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HUMANITIES GRADUATE SCHOOL

Modern Languages and Linguistics

Investigating the Impact of Vocabulary Strategy Instruction and E-Portfolios on Vocabulary Strategy Use and the Acquisition of Academic Vocabulary by TEFL Undergraduates

by

Mohammed Hathal Aldawsari

Thesis for the degree of Doctor of Philosophy

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<u>ABSTRACT</u>

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This study investigates the role of utilising an electronic portfolio in the context of vocabulary learning strategy (VLS) instruction. It aims to examine the use of a mixture of language learning strategies and skills required for learning management. Therefore, the current study incorporates e-portfolio as an application that can provide learners with practical and systematic steps and thus assist them to make control on their learning.

This research adopted a mixed method approach to explore the impact of e-portfolio integration in the context of the VLS instruction on undergraduate learners' strategic learning of vocabulary and academic vocabulary learning. This study employed a number of research instruments including vocabulary learning strategies questionnaire, academic vocabulary size test, interviews, artefacts and documentation of learning which forms comprehensive archival records (e-portfolio).

E-portfolio was found to be insightful and reflective of the strategies learning and use processes. Utilising e-portfolio in the context of VLS instruction seemed to lead to more systematic and consistent strategic learning of vocabulary. This has been in conjunction with significant improvement in the learners' academic vocabulary size and in their strategic vocabulary learning. Such improvement would make changes in learners' understanding and awareness towards strategic learning. This could play important roles in accelerating and facilitating the learning process in general. However, there were issues of irregularities where learners were not systematic or show less consistency when it comes to strategies use in the e-portfolio. The findings of this research contribute to a better understanding of how the use of e-portfolio impact on the learners' strategic learning and on their acquisition of academic vocabulary.

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DECLARATION OF AUTHORSHIP

I, Mohammed Hathal Aldawsari declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Investigating the Impact of Vocabulary Strategy Instruction and E-Portfolios on Vocabulary Strategy Use and the Acquisition of Academic Vocabulary by TEFL Undergraduates

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

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ACKNOWLEDGEMENTS

Chapter 1:   INTRODUCTION

1.1 Overview

This research study aims to investigate the impact of vocabulary learning strategy (VLS) instruction and the use of e-portfolios on academic vocabulary knowledge and strategic learning. It seeks to understand the role of the e-portfolio in supporting the development of the strategic learning of vocabulary among a group of undergraduates in Saudi Arabia who are following a Bachelor of Arts programme in Teaching English as a Foreign Language (TEFL).

Second language learners often encounter a huge number of words (Nation & Waring, 1997). Dealing with such a huge number of words is believed to be challenging. Previous research suggests that there is a deficit among learners at university level in the use of academic vocabulary and a lack of clarity in their spoken and written output (Roberts & Cimasko, 2008). Knowledge of, and skills in vocabulary learning strategies are believed to be essential in enabling learners to deal with new words independently (Graves, 2006). Nation and Meara (2010) claim that huge numbers of new words can be accessed by using appropriate strategies. Previous empirical research in the field of language learning strategies reveals that most intervention studies deal with strategies as a final product (e.g. O'Malley et al., 1985a; Sasaki, 2000; Rasekh & Ranjbari, 2003; Mizumoto & Takeuchi, 2009; Chen, 2009; McMullen, 2009) and to a large extent ignore the learning process itself. These studies usually consist of teaching language learning strategies and then assessing the progress of the learners after a period of time. Although it is important to check learner progress as it provides indications about performance, there has been little research on how these strategies are used and orchestrated. This leads to little understanding of the strategy use process itself. This study attempts to address this research gap and aims to enrich the understanding of VLS use and learning process. This is in contrast to previous studies which have primarily assessed progress in strategic vocabulary learning (the product) through the measurement of the impact of strategy instruction. Given a focus on process, and the current interest in technology to support learning, this research also looks at the use of e-portfolios which have mainly been used to support the learning process (Amaya et al., 2013). Therefore, the starting point in this study is that using an e-portfolio would provide learners with educational affordances that could assist the learning process. Equally, such integration of the e-portfolio in the context of VLS instruction could provide insightful information about the process of strategy development and the role of the e-portfolio in supporting this process. The use of the e-portfolio in the wider context of educational technologies and language learner autonomy will be discussed in section 2.2.

The current study integrates the use of the e-portfolio in the context of VLS instruction at university level. A full account of language learning strategy instruction in the research literature is provided in section 3.7. Furthermore, a description of the VLS instruction used in the empirical study is introduced in section 4.5.

This study was conducted at an emergent university in Saudi Arabia during the second academic semester of the 2014 academic year. The participants were second year English department undergraduates who will be teaching English as a foreign language on completion of their degrees.

Based on what has been briefly introduced above, the current research combines VLS instruction and the use of an e-portfolio as two core elements which offer the potential for strategic, consistent and systematic learning. The instruction of vocabulary learning strategies should provide the learners with the knowledge that they will need in learning vocabulary at both the linguistic cognitive and the meta-cognitive levels (Abhakorn, 2008). In the next section, the rationale for undertaking the current research is presented in light of what has been briefly addressed in this overview.

1.2 Rationale and significance of the study

It was believed that grammar is more important than vocabulary in second language acquisition (Nation, 1990). This can be observed in the early approaches to and methods of teaching languages. Starting with approaches that focused on teaching the structures of languages (e.g. the grammar-translation method). When research into second language learning area became deeper and more developed, it was found that vocabulary is more important. The British linguist, David Wilkins (1972, p. 111), said 'while without grammar little can be conveyed, without vocabulary nothing can be conveyed'. This suggests that lexical knowledge is the key factor in the general understanding and comprehension of the language. In other words, vocabulary knowledge is inextricably linked with the successful use of language.

The relation to the strategies in this case comes from the idea that the priority of teaching and learning should be paid to the most frequent words. Low-frequency words can also be learned but after learning the most frequent ones. Further, strategies to incidentally or deliberately learn the low-frequency ones can be taught to the learners, for example, guessing the meaning from the context, learning by using word cards, using word parts and dictionary use. Thousands of low-frequency words can be accessed by applying these strategies, which makes these strategies vital to learners (Nation & Meara, 2010).

The non-native English learners who are studying in programmes that use English as a medium of instruction usually suffer from a deficit in the use of academic vocabulary and lack of meaning clarity (Roberts & Cimasko, 2008). This has motivated the present research to focus on investigating possible ways to assist and accelerate the learning of lexical knowledge. To facilitate the learning of required lexical knowledge, there are two main routes: first, the direct and deliberate efforts to teach and learn vocabulary items, such as studying lists of words; second, to empower the learners with the steps, skills and behaviours to learn the different vocabulary items more effectively, entailed in the vocabulary learning strategies. Taking into account that learners at the university level usually encounter a huge number of frequent and less frequent words, strategies seemed to be possible and legitimate techniques to be applied to deal with larger numbers of new words.

Another issue about the vocabulary size in the university context is the restriction of the classrooms. Strategies can assist learners in overcoming the limitations of classroom time and settings. It can contribute to the learners' autonomy and independence. This discussion can explain the growing interest in researching vocabulary learning strategies (e.g. Ahmed, 1989; Gu & Johnson, 1996; Schmitt, 1997; Marin, 2005; Alqahtani, 2005). Likewise, (Nation, 2001) claimed that a larger amount of words can be learned with the help of vocabulary strategies that can fit different proficiency levels. The lack of comprehensive studies that took larger numbers of vocabulary learning strategies into the training level is another motivation for this proposed research. Previous studies in the area of vocabulary learning strategies have focused on specific aspects, such as one individual strategy (e.g. guessing from the context in Huckin & Bloch, 1993; Na & Nation, 1985; Nassaji, 2003). The lack of research investigating more comprehensive sets of strategies is not the only aspect that called for studying a comprehensive list of strategies, taking the training to a larger level that covers a diverse set of strategies makes the current research even more needed.

Research in language learning strategies has shifted the focus from the teacher to the learner. Therefore, the growing interest in focusing on individual learners constitutes another part of the current research motivation. The interrelationships between the language learning strategies and vocabulary learning strategies made this framework even more attractive to serve the aims of this proposed research. These relationships are found at many levels. One of these levels is that most of the learning strategies in general, as proposed in different taxonomies, are either directly about vocabulary learning or can be applied to the vocabulary context.

After about 40 years of research in the area of language learning strategies, there is still a need for further studies at the training level. A considerable amount of research in this area was about aspects of strategies other than training on strategies for use and learning. Strategies training

studies were on general language strategies, covering all areas and subsets strategies, such as communication, speaking, listening, writing, reading, test-taking, grammar and vocabulary. The importance of research at the training level lies in the idea of how strategies can be more effectively employed in different learning situations and contexts. More research at this specific aspect of the research in the area of language learning strategies can deepen the understanding of the possible and potential ways of implementing learning strategies.

Compared to the general language learning strategies training and instruction studies, vocabulary learning strategies training studies are limited (Mizumoto, 2010). Furthermore, in the context that this research focuses on (i.e. Saudi), there are very few studies on vocabulary learning strategies. Likewise, to the best of my knowledge, there is no study of training on vocabulary learning strategies. Since the learning of language in general is accumulative and needs time to occur (Oxford, 2011), this research acknowledges this when it deals with strategy learning and use. Therefore, it takes the time of the training into a greater consideration allowing more time for the learning to happen. That is by proposing a whole academic semester for the strategies training course. This is intended as response to previous research recommendations which suggest more time for strategies to be learned and used (Chamot, 2004; Oxford, 2011). This specific aspect is believed to add more significance to the present research compared to studies which did not allow a longer time for the training to have effects on learners for various reasons, including practicality issues. Cultural considerations, suggested by a number of researchers (e.g. Oxford & Crookall, 1989; Holliday, 2003; Oxford, 2011), are believed to be suitable to the EFL context which has a culture differing from other ESL and EFL contexts. This can be seen as another unique aspect of this research. For example, Oxford (2011) claims that underestimating culturally promoted strategies is considered culturism, which is the practice of cultural discrimination in education in general that was proposed by (Holliday, 2003).

One of the objectives behind strategies and strategies training is the self-management of learning. This becomes clear at the meta-cognitive level of strategy use. Bearing this in mind, this research accepts that the integration of an electronic portfolio might serve this objective. The integration of the e-portfolio would, hypothetically, offer the researcher chances to focus and feedback throughout the learning process. This research does not view the assessment of learning as a separate part that comes after the learning; rather it views the e-portfolio as an assessment for learning. This advantage of an e-portfolio in the context of vocabulary learning strategies is at the research level. However, other pedagogical advantages can also be utilised by using e-portfolios. This includes aspects of learning-management, regulation and assessment that come in line with the prominent aspects of strategies learning. Therefore, it is the

combination of the strategies training, learning and use with the employment of e-portfolio, which makes this research even more unique and significant.

1.3 Portfolios in education

The general concept of portfolios is that they are comprehensive records of specified items collected by specified people. However, the educational portfolios are more constructed and defined. Barrett and Carney (2005, p. 1) define the educational portfolio as one that "contains work that a learner has collected, reflected, selected, and presented to show growth and change over time, representing an individual or organisation's human capital". According to this definition, the educational portfolios are constructed by learners to evidence their learning through meaningful collections. This definition is true of both the traditional paper-based portfolios and the electronic version of portfolios. Although the electronic portfolio has similar characteristics to the traditional portfolio, it has some unique constructs. The National Learning Infrastructure Initiative (NLII, 2003, cited in Barrett & Carney, 2005, p. 1) defined the electronic portfolio as "a collection of authentic and diverse evidence, drawn from a larger archive representing what a person or organisation has learned over time on which the person or organisation has reflected, and designed for presentation to one or more audiences for a particular rhetorical purpose".

There are two main purposes of using portfolios in learning: first, using the portfolios for assessment of learning, where the focus is on the final product of the learners; second, using portfolios as assessment for learning where the focus is on the process more than the outcomes. These two purposes should be clearly explained to the learners before using the portfolios. The reason for that is that it can be problematic to achieve these two competing purposes and paradigms, according to (Barrett & Carney, 2005). In this research, using portfolios as assessment for learning seems to be more suitable to serve the goal of capturing the change and possibly the improvement of vocabulary learning strategies' use and learning over a period of time. The argument here is that traditional assessment usually focuses on the achievement of learning and ignores the process and experience of learning which can provide very useful insights about the learning, enriching the understanding of the process more than the product.

1.4   The study context and research questions

University students taking part in this research are studying for a bachelor's degree in TEFL. This four-year bachelor programme offered by Prince Sattam Bin Abdulaziz University is similar to many other programmes in other Saudi universities in that these future teachers receive intensive basic language education and take specialised linguistics modules that are

gradually introduced throughout the years of study. When students finish their TEFL bachelor degrees, they are required to pass a professional teaching exam in English before they can teach. Students are often under pressure to pass their exams before they can secure a job. Thus, students are motivated to seek extra help to master the target language. This research study carries out VLS instruction among a group of participants in this context and incorporates e-portfolios within the instruction to evaluate the impact of using this medium to facilitate the strategic learning process and to understand how learners orchestrate this strategic learning process.

Grenfell and Macaro (2007) argue that there is near consensus among researchers that the instruction of language learning strategies is helpful. However, the majority of studies which carry out strategy instruction do little more than evaluate the impact of the instruction over time (e.g. O'Malley et al., 1985a; Sasaki, 2000; Rasekh & Ranjbari, 2003; Mizumoto & Takeuchi, 2009; Chen, 2009; McMullen, 2009) and neglect the developing process of strategy use. In other words, previous research strategies have seen strategy use as a final product that needs to be checked after instruction. In contrast, this research study focuses on the strategy development process itself – as well as the product – thus providing insightful information into how a strategic repertoire is developed.

A number of researchers have highlighted the pedagogical and the additional technical affordances of e-portfolios which support the learning process through reflection and practice (e.g. Jafari, 2004; Sherman, 2006; Ravet, 2006; Buckley et al., 2009). Hence, this experimental study combines VLS instruction with the use of an e-portfolio in order to investigate the impact of the combined elements of VLS instruction and e-portfolio use on the development of academic vocabulary knowledge and the strategic learning of vocabulary.

The first two of my five research questions (below) aim to evaluate the learning impact of this approach. Knowing the general performance of the learners' academic vocabulary knowledge and the vocabulary strategy use of learners is essential to reveal the impact of VLS instruction and the use of an e-portfolio on the learners' general performance. The other three research questions aim to investigate the learning process itself in more detail. Exploring strategy orchestration is important to understanding the learning process, as is knowing how the use of e-portfolios contributes to the strategic learning process.

Research question 1: What is the impact of integrating an e-portfolio with VLS instruction on TEFL undergraduates' academic vocabulary size?

Research question 2: What is the impact of integrating an e-portfolio with VLS instruction on TEFL undergraduates' vocabulary strategic learning?

Research question 3: How do learners orchestrate their VLS in the e-portfolio?

Research question 4: What is the role of e-portfolios in supporting the development of VLS?

Research question 5: What is the role of technology in e-portfolios, in supporting VLS learning and use?

By answering these five research questions, this research seeks to contribute to the existing body of knowledge on strategic learning of vocabulary and the use of e-portfolios in this context.

1.5   Structure of the thesis

The thesis is organised into nine chapters. The first chapter is a review of the whole study. It identifies the significance and the rationale of the study. This introductory chapter discusses the context of the study and proposes the research questions. Chapter 2 is dedicated to reviewing relevant literature about e-portfolios. This chapter tries to situate the current research in the context of wider research field in order to identify a research framework relevant to the use of an e-portfolio. It reviews the empirical studies that have used e-portfolios in education and in language learning.

Chapter 3 covers the literature associated with vocabulary learning strategies. This chapter briefly identifies the links between strategies and learner autonomy to situate VLS in the wider context. It provides a review of the relevant issues to the research in this area. It introduces the definitions, critiques and claims about strategies. It then moves to the empirical aspects, where reviews of VLS empirical studies are introduced. Chapter 4 discusses the methodology used in the current research. It identifies the relevant research paradigms and methods used in the present study. It provides a systematic evaluation of the e-portfolio platform used. It describes the data coding and analysis methods applied in the current study.

Chapter 5 is devoted to reporting and explaining the quantitative findings gained from the analysis of the academic vocabulary size test and the vocabulary learning strategies questionnaire. Chapter 6 introduces the qualitative findings related to the vocabulary strategy use. Chapter 7 is dedicated to introducing the qualitative findings about the use of e-portfolios and the orchestration of the strategies.

Chapter 8 discusses both the quantitative and qualitative findings in the context of previous research findings. This chapter provides answers to the proposed research questions throughout its sections. Chapter 9 is the conclusion of the whole thesis. It provides conclusions from the research and suggests pedagogical implications for learners, teachers and administrators.

Limitations of the study are also identified in this chapter. The chapter ends with suggested further researcher recommendations in the light of the findings of this research.

Chapter 2: E-PORTFOLIOS IN THE CONTEXT OF EDUCATIONAL TECHNOLOGIES

2.1   Introduction

This chapter aims to situate the use of e-portfolio in this research in the more general context of educational technologies and learner autonomy in section (2.2). It will, then, move on to discuss the underlying theoretical framework (2.3) that enabled this research to understand e-portfolio use in education and informed the design of its study. Essential concepts and definitions of portfolios and e-portfolio will be discussed in section (2.4). Finally, the chapter finishes (2.5) with a full account of relevant empirical studies that integrated the e-portfolio in education in general and in language learning in particular.

The second chapter of the literature review (Chapter 3) is dedicated to reviewing the relevant literature on vocabulary learning strategies. It will start by situating vocabulary learning strategies in the wider context of learner autonomy. Then it will provide full accounts of the theory, definitions and concepts, empirical studies and strategy instruction.

2.2   Situating the use of e-portfolios in the wider context

The world is shifting towards a knowledge-based economy where investment is focused on empowering people with knowledge (Avery, 2016). Such economy models require higher education graduates to master higher levels of skills and knowledge. The focus on education is seen as vital in this movement. Technology facilitates knowledge building at many levels (Teo, 2012). In the last decade, technology has become an integral part of education (Verma & Shekhar, 2014) as its potential has been highlighted. Educational technology terminologies have become an essential part of research in this area. The interest in researching the potential of technology and its implications in e-learning has noticeably increased as it shifts the learning to be student-centred and offers chances for more personalised learning settings and environments (Gray, 2008).

Technology has a great impact on the ways learners learn (Reinders & White, 2016). Technological affordances have enabled learners to have a greater degree of independence and

autonomy (Ibid) which is increasingly becoming a must-have characteristic of higher education graduates. Technologies such as communication tools offered easy access to the content and to the required support (Benson, 2011). Learning management systems offer chances to plan, organise, collect and engage with learning (Avery, 2016). It places learners in an active and deep learning process (Barrett, 2000; Zubizaretta, 2004) that promotes more control over their learning. It also facilitates critical thinking and reflection upon the learning process. Educational technologies allow learners to be more autonomous through its affordances (Avery, 2016).

The rapid developments and changes in technologies have also rapidly influenced the way students learn. As emphasised in Beetham and Sharpe (2007) e-learning is not only for administration and content delivery. Instead it is becoming more responsive to the complex needs and objectives of mainly learners, but also teachers and institutions. Laurillard (2007) highlighted that the promise of educational technologies would help learners by engaging learners in the learning process and thus keeping them motivated, by offering them personalised support to respond to their engagement and by providing learning content that would suit their social needs. Technology has the potential to solve problems that might be difficult to deal with in traditional ways (Ibid).

Technology has profoundly changed the way educational bodies operate (Beetham & Sharpe, 2007). These educational organisations are now networked and thus offer learners the affordances of accessing educational content from anywhere and at any time. Technology also offers leaners more freedom on choosing when and how to participate in education (Ibid) and opportunities to choose how to interact with the content. It is important to highlight that the rapid changes and developments of technology have also affected the learners themselves in their normal life (Bryan, 2004). This influences the way they approach their learning as learners supposedly already engaged with tools of communication and information and thus the way learners manage their learning has changed not only in form but also in methods (Beetham & Sharpe, 2007). This indicates that almost everything related to the learning process and context has changed. Learners now have digital identities that are significantly different from their physical identifies which implies significant changes in learners' motivation (Ushioda, 2011).

The previous argument was set out to emphasise that technology and e-learning is changing the way learners learn, teachers teach and educational institutions operate. E-learning is not seen as a new learning type anymore. It is becoming a dominant learning method (Kim et al., 2005). E-learning, like traditional learning, has its own challenges, problems and criticism. Part of the criticism towards e-learning is that it might turn to be a transmission process instead of promoting higher levels of skills and thinking (Fehse et al., 2010; Bowskill, 2010 as cited in Felce, 2012). However, others (e.g. Mayes et al., 2009) claim that e-learning and technology

enhanced learning are transformational rather than transitional. In responding to some criticism of totally online learning some researchers emphasised the role of blended learning (Dennis et al., 2006; Massy, 2006; Fehse et al., 2010). E-learning was found to be more effective than face-to-face but blended learning was found to be even better according to ALT (2010 as cited in Felce, 2012). Bringing the advantages of both types of learning together would reduce the shortfalls and deficits of each type in its own. Thus, the current research has positioned itself in the side of blended learning mainly for this reason but also for other pedagogical and practical reasons such as the specific context of study which will be discussed in the methodology chapter.

McLoughlin and Lee (2010) point out that self-directed and regulated learning is facilitated by the use of web 2.0 and the social tools of technology. Cognition, meta-cognition, reflection, meta-reflection and regulation are among the practices that lead to personal development (Moon, 1999; Zimmerman, 2008). As discussed earlier, technology could facilitate and foster such practices leading to more effective learning and personal and professional development. Wall et al. (2006) indicated that e-portfolio contributes positively in the professional development of learners. It is on this basis that this research has found e-portfolio, as a particular example of educational technology, appropriate to serve the objectives of the study. Abrami et al. (2008) indicated that e-portfolio is one of the most effective educational technologies in promoting self-regulation and other literacy skills.

E-portfolio is perceived as a tool that would facilitate the learning of complex processes and advanced skills (Roberts et al., 2016). These complex processes of planning, synthesising, sharing, reflecting and responding to feedback can be facilitated by the use of e-portfolios (Joyes et al., 2010). E-portfolio in this research is seen as a personal skill and knowledge developmental tool that could foster constructive learning. E-portfolio ideally should facilitate the process of knowledge construction in this research context. To conclude, the complex links between learner autonomy and educational technologies enable pedagogical implications that offer learners more control on their own learning in a less formal settings (Reinders & White, 2016).

2.3   Theoretical framework underlying the use of e-portfolio

In this section, the learning theories related to using e-portfolio will be discussed. Furthermore, justifications will be provided for choosing the learning theory that would show the relationships between the theory and the e-portfolio.

It is crucial for this research to justify its approach in using the e-portfolio in its study. Thus, it is important to establish a discussion about the relevant learning theories of e-portfolio to help in understanding its theoretical and pedagogical aspects. The theory should work as a guide that helps in understanding the phenomenon under investigation and to inform the design and the interpretation of the data (Levy & Stockwell, 2006). The theory provides a context for the current research where the objectives, questions, design and implications can be understood. Each theory has different focuses, so it is important to establish a theoretical framework that would provide a context to the study (Ibid). This context can explain the objectives, questions and priorities of the research.

Technology enhanced learning and e-learning in particular is offering opportunities to implement education in different models and philosophies (Nichols, 2003). E-learning is perceived differently. E-learning is perceived as a knowledge transferring medium but also as a "communication-collaboration-knowledge building" (González, 2010, p. 64). The latter is of particular relevance to the current research as the e-portfolio is used to construct knowledge about the strategies of vocabulary learning. (Orsini-Jones, 2015) agrees with Siemens (2012) in favouring the idea of co-construction of knowledge on social media but also on MOOCs which are Massive Open Online Courses.

Constructivism is a key concept of e-portfolio use in education (Felce, 2012). Constructing knowledge is the fundamental principle in constructivist learning theory. Students build their knowledge by going through a process of experiences and reflection on these experiences (Jonassen & Land, 2000) which is achievable through the use of e-portfolio. The construction of meaning occurs while students individually or socially learn (Stahl et al., 2006). Therefore, the learner in constructivist learning is in the centre of the learning process (Kasemvilas & Olfman, 2009; Healey & Klinghammer, 2002) unlike other traditional theories (Marcoul-Burlinson, 2006) such as behaviourism. In this sense, the e-portfolio is promoting active learning where learners are engaged actively in constructing their knowledge and learning (Batson, 2000 cited in Tosh et al., 2006). The e-portfolio could promote "an active process where the learners accept responsibility for their own learning , and draw knowledge and meaning from their experiences, reflection, as well as collaborative participation and feedback" (Marcoul-Burlinson, 2006, p.169). Similarly, the nature of the learning in constructivist learning theory is that it is active and constructive (Taylor el., 2013). There are three main principles in constructivist learning:

- Each person forms their own representation of knowledge.
- People learn through active exploration.
- Learning occurs within a social context, and interaction between learners and their peers is a necessary part of the learning process.

(Dalgarno, 2001, p.184)

The last principle is placing emphasis on the social context which is evidently seen in the social constructivism theory. Social constructivism is a subset theory of constructivist learning. One of the key concepts that is relevant to social constructivism is that of the Vygotskian idea that knowledge is constructed in learners' minds and not by transfer (Powell & Kalina, 2009). According to this form of constructivism, learning occurs through meaningful engagement in social activities such as interaction (Kim, 2001). Social contexts and interactions are believed to influence how learners construct learning. Learners within a social context and by interaction with other individuals mutually construct their knowledge (Santrock, 2001). Therefore, learners are in ongoing active participation with other individuals in constructing knowledge (Cochran & New, 2007).

In the context of the current research, learners are aiming for the same goal which is building a better strategic repertoire and more effective ways of orchestrating the strategies. The learners have opportunities to discuss their experiences of using e-portfolios and the VLS within the classroom environment or virtually through different means such as the e-portfolio platform, instant messaging, emails etc. In this way, an e-portfolio learning community is established which is one of the fundaments of social constructivism (Avery, 2016). The affordances of the selected e-portfolio platform to facilitate such communication will be discussed in the methodology chapter. The e-portfolio learning community as this research wants it to be implemented is benefiting from a traditional human- human interaction and also from online virtual interaction between the learner and other learners and between the learner and the available resources. In this way, this research is responding to previous research findings that found blended learning more effective (ALT, 2010 as cited in Felce, 2012) as it benefits from the advantages of both online and traditional learning.

The e-portfolio is mainly built based on social constructivism learning models (Tosh et al., 2006). Likewise, specific platforms of e-portfolio are either built on constructivism and social constructivism or influenced by them (Knight & Bush, 2009; Sutherland et al., 2011). The link between constructivism and social constructivism and the current research study is laying in the idea that learners should be provided with the tools and skills they need to construct their own knowledge and learning. This can be done in both formal and informal learning settings by experiencing and reflecting upon experiences individually and socially in a coherent way where connections can be drawn between their experiences, knowledge and reflection. In the current research, using e-portfolio in the context of VLS instruction would enable learners to experience the use and learning of the taught strategies. It would also encourage them to reflect upon their experience in a constructive way.

2.4 Different views and concepts of portfolios and e-portfolios

Traditional paper-based portfolios and their new format of electronic portfolios are perceived differently in the literature. Unless these different views and concepts about traditional and electronic portfolios are addressed and discussed, this research would not be able to define the general principles and concepts of the e-portfolio that will be implemented in its study.

It is relatively crucial, before discussing the definitions of portfolios, to decide the type and the purpose of using them. Based on the purpose of using portfolios, there are three types, namely assessment portfolios, presentation portfolios and learning portfolios (The Quebec ministry of education, 2002 as cited in Peters et al., 2006). While this research accepts that the use of portfolios in these three types might overlap, its main focus is on learning portfolios. These portfolios are used to "show progress over a certain period of time by showing all the documents and reflections prepared by a student." (Ibid, p. 315). This comes in homogeneity with the current research objectives. E-portfolio can be used to enhance teaching, learning and assessment (Lorenzo & Ittelson, 2005). This research acknowledges the potentials of the portfolios in serving the teaching process and the assessment and evaluation of learning. However, it does not intend to use the e-portfolio as a teaching or assessment tool. Instead, it wants to focus on using the e-portfolio as a learner's tool. It will use the e-portfolio as a tool that would facilitate the learning of the taught VLS. The content of the e-portfolios created by the participants in this study is considered as vital source of data (among other instruments) about the learners' strategy use and the ways they operate the e-portfolio in an attempt to understand the learners strategic behaviours and the role of the e-portfolio in facilitating them.

After clarifying the position of the current research regarding using the e-portfolio as a learning tool rather than one for teaching or assessment, it is now essential to discuss the differences in the concepts, views and definitions between portfolios and electronic portfolios in the next two sections. This will include the current research understanding of the emerging electronic portfolios and the justifications it uses in the light of what previous research suggested.

2.4.1   Concepts of traditional portfolios

In the past, portfolios were used mainly to showcase the best work in different fields including arts, business and communication (Lorenzo & Ittelson, 2005; Peters et al., 2006; Wagner & Lamoureux, 2006). A portfolio is a learning tool that has been used in different fields but also in education (Peters et al., 2006). According to Barrett (2000, p. 1) the Northwest Evaluation Association (1990) proposed the following definition of the portfolio:

> "A portfolio is a purposeful collection of student work that exhibits the student's efforts, progress, and achievements in one or more areas. The collection must include student participation in selecting contents, the criteria for selection; the criteria for judging merit, and evidence of student self-reflection."

In an effort to explore how portfolios can support learning, Wade and her colleagues (2005, p. 1) stated that "a portfolio may be defined as a purposeful collection of student work that tells the story of a student's effort, progress and/or achievement in one or more areas." Although this definition did not include all the important concepts of portfolios such as reflection, Wade et al. (2005, p. 3) have discussed reflection in a different part of their paper as: "a portfolio allows the student the opportunity to reflect and record learning process…"

These definitions include assertions on two key concepts: (1) collection of work to evidence the learning progress and (2) reflection upon the learning process. The collection of work has been named differently in the literature. Artefacts creation (Sherman, 2006) and evidences of learning (Hartnell-Young et al., 2007) are examples of different names of the same key concept. Therefore, the current research will pay special attention to this as it is viewed as a vital and fundamental concept of portfolios. This concept will be emphasised in the design of present study. As the current research is intending to use the e-portfolio as a learning tool, it perceives reflection upon the learning process as an essential practice to be considered in any portfolio format. As previous research suggests (Lorenzo & Ittelson, 2005; Thanaraj, 2012; Parkes et al., 2013) reflection would facilitate critical thinking about learning, development of learning and offer more control over learning. This fundamental concept of e-portfolio will be considered as it would serve the objectives of the current study in engaging learners in critical thinking about their learning, taking more responsibility and control of their learning and thus developing their learning. The emergence of technology appears to have significantly influenced the concept and use of the learning portfolios (Kalz, 2005). The key concepts and definitions of e-portfolios will be discussed in the next section.

2.4.2   Different views of e-portfolios

The shift from paper based portfolios to electronic portfolios started two decades ago with the emergence of new technologies of multimedia CDs and DVDs (Avery, 2016). This shift continues with the advancement of technology until the portfolio becomes web folios that are accessible anywhere and anytime (Ibid). This shift could promote more educational affordances such as autonomy (McMurry et al., 2010).

Stefani et al. (2007) claimed that there are three main differences between the electronic and the paper based portfolios. First, the electronic e-portfolio is easy to rearrange, edit and combine materials. Second, e-portfolio is a connected document where hyperlinking helps in connecting the different pieces of work or artefacts with each other in a meaningful way. It also facilitates the connection with other resources and materials outside the e-portfolio itself. Third, electronic portfolios are portable, accessible, and transferable and can be transported unlike their traditional counterparts.

Artefacts of learning and the accompanying reflections in the traditional paper-based format provide a rich and complex presentation of work (Dillon & Brown, 2006). However, the potentials of technology in e-portfolios makes this process even more plausible as it helps in demonstrating a greater degree of complexity of work through reflection and organization of artefacts (Ibid). These advancements are believed to promote more use of e-portfolios at all levels. The e-portfolio has been used in institutions, schools, departments and in individual courses in higher education (Tosh et al., 2006).

Many definitions of e-portfolios were proposed in the literature. These definitions are not very different from each other. They all share some key features and functions of e-portfolios such as documentation of learning and reflection. In the following paragraphs, relevant definitions from the literature will be discussed. Justifications of the main principles and definitions that might be applicable to the current research context will be provided.

 One of the well-cited and early definitions of e-portfolio was proposed by Barrett (2005) as she defines it as:

> "A collection of authentic and diverse evidence, drawn from a larger archive representing what a person or organization has learned over time on which the person or organization has reflected, and designed for presentation to one or more audiences for a particular rhetorical purpose" (p. 5)

This definition seems to be restrictive of the fundamental concepts of e-portfolio as it only addresses the documentation of learning over a period of time and the reflection upon learning.

However, other aspects and concepts of e-portfolio have been emphasised by different definitions. Duncan-Pitt and Sutherland (2006, p.70) defines e-portfolio as:

> "A system that belongs to the learner, not the institution; populated by the learner not their examiner; primarily concerned with supporting learning not assessment; for life-long and life-wide learning not a single episode or a single course; that allows learners to present multiple stories of learning rather than just a simple aggregation of competencies; and, importantly, where access to them is controlled by the learner who is able to invite feedback to support personal growth and understanding."

In this definition Duncan-Pitt and Sutherland view the process of developing an e-portfolio as a system created, owned and fully controlled by the learner. This definition has also emphasised the life-long learning conceptualisation. Life-long learning conceptualisation is one of the attributes that graduate students should have (Khoo, 2012). Life-long learning is one of the vital concepts that Barrett and Garrett (2009) discussed in a conceptual paper that discussed the future vision of e-portfolio. Similarly, Foote and Vermette (2001) has concluded that e-portfolio can be effective tool for life-long learning due to the reflection aspects that it entails. Documenting learning over a period of time to demonstrate growth of learning, reflecting upon the learning process, control over the learning and creation of the e-portfolio, and life-long learning are fundamental concepts that this research would consider in its study. The reason for considering these concepts is that the first two are the basis of using e-portfolio and even traditional portfolios. Furthermore, the second two are promoted by technology in the e-portfolio. However, considering the practicality and the specific context of the current research where learners are expected to be novices with the e-portfolio, the documentation of and the reflection upon learning will be emphasised and considered as mandatory practices. According to Marcoul-Burlinson (2006) the general role of e-portfolio is to evidence learning. This research also places extra emphasis on the importance of the process of learning documentation. By allowing the learners to document the learning process, it allows learners to think critically about their learning and reflect upon it.

Other definitions e-portfolios were driven by the focus on the process of learning. Fehse et al. (2010, p.3) define e-portfolio as

> "A cohesive and well-structured collection of a learner's authentic documents – texts, audio files, video samples etc. – that demonstrate a person's competences, skills, educational achievements, and professional development. An e-Portfolio should support learning processes on an individual as well as a group level. For this purpose it offers appropriate facilities for interaction, communication and cooperation among peers as well as with teachers. An e-Portfolio at the same time provides means to document a person's learning history. By this, it opens up chances for reflection about learning aims, processes, and outcomes. An e-Portfolio is assembled, managed and owned by the learner himself (learner-centeredness)."

This e-portfolio definition stresses the idea of authenticity of the evidences of learning. Authenticity of the evidences is valued in this research, as they would reveal more in-depth and authentic information about the learning process, especially complex learning such as learning strategies. This is one of the concepts that made the e-portfolio use and implementation appealing to this research. Another aspect of this definition is that it views e-portfolio as a tool that facilitates the learning process. This specific aspect is of special interest in this research as it wants a tool that would support the use and learning of taught strategies in a process-oriented approach.

Other definitions were proposed with a general understanding of e-portfolios as they could be used as a showcase and a learning tool. Hornung-Prahauser (2007 cited in European e-portfolio implementation guidelines, 2015, p. 2) defined e-portfolio as:

> "E-Portfolio is a digital collection of "skilfully made works" (lat. artefacts) of one person who thus wants to document and illustrate the product (learning outcomes) and the process (learning path/growth) of the development of her/his expertise in a certain time span and for certain purposes. The respective person picked the selection of the artefacts autonomously and arranged them in accordance with the learning target. As an owner, she/he has the complete control who can review at what time which amount of information from the Portfolio."

This definition views e-portfolio as a tool that would showcase the best and "skilful" work and at the same time would help in documenting the process. This view of e-portfolio is mixing two main purposes or uses of e-portfolio which might be appropriate in some contexts and studies with different focuses. However, the current research accepts that these two purposes may not be suitable to its context as the focus is on the learning process of using and learning instructed strategies. The current research focuses on learners using the e-portfolio to evidence their learning more than showcasing their learning. However, it is not intended to apply any pressure on learners to include only the best of their work. Instead, it will emphasise the role of e-portfolio as a tool that would facilitate the learning process by documenting their learning in different occasions, situations and qualities and reflecting on it. Learners will have the freedom of choice as they will have a complete control on the type of evidence they want to include to show their use and learning of the taught VLS which is the primary aim behind using e-portfolio in this research context. This research wants to see any kind of evidence that would help in exploring how learners use their strategic repertoire and whether this use is simple or sophisticated in an attempt to understand how they develop their strategic learning of vocabulary.

The definition of e-portfolios in some context such as UK has been influenced by formal governmental agendas and projects. In UK, the e-portfolio definition was influenced by the

personal development plan (PDP) framework that has been advocated and mandated by the government. This has led to widespread use of e-portfolio in the UK (Marcoul-Bulinson, 2006; McAllister et al., 2008; Joyes et al., 2010; Roberts et al., 2016).

All in all, the current research will mainly focus on the documentation of and the reflection upon learning without ignoring the value and importance of the other available functionalities that could be facilitated by the use of e-portfolio. This comes in line with the objectives of the current research where strategic development of vocabulary learning is facilitated and looked at closely through the integration of learning e-portfolio.

2.5   Educational use and affordances of e-portfolios

E-portfolio is considered as a tool that encourages learners to be independent and autonomous (Ravet, 2006). Being independent and autonomous is one of the crucial concepts of the 21st Century Learning framework (Partnership for 21st Century Learning, 2015). An increasing body of research in the last two decades has been done on e-portfolios to highlight the main concepts, potentials, affordances, and relevant practices of e-portfolios. The use of e-portfolio has started mainly at the university and higher education level (Lopez-Fernandez & Rodriguez-Illera, 2009). Nowadays, more than half of higher education institutions in USA are implementing e-portfolios according to Eynon et al., (2014). Reviewing the relevant e-portfolio literature would help in building an informed evaluation of the available case studies, projects, and practices. Relevant studies that help to inform the design of the e-portfolio implementation in the current research will be reviewed in the following two sections. First, studies that used e-portfolio in education in general will be discussed in terms of the general principles that should be taken into the account when designing e-portfolio for learning purposes. Second, more focused studies that used e-portfolio in the context of language skills learning will be reviewed as it would suggest information, practices and considerations that need to be taken on board when using e-portfolio for language learning specifically.

2.5.1   E-portfolios in education

In the last two decades, the vast majority of studies that used e-portfolio were in education in general. The documentation of learning, reflective practices, engagement with learning and learning management were ideas and concepts that encouraged more adoption and use of portfolios and later e-portfolios in higher education (Buckley et al., 2009). Another important element that led to widespread use of e-portfolios, especially in medical, engineering and humanitarian studies, is the need for a tool that would help in assessing the complex models of learning in the different disciplines (Tochel et al., 2009). As the e-portfolio is now becoming

more mature in terms of technology and pedagogy with the help of research findings and observations of practice. Yet, more inquiry, explorations and discussions are needed to facilitate the process of implementing the e-portfolio in education (Wagner & Lamoureux, 2006).Therefore the current research intends to benefit from previous research findings and recommendations in this area to make more informed decisions when implementing the e-portfolio in the present study. A considerable amount of studies has used the e-portfolio for showcasing best practices of students or for providing a method of assessment (Sherman, 2006). This suggests that the use of e-portfolio as an instructional tool which helps in facilitating teaching and learning is ignored in previous research. Sherman (2006) proposed eleven interesting ways in which e-portfolio can be more effectively used to facilitate teaching and learning. In evaluating these eleven roles, the current research will discuss in the following paragraphs the roles that could be used in its study and the roles that cannot be applied. It will give justifications and arguments of what will be considered and what will be left.

First of all, the current research is focusing on the use of the e-portfolio as a learning tool more than a teaching tool. Thus, the discussions will be in the context of using e-portfolio as a personal developmental learning tool. The first and foremost role is artefacts creation. This role will be emphasised in the current research as it is the fundamental practice of developing an e-portfolio. This will work as evidence of learning where students should include created artefacts to show their use and learning of the taught VLS. These artefacts should work as learning documentations that will be available for learners to revisit, evaluate , revise and reform. Artefacts creation is in fact learning and knowledge creation (Carmean & Christie, 2006) which forms the key principle behind e-portfolio use in education. Therefore, it is essential to emphasise this practice in the current study. Such process of artefacts creation might lead to a comprehensive record of evidence that represents the learners' actual learning (Abrami & Barrett, 2005).

The second role is goal setting as it facilitates the process of building the e-portfolio. If the goals of having e-portfolio are clearly defined then it is assumed that learners would make informed decisions and practices to adhere to these goals. Therefore, the current research will clearly define two main goals of the e-portfolio. The first goal is to document their use and learning of the taught strategies and include them in their e-portfolio. The second goal is to reflect and think critically about their learning and use of the taught VLS. Other goals will be introduced to the learners but will not be imposed on them. These goals are revisiting their previously developed e-portfolios, revising the content, checking their classmates' e-portfolios and commenting on their peers e-portfolios. The reason for not imposing these goals as compulsory components of their e-portfolios is to reduce the influence on the way they approach their strategic learning of vocabulary. Another reason is to consider the practicality, as learners are only participating in a

research study and it is not part of any assessed language course. Therefore, if all these goals become compulsory students might become demotivated which might affect their learning. In all cases, these goals will be highlighted and communicated to the participants but without putting any pressure or obligation on them. Opportunities will be offered to learners to decide what evidence should be used in the e-portfolio to accomplish their primary learning goal (Roberts et al., 2016) of using and learning the taught VLS. By defining the present study goals of using e-portfolio for students to understand before they start, this study is corresponding to one of the important factors of portfolio success according to (Driessen et al., 2007a).

Reflection is another role that the e-portfolio can facilitate according to Sherman (2006). This role will be considered in the current research as this aspect is vital in advancing learning. The present study will emphasise the role of reflection in promoting critical thinking about learning. It will encourage learners to reflect and think critically about their use and learning of the taught VLS. In this way learners will be able to improve their use of the strategies to reach effective and improved strategic repertoire. These deep processes of strategy use will only be captured through students' reflections which constitutes one of the key contributions that this research is hoping to find out. Therefore this study will consider a platform that would offer learners opportunities to use varieties of forms to enable learners to reflect on their learning. Tools for simple use of text for reflection should at least be available in the online platform of the chosen e-portfolio. Dyrud, et al. (2005) indicated that selecting the tools that enhance self-reflection is vital to promote critical thinking among learners. The role of practice with a purpose will be considered as the purpose of the e-portfolio is to facilitate VLS learning. The e-portfolios work as a learning environment where learners can practise their VLS and possibly demonstrate their abilities and competences of technological skills.

The role of communication is valued in this research. Tools for communication in the e-portfolio platform would be considered. These tools should enable synchronous or at least asynchronous communication between the participants and the audience these choose. Such communication would enrich the process of learning by creating an online learning community where people share the similar interests, materials, resources, problems and challenges (Tosh et al., 2006). This hypothetically should engage learners in the learning process and possibly enhance their identities (Baxter & Haycock, 2014). Taking into account that participants in the present research are in fact volunteers who want to improve their English in an additional support offered by this research for scientific research purposes, it is possible that learners may not communicate actively in the online platform. However, it should be noted that these participants are in fact classmates who meet regularly almost every day. Thus, it is expected that they will be communicating in person and discussing issues related to their use of e-portfolio and their strategic learning of vocabulary. Regardless of the form of the communication,

learners are expected to share their ideas, notions and challenges in constructing their e-portfolios and in using the taught VLS which is one of the aspects that would enrich the learning process.

Planning, managing and organising are important roles that this research will take into consideration. The chosen e-portfolio platform should support planning, managing and organising of the collected artefacts of learning. Tools for planning, managing and organising are important to offer learners a greater degree of control over their learning which has been in the hands of teachers for a long time in traditional teaching and learning settings (Ascota & Liu, 2006). It should encourage learners to meaningfully link and relate the collected items and artefacts.

The last instructional roles of Sherman (2006), that this research is interested in, is historical records and stories role. This role serves the main objective of the current research as it emphasises the use of e-portfolio as a comprehensive record that demonstrates learners' strategic learning of vocabulary and tells a detailed story about the learners' learning experience that comes from an authentic source and in an authentic context of language learning. Learners will have the chance to revisit, revise, evaluate and reform their learning which will make them active self-assessors for their learning. It is important to highlight that this research found these eight roles out of the original eleven proposed by Sherman (2006) to be informative and guide the implementation of e-portfolio in the empirical study. It provides insights that will inform a more practical design of e-portfolio use in the present research that takes into account the special context of the study. It is also important to clarify that the other three roles included by Sherman, namely assessment, examples and non-examples and interdisciplinary teaching and learning, will not be considered in the present research. While this research acknowledges the value of these roles, it finds them either beyond its focus or not suitable for practical reasons. For example, using e-portfolio as a tool for assessment of learning is criticised in the literature (Teitel et al., 1998) as it might lead to production of unauthentic learning evidence (Barrett & Carney, 2005). Finally, although the e-portfolio can be used as an effective teaching and instructional tool according to Sherman (2006), the current research study is using the teachers e-portfolio only as an online repository where learners can find the in-class taught VLS with the relevant materials and resources in case they want to refer to it.

One of the e-learning projects that JISC (Joint Information System Committee) in the UK conducted is an e-portfolio project between 2008 and 2012. JISC (2014) claimed that their research in the e-portfolio project promoted e-portfolio as a vital learning tool and minimised the challenges in integrating e-portfolios in education. One of the outcomes of this project is a suggested guide for effective practice with e-portfolio. The effective practice guide stated that

"e-Portfolios are about people, rather than technology" (Gray, 2008, p. 10). This research will pay attention to the fact that some ineffective practices place emphasis on the technology itself. It will focus the attention on how the technology can serve the functionalities of the e-portfolio to facilitate the learning process of VLS as the specific example used in the present research.

The flexible structure of the portfolio was one of the important factors for success in using e-portfolios (Driessen et al., 2007a). Students should be offered the freedom to choose the structure they want in their e-portfolio as this would accommodate their learning preferences and styles. It is assumed then that having a higher degree of flexibility about the structure of e-portfolio would motivate, engage and encourage learners to use the e-portfolio in more effective ways. It might encourage them to demonstrate their use and learning of the taught strategies in a way that reflects the complexity of the strategic learning. Dalziel et al. (2006) in a review of e-portfolio use in UK concluded that some universities within UK like the idea of implementing the e-portfolio within their existing learning management systems such as Blackboard. While such practice might suit the universities economically and functionally, it may restrict the flexibility of the e-portfolio structure as it becomes part of a larger controlled learning management system. It is on this basis that the present study would consider an e-portfolio system or platform that would offer such flexibility.

Support provided by tutors is essential for successful implementation of portfolio (Dalziel et al., 2006). This research accepts that the success in using e-portfolio may lie on the support provided to learners especially if they are new to e-portfolios. Thus, the present study will provide the participants with the required support at both technical and functional levels especially at the beginning of the study. The user-friendliness of portfolios is an area that needs further research according to Driessen and his colleagues (2007a). A user-friendly platform might encourage learners to actively engage in the process of documenting, reflecting and using the e-portfolio. Further, the lack of user-friendliness in traditional paper-based portfolios has always been a problem (Haapaniemi & Karvonen, 2006). Thus, the careful selection of the e-portfolio platform to address the issue of user-friendliness and its implication in the current study would contribute to a better understanding of this specific feature of e-portfolios.

The learners' thinking about their learning is believed to be changed by the use of e-portfolio (McGee et al., 2006). This change can be seen in the kind of learning documentations and artefacts included in the e-portfolio to represent their learning. Some students might tend to include their best and refined final product to showcase their learning. However, other students might include different versions of their work that show their growth and progress over a period of time. The current research accepts this shift in students thinking about their learning and will not encourage one practice over the other. Instead, it will generally call for documentations of

their learning without specifying the type of evidences used. The reason for that is to acknowledge the idea that some students might perceive their e-portfolio as a showcase that should include only the best samples of work while others might perceive it as a process.

2.5.2   E-portfolios in a language learning context

One of the well-known projects on portfolios is the European language portfolio. It started from the mid-nineties. The project was developed by the language policy unit of the council of Europe which emphasised that the objectives of implementing the project are

" to support the development of learner autonomy, plurilingualism and intercultural awareness and competence; to allow users to record their language learning achievements and their experience of learning and using languages."   European Language Portfolio (ELP), Council of Europe (2015)

The council of Europe (2015) on its website states that the portfolio consists of three main sections. The first section is the passport in which learners normally include their personal information and any formal or informal qualifications and certificates. It works as a brief description of who is this particular learner before going to the second section which should reflect the current status of his/her language learning journey. The second section is language biography and it includes details about the different language learning experiences the learners have gone through. It also could add more details and explanations about the certificate and qualifications he/she included in section one. It usually includes the learner's personal goals for their future language learning such as getting a specific score on IELTS. The third section is the dossier which includes evidences of learning the language. This normally is in the form of copies of course work, copies of exam results and actual papers and any other evidence of learning. The use of the portfolios in this project was the topic of a considerable amount of research in this area.

Kuhn and Cavana (2012) argue that the European language portfolio, which created a significant movement at both the theory and practice levels, has a great impact on learning and teaching. Generally speaking, ELP is perceived to be effective, helpful and could promote language learning autonomy (Kohonen, 2012). However, others (e.g. Little, 2012) have highlighted some of the concerns and criticism towards ELP project. One of the concerns that Little (2012) discussed is the idea of encouraging the learners to use the target languages and not their L1 on their e-portfolios which might not reflect the depth of their reflection for example. He argues that the L1 might facilitate the process of reflection on language learning more than the second language especially with low proficiency levels. In responding to this criticism, the current research will not impose the use of English (the target language) or Arabic

(the participants' mother tongue) on participants when they reflect upon their learning. It will offer the learners the freedom of choice in regards of the language they want to use to reflect on their learning and use of the taught vocabulary learning strategies and general language learning. In this way, this research is responding to previous research recommendations and corresponding at the same time to the fact that some advanced learners may want to use the target language in their reflection to show their ability of using the target language to reflect on the language learning which might be seen as an advanced level of proficiency.

In a study where action research was used in the Indonesian EFL context, Warni (2016) found that the use of the e-portfolio facilitated learners development in their English writing. These improvements of overall writing were attributed to self-revising, teachers' and peers' feedback, reflection and critical thinking which all have been promoted by the use of e-portfolio. He also found out that the use of the e-portfolio has positively contributed to the learners' autonomy and motivation as learners showed more awareness of the meta-cognitive knowledge and skills. Interestingly, the use of the e-portfolio has changed learners' expectations and target standards of their writing. Part of the logic behind this change is that learners are using blogs as e-portfolios and their writings were available for others to comment on. Thus, they hold higher expectations and standards of their public writing which in this case has influenced their performance in a good manner. Similarly, Desmet et al. (2009) concluded that the use of e-portfolio has contributed to better use of writing revision strategies and thus writing performance in general. The current study would hope that the use of the e-portfolio would facilitate similar improvements in the autonomy and motivation among learners but more importantly in the use and learning of the taught VLS. By considering self-revision, peers' feedback, self-reflection and critical thinking as important aspects that could promote more effective use and learning of VLS, the e-portfolio in the current study will be implemented in a way that would facilitate systematic and consistent practices of strategic learning of vocabulary. The current study would also benefit from the public visibility of the students' work but in a more conservative way. Learners would be given the freedom to choose who can see their work by specifying whoever they want to share they work with. At the same time, they all know that their work will be available to their classmates who take part of this study, their teacher and only whoever they specify. Thus it is not totally public. In this way, they would benefit from having their work partially public which might influence their expectations and standards as in the Warni (2016) study, but also would not impose any pressure on them by making their work totally public which could negatively impact their motivation, for example.

This current study faced a challenge when some participants experienced difficulties with the chosen platform for the e-portfolio. These challenges might be due to the unclear online instructions of the portfolio platform as the researcher claimed he provided some guidance.

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According to JISC e-portfolio effective practice guide (Gray, 2008) adult learners might experience difficulties with technology at the beginning of e-portfolio use, thus availability of flexible support is essential. The current study will carefully choose an online platform for the e-portfolio that is mainly easy for students who lack some information technology skills. Systematic and consistent technical and functional support will be available to the participants in this research study. The current study will consider a platform that is user-friendly and have easy explained tutorials and support in the same platform. In this way, similar issues to those in the Warni study could be avoided in this study as virtual and physical support and guidance will be provided throughout the course of the study.

Meyer et al. (2010) reading and writing study revealed that those who used e-portfolio have a higher degree of reading and writing self-regulated learning. Similarly, in a study using e-portfolio to support English academic writing and reading, Valdez (2010) reported resistance towards the use of e-portfolio among some participants in his study. This resistance was attributed to the additional time and efforts it takes to develop an e-portfolio. Another reason was that the use of students' personal social networks accounts in this project was seen as demotivating as some participants did not want to make their writing and reflections public to their friends and relatives in their social networks accounts. To address these important concerns towards the use of e-portfolio, the current research intends to emphasise the role of the e-portfolio in advancing students' language learning as previous research suggests (Joyes et al., 2010). This could be achieved by raising the learners' awareness about the importance of the time spent and efforts invested in developing an e-portfolio that supports the use and learning of VLS. This in turn should facilitate and improve their vocabulary learning and consequently their proficiency. Participation in the current research study will be totally voluntary and thus learners who decide to participate are expected to be motivated and willing to spend some time in using e-portfolio. Such additional courses and support offered by the present study are not normally available to learners. Therefore, learners are expected to invest some efforts in participating in the e-portfolio study, which should hypothetically at least provide them with some required skills and knowledge about e-portfolio and strategic learning of vocabulary. In responding to the second reason for not accepting the e-portfolio: that Valdez study integrated students social networks accounts into the e-portfolio which led to a rejection of the e-portfolio project, the current study, however, will not impose any pressure on learners to make their work public as discussed earlier when reviewing the Warni study. Learners will have the freedom to choose who can see their work in their e-portfolio as students' social digital identity might influence learners' motivation significantly as claimed in Ushioda (2011). As writing was one of the elements that Valdez study focused on, significant improvement in students writing was reported such as the improved range of topics covered in their writings.

In a study that took place at the university of Newcastle, Alshahrani (2011) highlighted that students who used e-portfolio have developed a consistent use of process approach to writing. It can thus be suggested that e-portfolio could promote consistency of documenting the learning process and thus regulating the use and learning of the taught VLS. By doing so, participants in the current research would consistently develop more use of taught strategies which could lead to a better vocabulary size as previous research suggests. Another relevant and important finding of Alshahrani study is that the specific e-portfolio platform was found to be promoting changes in students' perceptions about writing in addition to actual performance in writing. It also claimed that the use of e-portfolio has positively impacted the students' motivation towards writing. Therefore, the current research will carefully consider the online platform that will be used as the e-portfolio, hoping to promote a positive change in learners' beliefs and practices towards strategic learning of vocabulary.

E-portfolio use in writing is expected to be effective in most cases (Cepik & Yastibas, 2013) as writing is a productive skill. E-portfolio has been used in speaking as it is characterized as a productive skill too. In a study at the university level in Turkey, Cepik and Yastibas, (2013) employed e-portfolio in a speaking course at an English language preparation programme. They concluded that e-portfolio was effective in facilitating speaking learning. It contributes positively to students' linguistic developments; grammar, pronunciation and vocabulary in particular, in addition to affective developments when speaking in the form of increased self-confidence and reduced anxiety.

In a different study, Huang and Hung (2010) investigated the use of e-portfolios in a speaking course. Significant increase in total words used in conversations and speaking and richness in lexical items used in these conversations were the main two findings of this study. In other words, the group who used the e-portfolio demonstrated a better lexical breadth and depth. However, The study did not find any significant difference between the control group and the experimental in terms of the syntactic complexity. This study has confirmed previous studies on the role that e-portfolio play in promoting affective gains in addition to linguistic gains. The study conclude that participants were motivated and held positive attitudes towards the use of e-portfolio as it offered them an additional place where they can practise their language in such speaking class. Further, e-portfolio offered participants opportunities to document but also monitor their learning. More importantly, It offered an environment where learners can practise their speaking in a less anxious manner. Bearing in mind the findings of these studies, the current research will focus on the strategic vocabulary learning and how it could be facilitated by the use of the e-portfolio. Understanding the role of the e-portfolio in the reviewed studies would inform the current research attempt to evaluate the use of e-portfolio in accelerating and facilitating the use and learning of taught VLS.

The reviewed studies were mostly focusing on the productive skills and whether the skills were improved with the help of the e-portfolio or not. It is noticed that these studies have ignored how learners improve their writing or speaking during the process. However, e-portfolio should enable researchers to look closely at these deep and complex processes of learning. Part of the uniqueness of the current research is that it will focus on the process as well as the product. As the learners will be asked to provide evidence of their use and learning of the taught VLS and reflect on them, these learning artefacts are expected to be authentic sources of rich information about how learners develop their strategic learning of vocabulary. In other words, this research views neglecting the process as a practice that would kill the usefulness of the e-portfolio as a source of authentic and rich information about the learning experience. Understanding how learners learn and orchestrate the taught VLS in the current research is vital as it would contribute to a better understanding of the levels of strategies use.

The literature suggests that the e-portfolio is generally effective in writing (Hiradhar & Gary, 2008; Baturay & Daloglu, 2010; Valdez, 2010; Alshahrani, 2011; Aliweh, 2011) and speaking (Huang & Hung 2010; Cepik & Yastibas (2013). This might indicate that e-portfolio might be more suited to productive skills. However, this does not mean that e-portfolio cannot be used in other areas and skills of language and language learning, such as reading, listening , vocabulary, grammar, language learning strategies, motivation and reflection. Furthermore, most of the studies that used e-portfolio in language learning were focusing on these productive skills. One of the reasons of this popularity of using the e-portfolio mainly in writing and recently in speaking is that they are easy to compile with the constructive learning which is the main principal behind the e-portfolio. Including observable learning outcomes (learning artefacts) contributes to the successful use of e-portfolio. Therefore, this research will consider a structure of VLS e-portfolio that would encourage students to include artefacts that demonstrate their use and learning of the taught VLS and equally their reflection upon their strategic use.

Chapter 3:   VOCABULARY LEARNING STRATEGIES

3.1 Introduction

After reviewing the relevant literature about e-portfolios in the previous chapter, this chapter will provide a review of the relevant literature to vocabulary learning strategies. The link between the use of e-portfolio as a specific example of education technology and the use of vocabulary learning strategies lies in the fact that both are providing learners with the skills and knowledge to be more autonomous. Providing learners with an effective pedagogical tool that is based on a solid theoretical framework (e-portfolio) and equipping them with the knowledge they need to deal with the different vocabulary learning situations (vocabulary learning strategies instruction) is assumed to promote learners' independence and autonomy. Therefore, having established a similar argument between the use of educational technologies (e-portfolio) and learner autonomy in the previous chapter in section 2.2, the next section of this chapter (3.2) will be dedicated to learner autonomy in relation to language learning strategies. This chapter will cover research and theories of language learning strategies to establish a theoretical framework to vocabulary learning strategies as a specified subset of the general LLS. This includes discussions about research on LLS as a field, definition of strategy, critique of LLS, specific taxonomies of VLS, empirical studies on different classified VLS and strategy instruction.

3.2   Learner autonomy and language learning strategies

The preliminary understanding of the relationship between learner autonomy and language learning strategies can be conceptualised through the following scenario:

> " Imagine a second or foreign language class with which you are somewhat or very familiar. Now consider which students in this class are the most competent in learning the language. These particular students are likely to be using a wide variety of language learning strategies and are probably o the way to becoming autonomous' self-regulated learners, that is, learners who take significant responsibility for their own learning."
> (Oxford, 1999, p. 109)

Learner autonomy and self-regulation comprise a theoretical framework that facilitates the understanding of language learning strategies (Oxford, 1999). Based on various definitions of autonomy, Oxford (1999, p. 111) proposed her comprehensive definition of autonomy as " (a) the ability and willingness to perform a language task without assistance, with adaptability

related to the situational demands, with transferability to other relevant contexts, and with reflection, accompanied by (b) relevant action (the use, usually conscious and intentional, of appropriate learning strategies) reflecting both ability and willingness." Similarly Macaro (2008) proposed a definition of autonomy that links it with strategies. He views autonomy as having three dimensions. These dimensions are: autonomy of language competence, autonomy of language learning competence and autonomy of learner choice. The first dimension of autonomy according to Macaro is autonomy of language competence. Therefore, to understand it, he started by illustrating what language competence is. Canale and Swain (1980) proposed a model of language competence that included grammatical competence, sociolinguistic competence and strategic competence. Macaro did not disagree with the notions of this model, but questioned: "against what standard are these dimensions of competence being proposed? For example, how strategically competent does the learner need to be?" (p. 48). Macaro differentiated between the first dimension of autonomy: the autonomy of language competence and the second dimension: the autonomy of language learning competence. He defined the latter as:

> "ALLC is the ability to deploy a range and combination of cognitive and meta-cognitive strategies such that task achievement or more general learning can occur either in complementary fashion with the teacher's approaches and techniques, or independently of (or indeed in contradiction to) the teacher's approaches and techniques."
>
> (Macaro, 2008, p. 51)

The link between autonomy and strategy use is evident in this dimension of autonomy. Autonomy of choice is the third dimension of Macaro's model of autonomy. In this dimension Macaro argues that the choice of learners is influenced by the set of goals they have. He also gave an example of learner choice in developing autonomy of learning a language as a bilingual or as a second language learner. This classification involves leaners deciding which label they want to have: bilinguals who can communicate with the language, or second language learners who will never stop learning and then will have a very different set of goals.

The relationship between autonomy and strategies is not always identified. Cohen (2007) analysed a questionnaire that surveyed a group of international strategy experts met at the University of Oxford in September 2004 and concluded that these experts have some agreement about issues and lack of consensus in other areas of strategies. He reported one respondent setting a sophisticated model of autonomy in relation to strategies which seems to be Macaro because he published his model one year later. The rest of the respondents of this survey expressed different understandings of autonomy. This includes one understanding that claims strategic learning is different from autonomous learning. While this research accepts that there is a lack of consensus about the relation between learner autonomy and strategies, it, at the same

time, acknowledges that there are some efforts to identify this relationship as discussed in Oxford (1999) and Macaro (2008), earlier.

According to Rivera-Mills and Plonsky (2007) positive correlation between learner autonomy and successful language learning has been established in the literature. Likewise, Little (2007) claims that language proficiency and learners' autonomy support each other in developing one another. Oxford (2003) argues that learning strategies should exist not only in the technical version but also in all versions of learner autonomy models proposed by Benson (1997) and Pennycook (1997). From the above definitions and arguments, it can be concluded that language learning strategies are significant in developing learner autonomy. Empowering learners with language learning strategies can assist learners to overcome the limitation of classroom time and settings and thus contribute to the learners' autonomy and independence. Hence, using strategies can contribute to a greater learner autonomy as highlighted in the literature (Oxford, 1999; Wenden, 1992; Macaro, 2001; Macaro, 2008).

Placing learners in the centre of the learning process is an attribute of strategies that lead to autonomy (Cohen & Weaver, 1998). Therefore, teaching language learning strategies could be one of the effective approaches that can lead to learning success and autonomy. Gu (2015) claimed that strategic language learning should lead to success in language learning but also to a greater learner autonomy. In his model, Gu explained that learners autonomy comprises three levels of autonomy, namely autonomous person, autonomous communicator and autonomous learner. Similarly, Oxford (1999) described the strategies as the necessary actions and behaviours to demonstrate the degree of autonomy. Accordingly, in the current research, the instruction of the VLS, which is a form of LLS, would offer learners chances for more successful vocabulary learning and learner autonomy. Instruction of LLS will be discussed in greater detail in section 3.7. After situating the research on LLS in the context of learner autonomy, this chapter will review the relevant literature of vocabulary learning strategies in the context of its general umbrella language learning strategies.

3.3 Issues in language learning strategy research

Language learning strategy research has witnessed substantial developments since the early seventies when Rubin's article about the good language learner was published in 1975. Since then the field of language learner strategies have gained "vibrancy" in second language acquisition (Gu, 2007). This research, over a period of about 40 years now, has revealed many rigorous and interesting findings, methods, practices and recommendations. The research in this field concludes that learning strategies are accessible and can be documented (Oxford, 1990;

Grenfell & Macaro, 2007). Similarly, strategies often contribute to the acquisition of communicative competence in a self-directed learning process (Oxford, 1990). Internal and external variables influence the use of strategies such as gender (Ehrman & Oxford, 1989; Oxford, 1993; Alyami, 2011).

There is almost a consensus among researchers that strategies are helpful (Oxford, 2011). Therefore, the teaching of these helpful strategies becomes an effective pedagogical approach. Another claim research reveals about strategies is concerned with the types of learners. Some students might tend to use strategies more successfully than others (Grenfell and Macaro, 2007). The following points are recent claims that are proposed by Grenfell and Macaro (2007, p. 24):

1- Strategies could continue to be identified under broad categories, despite the difficulties this entailed;
2- Strategy research offered a radical conceptualisation of the language learning process, shifting the emphasis onto individual learner;
3- The learning context, nevertheless, was a major influence on the way that individuals and groups used strategies;
4- Strategies were value-neutral, not in themselves good or bad, but were used either effectively or ineffectively by individuals and by groups;
5- Strategy research continued to offer insights into the complex operations that constituted the process of language learning; and
6- Strategy use and achievement were inextricably linked.

Finally, before plugging into the discussion about the definition of strategy and its complexity, it is important to discuss some major criticism of strategy research. Seliger (1983), Ellis (1986), Stevick (1990) and Kellerman (1991) expressed different criticism of language learning strategies in the early stages. One of these criticisms was that the learner had already developed learning strategies in their first language and then can build on them in learning a second language (Kellerman, 1991). Most criticism towards LLS in its early stage was about the lack of consensus on the strategy definition and issues about strategy involvement in learning such as the applicability of strategies to all learners, all aspects of learner performance and all contexts. Strategy training, teaching and instruction were issues raised in the criticism of LLS in the beginning stage. In general terms, critiques of language learning strategies research is very limited and few in terms of numbers (Grenfell & Macaro, 2007). The major critique was about the lack of consensus on the construct of the strategy. Part of the criticism regards the lack of explicit theoretical framework, which can explain the language learning strategies. Another critique by Dörnyei (2005) is about the language learning strategies taxonomies. His main argument is about the overlapping of individual items that can be classified in more than one category. While Dörnyei positions himself against language learning strategies research in most of its divisions, he does not, at the same time, dismiss the teaching and instruction of language learning strategies. He instead supports strategies training which is the final product of research

in language learning strategies. Thus, this can show the significance and vitality of language learning strategies and not vice versa.

This criticism led researchers in language learning strategies to react. Oxford and Cohen (1992) discussed the distinction between strategy and tactics as part of their reaction to the criticism of the fuzzy definition of strategy. Likewise, Grenfell and Macaro (2007) reacted to some of Dörnyei's critiques and called for more efforts to make the field of language learning strategies more mature. However, strategy, as the main concept in this field, needs to be defined and this is where the second claim comes from. The second claim looks to the strategy as a construct that can be defined, with what it is and what it does able to be described in practical terms. The definition of strategy and the problematic concepts in defining the strategy will be fully covered and discussed in another section.

Rose (2012) claims that due to the criticism towards LLS research, some researchers and experts have tended to change the labels of strategy research by proposing new models of strategy research. He claims that introducing different models in reaction to the criticism leads to more confusion in this field of research. This research acknowledges that this field like any other field in humanitarian studies might be understood differently and thus criticism has become a healthy scientific practice. Therefore, this research accepts that understanding this criticism at the theoretical level is essential in informing the decisions made at the practical level. Gu (2007) claims that Pluto planet is now removed from the planets list because it does not meet the characteristics of the revised definition of planet. He continues to claim that this does not mean that removing Pluto from the list of planets leads to dismissing astronomy because of the lack of consensus about planet definition. This argument is very typical of the major criticism of strategy definition. The current research, therefore, will review the relevant literature concerned with the different definitions of strategy at both the general level and at the specific level of vocabulary learning in the next section. Such review would inform the practical applications of the current study.

3.4 Definition of vocabulary learning strategies

Definition and terminology are very important aspects of the literature in language learning strategies. Therefore, variance is expected in the efforts of defining and explaining strategy. Moreover, there is no fixed definition of a specific aspect of this area, for example, there is no one definition of strategy.

Strategy definition at the very beginning stage of language learning strategies research was dealing with linguistic behaviours and included techniques, tricks, tactics, attitudes, exercises, and learning activities. Later, "strategy" as a term was shaped, defined and become more precise with respect to the debate and argument about the problematic strategy definitions as a sole part of strategy research development. Further, defining the phenomenon under investigation is vital in research (Gu, 2012). In dealing with the issue of strategy definitions, two sections will be introduced below. The first section deals with the definition of general language learning strategies. The second section will be dedicated to defining vocabulary learning strategies as a specified subset of general LLS.

3.4.1 General definition of strategy

In this section, different strategy definitions will be discussed and presented based on their historical order. During the last 40 years, the definition of language learning strategies have gone through different evolutionary processes. It is very clear how the concept of strategy in language learning has developed and become more precise and tangible. The early efforts to research strategy led to the first attempts at defining what a strategy is. This goes back to 1975 when Rubin started describing strategy. Rubin defined strategy as techniques and devices to acquire linguistic knowledge. This early definition has faced a number of challenges including the vagueness of the term.

Efforts have not stopped and more ideas have contributed to the definition of strategy. Stern (1975), in the same year, proposed a definition seeing strategy as more general order higher approaches to learning that govern the choice of specific techniques.

Bialystok (1978) introduced a new dimension in the efforts to define strategy. This dimension is about the consciousness of strategy employment, which became a matter of debate in language learning strategies research at later points. Bialystok sees strategies as (methods/conscious) enterprises to exploit the available information to improve competence in the target language. Likewise, Naiman et al. (1978), asserted the idea of consciousness of strategy use by using the word "deliberate" to describe the strategy. Based on this idea Naiman et al. (1978) concluded that strategy is generally, more or less deliberate approaches to learn a language.

 In the 1980s, the research in language learning strategies has become more complex and sophisticated and attempts to define strategy have increased. Communication strategies were regarded as problem solving practice in the communication process in the target language according to Tarone et al. (1976). This concept has evolved and been well-explained later by Tarone (1983). She defined communication strategies as " mutual attempts of two interlocutors to agree on a meaning in situations where the requisite meaning structures do not seem to be

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shared" (Ibid, p. 65). Communication strategies were considered by Canale and Swain (1980) as one of the four sub-competences that constitute communicative competence (Nakatani & Goh, 2007). Strategic competence was defined as "the ability to use verbal and non-verbal strategies to avoid communication breakdown that might be caused by learner's lack of appropriate target language knowledge." (Nakatani & Goh, 2007, p. 208). Communicative competence gained the attention of the field. Tarone (1983, p. 64) criticized the "broader definition of communicative competence" of Canale and Swain (1980) as it did not clearly differentiate between the sociolinguistic competence and strategic competence. Tarone (1983) defined language learning strategy as: "an attempt to develop linguistic and sociolinguistic competence in the target language to incorporate these into one's interlanguage competence" (p. 67). This was seen as a development in the definition of language learning strategies as this term gained more attention in the field of second language acquisition in the eighties. Interlanguage according to Tarone (2006, p. 747) is "viewed as a separate linguistic system, clearly different from both the learner's 'native language' (NL) and the 'target language' (TL) being learned, but linked to both NL and TL by interlingual identifications in the perception of the learner."

In 1984, Cohen proposed his definition of strategy, which was based on the idea that strategies are mental operations that can help in accomplishing specified learning tasks. Rubin (1987) appeared again on the scene after almost ten years of language learning strategies research with a definition that is more operationalised. Rubin defined strategies as a set of operations, steps, plans and routines of what learners do to facilitate the obtaining, storage, retrieval, and use of information to regulate learning. This new definition of strategy was more comprehensive and measurable than the first definitions in the early 1970s by Rubin. This indicates that the research of language learning strategies was getting more advanced. In 1990s research become more mature relying on a considerable body of research which helps in drawing more precise conclusions about strategies. Two key definitions were proposed in the 1990s, both by Oxford. The first definition (1990) defined strategy as special actions taken by learners to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new learning situations. Oxford's second definition (1993) understands strategies as specific actions but also behaviours, steps or techniques students often intentionally employ to improve their second language skills. This second definition is seen as more comprehensive than the first one because it added behaviours and steps or techniques. Furthermore, this definition raised the issue of consciousness and deliberateness to the surface. After conducting a comprehensive review of LLS definitions, Griffiths (2014, p. 2) claimed that LLS are "activities chosen by learners for the purpose of learning language. This definition contains four essential elements," namely: "strategies are chosen, strategies are active, strategies are purposeful and goal oriented and Language learning strategies are for developing language."

3.4.2 Specific definitions of vocabulary learning strategies

Vocabulary learning strategies are considered as a sub-division of language learning strategies (Schmitt, 1997). They are one type of language learning strategies that are based on an area-based context which is vocabulary. Other than vocabulary learning strategies, there are also other context-based sub-strategies of language learning strategies such as grammar learning strategies, listening learning strategies, reading learning strategies, speaking learning strategies, writing learning strategies and language test taking strategies. Nation (2001) claimed that vocabulary learning strategies are part of the general language learning strategies. Therefore, any attempts at defining vocabulary learning strategies should take the definition of language learning strategies into greater consideration. The definitions of most of the sub-strategies (e.g. vocabulary, grammar, reading, etc) have been neglected in the literature of language learning strategies because efforts were centred on the broader level of strategies. Another reason of lack of vocabulary learning strategies definitions might go to the fact that there was also a lack of focus on this specific language area's strategies. The first real attempt to define vocabulary learning strategies goes back to the 1997 study of Schmitt. He built his definition on Rubin's (1987) definition of general language learning strategies which focuses on the process of obtaining, storing, retrieving and using the linguistic information. However, Schmitt's definition is viewed as general and not explicitly defining vocabulary learning strategies because of the source that he relied on. The efforts of proposing a more comprehensive definition of vocabulary learning strategies have continued after Schmitt's first attempt. Four years later, Cameron (2001, p. 92) defines vocabulary learning strategies as "the actions that learners take to help themselves understand and remember vocabulary items." This definition seemed to be lacking the comprehensiveness of the vocabulary learning strategies' construct which provides that vocabulary learning strategies are not only action, and discovering the new words' meaning and memory are not the only types of strategies. This definition neglected the meta-cognitive strategies, for example. Nation (2001, p. 217) proposed his views of vocabulary learning strategies characteristics as follow:

(1) they involve choice;
(2) they are complex, i.e. consisting of several steps;
(3) they require knowledge and benefit from training; and
(4) they increase the efficiency of vocabulary learning and use.

These characteristics can provide a clearer image of the construct of vocabulary learning strategies. It should be acknowledged that these proposed characteristics of vocabulary learning strategies might face some challenges and criticism. For example, in some cases the vocabulary task might hugely influence the choice by inducing either one specific vocabulary learning strategy or set of them. In these cases the choice is not in the hands of the learner but the task

itself. Likewise, the idea of complexity is not always true to all vocabulary learning strategies such as repetition.

After Nation's attempt, Jimenez-Catalan (2003) proposed a definition which seems to be more well-established. Jimenez-Catalan (2003, p. 56) defined vocabulary learning strategies as:

> "knowledge about mechanism (process, strategies) used in order to learn vocabulary as well as steps or actions taken by students (a) to find out the meaning of unknown words, (b) to retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode."

This definition clearly focuses on one aspect of word knowledge which is discovering the meaning of new lexical items; however, other aspects might be part of any strategic learning of vocabulary. This made this definition limited to one aspect of vocabulary learning, which is considered as a weakness. The different steps entailed in this definition make it similar to Anderson's (1983) adaptive control of thought model of cognitive learning.

Marin (2005, p. 74) defined vocabulary learning strategies as: " those conscious and unconscious, planned and unplanned steps and actions that L2 learners take to discover and consolidate the form, meaning and usage of words". This definition by Marin came after an evaluation of most of the key definitions of language learning strategies (Oxford, 1990; Cohen, 1998; O'Malley & Chamot, 1990) and vocabulary learning strategies. It took into account important issues in vocabulary learning strategies such as consciousness versus unconsciousness, planned and unplanned meta-cognitive strategies, discovering and consolidating and different aspects of word knowledge. Marin acknowledged that his definition covers the issue of incidental and deliberate learning of vocabulary. Furthermore, he addressed the issue of vocabulary learning sequence by agreeing with Schmitt (1997) and however, suspected that all learners follow the same sequence of discovering in the first instance and consolidating at later points of learning. The most recent definition of vocabulary learning strategies was proposed by Takac (2008). Takac (2008, p. 52) concluded her chapter of language and vocabulary learning strategies definitions by claiming that vocabulary learning strategies are" specific strategies utilised in the isolated task of learning vocabulary in the target language." This definition looks comprehensive but uncertain because it neglects vocabulary learning in modes other than the isolated context. However, Takac (2008) acknowledges this by assuming that vocabulary learning strategies can be used in other tasks that are not isolated such as in reading. She cited Rosenfeld's study of ninth grade readers that listed some vocabulary learning strategies employed by learners such as guessing the meaning from the context, using the grammatical category of different lexical items and using a dictionary to discover the meaning of new words.

3.5 Vocabulary learning strategy classification systems

3.5.1   Overview of LLS classification systems.

As different researchers attempted to define strategies differently, similar different efforts were made to classify language learning strategies. This led to different taxonomies of language learning strategies. The difference between these taxonomies is in the criteria different researchers used in classifying strategies. This diversity of taxonomies has been criticised (Oxford, 1992), because of the inconsistency in dealing with the same thing (language learning strategies). In addition, Oxford (1992) claimed that different taxonomies were built on different orientations. She asserted that some taxonomies were designed based on systems related to successful language learners like Rubin's (1975) taxonomy. Other taxonomies were based one psychological functions (e.g. O'Malley & Chamot's, 1990) Taxonomy. Another classification system is one based on linguistic systems like the Bialystok's (1981) taxonomy. This taxonomy, for example, dealt with guessing, monitoring, formal and functional practice. Oxford (1992), likewise, reported that some taxonomies were based on systems related to different language skills like Cohen's (1990) taxonomy. Other efforts have been made to classify strategies based on different learners' styles and types like Sutter (1989) taxonomy. Here is a summary of Oxford's analysis of the existing language learning strategies classification systems:

Table 1 Oxford summary of language learning strategies classification systems

Classification System	Examples
those referring to the behaviours of successful language learners	Rubin's (1975) taxonomy
those based on psychological functions (cognitive, meta-cognitive and affective)	O'Malley and Chamot's (1990) Taxonomy
those based on linguistic aspects (e.g. monitoring)	Bialystok's (1981) taxonomy/ Tarone's (1983) taxonomy
those based on language skills or knowledge (e.g. oral production, vocabulary learning)	Cohen's (1990) taxonomy
those based on different types (or styles) of learners	Sutter (1989) taxonomy

(Oxford, 1992, p. 20)

Rubin's taxonomy is one of the most referred to taxonomies in the literature of language learning strategies. The reason for this frequent citation is probably because it was the first real attempt to classify strategies. Rubin's (1975) taxonomy included strategies that are directly applicable to vocabulary learning. For example, guessing / inductive inferencing and memorisation that were classified as direct and cognitive strategies in Rubin's taxonomy, can be employed in vocabulary learning situations. Other taxonomies were also highly cited and referred to in this area of research (e.g. Oxford, 1990; O'Malley & Chamot, 1990). These two taxonomies are the most influential ones in the field because they had significantly contributed to a better understanding of language learning strategies (Ellis, 1994). The taxonomies at the general level of LLS were essential to understand any subset of the strategies such as vocabulary learning strategies. In the following section, a comprehensive review of the most relevant VLS taxonomies to the current research will be provided.

3.5.2 Specific vocabulary learning strategy classification systems

This section will be dedicated to taxonomies of vocabulary learning strategies. According to Schmitt (1997), the results of taxonomies at levels both of language and of vocabulary learning strategies can enrich the research understanding and conclusions about vocabulary learning strategies. The reason for this assertion by Schmitt might be the fact that vocabulary learning strategies is a subset of LLS. Therefore, without a thorough understanding of proposed taxonomies at the broader level of language learning, the construct and the taxonomies of vocabulary learning strategies may not be well-identified. Furthermore, it is worth mentioning and noting that vocabulary learning strategies taxonomies are lacking a clear theoretical framework similarly to the language learning strategies taxonomies (Mizumoto, 2010). In the same line, different vocabulary learning tasks will require different strategies (Gu, 2003), which makes variance in any proposed taxonomy expected. Likewise, Schmitt (1997) claimed that factors affecting vocabulary learning strategies can affect its classification system. Nyikos and Fan (2007) described the consensus about vocabulary learning strategies classification as mild. However, Schmitt's (1997) classification system is seen by many researchers as the key taxonomy in this specific area of language learning strategies. For example, Marin (2005), whose is a key study in the area of vocabulary learning strategies, based his study and strategy assessment on the Schmitt taxonomy. The different taxonomies of Stoffer (1995), Gu and Johnson (1996), Schmitt (1997), Nation (2001) and Marin (2005) will be reviewed in this section.

3.5.3 Stoffer's taxonomy

In order to investigate vocabulary learning strategies, Stoffer (1995) carried out a complex study that involved a large number of learners of several modern languages including Spanish, German, Russian and Japanese. The major research instrument in this study was questionnaire. The questionnaire needed to be organised and from this point Stoffer proposed a classification system for vocabulary learning strategies. Stoffer's questionnaire was called vocabulary learning strategies inventory. This inventory included 53 strategies in total. These 53 strategies were divided into nine categories. These categories as cited in (Waldvogel 2011, p. 34) are:

1. strategies involving authentic language use,
2. strategies involving creative activities,
3. strategies used for self-motivation,
4. strategies used to create mental linkages,
5. memory strategies,
6. visual and auditory strategies,
7. strategies involving physical action,
8. strategies used to overcome anxiety, and
9. strategies used to organize words.

The goal of the Stoffer study may not have been to propose a vocabulary learning strategies' taxonomy. It was one of the few early studies that tried to classify the vocabulary learning strategies based on their functionality. It should also be noted that other taxonomies were based on strategies inventories studies (e.g. Oxford, 1990) at the general level of language learning and Schmitt (1997) at vocabulary learning level. After this study, the desire for a concrete classification system of vocabulary learning strategies in research became essential.

3.5.4 Gu and Johnson's taxonomy

This study is also considered among the large-scale studies, recruiting 850 participants. The main instrument in this study was a questionnaire comprising 91 strategies. This comprehensive set of vocabulary learning strategies was divided into eight sections. The sections of this comprehensive questionnaire were:

1. beliefs about vocabulary learning,
2. meta-cognitive regulation,
3. guessing strategies,
4. dictionary strategies,
5. note-taking strategies,
6. memory strategies (rehearsal),
7. memory strategies (encoding), and
8. activation strategies.

This classification of vocabulary learning strategies came to serve the purpose of the study to organise the data collected from participants in a comprehensive questionnaire. Beliefs and note taking were two dimensions that were not highlighted in previous attempts to classify vocabulary learning strategies. Moreover, the category, activation strategies appearing in this classification was not elicited by Stoffer (1995), for example. Though, these strategies were reported by other taxonomies with different labels such as consolidation strategies in Schmitt (1997).

3.5.5 Schmitt's taxonomy

Based on Oxford's (1990) language learning strategies taxonomy, Schmitt (1997) proposed his classification system of vocabulary learning strategies. This new taxonomy received praise from scholars in the area of vocabulary learning research (e.g. Nation, 2001). One of the significant contributions of this taxonomy is that it draws a clear distinction between discovery and consolidation strategies. Schmitt's study is also considered one of the large-scale studies in this specific area. It targeted 600 participants in the EFL Japanese context. Schmitt (1997) started his trial of questionnaire by listing a set of strategies and asking subjects of the study to indicate whether they use it or not and he added an open-ended item to give the participants the chance to add what they think as a strategy that is not listed in the questionnaire. Later on, Schmitt divided his questionnaire into two main sections; discovery strategies and consolidation strategies. He started with the discovery strategies, because it follows the logical flow of vocabulary learning where learners make efforts by employing strategies to discover the meaning of the new unknown words. Once, the meaning is revealed by employing any discovery strategy, consolidation strategies might be employed to maintain the meaning, reinforce the understanding and to be able to use it. These two categories were dived into sub-categories. Discovery strategies were divided into determination strategies and social strategies. By discussing the determination strategies, it should be noted that this category does not exist in Oxford's (1990) taxonomy.

Therefore, this sub-category of discovery strategies is a new contribution in the efforts of classifying vocabulary learning strategies. Oxford's taxonomy ignored the individual discovery strategies and rather looks on it as a social strategy. Schmitt (1997, p. 25) best described this by:

> "there is no category in Oxford's taxonomy which adequately describes the kind of strategies used by an individual when faced with discovering a new word's meaning without recourse to another person's expertise. It was therefore necessary to create a new category for these strategies: Determination Strategies (DET)."

Consolidation strategies included four sub-categories. These categories are social strategies, memory strategies, cognitive strategies and meta-cognitive strategies. It is noted that social strategies do exist in both the discovery and consolidation categories. The discovery social

strategies are strategies employed by learners to discover the meaning of a new word such as a asking a teacher about the L1 translation while the consolidation social strategies are used to maintain and reinforce the meaning of the newly discovered word by using the new words in a conversation with a native speaker (Schmitt, 1997).

3.5.6 Marin's taxonomy

Marin is among many researchers (Stoffer, 1995; Gu & Johnson, 1996; Lawson & Hogben, 1996; Schmitt, 1997; Hatch & Brown, 2000; Nation, 2001) who proposed taxonomies of vocabulary learning strategies. Most of the work in taxonomies at both levels general language and vocabulary were based on previous taxonomies with some exceptions when the taxonomy was based on a theoretical framework (O'Malley & Chamot, 1990). Marin (2005) is no exception because he based his taxonomy on Schmitt's (1997) taxonomy, which in turn, was based on an earlier work of Oxford (1990). This added value to this proposed classification system. Marin's taxonomy proposed three main categories; first, dealing with unknown vocabulary items, second, taking vocabulary notes, and third, memorizing/retaining vocabulary items. Dealing with unknown vocabulary items includes strategies of guessing, using dictionaries and other sources and social discovery (asking others). The category, taking notes about vocabulary comprises strategies of places where notes about new word are kept, the kind of information recorded about new words and organisation of notes about new words. The memorizing/retaining vocabulary section embraces repetition to help retain new words, association to help retain the words and further practice/consolidation of new words. Marin named strategies in every category and subcategory of his taxonomy. For complete and named strategies in every section and subsection in Marin's taxonomy, please see appendix A.

The present study will adopt the Marin (2005) taxonomy for several reasons. First, it should be considered that there is no universal consensus about one specific taxonomy at the language learning strategies level and at the vocabulary learning strategies level. Therefore, this research chooses this taxonomy among many others. Second, this taxonomy is a well-thought of taxonomy because it is based on a prior questionnaire distributed among language learners in the first instance. Further, it is also based on a very significant study in the field of vocabulary learning strategies which is Schmitt (1997). Third, this taxonomy followed very professional procedures of validating the contents of the taxonomy. Fourth, this taxonomy is proposed based on a study in the EFL context which is similar to the present research context. Equally, this study is similar to ours because Marin's participants were English majors who are expected to be more reflective about the learning process in general and vocabulary learning as a vital element of language learning in particular. This matter added more invaluable information about

the vocabulary learning strategies which significantly contributed to this informed taxonomy. Finally, it has a comprehensive set of strategies with 78 items.

3.6   Studies on vocabulary learning strategies

3.6.1   Introduction

This chapter will review studies relevant to the vocabulary learning strategies by category. The structure of this chapter is based on the Schmitt (1997) taxonomy where he classified the vocabulary learning strategies as discovery strategies and consolidation strategies. Therefore, there will be two main sections of this chapter. Section one is discovery strategies and includes two sub-sections for determination strategies and social strategies. The second section is consolidation strategies and consists of 4 sub-sections for memory strategies, meta-cognitive strategies, cognitive strategies and social strategies. This organisation of the chapter can manage the review of literature in a more relevant way since all of the studies under each section or sub-section should have connections with the present research. In each section the most related studies will be reported and evaluated based on the aspects that this research is concerned with. It also should be noted that studies' results and findings discussing the learning styles will not be discussed in this chapter as it is beyond the focus of the present research.

3.6.2   Discovery strategies

This section as discussed above will review key studies in the domain of discovery strategies and will include two main sections. First, the determination strategies, which will only include two key strategies under this category which are the guessing strategies and the dictionary use strategies. The second section is dedicated to discovery social strategies and includes asking teachers, classmates, native and non-native speakers and any other people who might help. In both sections related studies will be reviewed. It is also important to note that discovery strategies were also named differently in the literature including dealing with new words. Dealing with new words has been discussed throughout the VLS literature differently. Researchers proposed different terms and definitions such as word attack strategies, lexical inferencing skills and word decoding strategies as subsets strategies under this category (Haastrup, 1991; Zuckernick, 1996). This involved different points of view on dealing with new words strategies. This research does not intend to discuss the different views on dealing with new words strategies. Instead, a more comprehensive term that can cover a wider range of dealing with new words strategies will be adopted. It was found that the Schmitt (1997) discovery strategies category is more comprehensive and less restrictive (Marin, 2005). His

discovery strategies include most efforts, techniques and activities that can be applied when dealing with new words. It included inferencing and guessing, as other researchers emphasize, but also accepts dictionary use and asking others as discovery strategies.

3.6.2.1 Determination strategies

Determination strategies are part of the discovery strategies and come with different titles in different taxonomies. There will be two main sub-sections for this category: guessing and use of dictionary as the most frequently reported strategies at both the research level and the practice level.

3.6.2.1.1 Guessing

Guessing is probably the most extensively researched strategy in the area of vocabulary learning strategies. This review will take the most important studies that review guessing as a vocabulary learning strategy into consideration. To show the importance of guessing, Schmitt (1997) called it key among the vocabulary learning strategies. In the literature inferencing and guessing were used to address the same strategy (Nassaji, 2004; Chern, 1993; Haastrup, 1991; Morrison, 1996; Wesche & Paribakht, 2010). Hu and Nassaji (2014), for example, called the guessing "inferencing" and gave a discussion about what they called "Successful and less successful lexical inferencers" (p. 1). In fact, less successful learners employed inferencing and guessing strategies; however, they lack the "orchestration" of these strategies which means they usually do not improve their guessing and inferencing modes and skills (Hu et al., 2009). Guessing usually combined with context in its natural occurring in the learning process. Therefore, it is important to define the context and the possible interpretations of it. The textual context is "morphological, syntactic and discourse information in a given text" according to Nation and Coady (1988, p. 102). The non-textual context is where learners employ knowledge gained before to make an informed guess (Ibid). Thus, this definition suggests two types of information used to make a guess. First, the textual context including semantic or syntactic clues. Second, the non-textual including mainly information not given in the text.

In the literature, a number of issues have been investigated including whether or not guessing assists incidental vocabulary learning and whether guessing is or is not enough for vocabulary growth. Other issues such as the usefulness of guessing in all cases are questioned in the research. For example, Takac (2008) claims that inferring word meaning is not simple and not always successful. She asserts that "exposure to a variety of contexts - generally considered as extremely important in vocabulary acquisition" (Ibid, p. 18) but she at the same time put a precondition for that which is "precondition for successful inferencing is a sufficient level of knowledge and inference skills" (Ibid). She continues by explaining even if the condition is

granted, there is no guarantee that guessing will be correct and rich vocabulary cannot always be tied to guessing. According to the Schmitt (1997) and Marin (2005) taxonomies, guessing is a discovery strategy. This simple strategy usually involves several micro- and sophisticated steps, actions and skills to process the learning of vocabulary. This explanation might be the reason behind the guessing strategies being the most reviewed and researched strategies among the vocabulary learning strategies. The complex processes involved in this simple vocabulary discovery strategy include guessing from context, using schemata knowledge to guess the meaning, guessing from word structure analysis (stem and affixes) and using learners first language clues. The image of these issues are not always positive and literature is rich in studies that looked at either the positive or passive or both aspects of these issues in the vocabulary learning strategies.

An example of a less promising view towards the word structure analysis (stem and prefixes & suffixes) is what Clark and Nation (1980) gave by describing this strategy as one, less effective in guessing the meaning of a new word. The parts of speech of the unknown word should also be clear to the learner before guessing which should make the guessing more accurate. They also recommend that any guessing by using this strategy should take more time to check the broader context before making any quick guess. In a study that compared guessing from context and analysing word structure in isolation mode and when combined, Chin (1999) concluded that when learners employ one of these two strategies in isolation of the other, their performance usually depends on the nature of the task more than the strategy itself. For example, when a learner faces fill-in tasks they tended to use a more sophisticated processing that requires semantic and syntactic analysis of the word while those who face multiple choices employ lower levels of semantic and syntactic analysis because of the other clues being offered in the choices. Generally, Chin concludes that those who employed both strategies at the same time were those who outperformed their counterparts. A study conducted by Kelly (1990) concluded that word formation analysis can be more practical than context. This conclusion came from the idea that context should be controlled and constrained which is not natural nor practical according to Kelly. Nation and Meara (2010) suggest that to guess a meaning of a new unknown word, learners need to know between 95 and 98 percent of the tokens in the text. Knowing that amount of words in the text added a more comprehensible supporting context. This makes Kelly's early argument very legitimate, however, the same goes for word structure analysis if learners lack some knowledge of the roots and prefixes and suffixes.

Computer assisted vocabulary learning is another issue that has been researched and includes connections with certain vocabulary learning strategies such as guessing. Computer applications can provide various contexts to the learners which can build better guessing skills (Fox, 1984), especially if the immediate feedback that some digital application offers is taken into account.

Such features can reinforce correct guessing and give learners to reconsider incorrect or inaccurate guesses. Proficiency level and guessing performance have been examined and investigated in a study conducted by Bensoussan and Laufer (1984). The findings of this study revealed no significant difference observed between the different proficiency levels (low, intermediate and high). In contrast, and interestingly, Marin (2005) found more proficient learners are more capable of employing more successful guessing and linked that to their rich linguistic and lexical repertoires. Laufer (1997) in a different study, observed deceptive and incorrect guessing because of low efficiency of word structure analysis. What Laufer meant by deceptive guessing is when a learner analyses a word structure and links it to the wrong stem or root such as the word likelihood and the stem "like."

Regarding learners' beliefs about guessing strategy, the Gu and Johnson (1996) study in the Chinese context found that guessing from context strategy is one among other strategies that learners have positive beliefs about as the most useful strategies at the general linguistic development and at the vocabulary expansion levels. Pre-schemata or background knowledge is another issue discussed in the literature of guessing strategies. Learners with richer linguistic and lexical repertoires are expected to make use of their previous knowledge and thus make more successful guesses. Those learners are usually the higher proficiency learners and this conforms with many studies (e.g. Alyami, 2006).

Another issue discussed in the literature of guessing is how the teachers can incorporate and encourage the employment of these strategies. Takac (2008) suggests that teachers can create situations or scenarios to contextualise the vocabulary item, providing a rich and authentic context to improve guessing skills. Takac also recommends using demonstration, realia and visual aids to scaffold the guessing, especially with young learners. This should reduce the chances of guessing incorrectly because of deep processing of learning (Ibid). Nation (2001) proposed a technique of teaching the guessing strategy to learners among other strategies. This presents the teachability of strategies, and guessing in particular, as practical and healthy from a pedagogical point view. Qian's (1996) study is another study that showed lower usefulness for the guessing from context strategy against learning from a word list. Contrary to Qian's study, the results of Prince's (1996) study revealed more successful guessing by advanced learners. In a study conducted by Gu (2002) which built on an earlier study by Gu and Johnson (1996), no significant difference was found between male and female participants in the use of immediate guessing from context strategy.

Takac (2008) described the guessing strategy as an "extremely complex strategy" (p.80) that encompasses various steps including word structure analysis, immediate context analysis, wide context analysis, substitution and identifying the word class. The effectiveness of this strategy

comes from the fact that it is applicable to the receptive language learning skills and to some language areas including vocabulary learning and listening and reading skills (Ibid). Besides, this strategy as a prominent vocabulary learning strategy is also a form of incidental vocabulary learning which is an important approach and aspect of vocabulary acquisition, according to Takac (2008).

Nation (2001, p. 80) described the teaching procedure that teachers should follow when instructing this strategy as follows:

(a) Text and word selection. At least 95 percent of the words in the text should be familiar to the learners in order for them to be able to use the guessing 'Keys'. The selected words need to be inferable from context.
(b) Time. The teaching needs to take place over a long period of time and at frequent intervals. Learners need to have sufficient practice in order to guess quickly without deliberately having to go through all the steps involved in the strategy.
(c) Gradualness and comprehensiveness. Learners need to go through all the steps, working in groups, in pairs or individually, with the pace increasing gradually. The teaching can follow the procedure according to the above-mentioned possibilities of creating a 'miniplan'.
(d) Activities. Teachers need to know how to analyse critically and select activities to improve the use of this strategy.

In the case where learners' first language has cognates' similarities, some relationship is expected between the cognates and guessing strategy. This has been discussed by Meara (1993) who claimed that linguistic (orthographical and phonological) cognates can influence the choice of the strategy and guessing in particular. However, the same goes for languages that do not have any concordance with the target language. Hence, it is expected that learners whose first language does not have cognates with the target language will tend not to search for cognates to scaffold their guessing (Ibid). This hypothesis proved by empirical evidence from the Schmitt (1997) study in the Japanese context where cognates between learners' first language and the target language do not exist. The learners in his study reported that the strategy they use least to guess the meaning of words is using cognates. Though, even if cognates do exist, like in Marin's (2005) study of Spanish Mexican learners of English, this does not mean that it will be an effective strategy in all cases. In the context of the present research, it is expected that this strategy will not be employed because of the linguistic orthographical and phonological disconnection between Arabic, the learners' mother tongue, and English, the target language.

Finally, an issue that can hinder the development of vocabulary learning strategies, and guessing among them, of course is what Takac (2008) described as vocabulary learning strategies' "fossilisation," where learners stop improving their guessing skills or

mistakenly continue to use less efficient guessing skills. It is very interesting to see the fossilisation phenomenon as a possible factor that influences strategic development not the pure linguistic progress, as widely recognised in research of second language acquisition. Including such phenomenon in the context of vocabulary learning strategies is new to a certain degree. Therefore, this research might take it as a phenomenon that can be observed with vocabulary learning strategies and guessing is an ideal example to follow. The reason is that a number of guessing skills might be sufficient with one individual learner but not another, or some guess processing may not be applied in the right way.

In the previous review, important issues and aspects of guessing strategy were discussed, including review of studies that tackle guessing from context. This involves an introduction to and distinction between the textual and the non-textual contexts and how they can affect guessing strategy. It also touches on guessing from background knowledge (pre-schemata) and how the familiarity of subject matter influences the choice of guessing strategy employment. The review covers studies about analysing the structure of the word by stem and affixes (prefixes and suffixes) to guess the meaning of new words. It showed how this strategy can be applied and it raised cautions about how tricky words analysis strategy can be. It is important to conclude that few researchers conclude that this strategy is the best for all learning situations and tasks. Rather, most researchers argue that this strategy will best work when applied in a suitable vocabulary learning situation and task, in a suitable context and when it is accompanied with another set of vocabulary learning strategies. This should result in more comprehensive vocabulary learning instruction that does not teach one individual strategy in isolation from other related strategies. In this way the instruction will offer the learners the chance to be exposed to the guessing strategy skills and other strategies that can be used in a complementary mode. This hopefully will lead learners to achieve higher levels of strategy learning such as strategy clustering and orchestration.

3.6.2.1.2   The use of dictionaries as a strategy

Using a dictionary as a strategy for vocabulary learning is not as simple as some learners think. It involves complex processing and steps as Hartmann (1983) claims. The amount of research in this one specific, individual strategy is huge and is indicative of the complexity of this strategy. Using a dictionary seems to be more practical than guessing for various reasons. The most important one is that in order for learners to guess a new word from the context they need to be familiar with in excess of 90 percent of the tokens in the text (Nation, 2001; Laufer, 2005), which does not naturally occur. Nation (1990) suggests that learners should know at least 3000 to 3500 words in non-specialised text to be able to correctly guess the meaning of new vocabulary items. Research in this area investigated different aspects and factors that can play a

role in the employment of this strategy, including studies of dictionary use by gender, types of dictionary used, what information is checked in the dictionary, and learner preferences on types of dictionaries. In a recent study in an Iranian context, Payvandi et al. (2014) tried to investigate the effect of using monolingual or bilingual dictionaries on learners' vocabulary retention among males and females. This study found that that both the monolingual and bilingual dictionaries were helpful in learning vocabulary in general. However, they found monolingual dictionaries more effective in terms of learning retention among both male and female learners to almost the same degree. It also concluded that female learners were better than male learners in memorising and remembering the new vocabulary items but this difference was not statistically significant.

In a study conducted by Todd (2014), different types of dictionary and dictionary-like tools were investigated. Namely, these are dictionary definitions, which usually come from a bilingual dictionary, glosses which offer the precise meaning of the vocabulary item as it appears in the context, and annotations, which give a detailed explanation of the words meaning in addition to its uses in different contexts. It was found by English speakers learning Russian that annotations were the most effectively source of vocabulary learning. This can indicate that the more information the learners get, the more they benefit linguistically. The different contexts that annotations offered may result in a greater capability of using the words in different situations which is far from just knowing its simple meaning. The pragmatics of the words is an essential aspect of word knowledge, as this study revealed. Another interesting finding of this study is that when the definition is given along with another source of vocabulary input (Russian movie with subtitles), the vocabulary learning can be accelerated. This finding conforms with strategy studies that call for complex use of strategies by forming clusters of strategies against one learning situation.

It was a common myth among vocabulary teachers, learners and some researchers that using a monolingual dictionary is less effective. However, several studies revealed positive impressions and applications of this kind of dictionaries. The use of monolingual dictionaries was investigated in a study conducted by Yazdi (2014) in the Iranian context. The findings of this study showed that the frequent use of monolingual dictionaries correlated positively with vocabulary proficiency to a great degree. In the same context, Rahimi and Miri (2014) compared the effectiveness of using mobile and traditional dictionaries. They installed a dictionary app on 17 English language learners' mobile phones and distributed the paper copy of the same dictionary among a control group of the same number. Longman mobile app and printed version dictionary were used in this study. They used an achievement test prepared by the teacher of the language class as an assessment tool. With all concerns about the reliability of the teacher-made achievement test kept in mind, their results indicated that those who used the

mobile version of the dictionary significantly outperformed their control group counterparts who used the paper version of the same dictionary. This outperformance comes from the achievement test which included 20 listening items, 30 grammar items, 10 reading items and 30 vocabulary items. The test included a section for writing. From the structure of the test it was clear that vocabulary contributes about a third of the total value. In their discussion the authors did not compare the results of the vocabulary section of the two groups to observe any difference between the mobile and paper version of the dictionary. The authors, though, were focused on the general language learning, not vocabulary learning, which is usually linked with dictionary use. They used Joseph and Uther's (2009) summary to highlight the usefulness of mobile dictionaries. This summary asserted that the mobile dictionary affordances of visual media (images, graphics), audio media (pronunciation), multimedia, and searching make learning more effective according to Joseph and Uther (2009 as cited in Rahimi & Miri, 2014). The current research might observe use of the mobile dictionary as a vocabulary learning strategy. Efforts will be made to expose learners to different types and versions of dictionaries including mobile dictionaries, which are expected to be a common strategy in this digital era.

In a Malaysian context, monolingual dictionaries were reported among other vocabulary learning strategies, according to Asgari and Bin Mustapha (2011). This makes an assumption of what type of dictionaries the participants in the present study would report. It might be a factor that can affect their vocabulary learning or their vocabulary learning strategies use.

In a Japanese context, Prichard (2008) carried out a study that investigates the selectivity of dictionary and word look-up by learners. Japanese learners at the university level were asked to read a non-fictional English text and were observed to check how they select words to be looked up in the dictionary. It was found that high intermediate and advanced proficiency learners were more selective than the rest of class. In addition, a third of the participants were found to be heavily dependent on the dictionary and to employ it excessively for necessary and unnecessary words. Likewise, a quarter of the words that were checked in the dictionary were not frequent, useful or words related to the text's main ideas. This study called for training on how to be selective in the choice of words to look up in the dictionary, which can promote more efficient use of dictionaries. This very important aspect of word selectivity when looking up their meaning in the dictionary should be taken into account in the current research interests of vocabulary learning strategies' instruction.

One of the key studies in this specific strategy is conducted by Luppesku and Day (1993). It was investigating the use of bilingual dictionaries in reading to build a better vocabulary repertoire. The participants in this study were 293 Japanese learners at the university level. This study employed a vocabulary assessment tool (test) and compared experimental and control group

performance. The results demonstrated that there was a significant positive correlation between dictionary use and vocabulary improvement and those who used it outperformed those who did not. In the same vein, Knight (1994) found similar results and similar conclusions were reached. Another study in the Japanese context is conducted by Loucky (2005), but this time with a different focus. The subject of this study is engineering students at a Japanese university. Vocabulary learning was investigated in a pedagogical study of an online technical language course with links to reading. This study called for consideration of learners' needs, objectives and interests to be taken in designing any online reading materials. Similarly, the engineering teachers provided reading materials related to the engineering discipline to the language teacher to be integrated into the online language course that focuses on technical vocabulary development and reading level improvement. The researcher in this study tried to facilitate the reading and retention of some low-frequency and technical vocabulary items by:

a- providing a range of possible native language meanings via Rikai.com's glosses engine.
b- reading these articles with students orally in class, noting many of these new words together.
c- showing them how to auto-archive the words on their screens.
d- printing new vocabulary lists for written productive use.
e- having students practice using these new concepts and terms in the next class in oral interviews.

(Loucky, 2005, p. 411)

In addition to the above, web dictionaries and personalised vocabulary glosses were used as tools of this online course. One of the general observations from this study is the usefulness of specialised personal vocabulary and web dictionaries when accompanied with also specialised readings that take learners needs, objectives and interests into the consideration.

Hunt and Beglar (2005) proposed a pedagogical framework for language teachers, administrators and researchers to accelerate vocabulary development. This framework included two main approaches. First, the explicit lexical instruction and learning strategies, which includes the following important elements:

a- acquiring decontextualized lexis,
b- using dictionaries and
c- inferring meaning from context.

The second approach involves encouraging the use of implicit lexical instruction and learning strategies, which include the use of integrated task sets and narrow reading. It should be noted that this framework was proposed to work in an extensive reading mode. It is obvious from this framework that dictionary use is considered a major strategy in explicit lexical instruction and learning strategies approach. This practical proposal of dictionary application into the explicit

approach introduced and discussed the strengths and weaknesses of monolingual and bilingual dictionaries. Nonetheless, it introduced 'bilingualised' monolingual dictionaries as a potential third option for educators and learners to use. It addressed how digital copies can be applied in addition to normal dictionaries. Finally this proposed framework called for training for poor dictionary users who use them excessively and ignore clues in the texts.

In the Chinese context, Chen (2010) conducted a study that compares the pocket electronic dictionary with paper dictionaries among Chinese learners of English. The findings of this study suggest that there is no significant difference between pocket electronic and paper dictionaries at the comprehension level, productive level or vocabulary retention level. The latter is the focus of the present research and based on the results of this study in an EFL context it is expected to see similarities in the current study context which is also an EFL context. Likewise, the study results are limited to one kind of electronic dictionaries which is the pocket one which make other forms of electronic dictionaries, such as mobile dictionary applications, instant translators or web dictionaries subject to possible similarities or differences. The current study will take different types of dictionaries use by participants into account.

Researching dictionary use in language skills is very popular, especially when it is combined with reading. Researching it in connection with translation has not gained enough attention in research in recent years. The effects of using bilingual dictionaries and glossaries on vocabulary development in translation tasks were investigated by Bruton (2007). Spanish learners of English were asked to translate from their mother tongue, Spanish, to the target language, English. They were asked to use bilingual dictionaries and glossaries to help them in completing the translation task. Learners received feedback on their vocabulary errors from the teacher. Later, the same task was given to the learners without prior instruction, so learners did not know that they would be given the same task. This serves as a delay-post-test in this study. The research concluded that dictionary use in the translation task is significantly of help in improving the vocabulary gain when it is scaffolded by the teacher writing feedback focused on vocabulary errors.

In the Saudi context, a study conducted by Alqahtani (2008) investigated the use of "computerised" and paper dictionaries in the contexts of two different skills; reading and writing. The participants were Saudi undergraduates studying English as their major. The participants, first, were divided into two groups based on language skill; one for reading and a second group for writing. Then, participants in every group were divided into two groups based on the type of dictionary they use. As a result, four groups were set; computerised dictionary reading group, paper dictionary reading group, computerised dictionary writing group and paper dictionary writing group. The participants were asked to perform writing tasks on six different

occasions and were given the choice of using or not using dictionaries . The reason being that the study focused on incidental vocabulary learning. Two weeks after the last writing task, all participants were given a post-treatment test without any prior notification to guarantee more authentic results. The findings revealed that there was no significant difference between those using computerised and paper dictionary. It was also found that for those who were in the writing group both the computerised and paper dictionary users outperformed their counterparts in the reading group. In other words, both computerised and paper dictionary users in the writing group gained significantly more vocabulary items incidentally. Furthermore, in comparing the results of the computerised dictionary users and the paper dictionary users in the same writing group, it was found that those who used computerised version gained more vocabulary items that those who used traditional ones. This study was conducted in a Saudi context, so it shares interests with the present research. Additionally, it also targeted students in the English department, which is what the current research will try to do. Therefore, this study provides the present study with insights and indications to the research in the same context at the general level and in the dictionary use as a vocabulary learning strategy in particular. Unlike the findings of this study and in a similar context, Alshamrani (2003) found that incidental vocabulary learning by reading is not always effective. He claimed that such incidental encountering of new words in an authentic text should be accompanied by other steps including looking up the words in a dictionary to make vocabulary learning more efficient.

In this section, relevant studies focusing on dictionary use in learning vocabulary were reviewed. It includes studies from the EFL context where similarities exist with the current study context (EFL). Some of the studies reviewed in this section were conducted in a Saudi context which made them more directly relevant to the present study. Issues like the usefulness of bilingual dictionaries versus monolingual dictionaries, digital dictionaries versus paper dictionaries, and best practices of using dictionaries are expected to emerge in this study. Therefore, having reviewed these previous studies can facilitate an understanding of the use of these strategies.

3.6.2.2   Social strategies

Social strategies in this section are part of the discovery strategies. Social strategies can also be used for consolidating the meaning once it is discovered. Therefore, this category of strategies does exist in both categories of discovery and consolidation strategies proposed by Schmitt (1997), which is adopted for the structure of this chapter. This is clarified to avoid any possible confusion between them. Learners can ask direct questions to uncover the meaning of new vocabulary items to their teachers, classmates, native and non-native speakers and any other people who might help. This is considered a social strategy because it involves interaction with

another party. The very early study, labelled vocabulary learning strategies as a sub-phylum of language learning strategies and conducted by Ahmed (1988), has addressed the social discovery strategies. This study ranked the strategies based on their frequency of use starting with asking classmates, asking the teacher, asking about the meaning by demanding the target language, asking for direct translation to the first language and asking for a sentence to cover the pragmatics of the new word. Ahmed concluded that good language learners employed more social discovery strategies than poor learners. Similarly, the present study can look at the social discovery strategies among the participants and see if there is any correlation between the vocabulary knowledge level. Furthermore, Ahmed's study was conducted in an Arabic-speaking context (Sudan) which is very similar, at least linguistically, to the context of the present study, which can significantly contribute to a better understanding of the general Arabic world context. In the Japanese context, two significant studies were conducted to investigate vocabulary learning strategies in general, and social discovery strategies were among them. The first study was conducted by Schmitt (1997) which is the same study that has been adopted as the structure for the current chapter. In this study Schmitt included the following strategies as social strategies under the discovery label in his taxonomy:

1- asking the teacher for first language translation
2- asking the teacher for paraphrase or synonym of new word
3- discovering new meaning through integration in a group work activity
4- asking classmates for meaning
5- ask teacher for a sentence including the new word.

One of the important conclusions of this study was that learners with higher proficiency levels usually employed social discovery strategies that are more complex than asking only for the first language translation. Strategies such as asking for a sentence to demonstrate the use and not only the meaning of the word were associated with learners who were more proficient than the lower proficiency learners. The second study is Nakamura (2000), where the social discovery strategies were also addressed and focused on. This time Nakamura seemed to add parties other than the teacher that can be involved in these discovery social strategies, who are the classmates and native speakers. Like Schmitt, correlation was observed between the proficiency levels and some of these strategies. Marin (2005) found no significant relationship between gender and social strategies, which is not the common belief that research revealed, claiming that females are more social than males (Ehrman & Oxford 1989). Finally, in the Saudi context, Alqahtani (2005) found that Saudi learners of English used social strategies. Alqahtani ranked these social strategies based on their frequency as follows:

1- asking teachers for the Arabic meaning (highest frequent),
2- asking for its English pronunciation and spelling,
3- asking for the English definition by phrase,

4- asking for a word's English synonyms/ antonyms, and

5- asking for an example of the word in a sentence (least frequent).

From the above order of frequency, it is obvious that Saudi learners depend heavily on their teacher to seek the Arabic translation of different vocabulary items. This may not be seen as positive in all cases and it might be better for them to try other social strategies that require more negotiation of meaning. The attribution of this phenomenon among Saudi learners might be the educational culture in the Saudi context. In this traditional culture, learners see the teacher as the main source of knowledge. However, it should be noted that Oxford (2011) advised the language learning strategies' training providers not to underestimate any culturally promoted strategies. Thus, this observation about learners' dependency on teachers will be taken into account, bearing in mind the cultural sensitivity attached to it.

3.6.3 Consolidation strategies

In this section, four strategies were classified by Schmitt (1997). These four consolidation strategies are: memory, cognitive, meta-cognitive and social strategies. Schmitt in later work (2000) called for what he called "expanded rehearsal" where he encouraged immediate consolidation of newly discovered meanings. It was suggested by Russell (1979 as cited in Schmitt, 2000) that learners should review and consolidate what they have just learned immediately after five to ten minutes. After that, more expansions should be introduced, so learners should consolidate their learnings after another 24 hours. More time should be allowed before consolidating the new meanings again, a week after, then a month and finally six months after that. Regarding the teacher's role in consolidation strategies, it is debatable. While research into language learning strategies generally calls for freedom of choice of strategies, some researchers, such as Takac (2008), assert that teachers should be engaged in the consolidation of newly learned vocabulary items by creating opportunities for practice in class time. Takac summarised the most frequently used classroom activities to consolidate meaning as follows:

1- Mechanical repetition of words. Although deep level processing is more effective in the long run, loud repetition may also contribute to memorisation of a word.
2- Copying words. If accompanied, for example, by loud repetition or visualisation of its meaning, copying can aid memory. If learners copy words in word cards, other possibilities of revision activities present themselves.
3- Word manipulation. This includes examples of tasks such as matching words and their definitions, grouping words, finding the odd one out, etc.
4- Integrating new words with the already known. Activating linguistic pre-knowledge and knowledge of the world creates a link between new words and already known words. In the process of creating the links, new words become more meaningful and organised, and thus easier to learn. This can be achieved in various ways, as for example semantic elaboration.

5- Semantic elaboration. It facilitates the creation of links and semantic networks, as well as deep level of processing. According to Sokmen (1997), the following are procedures based on semantic elaboration: semantic feature analysis (e.g. a componential analysis); semantic mapping, which also serves as visual reminder of links between words; ordering or classifying words, which helps learners to organise and distinguish differences in meaning between words; pictorial schemata, such as grids or diagrams, which emphasis distinctive features and require learners to deeply process words by organising words and making their meanings visual and concrete. These techniques are also suitable for presenting and revising collocations.

6- Creating mental images by drawing diagrams, illustrations of meaning, etc.

7- Personalisation. Personalisation makes the learning material psychologically 'real'. It can be achieved by giving personal experience, etc.

8- Tasks for word identification. The aim of these tasks is to get learners to pay attention to specific lexical items and to recognise their form. Concrete examples are fining words in a text, working on a 'word snakes' puzzle, solving anagrams, etc.

9- Tasks for recalling words from memory. Activating knowledge, i.e. an attempt to recall a word's meaning with the help of the given form or vice versa, by recalling the form on the basis of given meaning, and thereby enhancing memory. Therefore, the teacher should deliberately encourage recall at spaced intervals. This task may be realised through a number of activities: acting the word out, replacing the word with its synonym or antonym, giving a definition, translation, cross-word puzzles, etc. Also, reading and listening activities stimulate word identification.

10- Tasks for expansion of lexical knowledge .These are concerned with providing additional information on lexical items in order to cover as many components of lexical knowledge as possible. The activities that seem worthwhile in this respect are: analysis of word formation, analysis of grammar categories and forms, highlighting collocations, etc.

11- Productive use of words. By using words in a meaningful context, learners create mental links. Activities that promote productive use of vocabulary include the following: completing sentences or texts, with words offered or not, using words in sentences, conversations, stories, etc.; various games (e.g. Hangman, I spy Bingo). All speaking and writing activities by definition include productive use of vocabulary.

12- Multiple encounters with the word. All above-listed activities can offer learners opportunities to encounter words many times and in different contexts. A variety of tasks and multiple encounters of a word ensure a more systematic coverage of various aspects of lexical knowledge and enable learners to build up an adequate lexical knowledge and consolidate it in long-term memory.

(Takac, 2008, p. 21-23)

This summary of important classroom activities regarding consolidation strategies from the research literature will be consulted when designing the vocabulary learning strategies' training plan. Other factors of learners' available time, suitability of different activities and level of proficiency will be taken into consideration.

3.6.3.1 Memory strategies

Memory strategies are strategies involved in the storage and retrieval of new information (Oxford, 1990) and when addressing vocabulary learning strategies they are strategies that assist storing, retaining and retrieving learned vocabulary items. Gu and Johnson (1996) called the strategies that were known as rehearsal and encoding strategies in some studies, memory strategies, paying attention to the importance of these set of important strategies. These strategies are also called in the literature mnemonics. Thus, all the terms used to describe memory strategies will be regarded as the same as memory strategies with no difference, because this research does not emphasize the terminological issue. According to Schmitt's (1997) taxonomy, this category of strategies consist of studying a word with a pictorial representation of its meaning, imagining a word's meaning, connecting a word to a personal experience, associating a word with its coordinates, connecting a word to its synonyms and antonyms, using semantic maps, using scales for gradable adjectives, peg method, loci method, grouping words together to study them, grouping words together spatially on a page, using a new word in sentences, grouping words together within a storyline, studying the spelling of a word, studying the sound of a word, saying a new word aloud when studying, image word form, underlining the initial letter of words, configuration, using the keyword method, affixes and roots for remembering, parts of speech for remembering, paraphrasing a word's meaning, using cognates while studying, learning the words of an idiom together, using physical action when learning a word and semantic feature grids.

3.6.3.2 Cognitive strategies

These strategies were defined by Schmitt (1997) as strategies that are similar to memory strategies but not in manipulative mental processing. Instead, it involves more mechanical devices to study words, including the employment of study aids such as verbal or written repetition. Verbal and written repetition, word lists, flash cards, note-taking, using vocabulary section in textbooks, listening to recorded words, using labels on physical objects and keeping a vocabulary notebook were all listed under the consolidation cognitive strategies in Schmitt's (1997) taxonomy. This categorisation of cognitive strategies by Schmitt is different from other taxonomies. For example, memorisation strategies were classified as indirect strategies in Oxford's (1990) taxonomy while there were described as cognitive strategies in O'Malley and Chamot's (1990) taxonomy. The distinction between memory strategies and cognitive strategies in Schmitt's classification system is logically based on the learners' learning experience. Likewise, note-taking strategies were put as a category in themselves in Gu and Johnson (1996) and Marin (2005) taxonomies, while they were described as one of the cognitive strategies in Schmitt (1997). It is worth mentioning that classifying note-taking as a main category has led to

more comprehensive coverage of its applications. For example, Marin (2005) included sections about where notes are kept, what information was recorded about new words and how learners organised these notes. Cognitive strategies' employment can be affected by the level of a language course. O'Malley et al. (1985b) found a decrease in the use of cognitive strategies when the level of language course became higher. In terms of frequency of cognitive strategies use, O'Malley et al. (1985b) indicated that repetition and note-taking were the most used strategies. However, in Marin's (2005) case, this was not the same because he found note-taking to be among the least used strategies while repetition was among the most used strategies. In regards to flash card use in learning vocabulary, Nikoopour and Kazemi (2014) compared digitized flash cards with paper-based ones. They found that the group using digitized flash cards outperformed that using traditional flash cards. Specifically, the group that used mobile flash cards was performed best compared to online and paper-based flash cards.

3.6.3.3   Meta-cognitive strategies

According to Schmitt's (1997) taxonomy of vocabulary learning strategies the meta-cognitive strategies are classified as consolidation strategies. The following table summarises the meta-cognitive strategies:

Table 2 meta-cognitive strategies

Strategy	Type
Use English-language media (smart phones, songs, movies, newscasts, etc.)	Consolidation/Meta-cognitive
Testing oneself with word tests	Consolidation/Meta-cognitive
Use spaced word practice	Consolidation/Meta-cognitive
Skip or pass new word	Consolidation/Meta-cognitive
Continue to study word over time	Consolidation/Meta-cognitive

(Extracted from Schmitt (1997) and revised by the author)

There has been a considerable body of research in investigating different aspects of these strategies. The research includes the use, and factors affecting the use of these strategies. It mostly tackles these strategies within a general framework of vocabulary learning strategies and likewise in an individualistic mode by researching single strategies or a specified group of strategies.

The importance of skipping strategy lies in the fact that the number of words existing in the target language, is extremely large. The number of words in a native speaker's repertoire usually exceeds the learners' by thousands. Since skipping is not directly involved in learning lexical items, it has been neglected in research literature until recent stages of vocabulary learning strategies field. Studies like Schmitt (1997), Nakamura (2000) and Marin (2005) considered skipping as a vocabulary learning strategy. Skipping can be seen as a strategy for communication but also for learning, because learners sometimes need to keep the flow of their learning smooth and ongoing. From this point of view and bearing in mind the nature of vocabulary learning in most languages as an overwhelming area, skipping is part of the learner's strategic learning in general and when it comes to vocabulary it becomes even more appropriate.

As discussed previously, skipping has not been well covered in the literature of vocabulary learning strategies and very few studies made efforts to focus on this strategy. In the context of the present study, it is expected that skipping will be reported by learners for several reasons. One of these reasons is that Arabic is a highly inflected language and many words can be derived from the same root. In Arabic language the root meaning can be represented in a very simple written form that mostly has three consonant letters and many words that share this core meaning can be derived from it by adding vowels to the three consonant letters. For example, /k-t-b/ (means Wrote) is the base form of many words such as /o-k-t-u-b/ (means write in imperative), /y-a-k-t-u-b/ (means write in the present form), /k-i-t-a-b-a-h/ (means scribing), /m-a-k-t-a-b-e-h/ (means library) and /k-u-t-o-b/ (means books). Wrote, library, books, write and scribe are different words in English that do not necessarily share the same root meaning form which makes English and Arabic differ in this point (Nation & Meara, 2010). Another reason that makes English different from many languages is the fact that English vocabulary came from different sources including the native English source, the words that emerged in English after the Norman invasion, and words came from Greek and Latin, the languages of science and knowledge (Nation & Meara, 2010).The estimates considered sixty per cent of the English words from French, Latin and Greek origins. An intermediate English language learner should have between 4000-5000 word families. This guides the present study to consider the lexical bar in English where words have no clues to meaning. However, this is not the case in all languages especially the ones that have rich morphology where skill in compounding can form many new words (Nation & Meara, 2010). Therefore, it is expected that Arab learners of English will use skipping because of the irrelevance of their first language mechanism in learning English vocabulary. Hence, this strategy is covered in a number of studies in the Arabic context. However, Alsudais (1997) conducted a study that explores the role of environment on vocabulary learning strategies and found that his participants, who were 20 Arab postgraduate advanced students, did not employ skipping strategy as frequently as other strategies as he

expected. Although Alsudais did not explain why his research subjects tended not to use skipping, it might be argued that other strategies were employed in dealing with reading tasks more than skipping. This makes skipping still a possible strategy that can be employed by Saudi Arabian learners who are the subject of this research.

Another study conducted in the Arabic context was Alsweed (2000). The subject of his study is 19 students enrolled in an English translation department at the university level. Therefore, they are considered advanced learners. Alsweed used a think-aloud protocol as his main instrument. One of his findings is that students reported two different types of skipping - he called them good and bad. He classified the skipping strategy based on the usefulness of the words being skipped to the learners' comprehension of the text. For example, if a learner skipped a word that is important to comprehend the whole piece of reading, this is considered bad skipping; if they skipped a word that is not significant to reading comprehension, then this is considered good skipping. Alsweed found out that the high proficiency learners were significantly better in employing the good skipping than the low proficiency students. He explained this by assuming that higher proficiency students' vocabulary repertoire is usually richer than lower proficiency students' which gives them higher ability to understand the whole text based on their lexical knowledge. This lexical knowledge will offer them wise decision-making for their skipping strategy by assessing the significance of a single lexical item to the whole text. He also tried to explain why low proficiency learners employ bad skipping by assuming that lower proficiency learners lack the evaluation skill strategy, which stems from their limited vocabulary.

Skipping will be part of the focus of the present research. The previous study has informed the current research by raising the idea of bad and good skipping. It also pays attention to the context where most of the skipping strategies were employed which is the reading context. More relevantly, the subject of the study is very similar to the subject of the present study: native Arabic-speaking undergraduates enrolled in an English language teaching programme, which is similar to a certain degree to the translation programmes. English language departments in some Saudi universities offer undergraduate degrees in English language where modules from all main subjects of this field are included. These disciplines are basic language skills, applied and theoretical linguistics, translation and literature. Some other universities offer degrees specialised in one or more of these disciplines, for example a degree in translation. In most cases, undergraduates of these different programmes study the language itself and the learning of it makes them an ideal subject for research in second language acquisition and learning strategies. Another study that investigated skipping strategies is He (2001) which took place in a Taiwanese context. The subjects of this study were 38 undergraduates studying English as their major at university level. This sample is very relevant to the current research study, like Alsweed. This study also used the think-aloud protocol as the main instrument of

data gathering. The findings of this study suggest are similar to the findings of Alsweed as reviewed immediately above. However, there is not obvious classification of skipping as good or bad as in Alsweed. There were skipping strategies employed by learners when there are no clues and skipping when learners think the rest of the text is already understood. Other studies (e.g. Marin, 2005; Alqahtani, 2005) found out that there are possible patterns to be observed when the skipping strategies employed. They both found that the more years of language study the learners have, the more skipping strategies are used. However, there was no obvious explanation of how these skipping strategies were used unlike other studies (e.g. Alsweed, 2000; He, 2001). Therefore, from the findings of these studies, similar employment of skipping strategies might be observed in the present study context. However, from the very varied findings, different or maybe new observations about skipping strategies might be found in spite of the similarities between the two studies' contexts.

3.6.3.4   Social consolidation strategies

First of all, it should be noted that this section is dedicated for social strategies under the label of consolidation strategies in Schmitt's (1997) taxonomy and is different from the social discovery strategies. The main difference is that the social consolidation strategies are used after discovering the meaning of the unknown vocabulary items by employing any of the discovery strategies and social strategies are among them such as asking the teacher or a classmate for a direct translation. According to Schmitt (1997), these social consolidation strategies include the following three major strategies:

1- Study and practise meaning in a group
2- Teacher checks students' flash cards or word lists for accuracy
3- Interact with native-speakers

It is clear from the strategies above that learners may tend at some point in their learning experience to consolidate the revealed meaning by looking for chances and situations where he/she can use, practise and reinforce the newly discovered item. However, it should be noted that there is an argument about these consolidation social strategies and whether they should be regarded as consolidation or meta-cognitive strategies. Schmitt admitted that communicating with a native speaker can be regarded as meta-cognitive strategy especially when it is playing a control role of language learning.

 Social strategies in general are effective and can facilitate learning (Oxford, 1990). The consolidation social strategies have not received as much attention in the literature of vocabulary learning as the use of dictionaries or guessing strategies. They were discussed mostly indirectly or without labelling them in a clear-cut category, such as consolidation strategies. Ahmed's (1989) study was clear in discussing strategies that were called macro-

practice strategies. It is noted that still this category of strategies was not yet labelled. Ahmed named some practice strategies which can be regarded as consolidation social strategies. These comprise asking other people for verification, making use of newly-discovered vocabulary items in more authentic situations, asking someone to test what has been learned by learners through lists of words, and creating imaginary scenarios to use the newly discovery meanings. It is noted from Ahmed's very early research that group-work to practise the newly discovery meanings was not discussed.

Another important ignored consolidation social strategy is interacting with native speakers. The reason probably is the unavailability of native speakers in an ideal EFL context like Sudan in 1989. Conversely, in 1997, Schmitt was able to find his participants who are also an EFL Japanese reporting their use of interacting with native speakers strategy. The difference in time and context might be the reason why this strategy was reported in the Japanese and not in the Sudanese EFL context. Similar to discovery social strategies findings but not exactly, Ahmed found "good learners" used these consolidation social strategies more frequently than their poor counterparts. Similar to the present research, proficiency (vocabulary performance in the present study) might be a factor that affects the use of social strategies at both levels of discovery and consolidation.

No discovery social strategies were reported by ESL learners in Stoffer's (1995) study. This finding did not come in line with the mainstream studies' conclusion. Yet, more consolidation social strategies were employed by the same subject in this study. These include asking someone to quiz me, using the newly learned language in real or imagined communication with native speakers, getting exposed to target language literature, newspapers and magazines and watching and listening to target language media. The last two strategies may not be directly regarded as social strategies but they hold a degree of sociality. The overlap between strategies' classification has always been a point of debate. Stoffer concluded that learners with short experience showed more interest in creating opportunities for practice of what had been learned. The possible explanation for this finding is that it might be because less experienced or proficient learners feel that they need more effort to consolidate what they just learned. This also might be the case in the current study, therefore more considerations about this specific observation will be taken into account.

3.7 Strategy Instruction

3.7.1   Introduction

As strategy instruction is particularly relevant to this research, important aspects and models of strategy instruction will be reviewed in this section. Strategy instruction is one form of strategy

assistance according to Oxford (2011). Therefore, strategy instruction is a specific form of strategy assistance which is a broader term that includes almost any kind of assistance in strategy learning and use. It includes, for example, teacher-led strategy instruction, learning to learn guidebooks and learner counselling. This section will discuss the definition of strategy instruction and instruction forms and important aspects of instruction.

3.7.2 Definitions of strategy instruction

The teachability of LLS is a widely accepted concept (Griffiths, 2014). Learning strategy instruction term was proposed differently by key experts including Chamot (2004) and Oxford (1990). They used this term to explain the ways in which teachers can help students become more effective learners. Cohen and Weaver (2006) used the term strategy-based instruction (SBI) and styles-and-strategies-based instruction (SSBI). These terms refer to direct strategy instruction in L2 teaching mostly. Oxford (2011) added her new form of strategy assistance which came under her strategic self-regulated model. She claimed that most self-regulated learning models involve strategic aspects that include explicit or implicit teaching of such strategies. Under the umbrella of Strategic Self-Regulated (S^2R) learning model, Oxford (2011, p. 176) defines strategy assistance as "any type of help (a) that is appropriate to the learners' culture and relevant to their needs and (b) that the learner receives to improve the use of self-regulated L2 learning strategies". Further, she indicated that the goal of strategy assistance to encourage learners to have control over their learning, which can enable them to be more effective learners.

3.7.3 Forms of instruction and other important aspects

Learners are not the same in terms of their learning needs and proficiency level. This means that these learners, who are diverse in their needs and proficiency, will need different sets and chains of strategies. This notion guides the present research to consider different approaches to instructing strategies to different learners with different characteristics such as learning needs and proficiency levels. Although there is a consensus that strategy assistance is useful and helpful in general, strategy instruction suitability to learners' needs and proficiency can make learning more effective.

When the research in LLS started in the 1970s (Naiman et al., 1978; Rubin, 1975), there was a trend of identifying good language learners' strategies. Later research analysed and diagnosed poor language learners' strategic behaviours (Nyikos, 1987 as cited in Griffiths, 2013, p. 26). After defining good and poor language learners' strategies, teaching to poor learners' the strategies employed by good learners seemed to be an appealing idea to language teachers.

There have been debates and arguments in the literature of LLS instruction about the separation versus integration of instruction (McDonough, 2005; Oxford & Cohen, 1992; O'Malley & Chamot, 1990), the explicitness of instruction (Hajer et al., 1996; Harris & Grenfell, 2004), the factors affecting instruction (Oxford & Leaver, 1996; Cohen & Weaver 1998), the role of culture in instruction (Reiss, 1983; Holliday, 2003), the language of instruction (Chamot & Keatley, 2003; Chamot, 2004) and the models of instruction (Grenfell & Harris, 1999; Oxford, 2011). Evaluation of relevant arguments and models of strategy instruction based on the present research needs and objectives will be provided in detail in section 3.8.

3.7.4 Separating strategy instruction from L2 content

Language learning strategies assistance can be provided as separate instruction and isolated from any L2 content. However, some forms of LLS assistance can be introduced within L2 content (Chamot, 2004). Oxford (2011) in her model of strategy reported her personal communication with another LLS instruction expert (Andrew Cohen, 2007) to discuss an LLS assistance programme at the University of Minnesota, USA. The programme title is "Practical Language Learning for International Communication". Cohen taught this programme in 2001. The programme included language learning strategies and styles, motivation, culture, L2 tasks, instructional methods, and other themes. The main goal of this programme is to increase the L2 learners' linguistic success and cultural awareness in their home institutions and abroad. The programme used *Maximizing Study Abroad: A Students' Guide to Strategies for Language and Culture Learning and Use* book authored by Paige et al. (2006) as its main course book.

An older separate learning to learn programme is Rubin's (1996). Rubin provided a nine-hour programme for L2 learners in three main language skills; listening, reading and speaking. This instruction programme was based on the idea that L2 learners have passive knowledge. Learners usually are not aware of this passive knowledge. Therefore, it needs activation by raising their awareness about the existence of such knowledge. It was then thought that strategies could facilitate the use of this knowledge by making learners use it more productively. Therefore, raising learners' awareness about the existing background knowledge is an essential concept of Rubin's programme. Other types of strategy instruction and programmes will be discussed in the next section.

3.7.5 Integrating strategy instruction into L2 content

The second type of strategy assistance is direct strategy instruction integrated into regular L2 courses. Direct strategy instruction integrated into L2 courses is perceived as an effective model of strategy instruction (Chamot, 2004; Grenfell & Harris, 1999). The reason for supporting this

kind of instruction is that it can offer chances for practice of strategies within real L2 tasks. Another reason is that learners may not be able to use what they learned in the learning to learn programmes (separate model) in L2 tasks due to their lack of awareness of their L2 learning process. In these cases, integrated programmes seemed to be more appropriate.

3.7.6　　　Explicitness of the strategy instruction

Oxford (2011) indicated that research suggests that the more explicit the instruction is, the more successful it is. There are different levels of explicitness of LLS instruction according to Hajer et al. (1996). The first level is blind (covert) strategy instruction. In this level, strategies are introduced within L2 content such as the language course book, but learners are not aware of them as strategies, but they might think them as part of the L2 tasks. In other words, there are no explicit identifications or definitions of these strategies as such.

The second level is somewhat informed strategy instruction. The L2 course book states the strategy, explains what it is for and encourages learners to apply it. The third level is informed strategy instruction where the L2 course book or teacher states the strategies, demonstrates them, explains the usefulness of them, and asks learners to use them. Last but not least is completely informed strategy instruction. The only difference between this level and the previous one is that teachers or course books add chances for practice in how to reflect on the strategy learning and use, how to evaluate their success, and how to transfer the strategy to new tasks.

Oxford (1990) claimed that the completely informed strategy instruction level is more successful. Similarly, explicit strategy instruction is encouraged by researchers in L2 learning (Harris & Grenfell, 2004). Chamot (2007) reviewed different evaluations of programmes and settings that used Chamot's CALLA model and concluded that significant achievements have been observed on many levels including content knowledge and skills, English proficiency and learning strategies.

Lee (2007) asserted that the well-preparation of the LLS instruction is essential in the success and effectiveness of it. Teachers' interests and motivational approach (Chamot & Kupper, 1989) and instructional flexibility and attention to learners' needs (Lee, 2007) are important factors, too. Oxford (2011) reported her personal communication with Chamot (May, 19, 2007) again, but this time discussing the suitability of some strategies for the learners over other strategies. That is to say, that some strategies suit all learners for all language and non-language tasks, such as the meta-cognitive strategies. Prior knowledge and cooperation strategies are also seen as applicable to all sorts of language tasks. Specific strategies can suit some language tasks. For example, inferring is applicable for listening and reading tasks while substituting and

paraphrasing are suitable for productive skills tasks (writing and speaking). Further, Chamot (in personal communication with Oxford, May,19, 2007) also indicated that EFL learners tend to employ understanding the language and speaking strategies while ESL prefer strategies that facilitate the achievement of academic tasks.

Designing LLS lessons is becoming more popular and gaining attention. Chamot (2004) proposed a lesson plan template of LLS in L2 real tasks. She indicated that this template should have the following elements:

> "a) activity title, b) strategy or strategies to be taught, c) learning standards, d) language and proficiency level, e) brief description of the activity, f) objectives, g) materials, h) procedures (linking the strategies to the activity, introducing and modelling the activity, practicing), i) expansion, j) adaptation, and k) teachers resources to enhance the activity."   (cited in Oxford, 2011, p. 182)

3.7.7   Factors affecting strategy instruction

Different factors play important roles in direct instruction. Identifying the usefulness of the strategy, modelling the strategy with a specific L2 task, giving the learners chances to practise the strategy and instructing the learners on how to evaluate the successfulness of the strategy are very significant factors and processes that research in this area found. Strategies that have already been used by learners should be checked before starting the strategy instruction (Chamot, 2004). Leaver (2003) asserted that LLS assistance and instruction can reduce the time needed to achieve higher levels of language proficiency. Oxford and Leaver (1996) called for a model of instruction that includes issues of motivation, anxiety, and interest which can help learners understand and manage their L2 learning. It should also make learners aware of why they tend to use strategies that match their learning styles.

O'Malley and Chamot (1990) emphasised that only strategies which learners really need to learn should be introduced. Likewise, Cohen and Weaver (1998) preferred that the strategies being taught to the learner should be relevant to their interests and concerns. Oxford (2011, in a personal communication with Chamot on May 19, 2007) discussed strategy instruction with Chamot as she is one of the strategies experts who developed one of the leading strategy training programmes known as CALLA. She claims that teachers who adopt learner-centred approaches of teaching can integrate strategy instruction into their L2 teaching. However, she highlights that such approaches always involve transforming and transmitting the good learners' strategies to poor learners which is not the ideal practice in LLS instruction. She adds that LLS instruction should encourage learners to be more active. Chamot continued to discuss the teachers' roles in LLS instruction models by stating that teachers should a) develop meta-cognitive awareness of their own learning and their students' learning, b) practise and encourage

self-reflection, c) observe and question students regarding learning, d) model learning strategies, and e) identify a given students' strategies and encourage other students to try it out.

Oxford (2011) emphasised that there are variables associated with learners that can influence the implementation of integrated strategies into L2 instruction. These variables include

> "a) demographics (age, gender, and status as minority, majority, refugee, or immigrant), b) education (interrupted schooling, years of formal and informal education, when, and where), and c) L2-learning factors (native language, differences between L1 and L2 in terms of language characteristics, proficiency in L1 and L2, language learning styles, L2 learning motivation, length of time studying the L2 and under what circumstances, strategies currently used, and attitudes and beliefs about L2, about L2 learning, and about culture)" (Ibid, p. 182).

Oxford (2011) asserted that attitudes and beliefs are especially crucial to the success of strategy instruction. Learners in the strategic self-regulated learning model are active co-constructors of knowledge, however, learners, who came from different cultures, where learners play less active roles, may need to develop new attitudes and beliefs. She suggested, in dealing with such learners from different cultural backgrounds, to assess the current strategies being used, the degree of responsibility of learning, new strategies that can suit them and ways to expand the range of strategies. This approach encourages learners to adopt new strategies that do not exist in their L1 culturally-promoted strategies which can afford them more chances to take more responsibility and control over their learning. Teachers should take into account the different strategies that are suitable and helpful for different learners. It means that individual differences play a significant role in LLS instruction, for example, strategies that work best for vocabulary learning can be supplemented with strategies that help maintain fluency to reach a greater degree of achievement. Another example that can show how individual differences should be treated by teachers is that learners within one class or settings may not understand strategies and then need basic help, while others need more assistance with long-term planning and self-evaluation, which is way beyond the task level. This approach focused attention on the crucial role of needs analysis and strategy assessment before the start of any strategy instruction.

3.7.8 Culture in strategy instruction

One of the most recent strategy models is the S^2R (strategic self-regulation) model by Oxford (2011). In this model, she calls for strategy assistance that takes into account cultural appropriateness and openness. According to Oxford, strategy assistance should take the sociocultural contexts into consideration, which involves positive attention to and use of the current culturally valid strategies that are used by learners. This does not mean at all that other potential and useful strategies, which are not part of learners' culture, should be ignored

(Holliday, 2003). The cultural awareness is so crucial in all aspects of life and when it comes to language learning it becomes vital because it is very difficult to isolate culture from it.

Oxford (2011) claims that strategies' assistance should never imply that the existing cultural strategies are wrong or useless. She cited a paper written by Tsai et al. (2000) that indicated that many non-Asian L2 teachers often describe Asian L2 learners' memorization strategies as rote. However, this paper proved that memorization strategies involved very sophisticated and meaningful mental associations which do not make these strategies rote at all. Underestimating culturally promoted strategies is considered culturalism which is a practice of cultural discrimination in education in general proposed by Holiday (2003). Oxford (2011) called for greater cultural awareness among teachers and strategy assistance providers to look positively to other cultures and develop acculturation instead of culturism. This does not imply that newly perceived useful strategies should not be introduced to learners. This would enhance learners' strategic repertoire instead of substituting their existing culturally promoted strategies.

3.7.9 The language of instruction

The language of the direct strategies instruction was under discussion in research. Chamot and Keatley (2003 as cited in Chamot, 2004) reported a failure of strategy instruction because teachers used L2 for strategies instruction for beginning learners. Chamot (2004) suggested that if all learners share the same L1, L1 should be the language of instruction. However, Grenfell and Harris (1999) called for L2 use in instructing the strategies as much as possible. At the same time, they admit that it is not easy especially, with lower levels of proficiency. A combination of L1 and L2 in strategy instruction has been implemented with a great degree of success (Chamot, 2004). Grenfell and Harris (1999) reported use of combination of L1 (English) and L2 (French and German). Ozeki (2000) used simplified English in listening strategies instruction for her Japanese female students and at the same time she gave the freedom to use the L1 in responding to the strategies instruction. Oxford (2011) drew attention to the fact that many ESL classes have a diverse variety of L1, which makes L1 use impractical. This guided her to propose more practical implications that can help teachers in implementing the strategies instruction in the L2 without ignoring that fact that L2 can affect the comprehension of the learners with a limited or beginning levels of proficiency. Chamot (2004) suggested that teachers can give L2 strategies simple names, and model the strategies for sufficient time. She suggested also greater integration of visual and tactical effects to facilitate understanding and comprehension of L2, the language of instruction.

3.7.10   Models of strategy instruction

In the literature of LLS, there exists a number of classroom models for direct strategy instruction. Oxford (2011) asserts that instruction is a cycle. Her proposed model starts with teachers assessing strategies and raising initial awareness. The model involves more complex processes such as learners' practise using, combining and monitoring strategies. The model finishes the instruction by letting learners continue in learning and using strategies and increase ownership of their learning. The last step in Oxford's model is to assess the possible impact at all levels, linguistically and strategically. There have been a number of studies that propose models of direct strategy instruction (O'Malley & Chamot, 1990; Chamot, 2004 & 2005; Chamot et al., 1999; Grenfell & Harris, 1999; Macaro, 2001). For detailed discussions of the available models refer to Oxford (2011). In conclusion, she claimed that these models are not so different. They all have the same aim which is raising the learners' ownership of strategies, and responsibility and authority of strategies' use and learning.

3.8   Selecting strategy instruction form and model

After reviewing the relevant literature of strategies' instruction in section 3.7, this section is dedicated to evaluating the available models and forms of strategy instruction. Such evaluation would enable the current research to make informed decisions about the form and model of its VLS instruction. The effectiveness of strategy instruction is an issue of debate in the literature of LLS. There have been a number of studies that reviewed and evaluated explicit strategy training. Oxford and Cohen (1992) concluded that studies employing explicit strategy training were generally effective, leading to better language proficiency. However, this was not always the case as this successfulness was not consistent. Similarly, McDonough (1995) reviewed a large number of studies that used explicit strategy training and concluded that there was enough evidence to see its success. At the same time, McDonough disagreed with the simple relationship drawn by some of these studies between strategy training and language proficiency. Another well-known study that reviewed explicit strategy training in the literature is that of Hassan et al. (2005). They reviewed studies that applied explicit strategy training which revealed new evidence that adds to the claims of effectiveness of explicit strategy training. It is worth noting that while they found explicit strategy instruction effective, it was not clear to them where the effectiveness lies. It is important to address the issue of integrating strategy instruction into language modules and the relevant arguments. Many scholars and researchers interested in strategy instruction (Dörnyei, 2005; Chamot, 2001; Macaro, 2001; Matsumoto, 1996) argue that integrating instruction into normal language courses might be more effective. However, there are a number of challenges that make integration difficult and tricky. These

challenges are summarised by Murphy (2008, p. 308) as: "the balance between strategy instruction and language instruction; the issue of progression or which strategies are appropriate at which levels; and the design of appropriate practice tasks which require the deployment of the strategies taught."

While this research acknowledges the possible pedagogical benefits of integrating strategy instruction into language materials, it takes the practicality of the integration model into consideration in designing its VLS instruction. The anticipated research subjects are diverse in terms of proficiency level, years of study, and motivation. This adds to the existing challenges of integration, which makes it less suitable to the current study context. It is not the practicality and the suitability of integration to this study's context that contributes to the decision. It is more about the scientific argument about the separation model of explicit strategy instruction. This includes Chamot's (2004) evaluation and arguments about this type of instruction that has been reported in Oxford (2011). Chamot indicates that separate strategy assistance programmes are more appropriate to learners than integrated assistance in L2 courses for several reasons. First, strategies learned in specific L2 tasks in classrooms are less likely to be transferred to other, wider tasks (Gu & Johnson, 1996). Second, strategies need significant time and efforts to teach them, so it also takes time for learners to integrate them into L2 course (Vance, 1999 as cited in Chamot, 2008; Weinstein & Mayer, 1986). Third, Wenden (1986) claims that motivated adult learners, who have a limited time, may not prefer the integrated model of strategy instruction because of the time limitation. They seem to prefer the separate models because they afford them the keys and principles of LLS and at the same time do not impose on the L2 course class time. Taking all these arguments into account, the present study has developed a balance between the two types by using the separate model of instruction with students who are studying English as their speciality. This type of instruction is not totally separate as students will be able to use the strategies in an authentic and natural way as part of their language learning in other language modules they are studying at the same time. Furthermore, as VLS is the subset of strategies used in this research, it is expected that students will be using vocabulary learning strategies in most of the four language skills and areas of language study such as language description and second language learning theories because vocabulary is an essential area for comprehension and production. Oxford (2011) called for more coordination and communication between strategy instruction providers and L2 teachers, which, if they are given at the same time can enhance the possibilities of strategies applications in L2 course tasks. This study will do its best to seek cooperation and coordination between the VLS instruction provider and the language teachers.

As discussed in the literature, certain researchers (e.g. Grenfell & Harris, 1999) are in favour of integration of strategy instruction into language modules because learners may not be aware

enough of their L2 learning and then it will be difficult for them to employ and use the strategies in which they have been trained. This seems to be true with learners who are not studying the language itself as their speciality. Therefore, this reason may not be applicable to the present study. This reinforces the current study decision to choose the separate, explicit VLS instruction model. In addition, learners will explicitly be instructed to provide evidence of strategy instruction in their e-portfolio.

Explicit strategy instruction has been emphasised in the literature as experts highlight its usefulness (Oxford, 1990; Grenfell & Harris, 2004; Chamot, 2008). This belief is built on evidence from empirical studies and from systematic reviews of studies that used explicit instruction. Therefore, the present study might benefit from this type of instruction. Explicit instruction, modelling, and practicing of strategies might increase the learners' awareness of strategies. The implicit instruction may not highlight the importance of strategies to the same extent that explicit instruction does.

Chamot (in a personal communication with Oxford (2007) as cited in Oxford, 2011, p. 182) claimed that integrating strategy instruction into L2 content might lead to a less successful form of learner-centred approach. As this study evaluates that separating strategy instruction from language content as suitable, it will at the same time give learners the freedom to choose, reflect and employ the strategies that they find useful without imposing any kind of intervention or preference. It will not encourage learners to transfer the good language learners' strategies to the poor ones, as this is not the ideal practice of strategy instruction according to Chamot (2007). The current study will adopt an approach that puts learners in the centre of the learning process with the freedom of choice they require in an informed context. This might lead to more authentic data that reflects actual and natural use of VLS.

As Oxford (2011) described learners as active co-constructors of knowledge, this study will do its best to ensure the learners' engagement with their learning and strategies use. It is exceptionally important that learners have positive attitudes and beliefs about strategy instruction. These attitudes and beliefs are influenced hugely by learners' culture. Learners who come from cultural backgrounds where there is less emphasis on the learners' responsibility for learning and more emphasis on teachers' roles and responsibility, might need to develop new attitudes towards strategy instruction. In the present study context, this might exist but not to a great extent as learners studying English as their speciality are expected to be more aware of the different available learning models and theories. However, this will be taken into consideration in the strategy instruction in the current research. This study will neutrally try to pay attention to culturally promoted strategies. These strategies will not be underestimated but rather will be used to introduce relevant, deemed-effective strategies. The instruction provider in the current

study comes from the same linguistic and cultural background as the learners, with experience of language teaching in the same context. Therefore, the instruction provider is expected to be familiar with the culture of the learners and the type of strategies that might be influenced by the students' culture. In addition, since the context is EFL where learners share the same cultural background, it seems that there will be very limited cultural diversity within any given group of participants, which limits any cultural difference between the participants.

After evaluating the literature related to the language of instruction, this study prefers to use the L1 of participants to reduce any chance of lack of understanding. Failure in strategy instruction because of L2 use as the language of instruction has been reported in the literature (Chamot & Keatley, 2003 as cited in Chamot, 2004). The decision is also taking Chamot's (2004) recommendation into account as all expected participants share the same L1. While this study will be using participants' L1 (Arabic) as the main language of instruction, simplified L2 as suggested by Ozeki (2000) will be used occasionally to give learners a sense of familiarity to LLS and VLS terms as they are specialised in language itself.

The current study accepts that strategy instruction involves steps of implementation that need to be taken into consideration when delivering the instruction. The instruction this study plans to execute begins with raising initial awareness before it moves to presentation of named strategies. It moves to offering learners chances for practice at a later point. The strategy instruction in the present study corresponds with McDonough's (2005) instructional model. This model (2005, p. 156) comprises four stages: (1) preview (a) materials for useful strategies, (b) the students' own current repertoire; (2) present a strategy by naming it and explaining why and when to use it; (3) model the strategy and provide practice opportunities; (4) develop students' ability to evaluate strategy use and develop skills to transfer strategy use to new tasks. Oxford's (2011) recommendation to finish any instruction with assessment of the possible impact of the instruction is considered as it provides indication of participants' performance. The VLS instruction this study chooses is not very different from most of the available models but it takes into account aspects and factors that are unique to the present study context. Therefore, the current study VLS instruction pays attention to the learners' needs and it is instructionally flexible, as Lee (2007) recommends. This means that the instruction is fixed and predetermined but with a degree of flexibility that allows changes in the details, activities and lesson plans but not in the general concepts. The sequence of instruction sessions is discussed in section 4.5.2 and sample of lesson plans and teaching materials are added in the appendices.

Chapter 4: METHODOLOGY

4.1 Introduction

This chapter introduces the methodological approach taken in this study. Both quantitative and qualitative methods were used in this study. Specifically, this chapter addresses the relevant philosophical research paradigms, research methods and instruments associated with vocabulary learning strategies, data collection procedures, data coding and analysis and introduces the participants and the context of the study.

4.2   Research paradigms and methods

4.2.1   Research paradigms

Previous research suggests that researchers need first to decide the philosophical paradigm (i.e. postpositivism, constructivism, transformative, pragmatism) and then bring the relevant research design (i.e. quantitative, qualitative and mixed method) and the specific procedure and methods (e.g. data collection, questions, analysis) to their planning of study (Creswell, 2013; Cohen et al., 2007). In other words, once a philosophical paradigm is elicited by researchers, appropriate methods and procedures need to be considered so as to reflect that general research paradigm.

There are several research paradigms available in educational research. Three main paradigms seem to be relevant to this research context. These are postpositivism, constructivism and pragmatism. In the following paragraphs, review and evaluation of each one will be provided. This evaluation is based on the current research objectives, questions and problems.

The first philosophical research paradigm is postpositivism. It is a philosophical paradigm that challenges the idea of "absolute truth of knowledge" as human beings cannot be positive about the claims of knowledge in human behaviour and actions (Creswell, 2013). Therefore, the assumptions of this paradigm are usually used in quantitative research more than qualitative (Ibid). The current research has some quantitative components, namely in capturing strategy use through quantitative questionnaires and in assessing learners' academic vocabulary size. Thus, some of this research paradigm's assumptions might be relevant. However, the present research is mainly seeking qualitative data to help in understanding and interpreting the learners' strategic behaviour and use of e-portfolio. Hence, postpositivism on its own may not fully help in understanding the different research strands.

The second research paradigm is constructivism and social constructivism. This philosophical paradigm is also called interpretivism (Morrow, 2005). This philosophical stance views the meaning through individuals who are part of a greater social and historical context (Creswell, 2013). It emphasises that "There is no, direct, one-to-one relationship between ourselves (subjects) and the world (object)" (Gray, 2013, p. 23). In this paradigm, the focus is on considering actions of individuals unlike the natural sciences where the focus is on consistencies in the data so conclusions can be drawn and consequently become laws (Ibid). The interpretations in this paradigm are influenced by the social and historical background and beliefs of the researcher (Creswell, 2013). Furthermore, this paradigm stresses that the interpretation should be centred around the views of the individuals and their understanding of the world (Cohen et al., 2007). Therefore, this type of research paradigm is suitable to qualitative research as claimed by Creswell (2013). The current research has major qualitative components in it, so this paradigm might provide insights and understanding to the data interpretations. However, it should be noted that the quantitative component of this research is still providing some insights into the learners' general performance in strategic use and academic vocabulary size. Therefore, adopting one philosophical stance may not adequately deal with the research objectives and questions. It is, then, legitimate to think about a research paradigm that might help in understanding both quantitative and qualitative components of the current research.

The third research paradigm is pragmatism. According to Creswell (2013), pragmatism "arises out of actions, situations, and consequences rather than antecedent conditions (as in postpositivism)" (Creswell, 2013, p. 10). In this paradigm the focus is placed on the research problem more than methods which is perceived positively in literature (Creswell, 2013; Morgan, 2007; Patton, 1990; Tashakkori & Teddlie, 2010). In this way, pluralistic views are used to originate information about the research problems (Creswell, 2013). In other words, this paradigm seeks to understand the phenomenon with all possible means regardless of their nature. The condition is whether this method works or not. If it contributes to the understanding of the phenomenon then it can be used. Hence this paradigm can use quantitative, qualitative and more importantly mixed methods approach (Onwuegbuzie et al., 2009). Pragmatism as a research paradigm is popular because it provides epistemological justification for mixed method approaches (Ibid). Likewise, Gray (2013) claims that pragmatism legitimises the use of mixed methods but also views mixed methods as necessary to gain a better understanding of the investigated phenomenon. In this sense, the ontological, epistemological and methodological understanding of pragmatism was found to be appropriate to the current research problem, questions and objectives as it reinforces the strengths and minimises the weaknesses of the postpositivist and interpretivist research paradigms. The current research is interested in

understanding learners' strategic learning of vocabulary and the role of the e-portfolio in it by all available means and methods based on the pragmatic paradigm. Therefore, the present research will adopt pragmatism as its main philosophical paradigm. After reviewing and evaluating the research paradigm, the current research will move on to discuss the research methods in the next section.

4.2.2   Research methods

The set of beliefs that researchers hold usually influences their research philosophical paradigm. This, in turn, embraces the type of methods and instruments that can be used in the research (Creswell, 2013). Quantitative and qualitative methods of research usually employed in language learning research in general and strategic learning research are not very different (Oxford, 2011). Likewise, the methods associated with vocabulary learning strategies normally follow the same methods' evolution that is associated with the general language learning strategies (White et al., 2007).

The current research methodology was designed to answer the proposed research questions. This research seeks to answer 5 different research questions. The current research questions are addressed in section 1.4. The research methods should always be chosen based on the research questions and research goals and objectives (Savenye & Robinson, 1996; Johnson & Onwuegbuzie, 2004). In particular, the research methodology is planned to help in finding evidence to understand the role of the e-portfolio in the context of VLS instruction, learners' strategic learning of vocabulary and academic vocabulary learning.

As the design of the methodology should be centred on the purpose of the research, the combination of more than one method would be more suitable to the current research. Such integration of methods would enhance the data collected in terms of depth and breadth (Denzin & Lincoln, 2005). It also would add more richness to the content and data. The methods, this research found to be suitable to serve its objectives, are quantitative and qualitative. Such integration of quantitative and qualitative methods would allow this research to deeply and widely look at the details of the learners' learning experiences. Mixed methods in strategic learning research can strengthen the understanding of strategy use more than purely quantitative or purely qualitative (White et al., 2007). In this way, the current study will be enabled to understand the phenomenon under investigation. Johnson and Turner (2003) claim that the findings that are generated from combined methods provide a great deal of insights that assist the understanding of investigated phenomenon. This is by offering more explanations and elaborations about specific aspects of the phenomenon. Mixed methods are usually used to obtain "interpretive clarity and to avoid the criticism that the method predetermines the results

obtained" (White et al., 2007, p. 94). Furthermore, the mixed methods approach might offer chances for triangulation. According to Cohen et al. (2007), triangulation is:

> "the use of two or more methods of data collection in the study of some aspect of human behaviour. The use of multiple methods, or the multi-method approach as it is sometimes called, contrasts with the ubiquitous but generally more vulnerable single method approach that characterizes so much of research in the social sciences." *(p. 141)*

The triangulation is used to increase the researchers' confidence in the data gathered and the results and findings (Johnson et al., 2007). It is used in an attempt to explain the richness and complexity of human interaction by investigating it from different positions (Cohen et al., 2007). This happens only if qualitative data is used alongside quantitative data to reveal a richer and more comprehensive picture of the social phenomenon under study. Johnson et al. (2007) claim that triangulation may not serve some research purposes.

Jick (1979 as cited in Johnson et al., 2007) claims that triangulation contributes positively to confidence in results, data collection procedures and instruments in an innovative way, the complexity and richness of the data, understanding of theories through synthesis and integration, discovery of contradictions, and chances to test competing theories. Different types of triangulation have been highlighted by Denzin (1978 as cited in Johnson et al., 2007). Data triangulation, investigator triangulation, theory triangulation and methodological triangulation were the four types proposed in Denzin's study. Methodological triangulation has been used widely in the literature as it is the one type that offers the most among the other types (Cohen et al., 2007). The current research finds methodological triangulation to be the most appropriate type to facilitate investigation of its research problem. Two types of methodological triangulation have been proposed by Morse (1991). These are simultaneous and sequential. In simultaneous triangulation, qualitative and quantitative methods are used to collect data in a limited interaction manner. That is to say that there is limited interaction between the two during the data gathering process. However, the findings of both contribute and complement one another. Sequential triangulation is used when there is a need to design, amend or plan another method. The current research intends to use the simultaneous type of methodological triangulation as it helps in providing richer information and a wider picture of students' strategic learning of vocabulary and e-portfolio use. Triangulation is a good practice in some research types, such as case studies (Cohen et al., 2007). The current research intends to use a case study and thus triangulation is essential in gathering and interpreting the findings. The current research will utilise a number of research instruments to investigate the strategic learning of vocabulary and the role of e-portfolio. Therefore, it will use a mixed method approach that would facilitate the triangulation process. For example, the data of the vocabulary learning strategies questionnaire as a quantitative method will be used in conjunction with students' interview and e-portfolio reflections to capture a bigger and wider picture of learners' strategy

use. Grid (1) below shows how the different research questions can be answered based on the quantitative and qualitative data reflecting the triangulation process in the current research. In this grid, √ tick mark were used to show the instruments that contribute to the answer of each research question and X mark for those instruments that were not used in answering each research question.

Mixed methods would enhance the opportunities for researchers to draw more valid and wider conclusions (Mertens, 2005). Thus, this research adopted this method of investigation to explore the impact of the integration of the e-portfolio in the context of the VLS instruction on undergraduate learners' strategic learning of vocabulary and academic vocabulary learning. This research accepts that one single method may not fully answer the proposed research questions. Therefore, a case study was carried out to investigate this research area. According to Yin (2009, p.13) case study is "An empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident." Interviews, archival records, physical artefacts, and documentation are among the key instruments in data collection recommended by Yin (2009). Hence, the mixed methods in this study, in addition to questionnaire and academic vocabulary size test, include interviews, artefacts of learning and documentation of learning that form comprehensive archival records of learning (e-portfolio).

In practical terms, this research carried out an experimental study that incorporated VLS instruction and e-portfolio use. In order to investigate the impact of this approach, three different groups have been recruited. The first group is the target experimental group who received VLS instruction and used e-portfolio. The second group is the semi-experimental group who received only instruction on VLS, but did not use e-portfolio. The third group is a natural control group who did not received instruction on VLS and did not use e-portfolio. However, they are receiving formal instruction on their different linguistics and language modules as they are studying for their TEFL bachelor's degree. This is to compare between these groups performances on vocabulary learning knowledge and strategic vocabulary learning to explore the impact of using e-portfolio in the context of strategy instruction. The first two research questions in the grid below deal with impact. Through the use of an academic vocabulary size test, the first research question was quantitatively answered as the grid below shows. A vocabulary learning strategies questionnaire was used to answer the second research question that deals with the impact on strategic learning at the quantitative level. Nevertheless, as this research is interested more in the process, which has been neglected in previous research as discussed in section 1.4, the remaining three research questions deal with the learning process more than the impact. Therefore, a number of research instruments have been used to answer these different research questions that are concerned with capturing the strategy use and the use

of the e-portfolio. The different instruments that have been used in this study are discussed in greater detail in section 4.3. The procedures of the study are introduced in section 4.5. The third research question is asked to cover the process of orchestrating the taught strategies. This research question is answered by analysing the data collected from the students' e-portfolio, interview and is linked with their scores in the test. The fourth research question is asked to provide information and insights about the role that e-portfolio plays in facilitating the strategic learning of vocabulary. This is answered by analysing the data of the participants' e-portfolio, interview and is linked with the VLS questionnaire. The fifth research question deals with the role of the technology in e-portfolio in the learning process of strategies. This question is answered through the use of the participants' data from the e-portfolio and interview.

Grid 1: shows how the different data sources were used to answer the research questions

Research question	Q	I	P	AVST
What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduate's academic vocabulary size?	×	×	×	√
What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduate's vocabulary strategic learning?	√	√	√	×
How do learners orchestrate their VLS in the e-portfolio?	×	√	√	×
What is the role of e-portfolios in supporting the development of VLS?	√	√	√	×
What is the role of technology in e-portfolios, in supporting VLS learning and use?	×	√	√	×

Q: Questionnaire   I: Interview   P: Portfolio   AVST: Academic Vocabulary Size Test

4.3 Research instruments associated with VLS

Language learning research with a particular focus on language learning strategies uses a mixture of methods and instruments (White et al., 2007). This would relevant vocabulary learning strategies, as they are considered a subset of the general language learning strategies. Therefore, the instruments used in research of language learning strategies should be applicable

to its specific subsets of vocabulary learning strategies. Some of the important instruments associated with strategic learning, which either informed the current research decisions or are directly utilised in this research, are evaluated here. In other words, instruments that have been found useful in understanding the available methods and the data collection procedures and processes are taken into the account. This is part of evaluating what is available and what is appropriate to the current research objectives and context. Rationale for the instruments used or disregarded in the current research is also given. In particular, the issue of strategy use observability will be addressed in this section. It will then move to review and evaluate the specific instruments used in this research.

The nature of the investigated research problem or aspect of strategic learning usually determines what type of methods and instruments are to be used (Creswell, 2013). In dealing with VLS, there is a number of research instruments that can be used. This includes classroom observation, video and audio recording analysis, verbal reports, guided learning diaries, interviews, questionnaires, self-observation and computer applications (Takac, 2008). McDonough (1995) distinguished between direct and indirect methods. When participants are asked in a questionnaire for example to decide whether they agree or disagree with statement, this is considered a direct method. Asking participants to reflect while they are doing a linguistic drill (think-aloud protocol) or to elaborate about a learning situation is usually described as an indirect method of investigation. The direct methods according to McDonough (1995) are normally quantitative and closed, while indirect are qualitative and open. The present research does not prefer one method over the other because every method has its strengths and weaknesses. Since this research is concentrating on vocabulary learning strategies, it will evaluate suitable methods taking into the account that no single strategies assessment method prevails (Cohen 1998). However, capturing the strategic learning and use reliably and authentically is a complicated process. This is mainly because strategies are, for the most part, mental processes that are not observable (White et al., 2007). The issue of strategy use observability will be discussed next before reviewing and evaluating the research instruments used in this research.

4.3.1   Observability of strategy use

Strategic learning processes are not all visible and thus not easy to observe (White et al., 2007). So traditional learner observation may not be useful in capturing such deep learning processes (Cohen, 1998). Traditional observation issues and limitations will be discussed in section 4.3.3. An avenue to learners' actual strategy use is crucial for validity and reliability in strategic learning research. While this research acknowledges the challenge in acquiring authentic, valid and reliable information of actual strategic use, it perceives learners' voice as a possible and

legitimate means of gaining such information. Nyikos and Fan (2007) stated that: "learner voice is also the avenue to insight into the individual learner's cognitive processes, beliefs, perceptions, priorities, and values. We are in the infancy of using learner voice and discovering the learner strategy clusters which are most effective for various learning tasks." (p. 272). They also believe that learner voice should be taken into account and inform the development of theoretical, methodological, experimental, conceptual and categorisational aspects of strategic learning. Likewise, this was clear in White et al. (2007) as they stated that: "researchers must rely on learner accounts as indirect indicators of these mental processes" (p. 93). Therefore, Verbal reports were seen as an essential instrument in capturing strategic learning and use. A full account of issues related to verbal reports will be given in section 4.3.2.

The need for more authentic and multiple evidence of strategies use is seen as vital in this area of research as strategy use is not fixed but dynamic (White et al., 2007). Ongoing, consistent and dynamic methods of capturing strategies use are crucial in this research. Thus, this research intends to incorporate e-portfolio, which encourages learners to actively show their use and reflect upon their use and learning of strategies. In this way, more general insights and multiple pictures that reflect learners' changes based on the different learning conditions and available time can be captured. In other words varied evidence of learning and reflection on learning would provide information and insights into strategy use in a dynamic series of different learning situations, settings and times. Using learners' diaries might facilitate reflection on strategy use and learning. A full account of diaries as a research instrument is given in section 4.3.4 Strategies use and learning documentation and reflection through the use of e-portfolio will be addressed in section 4.3.7

4.3.2   Capturing strategy use through verbal reports

This method of investigation requires participants to report verbally what they are thinking while fulfilling a language task (McDonough, 1995). This method is an attempt to make the internal thoughts and mental processing more explicit and thus is very suitable for strategies that are not external such as some cognitive strategies. The "unique perspectives on learners' performance that can be obtained through the use of verbal reports" (Cohen 2013, p. 4) can be useful in their own or in combination with other quantitative and qualitative data. However, Takac (2008) claims that they are still not acceptable as evidence confirming the hypothesised mental processes. Think-aloud protocol is the most commonly used technique to make learners verbally report about their strategic learning (White et al., 2007).

The application of this technique is in line with the consciousness perspective of strategies. This means that researchers who adopt think-aloud protocol are proponents of the idea that assumes learners are aware and conscious when they decide to use a strategy. Therefore, this technique

can be seen as a suitable method of investigation. Though, some researchers believe that some strategies become more automated and then learners are not conscious when applying them (McDonough, 1995). In this case, think-aloud protocol may not be the right method to use. Verbal reports usually entail several steps when used as a source of information about strategies employment (Takac, 2008). These include observations before the learners begin the task, while doing the task and after fulfilling the task.

Learners can also be asked before, during and after the task which makes the interaction a possible mode of investigation. Asking learners immediately after they finish a task can reinforce or reject what they report just before, during and after the task. Matsumoto (1994) elaborated more about this procedure by claiming that it has two forms of verbal reports. First, concurrent reports are when verbalisation occurs simultaneously while learners are doing a task. Second, retrospective reports are when verbalisation takes place a while after finishing the task. It is important to note that if the verbalisation occurs immediately after the task, it can still be described as concurrent and not retrospective unless there is a considerable gap of time. The concurrent mode of verbal reports is normally used when researchers are assigning specified tasks to learners according to Matsumoto.

The use of this method can add significant insights about what learners attend to when doing a task. At the same time, it is challenging to find out what learners do not attend to in doing the task which can be as important as what they attend to (McDonough, 1995). Another issue that limited the usefulness of this method of investigation is that learners verbalisation cannot sometimes fully described what they attend to. The reason for that can be that learners may lack self-reporting skills. Sometimes, learners may find it difficult to express verbally simple learning processes and this becomes even harder when dealing with complex strategies. Hence, the complexity of the strategies used may also make the verbalisation inaccurate or inadequate (Cohen, 2013).

The interpretation of verbalised strategic reports is another problematic issue that researchers discuss (McDonough, 1995). Not all strategies are conscious and thus some are inaccessible. Cohen (1998) further criticised this method, claiming that some learners may verbally report better than other learners which affects the reliability of the information gained from these reports. Discussing the task-induced verbal reports has informed the current research in understanding the challenges and the issues associated with verbalising strategies use. Thus, the current research will seek a way of verbalising strategy use that takes into account these challenges by offering learners more freedom to talk and lessen the time pressure on them. This pressure that task-induced reporting entails might lead significantly to unauthentic and less valid results. This way of verbalising strategy use should also take into account that the rationale

behind it is to give as much and as deep information as possible about the learners' strategic learning of vocabulary in general and not of a specific number of strategies and tasks. This might be achieved by conducting in depth interviews with learners as they can verbalise what they think with no time or task pressure. This research accepts that while there are limitations and shortfalls in using traditional task-induced verbal reports, reviewing them has informed the design of the interview as a method of verbalising learners' strategic learning. In-depth discussion about the interview used in the present research is given in section 4.3.5. Finally, it is important to note that the focus of this research goes beyond the debate about the consciousness perspective in language learning strategies. Hence, it will explore any strategic vocabulary learning regardless of whether the learners are applying the strategies consciously or not.

4.3.3   Capturing strategy use through traditional observation

Observation of language learners can facilitate the exploration of language learning and language learning strategies. Though, this method is not without limitations. The major limitation of such method in the context of language learning strategies is that these learning processes are not all visible. The strategies are usually mental and not observable. Some researchers are dismissive of this method (Cohen, 1987), especially when used in research centred on purely cognitive strategies. This also suggests that observation is not always limited in all research areas of language learning strategies. Precisely, investigation that is interested in sets of strategies that can be observed such as some meta-cognitive strategies (drawing a semantic map or taking notes), can use observation. Another main issue in employing this method is the practicality. Conducting observation on strategies or specific aspects of strategies should always be natural and authentic. The natural way of doing it can lead to ignorance of other important strategic practices due to the fact that the observer is busy observing another maybe interesting strategic event in the same setting. Therefore, the use of this method should be well-planned. To solve the practicality issue, more structured observation can be applied with more observers who should receive adequate training before they start. Furthermore, Takac (2008) described a study by O'Malley et al. (1983, as cited in Takac, 2008) as a more successful quantified version of observation which is thought to be only qualitative. Takac ascribes their success in quantifying the observation to the design and structure of their observation. The high degree of objectivity is an advantage of a well-structured observation. However, it should be noted that O'Malley and Chamot (1996) claim that the implementation of observation in O'Malley et al. (1983) was not fully successful. Takac's review of this method calls for adoption of a more concrete and well-structured use of observation. This included considerations and concerns that should be taken into account when deciding to use observations. For example, the role of observer as a researcher with already formed orientations

and prior expectations can be misapplied. This can lead to more subjective and maybe quicker conclusions. This consideration is true in cases where researchers play an additional role, such as teacher. The second issue regarding observations is the limited attention to one individual participant and neglecting the rest or excessive attention to one over the others, which can significantly affect the objectivity of this method.

This method of investigation, as discussed earlier, is more suitable to observe more visible strategies such as meta-cognitive strategies rather than mental such as cognitive strategies. The current research is interested in observing all sets of strategies; cognitive, meta-cognitive and social strategies. Thus, this method does not seem to be suitable for the purpose of investigation. Furthermore, this research is also dealing with evaluating the impact of a vocabulary learning strategies training course over an academic semester and its expected results cannot be immediately observable in the classroom setting. Its impact hypothetically goes beyond classroom time and settings, namely during study time inside classroom but also dominantly in every other chance of learning during daily activities. Another administration restriction was that the administration of the context where this research will be conducted refused any kind of intervention with students' normal language classes. Instead, they offered an extra supporting one hour class where attendance is compulsory and which has no influence on students' official marks and assessment. As a conclusion, observation is disregarded in this study for the reasons discussed earlier and for the reason that other research methods can be more suitable for this kind of study. The exclusion of this method comes in accordance with Marin's (2005) conclusion that this is the least useful method in this specific area of research, language learning strategies. While this research has decided not to use the traditional task-induced observation, it has found it informative in understanding the process of capturing strategy use. Evaluating observation as a method of capturing strategy use has informed the current research about practical issues that might be experienced in the real data gathering in other instruments such as observing learners' strategy use artefacts in their e-portfolio. The challenges experienced in observing strategy use are important in dealing with what learners can externalise from their mental processes in creating artefacts that reflects their vocabulary strategic learning.

4.3.4 Capturing strategy use through diaries

In the literature of strategic learning research, diaries were used to report learners' strategic behaviour over longer periods of time. Taking into account that the development of strategic learning of language usually takes a longer period of time, this method is viewed as appropriate to serve this purpose. This method works best with the hidden mental and cognitive strategies because learners are writing down their strategies (cognitive and meta-cognitive) after a learning situation. Matsumoto (1994) asserted that the aim of diaries is to capture the mental and

cognitive processes employed in a certain learning situation or language task. This method was praised by McGroarty and Oxford (1990) because of its potential for reflecting the development of strategies use over weeks, months or years. Retrospective reporting in diaries makes it similar to verbal reports because it usually does not occur during a learning situation or language task. This similarity with verbal reports according to Takac (2008) makes it subject to the same limitations as verbal reports. In addition, Takac indicates that it has two, more serious limitations. First, the diverse data gained from learners dairies is problematic because learners themselves choose what to include or exclude. This suggests that researcher can provide feedback from time to time to make the diaries more systematic. Second, the data collected from diaries can be overwhelming and then investigational objectivity might be influenced. In the same vein, Cohen and Scott (1998) claim that the random order of diaries entries and the quantity of data is a serious challenge in using this method. They, however, admitted that diaries can provide insightful information about language learning strategies. Though, this might lead to the impossibility of direct comparison between participants because of the open-ended nature of the diaries. On the other hand, Cohen (1998) found diaries to be a very effective pedagogical application more than research tool. He meant that asking learners to regularly write down the strategies they have used can make them more aware of their strategic behaviour and might improve their strategic repertoire. Furthermore, the nature of this method makes it very applicable to research that is more qualitative and focuses, for example, on specific sets of strategies in specific language tasks. Similarly, reflective journals and e-journals were also used for almost the same purposes (White et al., 2007). It is then relevant because it might serve the objectives of the current research. Therefore, the use of reflection in the dairies, journals and e-journals will be considered but in a new, innovative way. This is by incorporating an electronic portfolio that first, works as an effective learning tool, as claimed in Cohen (1998) and second, as a source of data that are generated in an authentic context of strategy use and language learning. This is true because the participants in the current research will receive instruction and training in VLS and will be using e-portfolio to document their learning and reflect upon it. In this proposed way, chances for systematic use of strategies will be offered to learners (pedagogical affordances discussed in chapter two) and equally ways of gaining learners authentic voices will be granted (Nyikos & Fan, 2007). It is the latter that is of particular interest to the methodology of the current research. Reflection upon strategy use and learning and the documentation of learning as pedagogical affordances of e-portfolio were discussed in chapter two. In this chapter, the role of them in capturing the learners' strategy use will be discussed in section 4.3.7.

4.3.5   Interview

Questions, previously prepared by researchers to be asked directly and verbally to an interviewee who is usually part of the study subject, are called an interview. Interviews are considered the most popular qualitative research instrument (Dörnyei, 2007). Interview is one of the earliest instruments used in accessing the learner's account regarding learners strategy use (White et al., 2007). It is still one of the key instruments used in LLS as it offers researchers flexibility to ask for more elaboration and clarification (Ibid), which is essential in exploring such complex and mental processes. These questions' order and word formation are carefully selected by researchers to gain a better understanding of a certain research problem.

The nature of the information needed from the interviewee decides the structure of the interview. Some research is interested in specific and direct answers which can be achieved by a fully structured interview. However, there are other types of interviews, according to Matsumoto (1994). There are structured, unstructured and semi structured interviews. Each type serves different foci and research problems and areas.

First, structured interviews have a set of predefined questions that need to be asked to the interviewees. The authority in this type of interviews is in the researcher's hand. He/she is the one who asks to make sure that the answer sticks to his/her research focus and interest. In this type of interview, there is usually less flexibility given to the interviewees to elaborate on their answers. The interviewee should give a direct and clear answer to the questions asked which usually come in a clear and direct form. This type of interview is seen by researchers (Matsumoto, 1994; Takac, 2008; White et al., 2007) as having a higher degree of objectivity compared to the other types of interviews that will be discussed later. The risk of researcher bias is minimised in this type of interview as the highly structured nature of the interview and the precise and predefined questions contribute to a more objective result (Matsumoto, 1994). The main disadvantage of this type is the limited, short answers that cannot be fully understood or accurately interpreted without more elaboration. This is true when it comes to describing complex learning processes such as strategic learning actions, steps and thoughts.

The second type of interview is the unstructured interview. In this type of interview, there is a higher degree of flexibility for both the researcher and the interviewee. The researcher can start with new discussion and material which can be expanded and elaborated more by both the researcher and the interviewee. From this explanation, it is evident that authority is shared by both the researcher and the interviewee to almost the same degree. The major advantage of this type of interview is the idea that the interviewee can endlessly elaborate and make clearer and better-explained answers. Similarly, the researcher can ask freely for more explanation to draw a better understanding of the interviewee's answers. Furthermore, this type of interview is ideal

for situations where reasons, feelings, opinions and beliefs are important to the research according to Ritchie and Lewis (2003). This type of interview can be highly subjective due to its unstructured nature in contrast of the structured interviews. The risk of losing focus and having overwhelming data, that may be sometimes irrelevant to the research problem and focus, is a major limitation of such type of interviews.

The third type of interview is the semi-structured interview. Predefined questions are usually prepared by the researcher in this type with a chance of tolerating interviewee elaboration and further verbalisation. Researchers can have some follow-up questions in case answers need to be further investigated. Dörnyei (2007) suggests that, in semi structured interviews, researchers can centre their interview on predefined themes with possible relevant questions to be pre-decided and asked. A good practice in this type of interviews is to ask the interviewee to confirm or deny their answers according to Kvale (1996). This practice can reduce the possible misinterpretation of the interviewee's answers and reduce the degree of subjectivity of the whole interview.

Interviews are usually conducted "based on one or more contexts, situations or task-scenarios" Oxford (2011, p.153). Offering the interviewee a degree of power and control is an advantage of the semi-structured interview according to Nunan (1992). He claims that the higher degree of flexibility the interviewee has compared to the structured type is another advantage of the semi structured interviews. From this discussion, it seems that the semi-structured interview combines the potentials of the other two types into one type. It, at the same time, reduces the shortcomings of the other two types. Additionally, this research method has been widely used in language learning research studies. For all of these reasons, semi-structured interviews will be utilised in the current research as they will offer chances for learners and researchers to elaborate about their strategy use and at the same time keep the focus. Giving learners such opportunities to reflect, elaborate and explain is essential in understanding the strategic learning of vocabulary in this research.

As language learning strategies area is concerned in the present research, Harris (2004, as cited in Chamot, 2004) uses the semi structured interview as a major research method in investigating possible first language learning strategies transfer to target language learning strategies. Another key study that proposed a guide for interviews in language learning strategies is O'Malley et al. (1985b). In this study they proposed and used what they called *Student's Interview Guide*. This guide: "asks learners to think about what they usually do when faced with familiar language tasks, such as pronunciation, oral grammar exercises, vocabulary learning, following directions, communicating in a social situation, and two levels of listening comprehension in class" (Oxford 1990, p. 195).

At the vocabulary learning strategies level, some studies used the interview method as a major research tool. Nakamura (2000) uses the interview to investigate vocabulary learning strategies. Likewise, Marin (2005) uses a semi-structured interview after a questionnaire to find out the real use of vocabulary learning strategies. His semi-structured interview included three important sections. Briefing is the first section of his interview, where he used ice-breakers such as talking about the city, the university or the interviewee hometown. The benefit of the ice-breakers is to get the interviewee as relaxed and as natural as possible, so his/her answers will be more authentic and reliable. In the briefing section, he introduces the purpose and the organisation of the interview. This should make sure that the learners' answers are about what he actually does and about what he ideally should do. Hence, he should assert and highlight this issue at the beginning of the interview. However, in the current study, a reminder of this fact will be used from time to time during the interview just to make sure that the participant is not describing what he should do. The final step in the briefing section is to answer any questions asked by the interviewee before the interview starts. Interviewees might sometimes need to ask for clarifications about the purpose of the interview or specific questions. The second section of the interview is the content-based section which means the questions that researcher is interested in. In Marin's case these questions were divided into 3 sections. The first section is about dealing with unfamiliar words. This section has one question and four follow up questions. This interview example is an ideal semi-structured type. It is neither fully unstructured nor structured. The answers of the interviewee decide which follow up question should be asked. In some cases, interviewees might not be able to identify their answers, especially when discussing strategies which some learners are not aware of. This is where follow up questions should help. Marin's first main question is " when you meet a new word, if it is not directly explained by the teacher or the book, how do you figure out its meaning?" Marin (2005, p. 343learners may not give a direct answer and sometimes they may tell anecdotes that are not relevant to the research interest. Thus, he prepared follow up questions if the answers were not covering the desires areas, because they are at the core of his research focus. If the answer of the interviewee did not cover guessing, dictionary use, skipping or social strategies, then he would ask these follow up questions:

1- Do you ever guess? How?
2- Do you ever use a dictionary? Monolingual or bilingual? What do you look up in the dictionary?
3- Do you ever skip new words and not bother with them?
4- Do you ask other people? Who? What information do you ask about?

(Ibid)

This scenario for asking questions in this section seems to be very similar to that which the current research is trying to investigate. The second part of the content-based section of this

interview is note-taking strategies. There was one main question about what notes learners take, where and how. Three follow-up questions were prepared in advance, similar to the first part. These follow-questions are:

1- Do you keep a vocabulary notebook? How do you organise it? Semantic maps? Drawings?
2- In general, what kind of information do you note down, regardless of use, in a vocabulary notebook?
3- Do you use word cards? Can you describe how you use them?

The last part of the content-based section of the interview was about memorising and repeating words. Similar to the previous two parts, one question was asked with seven followed by seven questions. The main question was: "what do you do to try to retain new words?" (Ibid). The follow up questions below were asked:

1- What kind of repetition? (Written/verbal, silent?).
2- What sort of associations do you use to memorise new words?
3- Do you seek out occasions to practise vocabulary and English generally? (Watching TV, listening to TV, listening to recorded vocabulary lists, internet).
4- Do you check words written on commercial products/items? How?
5- Do you put labels on objects?
6- Do you test yourself? Ask others to test you on vocabulary?
7- Do you use the vocabulary section of the coursebook?

(Ibid)

The debriefing section of this interview is crucial because it includes a review of the main points that the interviewee revealed. This is a chance for the participant to confirm or disconfirm what he/she just said. This practice is praised and recommended in research (Kvale, 1996). The debriefing is also an opportunity for participants to give a final comment or suggestion before finishing the interview. General final comments and suggestions by interviewees can guide the researcher to new dimensions that were not expected in the preparation of the interview questions which can be taken into account in the upcoming interviews. The present research finds the semi-structured interview as highly suitable for its focus which needs to have a clearer picture of the participants' vocabulary strategic learning before and after instruction. The reason for that is semi-structured interviews can be a rich source of data from which deeper information about participants' vocabulary learning strategies can be elicited. Giving the attention to the time such instrument can take, this research method is not always ideal for all kinds of research areas and aspects. The recording, transcription and analysis make it less easy to use. The translation of the content of the interview, if conducted in a language other than the research language, which is the case in the present research, makes it even harder. Another limitation of interviews is similar to the one discussed in the verbal reports when learners may not reflect all of the strategies they are using either because they do not remember them or they

are too complex to be explained in an interview. Another risk in interviews is similar to ones in questionnaires and some other methods in which learners may report strategies that they do not actually use to make some socially accepted statement to the interviewer. To resolve this specific issue, participants in the present study will be reminded from time to time during the interview that this is about what you are doing not what you should do. The atmosphere of the interview must always be free and safe to make the learners talk and answer the questions as naturally as possible, which is the practice recommended by Kvale (1996). According to Cohen et al. (2007), interview is not a natural conversation but rather structured and therefore researchers should try to create an interview situation that establishes an atmosphere of comfort. Such atmosphere would enable interviewees to engage to a greater extent with the interview enquiry. This research will adopt Marin's briefing and debriefing of the interview which can meet this recommendation by creating an atmosphere of comfort and authenticity.

Another step that this research will take is to conduct the interview in the participants' first language with examples in English to make it easier to understand. Cultural aspects in language learning strategies research and its methods should always be taken into account (Oxford, 2011). This includes using appropriate expressions and language in the interview. Therefore, socially accepted forms of greetings and expressions will be used in the interview to guarantee a higher degree of comfort among the interviewees. Cohen and Scott (1998) recommended that the interview should be conducted immediately after a task, or to contextualise the questions of the interview around a specific strategy use or situation. The reason for that is because interviewees' answers depend on their own evaluation of the mental processes of behaviours. Consequently, the current research will make sure that the strategies are fully understood by participants by explaining and elaborating more about them if necessary during the interview.

Some researchers have used interviews in combination with questionnaires as a supplementary instrument. However, to gain more reliable information from the participants, questionnaires might be utilised in this study to draw a better understanding of every learner's strategic vocabulary learning before and after the instruction. Hence, the questionnaires might be used as part of the triangulation process where the information from each instrument can confirm or deny the participants' strategies use.

4.3.6 Questionnaire

In the social sciences, questionnaires are considered a popular quantitative research instrument according to (Dörnyei, 2007). At the strategic learning level, questionnaires are the most commonly used instrument in strategic learning research (White et al., 2007). The capability to collect large amount of information in a relatively short time is what makes questionnaire appealing (Dörnyei, 2003). Questionnaires are not very different from interviews in concept.

Both usually seek similar sort of information, but questionnaires, unlike interviews, are usually more structured. The structured questionnaire should carefully choose the wording and the order of items. This practice of highly structured questionnaires gives the researcher more control of the variables that can affect the participants' answers.

According to Oxford (2011), questionnaires have been widely used as a research method in studies both in the area of language learning and outside this area. There are three main limitations of questionnaires in capturing strategy use (White et al., 2007). First, participants may not fully understand the different questionnaire items that describe a strategy. Second, participants might report strategy use that is not part of their real strategic repertoire. Third, participants might find it difficult to remember their strategy use in past learning experiences. Yet, the researcher will be available to the participants while they are taking the questionnaire to assist in clarifying and explaining any ambiguity in the wording of the items and in understanding the targeted strategies.

Questionnaires are also used for strategic assessment in second language learning. Oxford (2011) in her review of strategy assessment concluded that there are three different types of questionnaires. These are: "actual-task strategy questionnaires, hybrid strategy questionnaires, and general strategy questionnaires" (p. 156). According to Oxford, the actual-task strategy can also be structured or less structured and the aim of it is to ask learners about the strategies they just used in a language task. The second type is when a hybrid scenario has been given to learners to answer about what strategies they would use to deal with a language learning scenario. The idea of this type is to create a context for the questionnaire items. The last type is general structured strategies questionnaire. A well-known example of this type is Oxford's (1990) *Strategy Inventory for language Learning* (SILL). This type can be used for general and diagnostic purposes (Ibid). Some of the well-known general structured strategies questionnaires were widely used and praised for their high degree of reliability. However, this does not mean that all of them are suitable for all contexts and learning situations. For example, SILL by Oxford, which has been widely used in research within the area of language learning strategies, has been criticised for not being suitable for all sociocultural settings (LoCastro, 1994 as cited in Oxford, 2011).

Cautions and recommendations were raised by different researchers when adopting one of the general structured strategies questionnaires. Lan and Oxford herself in 2003 study made adjustments to her initial SILL to make it more suitable to the age and culture of their Taiwanese participants. Likewise, Lee and Oxford (2008) again added open-ended items to the structured strategies inventory. Other relevant recommendations came from Takac (2008) who also reviewed the research methods used in vocabulary learning strategies. She asserted that

ambiguity in the wording of questionnaire items should be avoided. Directing the participants' answers in the formation of the items are another issue that researcher should get rid of.

As the current research is interested in vocabulary learning strategies, it will adapt Marin's (2005) questionnaire which is based on well-designed and highly used questionnaire of Schmitt (1997). Nevertheless, the present research acknowledges that Marin's questionnaire is taking the logical sequence of vocabulary learning in second language into consideration. This is because this questionnaire is organised into three main sections that reflect this logical sequence, namely discovering the meaning of new words, taking notes about words, and remembering and retaining new words. This is very important in making learners think logically and accurately about their vocabulary learning. Such thinking might lead to more reliable answers and a valid reflection of strategy use. Furthermore, the adaptation of this questionnaire has helped in informing the research design and the instruction of VLS in the present research. This questionnaire was used as an organising principal that facilitates the understanding of learners' strategic learning of vocabulary.

Marin also recommended that this questionnaire should always be piloted when used in a different context which can raise the validity of the questionnaire. Following all the recommendations and cautions suggested in previous research, this research will pilot Marin's questionnaire in the context of the present study. The context of the present study is similar to Marin's context in that they are EFL contexts. Yet, the difference between the two contexts' linguistic and cultural backgrounds may have some influence on the items of the questionnaire. The main remaining limitation of using this questionnaire lies in the fact that it is not used after one specific task, since the interest of the current research is not to know specific strategies associated with fulfilling a specified task. The aim is to know learners' current strategic use before any training and after it. It is important to note that the participants in the present study are studying English as their speciality and thus are learning the language extensively. Hence, this extensive focus on language learning would provide a context for the questionnaire. In addition, the researcher will be available to the participants in case they face any difficulty in understanding any item because of the lack of task context. This way, limited answers from participants due to a lack of task context might be reduced since alternative explanations and assertions will be provided by the researcher during the questionnaire session. This research acknowledges previous research recommendation to use questionnaires in gathering data of strategy use (Oxford, 2011). This research will adapt Marin's vocabulary learning strategies questionnaire to capture the participants' strategy use. Procedures for adaptation of Marin's questionnaire including piloting, amending and translating the questionnaire will be followed. A full account of the questionnaire piloting, the amendments made after the piloting, the final English version and final translated questionnaire will be provided in 4.5.1.

4.3.7 Strategy use, learning documentation and reflection through e-Portfolios

The pedagogical and research affordances of portfolios (electronic version in this study case) are what makes it suitable to this research. Barrett and Carney (2005, p. 1) defined educational portfolio as something that: "contains work that a learner has collected, reflected, selected, and presented to show growth and change over time, representing an individual or organisation's human capital." They claimed that a critical aspect of educational portfolio is reflection upon learning. In their paper, they differentiated between the reflection on individual work and the general reflection on the whole portfolio. Both types of reflection are important and will be considered in the current research. The holistic type often generated by learners to reflect on the learning experience in general which is of particular interest in this research as it would provide insightful information about the process of developing strategic learning of vocabulary in a general sense. This might include reflection about the role of the e-portfolio in facilitating the process of building and improving strategy use which is one of the current research interests. Likewise, reflections specific to one component of the e-portfolio are equally important as they would give details about the specific smaller processes of learning. This is relevant to what this research is hoping to find out by looking deeply and closely at the learners strategic learning of vocabulary. With such specific reflections, insights and information, generated by learners in a hypothetically authentic context, about specific types of strategies and strategy processing such as clustering could be offered. These reflections would assist our understanding of strategy. Furthermore, such reflective practices could at the same time increase learners' meta-cognitive awareness of their learning (Rubin, 2003). Based on all of what has been mentioned above, reflection in the current research is seen as vital, as it should inform the current research about the learning process. As reflection often touches on complicated processes of learning, using only the target language might be challenging. Therefore, the current research will offer learners the freedom of choice in using the language they feel comfortable with. Hence, participants are instructed to use both their L1 (Arabic) and/or the target language (English) to reflect upon their learning and use of the taught VLS in their e-portfolios.

E-portfolio should function further beyond recording learners' accomplishments (Barrett & Garrett, 2009). It should function to effectively facilitate the process of learning and the process of recoding and documenting the learners' changes, achievements and growth by offering structured templates (Barrett & Garrett, 2009; Meyer et al., 2010). E-portfolio should not function as only an electronic copy of the traditional paper-based portfolio (Meyer et al., 2010). Furthermore, electronic portfolios can place the learners at the centre of a more personal learning environment which can offer more effective and dynamic accessible learning process. The effectiveness, dynamics and accessibility of e-portfolio can deepen learners' experience and

control of their learning. This, according to Meyer et al. (2010), can scaffold learners on two levels; their general learning experience and meta-cognitive skills.

Portfolios are viewed in previous research as a very "powerful way to assess L2 performance and strategy use for multiple levels of proficiency and varied cultures" Oxford (2011, p. 152). However, most previous studies used e-portfolio in language learning to focus on general language learning development. Some studies incorporated the portfolio into their language classes with a focus on second language development and strategies use at the same time (Donato & McCormick, 1994 as cited in Oxford, 2011). Another study that used portfolios in language learning strategies context is Yang (2003). In her study, Yang used a web-based form of portfolio mainly as a teacher portfolio. In other words, to deliver better language learning strategies instruction, Yang used the portfolios. Other studies acknowledge that portfolios can contribute in improving longitudinal development in the areas they are used (Vialpando et al., 2005). Portfolios hypothetically could promote self-regulation (Zimmerman, 2008). Perry et al. (2002) used the portfolio among other qualitative and quantitative measures. Oxford (2011) claimed that while the portfolio can be used as a strategy assessment tool, it can also be used as a strategy instruction tool.

The present research will make use of the portfolio at three major levels. First and foremost, portfolio used as a learning tool. The portfolio utilisation in this research is going beyond the assessment and teaching levels to reach the learning level. This research emphasises that this level is crucial as it would significantly contribute to our understanding of how learners use the taught strategies and the role the e-portfolio plays in it. Every learner will submit a portfolio that has evidence of and reflection on the strategies they have learned and used over a period of time specified in the research design and procedures. The use of portfolios as assessment of learning is beyond the focus of the current research.

Second, portfolios will be incorporated as a strategy instruction tool that can be used by the strategy training provider. In this case, the vocabulary learning strategies training provider will include presentation of the set of vocabulary learning strategies that need to be learned and used. In addition to the introduction of the vocabulary learning strategies, it will also include materials that provide opportunities for learners to practise the strategies. This use of portfolio makes it an ideal teacher or trainer portfolio with rich sources and materials for learners to access.

Third, this research incorporates the e-portfolio as a research method that assists in capturing the complex processing of strategic learning of vocabulary. This research views the portfolio as a significant research instrument for various reasons. First and foremost is that strategies learning and use do not only occur in class time, so other research instruments can be utilised to capture them. In fact, strategies employment is a continuous learning process that can be used in every

learning situation inside and outside classroom settings. The process of strategy use and learning documentation and the reflective statements upon their learning is essential both for the learners as it assists their learning, and for the researchers as it helps in drawing a better picture of the learners' strategic behaviours. The constructive development of vocabulary learning strategies documented in the learners' individual portfolios should provide very informative insights to the researcher. Portfolio utilisation offers learners more time to let the learning take place and then to document and reflect upon this learning. This is not the case in many other research instruments, that can put learners under research time restrictions and pressure, such as think-aloud protocols.

This research accepts that there is no perfect research instrument that fits all research purposes. As a conclusion, the previous evaluation and argument is used to highlight that the strategy use captured by e-portfolio is believed to be authentic, comprehensive and detailed. It should hypothetically reflect the general learning process and at the same time the specific smaller processes of strategy use. Such affordances are important at the pedagogy level but relevantly they are crucial in capturing the strategy use at the methodological level. This is one of the key contributions that this research is hoping to achieve.

4.3.8 Vocabulary assessment

Part of the interest of the current research is to trace the vocabulary learning development before and after instruction as an indication of the impact of strategy instruction on language learning. For this reason, the need for vocabulary learning assessment has emerged in this research. In the literature of vocabulary assessment two different directions are noticeable. First, researchers use vocabulary achievement tests to trace the learning of specified vocabulary items that have been taught to the learners (e.g. Ahmed, 1989) very early study. Second, researchers who are interested in the relationship between the use of vocabulary learning strategies and general vocabulary learning improvement, usually use a standardised vocabulary size estimator test.

Since the present research is not going to teach specific vocabulary items, specific vocabulary achievement tests will be disregarded. Consequently, a standardised vocabulary assessment tool will be employed to capture the participants' vocabulary improvement. Nation's (1990) test was found to have potential in this research as it is used to give estimations of students' vocabulary size and level. He proposed a vocabulary level test which was introduced to give teachers estimates of their students' level of vocabulary proficiency. Schmitt et al. (2001reviewed Nation's preliminary test and revised it. Then they proposed their reformed and improved form of the test which was praised by Nation. The literature claims that this test is well-designed, valid, reliable, clear, and easy to score, administrate and interpret results (Nation & Beglar, 2007). This test has been widely used as a measurement of vocabulary size (Marin, 2005). The

test comprises five different levels; 2000, 3000, 5000, 10000 words levels and an academic band. The test takes matching as its main format. Learners match words with their definitions. The definitions are given in a simplified way, so learners can understand them. Learners are offered six words and only three definitions available to them to match. So, three words are tested in every word level item. Every word level has ten items making a total of thirty words tested in every level. The maximum score of every word level is thirty. The following is a sample of one test item:

Copy

1- Event   _____ this moves a car
2- Motor   _____ end or highest point
3- Pity   _____ thing made to be like another
4- Profit
5- Tip

The test seems to be easy to administrate as claimed by Nation and Beglar (2007), which is treated as an advantage by the current research. The test format, by offering six different words with only three definitions to choose, from reduces the chance of getting the right answer just by guessing (Read, 2000). The ease of scoring and interpreting results is another advantageous aspect that made this test suitable to the context of the present study.

The rate of vocabulary development in second language learning is usually very slow compared to first language vocabulary acquisition. The different setting of learning and lack of opportunities for meaningful interaction make second language learning slow (Danilovic & Grujic, 2014). Vocabulary learning is a cumulative process that needs time to occur (Waring & Nation, 2004). Alothman (2014) claimed that while significant improvement of general vocabulary learning may not happen in a short period of time, academic vocabulary learning can be significantly improved in a shorter period of time. This is partly because the academic word level section of the test is derived from the 570 academic word families list initially proposed by Coxhead (2000), so it is a limited number of words when compared to the thousands of words in each general level. Based on that, and because this research is taking place in an academic context with participants studying TEFL as their major, it is believed that the academic band of this test is more appropriate. In terms of practicality, this test would make it possible to capture any improvement in the size of academic vocabulary because the study takes only one academic semester which is not significantly long to capture improvement at the general levels.

4.4 Participant sampling and background to the study

The study takes place in the Saudi EFL context at an emergent university. This university was established in 2009. It has a main campus and regional campuses in different towns. However,

the regional campuses are suffering from weak infrastructure due to the fact that most of them are rented buildings that are not fully equipped with what some departments might need. It should be noted that part of the ministry of higher education strategy is to provide every governmental university campus with what it needs with new buildings, labs and infrastructure. Staff on this campus is not offered any learning management system such as Blackboard. However, the university at the main campus offers Backboard to its staff and students to manage their learning. By stating all of that, it is obvious that the present study is dealing with a situation where technology as a learning and teaching tool might be seen as new to a certain degree. This might add more challenges and difficulties to the current research implementation. Therefore, this research has gathered some basic information about the available facilities to avoid any future disappointment. It was found that this campus has about 40 desktop computers with an internet connection. These were the minimum requirements that this research needs to apply its empirical study in this campus. By setting this scene, it is hoped that the context of the study is being made clear, so any possible challenges, findings and discussion can be understood in its context.

The participants of this research were recruited by adopting convenience sampling. According to Dörnyei (2007) this sampling approach is the most common in L2 research. It is based on the availability and access to the population. It is "usually partially purposeful, which means that besides the relative ease of accessibility, participants also have to possess certain key characteristics that are related to the purpose of the investigation" (Ibid, p. 99). Therefore, this research finds that students, who are studying the language itself and the researcher can have access to, are suitable for this research purpose. These specialized students are expected to be more reflective about the language learning process and thus their responses might disclose many unobservable aspects of strategies use and learning.

The researcher was given permission to access three sections of reading class taught by the same teacher. There were 19 students in each group. One of the three sections was randomly assigned as the experimental group who received instruction on VLS and e-portfolio. One of the other two groups was also randomly assigned to be semi-experimental who received only VLS instruction. The last group was assigned to be the natural control group who received no instruction other than the normal language teaching.

The subject of the present research is Saudi students who are enrolled in an English bachelor degree at a regional campus. The age of students is between 19 and 24. At the time of conducting this study, all participants were enrolled in the fourth of eight levels and described as intermediate. Students at level four usually had finished three academic semesters of language skills modules and a few specialised linguistic study courses.

4.5 Data collection and study procedures

The procedures of the current research began with ethical and administrative approval applications made to the host and the research institutions. The researcher submitted the required applications and forms through the Ethics and Research Governance Online (ERGO) system of the University of Southampton. The research was granted the ethical approval number 6822 from the University of Southampton in September 2013. Another approval application was submitted to the host institution Prince Sattam Bin Abdulaziz University in Saudi Arabia. The researcher received approval from the administration of the faculty of Humanitarian Studies at the university in September 2013 to carry out the pilot and the main studies with the English language department administration, staff and students during the academic year 2013/2014.

The researcher started the first step of the research by piloting the chosen questionnaire that was originally developed by Marin (2005). The piloting of this research instrument was suggested by Marin himself because he developed it from Schmitt's (1997) study in the Japanese context. Therefore, Marin claims that while Japan and Mexico are EFL contexts, the linguistic background should be taken into account and then piloting becomes more important. Items in the questionnaires that might fit in the Japanese or Mexican contexts may not be applicable or suitable in the Saudi context. The piloting of the questionnaire in the Saudi context is discussed in the following section. The piloting took place in the first half of the first academic semester of 2014 academic year in Saudi. In the second half of the first semester of this academic year, the vocabulary learning strategies instruction materials, vocabulary assessment tool and interview guide in addition to the final version of the tested and piloted questionnaire were prepared and made ready to be used in the main study in the second semester.

4.5.1 Piloting the questionnaire

As discussed in section Questionnaire4.3.6, Marin's questionnaire needs to be adapted for this research as it serves well the need for strategy use assessment. This questionnaire first needs to be piloted based on previous research recommendations (Marin, 2005; Schmitt, 1997). Likewise, this questionnaire needs to be piloted as it was originally developed in a Mexican context (please refer to appendix A to see Marin's questionnaire). As the current research study is in a Saudi context, the learners' characteristics as well as other contextual factors are expected to be different from the Mexican one. Linguistic backgrounds, for example, are significantly different, in that Mexican students in Marin's study speak Spanish as their first language while participants in the current study speak Arabic as their L1.

The first step of the adaptation process starts with general evaluation of what is relevant to the current study and what is not. Items that compare between Spanish and English in the

questionnaire were found to be not applicable in the current study as Arabic is a Semitic language while English is Latin. Therefore items such as "*I check if the word looks similar to Spanish*" and "*I associate new words with a similar word in Spanish (i.e. cognate, relation & relacion)*" will be removed. After removing inapplicable items from the original questionnaire, the process of piloting will start.

The second step taken in the process of adapting Marin's questionnaire is to translate the questionnaire into the participants' first language. The questionnaire was translated by the researcher into Arabic, the mother tongue of the participants, with the intention of reducing any language barriers in understanding the specific items of vocabulary learning strategies. However, translating the questionnaire was not a process without difficulties and challenges as it involves translation of some linguistic terminology of English which sometimes does not have equivalent in the students' first language. Examples used to illustrate the items were also not identical to the Arabic language. Therefore, a process of validation of the translated copy of the questionnaire was applied. Confirmation and consultations were sought from Saudi and Arabic speaking experts in the formation and revision of the early version of the translated questionnaire. Removing confusing words and unclear statements were the main focus at this stage. Eventually, the researcher translated the VLSI into standardised Arabic, the formal language of education in Saudi Arabia and most of the Arab countries. Finally, the translation was sent to a professional translator who holds a PhD in translation. One major comment was received from the translator, which is about a linguistic phenomenon in some languages called Diglossia. The daily life and communicational language that is spoken by people of most of the Arab countries are varieties of different dialects and colloquial language that does not necessarily have the same linguistic features as the official language of the country which is modern standard Arabic. Moreover, some linguists believe that uneducated Arab people treat modern standard Arabic as a second language in some cases (Abu-Rabia, 2000). It is believed that Diglossia, where spoken language is noticeably different from modern standard Arabic, the official language of government and the official institutional means of instruction, is a phenomenon that does exist in Arabic language. Therefore, the questionnaire takers who are 26 Saudi students might need more clarification about survey items because they are speakers of standard Arabic. Their local dialect and regional variation might have an influence of their understanding. In other words, they might experience some sort of inequality of understanding or expression due to this Diglossia. The researcher therefore decided to be in class with the participants to answer their questions if needed and write notes about these possible comments to be able to take them into account in the final version of the questionnaire afterwards.

The third step in this process is to pilot the questionnaire with a sample of participants that is similar to the target population that will participate in the main study. The piloting procedures

started by recruiting the students. This procedure began with an invitation to students to take part in the study after their normal language classes. The researcher was given the last 30 minutes of 4 reading classes to talk to around 70 students to recruit them. Recruiting students took a long time due to time conflicts issues with students' different timetables. After allocating time that suits all students, 26 students came to the meeting and participated in the piloting of the questionnaire. Students were asked to take the questionnaire and feel free to ask any questions they want. They were encouraged to ask questions about the clarity of meaning of the items, examples and sections if they were faced with ambiguity in them. It should be noted that the recruited students in the questionnaire piloting are students from Level 3 which is a lower level than the intended target population of level 4 students. The reason for choosing this particular level is that this sample is relatively similar to the target population but at a hypothetically lower level of proficiency and learning experience. As their level of proficiency is expected to be lower than the sample that will participate in the main study, it is expected that they will comment more on the meaning and clarity of the different items. Accordingly, it is supposed that if this questionnaire is found to be easy by this level, it will be much clearer and easier to the target students in the main study since they are at a higher level.

Previous studies suggest that the questionnaire needs to be piloted in an open mode (Marin, 2005; Schmitt, 1997) where student can have the chance to add and comment on the items of the questionnaire. One open-ended question has been added to every section of the questionnaire. It consists of 3 main sections and 3 subsections under each main section. Items between 4 and 12 were listed in each section with a total number of list items of 78 in addition to 9 open-ended questions. Piloting the questionnaire in an open mode would result in a more valid questionnaire that takes into account the Saudi context, the context of the study. This process should end in a more closed questionnaire with valid content for the Saudi context that can be used in the main study as one of the main instruments to evaluate the vocabulary strategic learning of the students before and after the strategy instruction. There are 3 main sections of the questionnaire. These sections are: Dealing with unknown vocabulary, Taking Vocabulary Notes and Memorising/Retaining. The section, Dealing with unknown vocabulary, has the following 3 subsections: *Guessing, Using dictionaries and other sources* and *Asking others.* Taking Vocabulary Notes has also 3 subsections: *Places where notes are kept about new words, Kind of information recorded about new words and Organisation of notes about new words.* Memorising/Retaining section has the following sections: *Repetition, Association to help retain words and Further practice/consolidation of new words.*

The fourth step is to amend the final questionnaire in light of the piloting results and recommendations. Most of the students' questions in the questionnaire piloting were about the terminology and lack of examples that explain the description of the strategies. For example,

grammatical categorisation was translated into Arabic as التصنيف الاعرابي, almost all students asked about this item. After a discussion with the supervisor it was suggested that using a translated Arabic version of the questionnaire might be the right choice, but also adding examples for unclear items can clarify the meaning. Therefore, examples for problematic terminology were added in the final version of the questionnaire. The irrelevant and inapplicable items such as the ones that contain associations between English and Spanish as discussed earlier were removed from the questionnaire. It was found that the open-ended questions might stay in the final questionnaire in case students in the main study want to elaborate more. Previous research usually recommends that the questionnaire can be piloted with open-ended items to reach a more closed and valid questionnaire. This is true and this research acknowledges its importance, especially in the study that is mainly quantitative. However, the current research is partially quantitative but mainly qualitative. The quantitative part of this research contains a low number of participants and subsequently it will be easy to deal with the open-ended items in it. After taking all of these amendments and recommendations on board, the required modifications were applied and the final English version of the questionnaire was prepared (see appendix I). Also, the final translated questionnaire (please see appendix H) became ready to be used in the main study.

4.5.2 Main study procedures

At the beginning of the second academic semester, students were recruited with the help of the English Language Department administration and staff. The recruited students were asked to take the questionnaire which took them about 40 minutes. The academic vocabulary test was administered after the questionnaire. The test took about 20 minutes because it is a matching test. Students were given a short break between the two sessions. Students were not allowed to use any source of help, including dictionaries and mobile phones. The second day, a meeting was conducted with the target group of students, who will receive both the vocabulary learning strategies instruction and e-portfolio support. After conducting the required pre-instruction instruments and assessment tools, the vocabulary learning strategies instruction started. The instruction includes one VLS instruction session every two weeks for the whole academic semester and one e-portfolio support session every two weeks for the whole semester. The total of the instruction is five VLS sessions and five e-portfolio support sessions. About nine vocabulary learning strategies were introduced, modelled and discussed in every session. Then students asked to learn and use these strategies in their language learning in their language classes and outside the class settings. Two academic vocabulary lists that contain 120 words of the total of 570 were distributed among the three groups after every instruction session. It is worth noting that learners were not asked to limit their learning only to these lists but were told to use the strategies in every possible situation of vocabulary learning. Students were asked to

submit an e-portfolio every two weeks including evidence of using these strategies and reflections about them. In the e-portfolio session, students were offered technical and practical assistance.

Table 1 shows the exact sequence of VLS and e-portfolio sessions that have been delivered to participants. Samples of lesson plans (Appendix C), teaching materials (Appendix D), teacher's e-portfolio (used as a teaching tool, Appendix E) and academic word list (Appendix F) were all added in the appendices of this thesis. It is important to highlight that the teacher's e-portfolio used in this study works as an online repository for the materials and resources about the VLS taught in class. This is to make the material available to the learners within the same portfolio project in case they want to refer to it. It also offers them chances for practising some strategies that were not practiced during the VLS instruction sessions because of the limited time. The teacher's e-portfolio was not used as a typical teacher's e-portfolio where teachers document and reflect upon their teaching to either revise and then improve their teaching or to showcase their teaching for employability purposes.

Table 3 Sequence of VLS and E-portfolio Sessions

Week	Taught VLS	e-portfolio Support Session	Materials and support
Week 1	First VLS session: DET Dictionary Use MEM Use Semantic maps MEM Group words together to study them SOC Discover new meaning through group work activity	e-portfolio support in the computer Lab	Teacher's e-portfolio (used as a teaching tool) contains extra materials for explanations and practice of the taught VLS + Distributing sub lists 1 &2 of the most frequent words in the academic word list according to the University of Nottingham list
Week 2	_____	e-portfolio support in the computer Lab	Computer lab equipped with desktop computer and internet connection
Week 3	DET Analyse part of speech DET Analyse affixes and roots DET analyse any available pictures or gestures SOC Ask teacher for a sentence including the new word SOC Discover new meaning through group work activity MEM Connect the word to its synonyms and antonyms MEM Group words together within a storyline COG Flash cards MET Use English-language media (songs, movies, newscast, etc.)	_____	Teacher's e-portfolio (used as a teaching tool) contains extra materials for explanations and practice of the taught VLS + Distributing sub lists 3 & 4 of the most frequent words in the academic word list according to the University of Nottingham list
Week 4	_____	e-portfolio support in the computer Lab	Computer lab equipped with desktop computer and internet connection
Week 5	DET Guess from textual context SOC Interact with native-speakers MEM Study word with a pictorial representation of its meaning SOC Asking teacher about new words	_____	Teacher's e-portfolio (used as a teaching tool) contains extra materials for explanations and practice of the taught VLS + Distributing sub lists 5 & 6 of the most frequent words in the academic word list according to the University of Nottingham list

	SOC Asking classmates about new words COG Written Repetition MEM Group words together spatially on a page MEM Use new word in sentences COG Take notes in class		
Week 6	_____	e-portfolio support in the computer Lab	Computer lab equipped with desktop computer and internet connection
Week 7	DET Word lists MEM Use 'scales' for gradable adjectives MEM Study the spelling of a word MEM Connect word to a personal experience MEM Use Keyword Method MEM Paraphrase the words meaning COG Use the vocabulary section in your textbook MEM Use Physical action when learning a word MEM Learn the words of an idiom together	_____ _____	Teacher's e-portfolio (used as a teaching tool) contains extra materials for explanations and practice of the taught VLS + Distributing sub lists 7 & 8 of the most frequent words in the academic word list according to the University of Nottingham list
Week 8	_____	e-portfolio support in the computer Lab	Computer lab equipped with desktop computer and internet connection
Week 9	Final VLS instruction session: MET Testing oneself with word tests MET Use spaced word practice MET Continue to study word over time MEM Use semantic feature grids MET Skip or pass new word MEM Study the sound of a word COG Keep a vocabulary notebook COG Verbal repetition MEM Say new word aloud when studying	_____ _____	Teacher's e-portfolio (used as a teaching tool) contains extra materials for explanations and practice of the taught VLS + Distributing sub lists 9 & 10 of the most frequent words in the academic word list according to the University of Nottingham list

	MEM Peg Method MEM Loci Method MEM Image word form COG Put English labels on physical objects MEM Underline initial letter of the word		
Week 10	_____	Final e-portfolio submission and e-portfolio support in the computer Lab	Computer lab equipped with desktop computer and internet connection

As the timetable above shows, every week there is a training session. In the first week, participants were taught the target VLS in classroom. They were taken to the computer lab on the second day of the first week to be introduced to the e-portfolio. New accounts were created for each student in Glogster, the nominated e-portfolio platform. All participants were added into the main educator account in Glogster where they can have access to their e-portfolios. Students were asked to sign in and out to make sure every student had an active account. Participants were asked to use the taught strategies in learning vocabulary in their formal language learning classes and outside classroom settings. This is to make sure that these strategies are used in all possible situations and contexts. Hence, the strategy use can be documented and reflected upon in the e-portfolio. Students were explicitly asked to document their learning and use of the taught strategies in their e-portfolio with all possible formats. Students were asked to think and critically reflect upon their learning and use of the taught VLS in the language they feel more comfortable to use. Therefore, the language of reflection might vary between their L1 (Arabic) and their L2 (English). Then, in the second week, students were provided with the second formal e-portfolio session where they received technical and functional support. By the end of the second week students were asked to submit their first e-portfolio. In the third week, students received the second VLS instruction session where nine new strategies were introduced to them. Later, students received support on the e-portfolio in week 4. Students submitted their second e-portfolio by the end of the fourth week. In the fifth week, nine new strategies were instructed to the participants in the VLS session. An e-portfolio support session followed in the sixth week. Students submitted their third e-portfolio by the end of the sixth week. In the seventh week, a VLS instruction session was conducted followed by an e-portfolio support session in the eighth week. Students submitted their fourth e-portfolio by the

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end of this week. In the last week of strategy instruction about 14 strategies were instructed to the students as it was the last session. In the tenth and last week of instruction, students received the final e-portfolio support session. Students submitted their final e-portfolio by the end of this week. After students submitted their last e-portfolio, students were interviewed, surveyed and tested. They were interviewed about their strategy use and about the use of the e-portfolio. Then they took the VLSQ that they had taken before the instruction to assess their strategy frequency of use. Finally they took the AVST that they had taken before the instruction to assess their academic vocabulary size. The data was stored and kept in a safe location and backed up. To summarise, the main study consisted of three stages; first, the pre-instruction instruments and assessment tools stage; second, the vocabulary learning strategies and e-portfolio instruction stage; and, third, the post-instruction instruments and assessment tools stage.

4.6   Evaluating and selecting the e-portfolio platform

The general main criteria of selecting the e-portfolio platform should be its suitability for fulfilling the objectives of the learning project (Hall et al., 2005). Jafari (2004) concludes that there are many challenges in developing and employing e-portfolios in educational contexts and beyond. This is particularly true as the available platforms nowadays still share most of their features with other general systems and platforms. The uniqueness of the e-portfolio as a pedagogy should be reflected in the system and platform development. However, Mobbs (2012) explains that any platform can be used as an e-portfolio if it takes into account the main principles and practices of portfolio such as documentation of learning and reflection upon learning. While there is much to do to improve e-portfolio development and use, the available platforms are believed to be effective tools that can be successfully implemented. Therefore, the following platforms will be evaluated to be considered in the current research study. The criteria are a mixture of what previous research suggests and what the current research wants to do with the e-portfolio. Therefore, the context of the study, objectives and participants will be considered in selecting an appropriate platform.

4.6.1   E-portfolio selection criteria

It is important that the process of selecting an e-portfolio platform or system should include a systematic evaluation of the available systems, software and platforms. Therefore, a process of creating an e-portfolio evaluation checklist was followed. It should be noted that this checklist was based on previous research recommendations but more importantly based on the current research objectives, participants and context.

Jafari (2004) highlighted what should be available in the e-portfolio platform or system for effective use. He emphasises the following points, easy usage and friendliness for the user, enough technical support, transportability and security of the platform, interoperability of the platform, features of accessibility, features of privacy and features to generate reports and usage of learners. Meta-level layer criteria and pedagogical criteria for selecting e-portfolios have been proposed by Himpsl and Baumgartner (2010). Most of the criteria and items in these meta-level and pedagogical lists are generic and can be applied in selecting e-portfolio. The following criteria are meta-level layer criteria:

- Collecting, organising, and selecting
- Reflecting, testing, verifying, and planning
- Representing and publishing
- Administrating, implementing and adapting
- Usability   (Himpsl & Baumgartner, 2010, p. 23)

The criteria for the pedagogical level contain three main points (Ibid). The first criterion is that the e-portfolio should belong to the learner not the institution. This means that learners should have full access and control to administrate the content of the e-portfolio. The data should be accessible and available to the learners when they finish their study at the institution. The second criterion is that the system of platform of the e-portfolio should not be used as a learning management system. As discussed earlier in the comparison between LMS and e-portfolio, they should be perceived differently as the objectives of each system are significantly different. The third point of the pedagogical level criteria is that selecting the e-portfolio system should be based on the needs and benefits of the individual learners. This means that the e-portfolio should not be used as an institutional competence management system.

The previous suggested criteria and points may not be identical to any context or case. Therefore, the specific context of the institution, course or even single study should be taken into account. As emphasized in Himpsl and Baumgartner (2010), this checklist is not intended to be fixed and suitable to all cases but rather can be changed and amended based on the needs of each individual case. The current research intends to implement an e-portfolio that would encourage learners to document their use and learning of the taught VLS and to reflect upon their learning. These two main principles and practices are the most important to the current research as they would facilitate the learning and using of strategies and equally would facilitate thinking and criticality about the use of them which might lead to higher and sophisticated use of strategies and thus development at both strategic learning level and academic vocabulary learning level. Bearing in mind these objectives, most of the available e-portfolio systems, software and platforms would be suitable to the current research. However, this study, for

practical reasons seeks a platform with easy account creation, and that is easy to use and at the same time has an attractive visual appearance that appeals to learners to participate actively in the study.

Based on the reviewed literature and the objectives of the current research, an evaluation checklist will be suggested to assess the different e-portfolio systems and platforms suitability and flexibility in fulfilling the current research objectives.

It is important to highlight that only three popular platforms, namely Pebblepad, Mahara, Taskstream and one nominated platform, namely Glogtster, will be evaluated in this research. The current research has become aware of Glogster after reviewing studies that shows the effectiveness of Glogster as a possible learning tool (Kent, 2010; Lightle, 2011; Carroll et al., 2012). This evaluation is limited to these popular platforms because it is only dedicated to the current research study and does not intend to be used for more comprehensive evaluation for institutions or for commercial purposes. Limiting the evaluation only to the popular platforms will make the efforts of evaluating the platforms more focused. It serves the current research objective of selecting only one platform that will meet the criteria created for this research.

To reach a checklist that is suitable to the current research study, a comprehensive list of criteria and points that come from different resources and from the current research criteria will be created. After that, the current research will decide what is applicable to the current research context, objectives and participants and what is not. The following table represents the comprehensive list that mainly comes from essential criteria of the current research, meta-level criteria of Himpsl and Baumgartner (2010), pedagogical level criteria by Himpsl and Baumgartner (2010) and essential criteria for effective e-portfolio implantation and development by Jafari (2004).

Preliminary Checklist

Section	Criterion	Applicable	Not applicable
Essential criteria for the Current research context, objectives and participants	Documenting learning	✓	
	Reflecting upon learning		
	User friendly	✓	
	Support at the technical level	✓	
	Attractive visual appearance	✓	

Meta-level criteria by Himpsl and Baumgartner (2010)	• Collecting, organising, and selecting		×
	• Reflecting, testing, verifying, and planning		×
	• Representing and publishing	✓	
	• Administrating, implementing and adapting	✓	
	• Usability	✓	
Pedagogical criteria by Himpsl and Baumgartner (2010),	• Ownership of the e-portfolio	✓	
	• E-portfolio not management system	✓	
	• Individual e-portfolio not institutional competence e-portfolio	✓	
Jafari 2004	easy usage and friendliness for the user,		×
	enough technical support,		×
	transportability		×
	security of the platform,	✓	
	interoperability of the platform,		×
	features of accessibility,	✓	

	features of privacy	✓	
	features to generate reports and usage of learners.		×

A number of criteria and points are either repeated between the three sections of the checklist or not part of the current research objectives. Therefore, these items that were marked as not applicable in the above table will be removed to create a refined list. The first removed item from the Himpsl and Baumgartner (2010) study is: collecting, organising, and selecting. This item was removed because it is already included in the current research essential criteria checklist. Similarly, the item: reflecting, testing, verifying, and planning was removed as it is repeated. From Jafari's (2004) list of criteria two items have been removed as they are repeated in the current research essential criteria. These are :easy usage and friendliness for the user, and, enough technical support. The transportability criterion from Jafari (2004) has been disregarded as it is not part of the current research to focus on the use of e-portfolio in the educational context and then transport it to the career context. This research does not intend to undervalue the transportability of e-portfolio criterion, but it found it irrelevant to its main objective where e-portfolio is used to facilitate and document the use and learning of taught VLS. Likewise, the interoperability criterion is perceived crucial in previous studies (Jafari, 2004; Cambridge, 2006; Grant et al., 2006). However, it is perceived irrelevant to the current research as it does not intend to interoperate the selected e-portfolio platform with any learning management systems used by the institution where the study will take place. Finally, features to generate reports and usage of learners were viewed less important in this research as the e-portfolio is not intended to be quantitatively used, instead the content of the e-portfolio will be used to look closely at how learners orchestrate their strategy use.

The initial table of the checklist has 21 criteria and points. After reviewing and evaluating the different items, a more refined and concise checklist has been reached. This refined checklist has 14 items. The following table represents the refined checklist that will be used to evaluate the four e-portfolio platforms (Pebblepad, Mahara, Taskstream and Glogtster).

Refined Checklist

Serial	Section	Criterion
1-	Essential criteria for the Current research context, objectives and participants	Documenting learning
2-		Reflecting upon learning
3-		User friendly
4-		Support at the technical level
5-		Attractive visual appearance
6-	Refined Meta-level Criteria proposed by Himpsl, K. and Baumgartner, P. (2010)	Representing and publishing
7-		Administrating, implementing and adapting
8-		Usability
9-	Refined Pedagogical criteria by Himpsl, K. and Baumgartner, P. (2010)	Ownership of the e-portfolio
10-		E-portfolio not management system
11-		Individual e-portfolio not institutional competence e-portfolio
12-	Refined Criteria proposed by Jafari (2004)	security of the platform
13-		features of accessibility
14-		features of privacy

The current research will use a scale of 1-3 with one as the lowest and 3 the highest to evaluate the e-portfolio platforms. If a platform gets 3 in one of the criteria it means it is has the strongest possibility to offer the assessed criterion or feature. Therefore, the four e-portfolio platforms

will be put in a table with the criteria and then a score will be assigned to each. The scores will be interpreted later to explain why each platform gets this score and to justify the selection of one platform.

Final Refined Checklist

Serial	Criterion	Pebblepad	Mahara	Taskstream	Glogster
1.	Documenting learning	3	3	3	3
2.	Reflecting upon learning	3	3	3	3
3.	User friendly	2	2	2	3
4.	Support at the technical level	3	3	3	2
5.	Attractive visual appearance	2	1	2	3
6.	Representing and publishing	3	3	3	3
7.	Administrating, implementing and adapting	3	3	3	3
8.	Usability	2	2	2	3
9.	Ownership of the e-portfolio	3	3	3	3

10.	E-portfolio not management system	3	3	3	3
11.	Individual e-portfolio not institutional competence e-portfolio	3	3	3	3
12.	security of the platform	3	3	3	3
13.	features of accessibility	3	3	3	3
14.	features of privacy	2	2	2	3
Total	Total	38	37	38	41

Before discussing the results of this evaluation, it should be noted that this evaluation is only suitable for the current research objectives, context and participants. It is not intended to be comprehensive or for commercial purposes that can be used by institutions. It was set to facilitate the process of selecting an e-portfolio platform that will work for the purpose of the current research study. As the scores show, the four platforms are not very different. The results show that Glogster was found to be the highest in terms of meeting the criteria used to evaluate the platforms. In the following paragraphs, this research will explain and justify each score given to a platform.

The first two criteria used in the checklist to assess the four e-portfolio platforms are documenting learning and reflecting upon learning. As these two elements are the key practices and concepts of the e-portfolio it is expected that all e-portfolio platforms offer them. This is true as all four platforms offer learners a medium for documenting their learning and for

reflecting upon learning. Therefore, this research accepts that all four platforms obtain the maximum score for these two criteria.

The third criterion is user friendliness. This criterion is important as the current research is not part of institutional or large institution of implementing e-portfolio. It is part of a research project where there is a limited time and a focused objective. Therefore, having an e-portfolio platform that is easy to use is vital for engaging participants actively in the use of the e-portfolio to generate appropriate data. In this criteria only Glogster gets the highest score as it is extremely easy to use. However, it should be noted that the other three platforms are also easy to use and they get 2 out of 3. This is because their layouts do not show the clarity and straightforwardness of Golgster. Mahara's layout, for example was found to be confusing (McNeill & Cram, 2011). However, these confusions and lack of clarity might be reduced with proper explanation and training on these platforms. However, since this research intends to introduce the e-portfolio to novice students with no prior experience of e-portfolio, it is essential to find a platform that is very easy to use and learn.

The availability of technical support is essential in introducing the e-portfolio, especially when it comes to the new students who will be using the e-portfolio probably for the first time in their life. This research finds all of the platforms provide sufficient online technical support through their websites and through tutorials on YouTube. This makes technical support available to and accessible by students which should ease the process of using the e-portfolio. However, the amount of available support and video tutorials for Glogster is less than that available for the other platforms. This may be due to the fact that Golgster is quite a recent platform compared to the other platforms. Another reason is that Glogster provides services other than the e-portfolio. The e-portfolio is only one feature of it. In addition to that, Glogster is mainly used in the United States rather than Europe and the rest of the world. Although, sufficient technical support is available in Glogster, the quantity is less than in the other three platforms. Hence, Glogster was assigned 2 out of 3 while the other 3 platforms assigned 3.

The attractive visual appearance was set as an important criterion that this research pays attention to, as it can encourage learners to be actively engaged in using the e-portfolio. In this sense, Pebblepad and Taskstream have nice layouts. They have some colours and different layouts and customisation tools, but sometimes it is found to be confusing. Mahara is poor when it comes to the richness of colour, layout and customisation tools, which are perceived by the current research to be important to motivate more learners to actively use their e-portfolios. The uniqueness of the Glogster platform is that it is based on simple but rich and beautiful graphical design. Using interactive and beautiful coloured graphics might make Glogster more appealing to participants.

In regards to the representing and publishing criterion, all platforms were found to be similar in offering features for representing and publishing work. They all offer full control for the user to design, adjust and publish in various ways and formats to almost the same degree. It depends mainly on what the instructor wants learners to do with their e-portfolio. Some designs put restrictions on what to publish to represent learning, but in terms of technology these four platforms offer learners full control to publish and edit what they want. In the current research, no restrictions will be imposed on learners other than encouraging them to document their learning and use of the taught strategies and to reflect upon their use and learning of these strategies. In terms of formats of the evidence of learning almost all of the four platforms offer learners the opportunity to document their learning in any format, including: text, video, audio, photos. This research will not restrict the learners to specific formats. Instead, it will encourage them to document their learning in any format, digital or traditional. This means that learners will be able to record their traditional learning evidence by taking photos of them and including them in their e-portfolios.

The four platforms afford full control by the users in creating, administrating and editing the e-portfolio, as discussed earlier. This is one feature that corresponds with the administrating, implementing and adapting criterion. Another important feature in this criterion is that these four platforms are found to be compatible with most operating systems and can be implemented on different devices. Likewise, all of them offer an easy way to export the data and the whole e-portfolio into other formats such as PDF. Generally speaking, the users in the four platforms are offered the required technology to administrate, implement and adapt their own e-portfolio with more or less the same degree of flexibility. For all of these reasons, all four platforms were assigned 3 in the administration, implementing and adapting criterion.

The general usability of the platforms forms the eighth criterion of the evaluation checklist. This includes the storage limits the evaluated platforms offer. Nowadays, these platforms offer good storage size that is suitable to the current research use, although Glogster offers unlimited storage. However, as they all offers storage size that will work for the purpose of the current research, they are all considered similar. Glogster offers a quite good number of ready-made templates that can be used for the e-portfolio while also allowing learners to create their own. Furthermore, the navigation between the different portfolios, files, folders and layouts is extremely easy in Glogster. The navigation in the other platforms, especially in Mahara, is not difficult but it is not as easy as in Glogster. For all of that, Glogster was found to be more efficient in terms of the general usability of the platform.

The ownership of the e-portfolio is a criterion perceived to be important in this research. Thus, it is important to check if the evaluated platforms offers such ownership. All four platforms offer

ownership of the e-portfolio to the user. Access to the e-portfolio is permitted only to the end users, who are the participants in the current study. Although Glogster includes learners' accounts under the instructor accounts, participants will have independent lifelong access to their personal e-portfolios. The linking is just a way to ease the process of signing up and enrolling participants in the e-portfolio.

The selected e-portfolio platform should serve as an e-portfolio and not as a class management system or learning management system. This criterion is perceived important in this research as part of its focus on evaluating the role of the e-portfolio in students' strategic learning of vocabulary. The four evaluated platforms are either dedicated e-portfolio platforms or e-portfolio is an independent dedicated feature within the larger platform. Therefore, the current research found the four platforms equal in offering this criterion. It is beyond the focus of the current research to investigate the integration of e-portfolio into an institution or learning management systems. Therefore, the selection of an e-portfolio platform should be based on its suitability and effectiveness for individual learners and not for an institution.

For ethical reasons, all efforts must be made to make sure that the use of e-portfolio is safe and secure for the participants of the study and thus having a high degree of security in the selected platform was among the key criteria. This research found the four platforms fairly secure with private email needed for signing up and for resetting of passwords if required. The four platforms suggest strong passwords to add a higher degree of security. This research will also provide more advice on security in the e-portfolio training sessions, especially at the beginning when participants sign up for their e-portfolio account.

The last two criteria are the accessibility and privacy of the selected platform. In regards, to accessibility, all platforms offer online web folios that can be accessed anytime and anywhere. They all offer either a mobile application or a mobile browser version of the original e-portfolio platform. This is believed to be useful as learners increasingly use mobile devices in their learning. In terms of privacy, users in the four platforms can specify who can see their e-portfolio. They also can share their e-portfolios with specified other users of the e-portfolio platform. Users in all four platforms can share their e-portfolios with externals who do not necessarily have accounts for the same platform. Therefore, this research found the four platforms to be similar in these two criteria.

After evaluating and assigning scores to the four platforms as shown in the table above and the explanations under it, it was found that Glogster scores the highest with 41 points. Pebblepad and Taskstream both score 38 points. Mahara scores the lowest with 37 points. The results are not very different which indicates that any platform might work adequately. However, the current research will use Glogster as it proves to be the most efficient platform based on the

proposed evaluation. After selecting Glogster as the e-portfolio platform in this research study, a review of how it can be used will be provided in the next section.

4.6.2   Glogster E-portfolio

Glogster e-portfolio offers a set of tools for documenting and reflecting upon the learning. First of all, Glogster e-portfolio gives the instructor or educator a main account that allows him/her to enrol the students under it. This is to ease the process of signing up new accounts for students if they do not already have a Glogster account. It offers easy account creation for users with a Google account. This makes account creation easier as most of the students have Google accounts. Students can be invited to the main educator account and once they accept the invitation they become enrolled in the teacher's e-portfolio project.

The main educator account cannot edit the content of the students' e-portfolio. It administrates the project and can create a teaching portfolio. The teaching portfolio has been used in this research study to work as an online repository for the materials and resources about the VLS taught in class. This is to make the material available to the learners within the same portfolio project. The main educator account can view all the student e-portfolios under the main tab. This is also true for the other students as they can view each other's e-portfolios and the materials and the resources about the VLS under the main tab in the student view. However, neither the teacher nor the students will be able to view the e-portfolios until students make them public to everyone in this project including the teacher. Therefore, Glogster creates a closed community for the students but also offers features of sharing with other students and externals without risking students' privacy and online security.

Glogster offers learners ready-made templates that they can use or learners can create a new template for their e-portfolios. As shown in the picture below, once students click on 'create new glog', they are offered the option of using ready-made templates or creating their own. Once they choose a template, a variety of actions are offered to them. As shown in the picture below, they can add text, graphics, image, wall, audio, video and even data. In addition to this, they can add attach files to the glog as shown in the top right. Consequently, learners will have the chance to document their learning with evidence in any formats. This usually encourages them to document their learning in all possible ways and all possible situations as they are offered flexibility of formats. Hence, this should provide more varied evidence of their learning.

Variety of actions offered to users
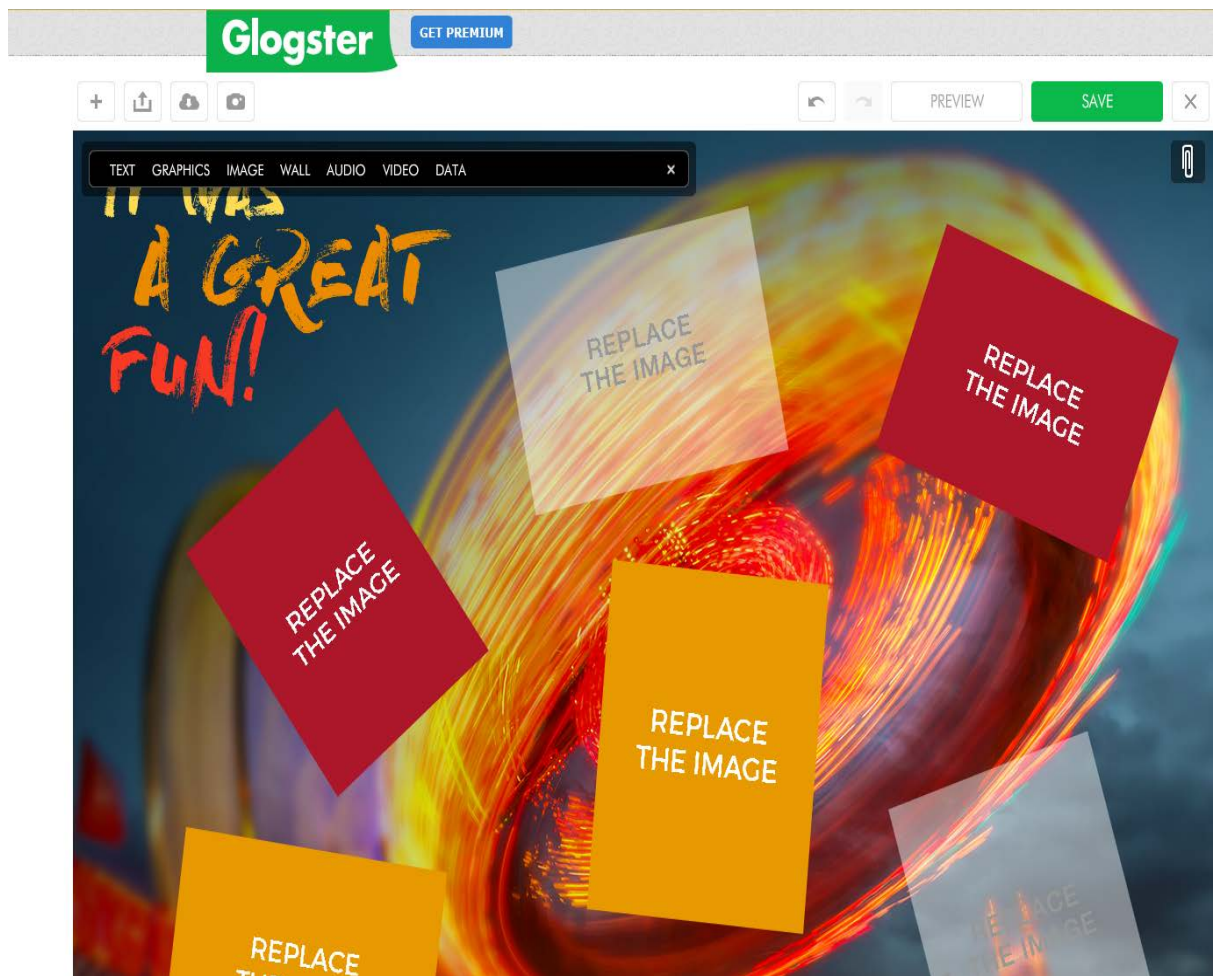
The graphical and colourful templates offered to students might attract their attention and
motivate them to engage more with their e-portfolios. These templates are usually organised
based on the subject area to make the selection more appropriate, however, most of the
templates would work for all subjects. The following are just examples of the templates
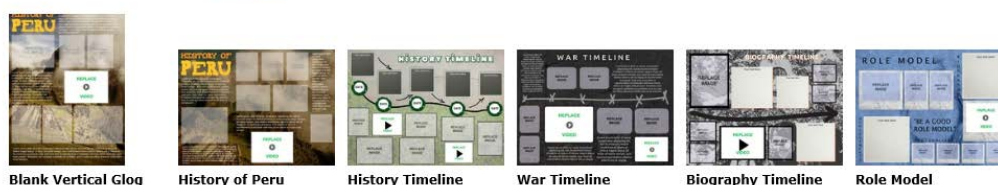available for students to choose from:

Sample of the available templates

Students can include external links that are relevant to their learning and strategies use. The e-portfolio content can be completely digital or it can contain photos of traditional materials used in their strategic learning. The following picture shows a sample of a participant e-portfolio which includes text and also an external link to a clip from the BBC Learning English YouTube Channel. The second picture shows another student's e-portfolio that has photos of traditional paper-based evidence of learning about note taking strategies and a number of other materials including videos explaining how to use note taking effectively. This section is included to explain what can be done with Glogster e-portfolio platform to document and reflect upon learning. How these tools can facilitate the process of strategic development is discussed in the findings and discussion chapters.

5

example of my vocabulary notebook

1- prepare: to make something ready.
تجهيز - تحضير - تهيئة

2- speculate: guess about something.
تخمين - تَوَقَّع

1) reference and preference. they are similar. i know preference before but reference is new to me. prefernce mean what i like but refernce which is similar means books i need to write new book.

2) Whale and while. they are similar. i know while before but whale is new to me. While is about time but whale is very

I find it useful to skip and pass any difficult word. This helps me to feel good when i learn. If i do not understand many words, i may feel bad about my self and do not learn better.

I use BBC Learning English Pronunciation. They help with how to say sounds. I like to learn from native speakers and see how her mouth moves when she pronunce the sound. it improves my speaking.

bbclearningenglish.com

minute /ˈmɪnɪt/

Sample of an e-portfolio containing photos of traditional paper-based evidence of learning
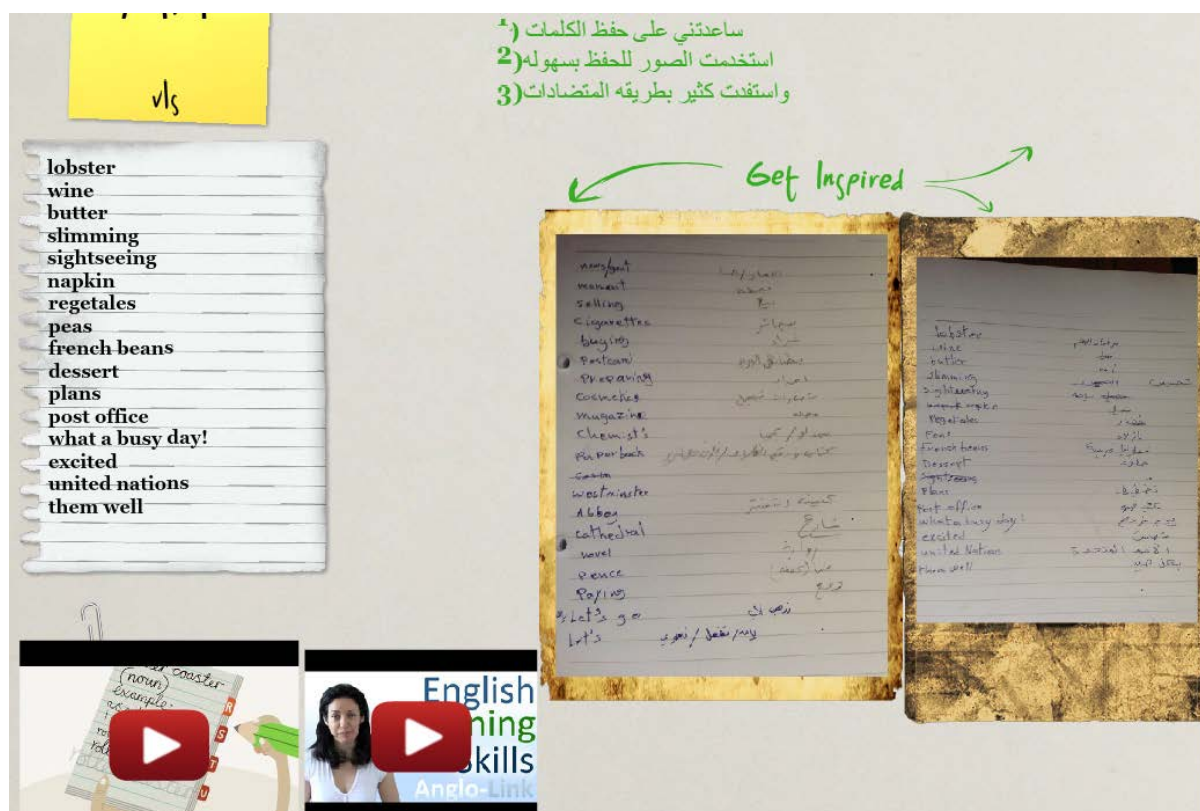
Finally, it is worth mentioning that the teacher's main account was used as an online repository for all the teaching material and resources that have been taught to the learners in class about vocabulary learning strategies. It includes the list of strategies taught to them and all the materials that would offer learners the chance to practise the strategies. The teacher's e-portfolio was not used as a typical teacher's e-portfolio where teachers document and reflect upon their teaching to either revise and then improve their teaching or to showcase their teaching for employability purposes. The following picture is a sample of a teacher's online materials and resources about the taught VLS.

Sample of main VLS online repository for materials and resources

4.7 Data coding and analysis

A data coding process was followed to systemise the data analysis. According to Lockyer
(2004) data coding is a "systematic way" in which extensive data can be turned into smaller
parts that can be analysed. All interviews were recorded and then transcribed into text. A
process of revision by listening and pausing the audio were followed to ensure accuracy. A
sample of transcriptions was compared with another transcriber to ensure that transcription is
not different. Later, all transcribed interviews were organised and inserted into MAX QDA,
special qualitative data analysis software that supports Arabic language, as the interviews were
conducted in Arabic. Regarding the e-portfolio, all participants' e-portfolios were printed in
PDF format. Then each participant's e-portfolio and transcribed interview were organised in one
document group in MAX QDA software like the screenshot below:

Figure 1 Documents Group in MAX QDA Software
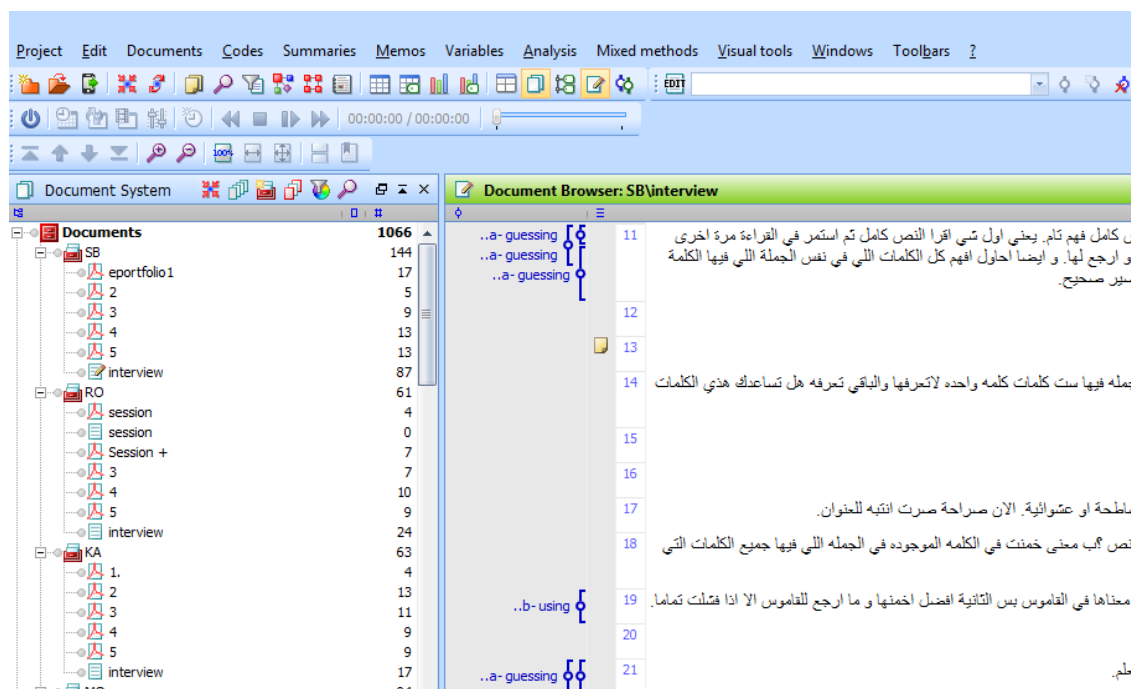
After that, the process of thematic analysis of both the interview and e-portfolio was started. Data analysis can begin with predetermined themes that have been proposed to address the research problem. Themes created to analyse the data can be predetermined and can also emerge from the data (Stuckey, 2015). In the current study predetermined themes acquired from Marin's taxonomy (2005) and themes emerging from data were both used. This approach assures a focused and structured deductive analysis and at the same time does not risk losing new, emerging concepts that can be found in the data. Some new themes were added as they emerged from the data; especially, e-portfolio (see the screenshot below for an example of coding system). Coding systems were revised and changed during the process of analysis.

Sample of coding system in MAX QDA

Statistical Package for Social Sciences (SPSS) version 21 was used to analyse the results from VLS questionnaire and academic vocabulary size test. Before starting the analysis, appropriate coding of questionnaire items and test results was followed. Missing values in the questionnaire were dealt with. Descriptive statistics were used to identify the central tendencies and distributions. Normality tests were conducted to decide the right tests. Paired and independent t-tests were conducted to compare performances. Confirmation and consultations about steps, tests and results used in analysing the data were sought from an expert in SPSS at the University of Southampton. Finally, a part of the ethical considerations of this research is to keep the participants' identity anonymous. Therefore, in any reporting of the results, this research will give participants a code instead of using names or numbers to avoid giving any details that might lead to identification of participants.

Chapter 5: VOCABULARY LEARNING STRATEGY AND ACADEMIC VOCABULARY PERFORMANCE

5.1 Introduction

This chapter is devoted to the quantitative findings of the research. It comprises the results of statistical analyses of performance by three groups in academic vocabulary size test (AVST) and vocabulary learning strategies questionnaire (VLSQ). The first group is the experimental group, who received instruction and training on VLS and e-portfolio. The second group is the semi-experimental group who received training only on VLS. The third group is the natural control group who did not receive any instruction or training on VLS nor on e-portfolio. The quantitative findings of the present research focus on the impact of the approach used in the current study in two main areas: the first is participants' performance in academic vocabulary as assessed by the academic vocabulary size test (proposed by Nation, 1990 and improved by Schmitt et al., 2001); the second is participants' vocabulary strategic learning, as assessed by adapting Marin's (2005) questionnaire. The research questions related to the quantitative data in this chapter are:

1- What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduate's academic vocabulary size?

2- What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduate's vocabulary strategic learning?

This chapter is organised around these two questions, so the first section deals with participants' academic vocabulary performance and the second section reports participants' vocabulary strategic learning. It is important to note that this chapter aims to report and interpret the quantitative results but deep discussion, elaboration and complete answers to the research questions are provided in the discussion chapter in light of these quantitative results. This chapter concludes with an overview and summary tables of the quantitative findings.

This chapter is the first findings chapter. The other two findings chapters report the qualitative findings that mainly come from the post interview and e-portfolio content: Chapter 6 introduces the findings from participants' post interview and e-portfolio based on the pre-determined themes of the study that come mainly from Marin's taxonomy; Chapter 7 presents the

qualitative findings about e-portfolio and the orchestration of VLS based on themes emerging from the data analysis.

5.2   Academic vocabulary size test (AVST) results

5.2.1   Comparison between groups before instruction

A pre-instruction AVST (see section 4.3.8 for more details and appendix G for a sample) was administrated in the current research study to establish whether any significant difference existed between the three different groups (experimental, semi-experimental and control). The scores in this test of the participants in the three different groups have been put in datasets in SPSS to run the appropriate tests.

In order to decide the appropriate means comparison test, the normality of data distribution was checked. Normality distribution test was conducted and the significance value of all three groups' scores was 0.036 as shown in Table 1.

Table 1: Shapiro-Wilk test

Normality test	Shapiro-Wilk		
	Statistic	df	Sig.
All groups	.956	57	.036

 We can see from the table above that the data of the mean scores of participants in control, semi-experimental and experimental groups on the AVST taken before instruction is not normally distributed because the significance value is not greater than 0.05. Therefore, Kruskal-Wallis test was conducted to compare the three groups' scores. Table 2 below shows that the *P* value is greater than 0.05.

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Table 2: Kruskal-Wallis test

	N	Minimum	Maximum	Mean	Std. Deviation	Sig
Experimental	19	7.00	22.00	13.105	4.254	
Semi	19	5.00	25.00	12.842	5.428	.970
Ctrl	19	5.00	24.00	12.947	4.564	

 Hence, it was found that there was no significant difference between the three groups' performances before instruction at the beginning of the second academic semester. In other words, performances among the control (M=12.95, semi-experimental (M=12.84 and experimental (M=13.11) were very similar with no statistically significant difference. It is worth noting that the three groups comprised three different sections of one reading class where the teacher divided the students on these sections based on a distribution of GPA, which means that there was a degree of similarity across the three groups in terms of good and poor learners. This was reflected in the pre-instruction AVST results. The procedures for finding the normality of data distribution will be followed in all sections and comparisons throughout this chapter. However, the procedures and the value of the normality will not be reported and only the means comparison tests will be reported.

5.2.2   Comparison between pre- and post-AVST within groups

The scores of the post-AVST for each group were compared with the pre- scores for the same group to determine any change in performance. As stated in section 5.2.1 the same procedures of normality test were followed. In comparing the scores of the control group, the Wilcoxon Signed Ranks Test has been carried out as shown in Table 3 below. The results of Wilcoxon Signed Ranks Test show that there is a significant difference between the participants pre- and post-AVST scores ($p < 0.05$). That is, the pre-test score (M=12.947 has increased to be (M=14.89) in the post-test. This indicates that the group has significantly improved in their academic vocabulary gains over the period of almost one academic semester.

This result challenges the idea that natural control group, who received no training of VLS or e-portfolio, would not significantly improve. Part of the explanation of this result is that the subjects in this group and in the other groups as well are TEFL major students who are studying the language itself to be language teacher in the future. Therefore, it can be assumed that they are highly motivated and advanced learners. Likewise, in reporting many vocabulary size

studies, Milton (2009) claims that an estimate of 200-400 and 400-600 words can be learned in one year. Taking this into the account, learners in the control group who are studying English as their major would be expected to improve their vocabulary learning probably with a reasonable statistical significance level. Accordingly, it will be important then to compare between the results of the post-test of the three groups to see if the size of improvement differs between the control and the experimental and semi experimental groups. A full account of post-test comparisons between groups will be presented in section 5.2.3.

Table 4: Wilcoxon Signed Ranks Test (control group)

Group	AVST	N	Min	Max	Mean	Std. Deviation	Sig
Control	Pre	19	5.00	24.00	12.947	4.564	.000
	post	19	8.00	27.00	14.894	5.424	

With regard to the semi-experimental group, the pre- and post-test scores dataset was prepared to run a means comparison test. The value of the paired sample t-test as shown in Table 4 below is significant ($p<0.05$), indicating a significant difference between the scores of the semi-experimental group pre- and post-AVST. Specifically, it indicates that the participants' pre-mean score in the semi experimental group (M=12.8) has significantly increased in the post-test (M=16.2). The results of this group who received training on VLS are expected because of the consensus in the literature that VLS instruction is helpful and can offset a deficit in learning (Grenfell & Macaro, 2007). It also comes in line with other studies of language learning strategies (LLS) that link language proficiency improvement with the use of LLS (O'Malley et al., 1985a; Green & Oxford, 1995) and between VLS and vocabulary proficiency (Alyami, 2011; Marin, 2005; Gu & Johnson, 1996). It should be noted that the control group has also significantly improved which challenges the idea that instruction of strategies can lead to better learning. Therefore, this research again sees importance of comparisons between the different groups post-AVST which will be presented in 5.2.3 section. Such comparison could capture the size of improvement that can support the assumptions of this research that expect significant improvement in the experimental and semi-experimental groups' performance in the AVST.

Finally, the comparison between the means of the target experimental group participants' scores in AVST before and after the instruction as shown in Table 4 below indicates that there is a significant difference ($p<0.05$). In other words, the participants mean score before instruction (m=13.10) has significantly improved in the post-test mean score (M=20) after

instruction on VLS and e-portfolio. This indicates that instruction might have an impact on learners' academic vocabulary gains. Such argument cannot be justified without comparing the improvement size of the other two groups as they also significantly improved. As the post mean for the three groups varies (control M=14.9, semi-experimental M=16.2, experimental M= 20), comparison tests between the different groups will be performed to check whether this variation in the improvement size is statistically significant or not. This will be presented and elaborated in the next section.

Table 5: experimental & semi experimental paired sample t-test

Group	AVST	N	Min	Max	Mean	Std. Deviation	Sig
Semi-experimental	Pre	19	5.00	25.00	12.842	5.428	.000
	post	19	10.00	27.00	16.210	4.460	
Experimental	Pre	19	7.00	22.00	13.105	4.234	.000
	post	19	13.00	27.00	20.000	3.148	

5.2.3 Comparisons between the groups after instruction

This section will demonstrate the results of statistical comparisons between the participants' performances in the post- AVST. It will bring the scores of the three groups together to perform the relevant test. It will run a comparison between the experimental group and the control group and between the experimental and the semi-experimental group. Likewise, it will compare between the scores of the participants in the semi-experimental and the control groups.

To start with, the three groups' post-test scores will be put together to run a test that can analyse the variance of the three groups to decide whether there is any significant difference between their scores. The analysis of variance (ANOVA) test was used to compare between the three groups. The results in Table 5 show that there are significant differences between the three groups ($P<0.05$). ANOVA significance value alone does not indicate which group outperformed the others. As a result, it is important to run multiple comparisons post-hoc tests to be able to decide which group performance is statistically better than the others.

Table 6: Post-AVST ANOVA

All groups ANOVA	Sum of Squares	df	Mean Square	F	Sig
Between Groups	266.982	2	133.491	7.580	.001
Within Groups	950.947	54	17.610		
Total	1217.930	56			

Table 7: Post-hoc Multiple Comparisons

Post-hoc Multiple Comparisons	Mean	Mean Difference	Sig
Experimental	20.000	5.102	.001
Control	14.894		
Experimental	20.000	3.789	.020
Semi	16.210		
Semi	16.210	1.315	.601
Control	14.894		

The results of the post-hoc comparison test between the experimental (M=20.0) and control (M=14.9) groups demonstrate a significant difference (P<0.05) as shown in Table 6. Accordingly, the experimental group has outperformed the control group significantly. This indicates that the experimental group, who received instruction on VLS and e-portfolio, performed better than the control group in the post-AVST. This could support the main research assumption claiming that the VLS instruction could improve the academic vocabulary size and that this improvement could also be accelerated and facilitated if it is provided within a learning environment that enhances the strategic learning of vocabulary and learning management. This environment in the current research context is the personal developmental

learning tool of e-portfolio. However, since the comparison in this section is between a group who received training on VLS and e-portfolio and a natural control group who did not received any instruction other than their normal language teaching, the result might be expected. What will be more interesting is to compare between the group who received instruction only on VLS (semi-experimental) and the experimental group who received e-portfolio instruction in addition to the VLS. In this way, the research might be able to discern some impact from the provision of the VLS instruction being in a personal developmental learning management tool, namely the e-portfolio.

The post-hoc multiple comparisons table above shows a significant difference ($P<0.05$) between the experimental post-AVST mean score (M=20.0) and the semi-experimental post score (M=16.2). This comparison is also in favour of the experimental group. This result can provide support to the main research assumption that emphasizes the role of e-portfolio as a personal developmental learning tool that encourages more systematic use of the taught strategies in a consistent way. The group who received VLS instruction and were left to use them on their own, like many other studies in the literature, significantly improved but not to the same degree of success as the e-portfolio group. This could indicate that providing the learners with such environment as assures regular use of the taught VLS could be a new, effective method of VLS instruction. This will be supported by the findings of VLS use and learning questionnaire and whether the e-portfolio has increased the learners' strategic vocabulary learning, because the importance is not only in linguistic development but also in the strategic learning that could lead to lasting and consistent linguistic development. This will be checked and presented in section 5.3 where comparisons between groups are conducted in regard to their strategic vocabulary learning through the VLSQ.

The comparison between the semi-experimental group and the control group would provide insights about the possible impact of VLS instruction on academic vocabulary performance. Taking into account the wide support in the literature of VLS instruction leading to better vocabulary proficiency, it important to check if the result of such comparison will also coincide with the literature. The results shown in the post-hoc multiple comparisons table show that there is no significant difference ($P>0.05$) between these two groups. In other words, the difference between the mean scores of the semi-experimental group (M=16.2) and the control group (M=14.9) is not statistically significant. This does not conform with many studies in the literature (Alyami, 2011; Marin, 2005; Gu & Johnson, 1996) that revealed correlations between the VLS use and vocabulary improvement. The low statistical power might be the reason behind this variance with the literature. In other words, the number of participants in the current research may not be as representative of the wider population as in the other studies which would explain why these results do not correspond with previous studies' findings. It also

should be noted that there was an improvement as the semi-experimental mean was (M=16.2) and the mean score of the control was (M=14.8), however, this difference in improvement is not statistically significant.

In summary, all of the three groups have significantly improved in the post-AVST performance. However, the improvement level of the groups is different. The experimental group has the highest improvement level. The control group has the lowest performance improvement. After running the relevant statistical tests, it was found that the experimental group has significantly outperformed the semi- and control groups while there was no significant difference in performance between the semi-experimental and the control group.

5.3   Vocabulary learning strategies questionnaire results

5.3.1   Questionnaire reliability

The internal reliability of the questionnaires is commonly measured by Cronbach's Alpha coefficient (Dörnyei, 2007; Bryman & Bell, 2011). In order to measure the reliability or the internal consistency of the vocabulary learning strategies questionnaire Cronbach's Alpha was computed in SPSS. The value of alpha varies from 0 to 1. The higher the Cronbach's Alpha value is, the more reliable the instrument is. However, there is no agreed cut-off about the acceptable values of Cronbach's Alpha. George and Mallery (2003, p. 231) suggested the following rules of thumb of Cronbach's Alpha value:

Value	Degree
_ > .9	Excellent
_ > .8	Good
_ > .7	Acceptable
_ > .6	Questionable
_ > .5	Poor
_ < .5	Unacceptable

According to Dörnyei (2007) and Brayman and Bell (2011) the Cronbach's Alpha should exceed .70 for the items of the questionnaire to be reliable. Furthermore, research reports that

usually values ranges from 0.70 to 0.95 are more than acceptable (Nunnally, 1978; DeVellis, 2003; Bland and Altman, 1997).

Table 7 below shows the Cronbach's Alpha values of the complete 78 questionnaire items and of the three different sections of the questionnaire. The table shows that the overall reliability of the complete questionnaire is relatively high as the value of the Cronbach's Alpha is (.904). Therefore, the questionnaire in general is considered reliable. This is also true when the reliability of each individual section has been calculated. The first section which deals with new words strategies is also reliable as the Cronbach's Alpha value is (.801). Likewise, the reliability of the memorisation and retention section is also acceptable with a Cronbach's Alpha value of (.783). However, the Cronbach's Alpha value of the note-taking section (.639) is considered questionable according to George and Mallery (2003). Despite this, and bearing in mind that the overall reliability of the test is considered relatively high, which is also true of two individual sections of the questionnaire, it can be taken that this questionnaire is generally reliable and can be used for the purposes of the study.

Table 8: Questionnaire Cronbach's Alpha

Questionnaire	Cronbach's Alpha	No of items
Complete Questionnaire	.904	78
Dealing with new words section	.801	29
Note-taking section	.639	24
Memorization and retention section	.783	25

5.3.2   Comparison between pre- and post- VLSQ in the same group

Before analysing the same group's pre- and post-VLSQ, it is important to report the result of the three groups' comparison in the pre-VLSQ. Therefore, all groups' mean scores of the pre-

VLSQ have been put together to prepare one dataset to run a one-way ANOVA test to analyse the variance between the participants in the three groups. The results shown in Table 8 indicates that there is no statistical significant difference (P>0.05) between the three groups. As discussed in section 5.2.1, it can be argued that these three groups have a high degree of similarity as they are three sections of one reading class where students were distributed evenly based on their GPA. Therefore, each group has similar numbers of good and poor learners in terms of their GPA. This fact might explain the lack of significant difference between the three groups in the pre-VLSQ.

Table 9: ANOVA of pre-VLSQ

All groups ANOVA	Sum of Squares	df	Mean Square	F	Sig
Between Groups	.024	2	.012	1.311	.278
Within Groups	.502	54	.009		
Total	.527	56			

Knowing that there is no significant difference between the three groups, it is important to check whether the different groups improved in their strategic learning after instruction. This would be possible through a comparison between the pre- and post-questionnaire for each group individually. First, the experimental group pre- and post-questionnaire data were put together in one dataset to run a mean comparison test. The result in Table 9 below shows that there is a significant difference (P<0.05) between the pre- and post-questionnaire. It means that the experimental group significantly improved from their initial strategic learning of vocabulary (M=2.03) to a higher level of strategic learning of vocabulary (M=3.19) after receiving instruction on VLS and e-portfolio. This improvement is considered statistically significant. Such findings might indicate that the participants in this group improved because of the instruction they received on VLS and e-portfolio.

Likewise, the semi-experimental group witnessed a significant improvement (P<0.05) in the vocabulary strategic learning questionnaire as shown in table 9 below. It means that the participants in this group employed more strategies (M=2.50) than before the study (M=2.01). This result corresponds with previous studies findings identifying correlation between strategy

instruction and strategy use development (Cohen et al., 1998; Ozeki, 2000; Carrier, 2003; Chamot & Keatley, 2003; Ikeda & Takeuchi, 2003; Oxford et al., 2004; Nakatani, 2005).

This result challenges the main assumption of this research that put extra emphasis on the role of the e-portfolio in facilitating more strategic vocabulary learning. However, the development size of VLS use of these three groups will be compared to test the different assumptions again because this group also received instruction on VLS.

Table 10: Experimental/semi-experimental pre-/post-VLSQ (Wilcoxon Signed Ranks Test)

Group	VLSQ	N	Mean	Sig
Experimental	Pre	19	2.035	.000
	post	19	3.195	
Semi	Pre	19	2.012	.000
	post	19	2.500	

With regard to the control group, the paired sample t test was used to calculate the significance value of this normally distributed dataset. Table 10 below indicates that the participants in the control group significantly improved (P<0.05) their use of strategies. The pre- mean of this group (M=2.06) improved by the end of the academic semester (M=2.24). While this group is natural control group, it is vital to bear in mind that these students are studying English as their major. They will be TEFL teachers when they finish their degrees. It is also important to emphasise that: "there is no sense in assuming that students are a blank slate when it comes to strategy use", Cohen & Weaver (2006, p. 4). Students in this group are learning over a period of almost an academic semester and they are expected to improve their use of strategies. The importance of the qualitative data in this research lies in the fact that it can provide insights by learners (in the experimental group) about how systematically or not systematically these strategies were used. That is simply because learners most likely have developed and might continue to develop strategy use based on their previous experiences and ongoing learning experience but in an unsystematic way. This research acknowledges that the e-portfolio as a constructive, developmental learning tool could play a supporting role in systemizing strategies use. It is worth noting that the participants in this group (control) also significantly improved

their academic vocabulary size as demonstrated in section 5.2.2. Their improvement at the linguistic level (academic vocabulary size) could also support the earlier argument about their improvement at the strategy level. Due to the fact that this research is also interested in comparing the three groups' improvement size to decide if there is any statistical significant difference between the size of improvement in use of VLS, comparison between the different groups' performance will be presented in the next section.

Table 11: Control pre- and post- VLSQ (paired sample t-Test)

Group	VLSQ	N	Mean	Std. Deviation	Sig
Control	pre	19	2.062	.089	.000
	post	19	2.240	.105	

5.3.3 After instruction comparisons between groups

In order to compare the three groups' post-VLSQ, participants' scores were brought together in one dataset to run ANOVA test. The results in Table 11 below show that there is a significant difference (P<0.05) between the three groups. Therefore, a post-hoc multiple comparisons test was needed to reveal which group outperformed the others.

Table 12: Post -VLSQ ANOVA

All groups ANOVA	Sum of Squares	df	Mean Square	F	Sig
Between Groups	9.257	2	4.628	175.750	.000
Within Groups	1.422	54	.026		
Total	10.679	56			

Table 12 below shows that the experimental group significantly outperformed (P<0.05) the control group. Thus, it can be argued that the experimental group (M= 3.19) used more strategies than the control group (M=2.24). Although the control group improved their use of strategies comparing pre- and post- scores of VLSQ, the experimental group improvement size

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seems to be statistically higher than the control group. At the quantitative level, the experimental has outperformed the control, which could support the main research assumption. However, this research as stated before is not taking these findings for granted. It takes these findings as indications that lead to more exploration about 'how' rather than 'what'. Therefore, it is crucial to understand how the participants in the experimental group, who seemed to be using more VLS than the control, employed the strategies which will be discussed in the qualitative chapters.

The post-hoc multiple comparison test as shown in Table 12 below shows that there is a significant difference ($P<0.05$) in the scores of the experimental and semi-experimental groups. By looking at the mean values in the table, it is noticed that the experimental group (M=3.19) significantly outperformed the semi-experimental (M=2.50). With regard to strategies use, this means that the participants in the experimental group used significantly more strategies than the participants in the semi-experimental group. In the comparison between the control and experimental groups, significant difference in favour of the experimental was found as reported earlier above. This could suggest that instruction alone may not be sufficient to effectively contribute to the learning and use of VLS. This argument might also provide support for the main research assumption that places emphasis on the role of the e-portfolio as developmental, self-managed learning environment in the context of VLS instruction. This research also argues that instruction alone may not be enough and extra efforts should be made to ensure that learners are able to learn and use the content of their strategies instruction. However, this research is not underestimating the usefulness of strategies instruction as a particular form of language learning strategies assistance. Rather, it suggests a new model of employing instruction, learning and use of the VLS. Therefore, it found the comparison between the semi-experimental group, who received instruction on VLS, and the control group important to explore any difference between them at the strategies use level.

The final comparison obtained from the post-hoc multiple comparisons test is between the semi-experimental and the control groups. Table 12 below reveals significant difference between the two groups. In other words, participants in the semi-experimental group (M=2.50) statistically used more strategies than their counterparts in the control group (M=2.24). While this result might appear contradictory to the main research assumption that suggests that VLS instruction alone may not be sufficient, it reflects the literature that views strategies instruction positively. However, the comparison between the Semi-experimental and the experimental post VLSQ as discussed earlier in this section indicated that the participants in the experimental group, using e-portfolio, employed significantly more strategies than their counterparts in the semi-experimental.

Table 13: Post-hoc Multiple Comparisons

Post-hoc Multiple Comparisons	Mean	Mean Difference	Sig
Experimental	3.19	.954	.000
Control	2.24		
Experimental	3.19	.694	.000
Semi	2.50		
Semi	2.50	.260	.000
Control	2.24		

In conclusion, this research argues that while VLS instruction was found to be useful like many previous studies (Cohen et al., 1998; Ozeki, 2000; Carrier, 2003; Chamot & Keatley, 2003; Ikeda &Takeuchi 2003; Oxford et al., 2004; Nakatani, 2005), combining the instruction with the use of the e-portfolio might lead to more effective strategy use as the current research findings suggest. However, this research acknowledges that these results are indications of the performance which is not underestimated but more qualitative evidences would make such argument more justified. This intends to be discussed in the next two chapters where more qualitative data will be analysed to deepen the understanding and the insights into how the e-portfolio can facilitate effective use of the strategies.

5.3.4   Comparisons between groups based on sections of VLSQ

The strategic learning of vocabulary questionnaire consists of three main sections. The first section is dedicated to dealing with new words strategies. The second section is concerned with note-taking strategies. The third section is mainly dealing with memory strategies to remember and retain the words. The general performance of the participants in the VLSQ has been compared between the groups in section 5.3.2 and 5.3.3.

In this section comparisons between the groups in each individual section of the questionnaire will be performed. The first step is to carry out analysis of variance (ANOVA) test between the three groups in the first section of the questionnaire, dealing with new words. The result of the ANOVA test indicates that there is a significant difference ($P<0.05$) between the three groups in

using discovery strategies. Knowing that there is a significant difference between the three groups, post-hoc multiple comparisons test was needed to reveal which group outperformed the others in using discovery strategies in learning vocabulary.

The first comparison is between the experimental and the control groups. Table 13 below shows that the experimental group significantly outperformed the control group (P<0.05) in this section of the vocabulary strategies questionnaire. The participants in the experimental group (M=2.9) used significantly more discovery strategies than their counterparts in the control group (M=2.23). Similarly, the experimental group outperformed the semi-experimental (P<0.05) as the table below shows. This is in line with the general questionnaire comparison result where the experimental group outperformed the control and the semi-experimental groups. However, looking at the comparison result of the semi-experimental and the control groups in Table 13, no significant difference (P>0.05) is observed between the two groups, contradicting the general comparison of the two groups. The general comparison in section 5.3.3 indicates that the participants in the semi-experimental significantly outperformed their counterparts in the control group. This is not true in all sections as the participants in semi-experimental did not outperformed their counterparts in the control group in discovery strategies when learning vocabulary. This result might indicate that the VLS instruction may not lead to sufficient improvement in the discovery strategies as the control group also improved in a similar manner without receiving any VLS instruction.

Table 14: dealing with new words section post-hoc results

Post-hoc Multiple Comparisons	Mean	Mean Difference	Sig
Experimental	2.94	.71	.000
Control	2.23		
Experimental	2.94	.55	.000
Semi	2.38		
Semi	2.38	.15	.441
Control	2.23		

A comparison between groups in the note-taking section of the questionnaire was carried out. The ANOVA test indicates that there is significant difference between the three groups in this set of strategies within the same questionnaire. The experimental group (M=3.08) outperformed both the control group (M=2.28) and the semi-experimental (2.57) as Table 14 below shows. The difference in the means is considered significant (P<0.05). Likewise, there was a significant difference (P<0.05) between the semi-experimental group and the control group as the table below shows. These results confirm what has been found at the general level with comparisons between groups in the complete questionnaire in section 5.3.3.

Table 15: Note-taking section post-hoc results

Post-hoc Multiple Comparisons	Mean	Mean Difference	Sig
Experimental	3.08	.80	.000
Control	2.28		
Experimental	3.08	.51	.000
Semi	2.57		
Semi	2.57	.29	.005
Control	2.28		

The last comparison between groups is in the memorisation and retention section of the questionnaire. The ANOVA test result indicates that there is significant difference (P<0.05) between the groups. As Table 15 below shows, the experimental group (M=3.04) outperformed the control group (M=2.15). This difference is considered significant (P<0.05) and was also found in the general comparison. In other words, participants in the experimental group used more memorisation and retention strategies than their counterparts in the control group. Similar results are found between the experimental group and the semi-experimental as shown in Table 15. The *P* value of the comparison between the experimental and the semi-experimental is (.003) which indicates significant difference between them in favour of the experimental with a mean score of (3.04). This is also in line with what has been found in the general comparison between these two groups in the questionnaire. Finally, the semi-experimental (M=2.57) significantly outperformed the control group (M=2.15). The participants in the semi-

experimental used more memorisation and retention strategies than those in the control group, which reflects the general questionnaire comparison between the groups.

Table 16: Memorisation and retention section post-hoc results

Post-hoc Multiple Comparisons	Mean	Mean Difference	Sig
Experimental	3.04	.89	.000
Control	2.15		
Experimental	3.04	.47	.003
Semi	2.57		
Semi	2.57	.42	.009
Control	2.15		

To conclude, the comparisons of the sections between the groups correspond with the general comparisons of the complete questionnaire except in the discovery strategies sections, where no significant difference between the semi-experimental and the control group was found. Based on these findings, this research can argue that while VLS instruction on its own would lead to improvement in strategy use and learning in general, it may not lead to significant improvement in using and learning discovery strategies. It can be argued that VLS instruction might be more effective when combined with use of e-portfolio, as the experimental group consistently outperformed the other two groups in both the general and the section comparisons. In other words, participants in the experimental group showed more use and learning of the vocabulary learning strategies in general and in each section when compared with semi-experimental and control groups. This was not the case with the semi-experimental group who received VLS instruction and did not use the e-portfolio. Participants in this group outperformed those in the control group in the general questionnaire which confirms previous research findings about the helpfulness of VLS instruction (e.g. Cohen et al., 1998; Ozeki, 2000; Carrier, 2003; Chamot & Keatley, 2003; Ikeda & Takeuchi 2003; Oxford et al., 2004; Nakatani, 2005), but did not outperform the control group in using and learning the discovery strategies.

5.4   Overview of findings

The statistical analysis of the participants' AVST results shows that all of the three groups improved significantly in their academic vocabulary size. This does not answer the first research question, which deals with the impact of using e-portfolio in the context of VLS instruction on participants' academic vocabulary size. Therefore, a comparison between the improvement sizes of each group was needed to tackle any difference in performance among the participants in the three groups. The comparison results as presented in section 5.2.3 indicate that the experimental group who used the e-portfolio has significantly outperformed the other two groups. Further, the semi-experimental group who received instruction only on VLS and did not use e-portfolio also outperformed the control group but with low statistical significance. These results answered the first research question as the e-portfolio group significantly improved more than the semi-experimental and the control groups. Deeper discussions and interpretations of these results are introduced in chapter 8 to thoroughly answer the first research question.

Statistical analysis of the results of the VLS questionnaire was carried out to answer the second research question that focuses on the impact of using e-portfolios in the context of VLS instruction on the participants' strategic learning of vocabulary. The results show that the experimental and semi-experimental groups have significantly improved. Likewise, the control group who did not receive any instruction on VLS or e-portfolio also significantly improved. These results challenges the assumptions of this study and do not answer the second research question. Therefore, comparing between the improvements sizes of each group was carried out to check if there is any significant difference between them. The results as shown in section 5.3.3 reveal that the e-portfolio group has significantly outperformed the other two groups in terms of strategy use. The semi-experimental group has significantly outperformed the control group in terms of strategy use. This was not the case in terms of the vocabulary size test as the semi-experimental group did significantly outperformed the control group. This might indicate that strategy instruction is helpful in improving strategy use but does not lead to improvement in vocabulary size. However, when this instruction combined with the use of e-portfolio, it leads to significant improvements at both strategy use and academic vocabulary size as the statistical analyses of the groups' results and performances suggest. This preliminary answers the second research question as the impact of the e-portfolio is identified. Deeper discussions and interpretations of these findings will be presented in chapter 8.

The comparisons between the different sections among the three groups is similar to the general comparisons in all sections in most parts. The experimental group, as in the general comparison outperformed both the semi-experimental and the control in discovery strategies, note-taking strategies and in memorisation and retention strategies. Like the general comparison, the semi-

experimental group outperformed the control group in note-taking strategies and in memorisation and retention strategies. The only exception for the semi-experimental group is that it did not outperform the control group in the discovery strategies, which contradicts with the general comparison findings. The results of the section comparisons do not contradicts with the results of the general comparisons between the groups in most parts. This seems to confirm the findings of the groups' comparisons at the general level.

It is worth mentioning that these findings are perceived in this research as indications of the general trends of learners' improvement in their academic vocabulary and strategic learning of vocabulary. A thorough analysis of the qualitative findings would provide more details about the students' strategic learning with the help of the e-portfolio and the post interview. Such qualitative data might explain some of the trends in the performance results. The statistics might explain some of the qualitative patterns as will be shown in Chapters 6 and 7.

Chapter 6:   USE OF VOCABULARY LEARNING STRATEGIES

6.1   Introduction

In the previous chapter, a full account of students' quantitative findings and results of their performance in the AVST and VLSQ was presented. In this chapter, qualitative findings about the actual use of the different VLS will be reported. It is worth noting that the use of these VLS comes in the specific context of the VLS and e-portfolio instruction. The instruction and the learning environment that comprise the practical side of this research framework that focuses on strategic learning and management of learning vocabulary strategies is believed to play an important role in shaping the use of VLS. It should be pointed out that the organisation of the sections and the presentation of the findings in the subsections of this chapter is based on Marin's (2005) taxonomy (see section 3.5.6 for more details). This taxonomy takes into account the logical steps of vocabulary learning where learners try to discover the meaning of new words first, try to take notes about them second and finally try to remember and retain them. Therefore, this chapter will have three main sections about each step, namely: Dealing with new words, Note-taking, and Memorising and retention. This chapter will be concluded with an overview of the findings in section 6.5. The two main sources of qualitative data in this research are interviews and e-portfolios. Quotes used in the coming chapters are taken from students interview. Screenshots used in this chapter are taken from students' e-portfolios. However, in some cases, when the reflections in the e-portfolios are not clear in the screenshots, transcription has been added with the abbreviation (p) to refer to portfolio.

6.2   Dealing with new words

6.2.1   Guessing: word structure analysis

The first strategy for dealing with new words used by learners is guessing. Almost all participants reported that they used guessing strategies. The patterns of guessing strategies used by learners will be introduced. The first pattern of guessing strategies that was observed in the qualitative data is word structure analysis. This strategy refers to the action when learners analyse one single word by its parts: stem and affixes. By breaking down the words into smaller parts, learners can have a more relevant guess. This requires knowledge about suffix and prefix meanings. Learners showed increased awareness of the importance of the meanings and functions of the prefixes and suffixes.

> " I absolutely agree that analysing words into stem and suffixes is important and I think I am using it, but the problem is to know the meanings of all suffixes."

Participant MD states in the quotation above that the strategy would be useful if he knew more about suffixes. He uses "suffixes" but he probably means both suffixes and prefixes. This could suggest that this student might pay attention to the meanings and functions of affixes. This was proved true by looking at his e-portfolio. He included an electronic flash card from a website that offers explanations and drills on affixes as seen in the following snapshot of his e-portfolio.

Figure 2
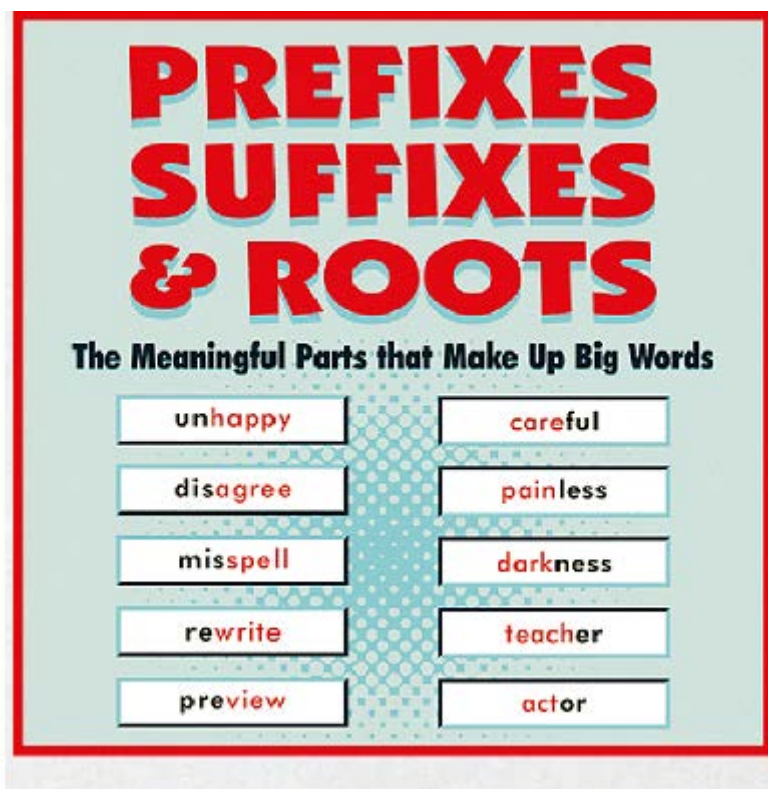
This evidence of learning contains both prefixes and suffixes which supports the argument above that he uses "suffixes", but means both prefixes and suffixes. This screenshot from his portfolio is hyperlinked to a website that provides materials and drills on affixes. This might be seen to indicate that this student was not only convinced of the usefulness of the word structure analysis strategy to assist in guessing word meaning but also spent effort learning about and practising it. This is observed among other students as well. The following quotation is taken from participant SB's interview.

> "Now, I am able to analyse the words structure, I identify the stem and then affixes either before or after, exactly like what we did with the word '*beautiful*.' I think I can do the same with many other words such as '*colourful*."

This student uses the word "now" which might mean that he was not aware of the existence of this strategy before the course of VLS instruction and e-portfolio. It also might mean that he was aware of the strategy but he was not using it. There is another possibility that he might know the strategy before, but have not thought about its usefulness in assisting word meaning discovery by guessing. He even made some efforts to learn affixes and their meanings and functions in his e-portfolio. The following is a screenshot from the same participant's e-portfolio.

Figure 3

Synonym	Antonym	Prefix	suffix	Root
Move out	Restore	Re	ed	Move
Position	None	None	ion	Locate
Unite	None	None	None	Link
Upper limit	Minimum	None	Mum	Max

He uses both video and a table from the internet to study the affixes. This is used as evidence to show that he is using two strategies to learn vocabulary, namely: synonym and antonym and affixes. Synonym and antonym strategies are used as association strategies, while affixes are used as a meaning discovery strategy.

Overall, this participant expresses an interest in this strategy and his willingness to employ it. This might be linked with the VLS instruction, because the interview took place after the instruction. Therefore, this research might argue that the VLS instruction has an impact on some learners' strategic learning. This will be further discussed in detail in the discussion chapter.

Participant HM adds a list of affixes with their explanations to his e-portfolio. This is a screenshot from his e-portfolio.

Figure 4
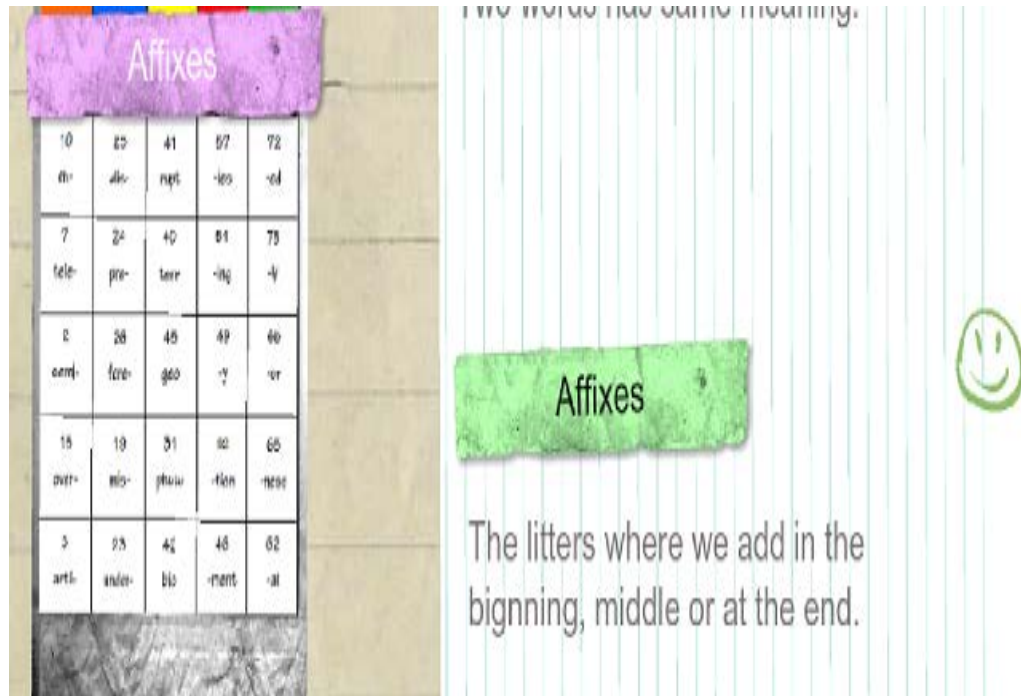
This participant adds a happy face next to this list of affixes and their meanings, which might indicate that he also likes them and might find them useful. This is supported by a quotation from his post-VLS interview. He states:

> "The word structure analysis is not only easy to use in terms of analysis, but very helpful in guessing the meaning, especially if you know the stem meaning and of course have a good grammatical knowledge about the affixes. I love this straightforward strategy"

This participant, as seen in his e-portfolio and his quote, likes and actually used the strategy because he provides a list of affixes with their meanings and functions. He also describes this strategy as a "straightforward strategy", which might indicate that he finds it practical in his learning process. This strategy as described by the learner is easy to apply because it does not involve many other mini-processes like other strategies such as key word method.

Participant AR shows evidence that he used this strategy. The following table is taken from his e-portfolio.

Figure 5

Practice adding prefixes and suffixes to your spelling words.
Follow the directions in each box.

Base word	Add...	Add...	Add...
arrive	-ing	-al	-ed
dream	-er	-ing	-ily
use	re-	re-, -ing	-able
wave	-ing	-s	-y
reheat	-ing	-ed	-s
trade	-er	-ing	-s

This table is included in this participants' e-portfolio. It can be used as a drill or exercise to practise some affixes that can facilitate the discovery of new words' meaning. For example, the word 'arrive' will be arrival when adding 'al' to it, which could make any guess of this word more informed. This table might be seen as an evidence of strategy use and employment. This is also observed in the e-portfolios of participants AM, SA and RM. The following captures are taken from their e-portfolios. All show evidence of the same strategy.
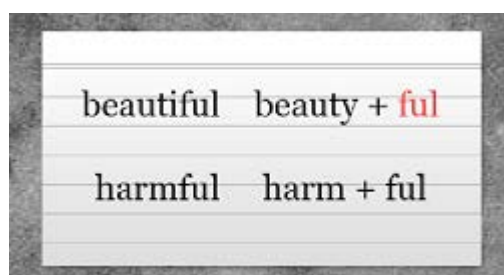
Figure 6

beautiful   beauty + ful

harmful   harm + ful

Figure 7

Figure 8
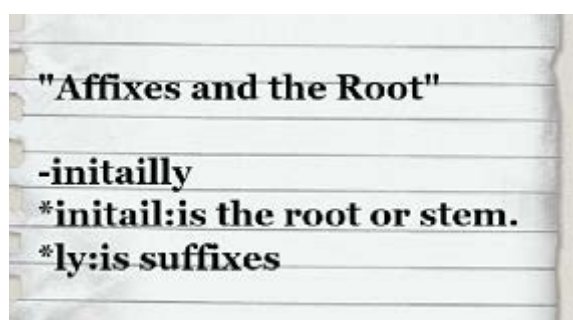
6.2.2 Guessing: sentence structure analysis

The second set of strategies that accelerate new word meaning guessing are sentence structure analysis strategies. These come after the simple analysis of one single word's structure. The sentence structure analysis means that learners identify the parts of speech of each single word in the sentence. Once the parts of speech are discovered, a more informed guess can be reached. In this way, this strategy is seen as complicated compared to word structure analysis strategy. This complexity makes it less appealing to the participants in this research.

> "I pay attention to the parts of speech and I can decide it, verb, adjective but it does not help me to know the meaning especially if it is a new word. It does not help my guess." (Participant RO)

Participant RO, for example, is able to identify the parts of speech, but he finds it pointless because it does not help him to guess the meaning of new words. The relationship between grammatical category and meaning may not be clear to all learners and that might make this strategy less attractive to learners.

Participants express various views towards this strategy. While most participants do not express interest in using this strategy, two of them report that they found it useful in some cases. For example, participant MO asserts that this strategy can help in finding the right equivalent in the first language.

> "yes yes, if I want to translate this word and write it down in my vocabulary notebook. It is important to know whether it is verb, noun or adjective, so I know what to write."

This participant expresses that he valued this strategy when he wanted to translate new words into his first language, but he makes no connection with the guessing strategy. This might indicate that this strategy did not work well with most of the participants.

There are only two occasions where participants link this strategy with guessing in a helpful way. This first is taken from participant AA's e-portfolio.

Figure 9
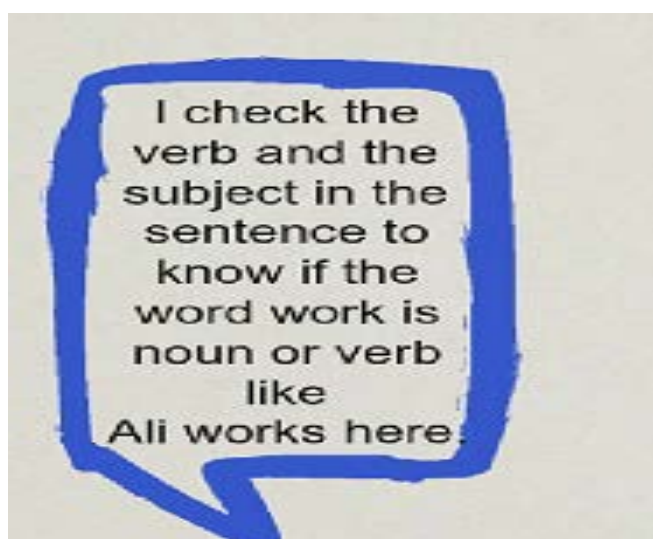
(Ali works here. He likes his work.) (p)

This participant uses an example to show how he applied the strategy. The example shows that this participant actually used it in an effective way. The word "works" with singular simple present (s) indicates that it is verb, but when the same word comes at the end of the second sentence it becomes object which should be a noun. Therefore, this strategy in this way could assist in making a good guess. Another participant comments on this strategy positively. The following quotation is taken from participant SB's post interview.

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"Sometimes it helps when I need to fill in the blanks exercises. For example, if I am able to decide what parts of speech should go in the blank, it helps in making my guess or answer more accurate or at least it reduces my choices."

The way of employing this strategy, as this participant describes, makes it useful to him in a specific task context, which is vocabulary fill in the blanks exercises. This also could be true to other participants who do not reflect upon using this strategy in their e-portfolio or their interview. The complexity of this strategy may make reflection on and description of it difficult, which could be the case in this study. Another reason for not finding rich reflections about this strategy might be the other strategies that were introduced to the participants with it in the VLS instruction sessions. The other strategies might be more attractive to the participants than this strategy. Further, these other strategies may seem to be easier to explain, employ or reflect upon than this strategy that requires analysis skills. This makes it very difficult to draw one straight conclusion about this strategy.

Until this point, two analysis strategies that could lead to a better guessing of new words' meaning have been discussed. First, word structure analysis, which involves the breakdown of a single word. This strategy generates enormous reflections and justifications by participants. Generally speaking, it is found that this strategy was valued and considered helpful by participants on different occasions. Second, sentence structure analysis, which was seen by most participants as either less useful or irrelevant to guessing strategy. There are some exceptions to this pattern where this strategy was found to be useful. Reflections about this strategy are noticeably fewer than reflections generated about word structure analysis strategy. One of the possible reasons for the lack of reflection about sentence structure analysis is the complex nature of it as it involves, first, identifying the parts of speech and, second, meaning familiarity with some of the words comprising the sentence.

6.2.3   Guessing: using visual aids

The third type of strategies in this section are the ones use visual aids such as pictures to guess the meaning of new words. The pattern in this specific strategy is that participants do use visual aids to guess new words' meaning. Most of the segments coded in this section come from the interviews. Pictures were the most common visual aid participants used to guess a new word meaning. Participant KA explains how guessing can be more informed if there is a picture with the text:

> " if there is a picture, you mean with the text? Yes definitely I look at it to help create more relationships between my ideas about the new words. It makes my guesses more correct."

This learner explains that a picture could help him to build a link between his ideas about the text during reading; the picture comes with the text and the new word, which enabled him to make a well-informed guess.

Participant RA talks about the pictures and their roles in facilitating the guessing. He reveals that he used a mobile app that has pictures linked with the words meaning:

> "yes, I remember, I am using picture dictionary app in my iPhone. This app brings in the word with its English explanation, a picture and a sentence as an example."

This participant reinforces what other students claim about picture use in guessing the new words meaning. He is a bit different from them because he uses a whole application that is centred on picture use to train learners in how to build connections between pictures and new words. Discussion of the role of the technology will be provided in the discussion chapter.

While there is almost nothing about picture use in guessing in the participants' e-portfolios, they kept reflecting about it when asked in the post interview. Participant TS discloses that he "often" uses the pictures that come with the text when making a new guess.

> "If the picture comes in the margin of the passage I am reading, and I found a new word, I often link the picture with the new word, especially if the word is a key word."

This participant clarifies that if the word is a key word in the passage, he will probably use the picture to make a guess. Adding this condition in guessing makes this student different from his classmates who claim that they use the pictures to make their guesses. Deciding the importance of the word in the text might affect the choice of using the pictures to guess the meaning. This also could be true for other participants who simply express their use of the strategy because it does seem to be logical in terms of learning and strategic learning in this research context. From the participants' reflections about this strategy, it is felt that this strategy became part of the learners' strategic repertoire.

6.2.4   Guessing: title, topic sentence and context

There are other patterns about guessing strategies. It was found that the familiarity with the title of the text could help in guessing. Participants express that they use the title and link it with the new word when they make a new guess of a word appearing in the same passage. Thirteen from

nineteen participants express that they used this strategy. I will use one example, which is very similar in content to other participants, to see how learners used this strategy in guessing. The following quotation is taken from participant SM:

> "I think if I knew the title, I will make a more accurate guess or at least my guess will not be random."

This participant's answer to a question about the title in guessing in the post interview is reflecting how he used the title to make his guesses more informed. The answers of most of the thirteen participants to the same question are very similar to this student. They explain how the title could make their guesses correct or close. It is an obvious pattern to be observed.

Another strategy, participants report mostly in their interview, was using the topic sentence to guess the meaning of new words. Participants' familiarity with the topic sentence of each paragraph encouraged them to make guesses. The following reflection is taken from participant MD:

> " the topic sentence in each paragraph is the key for correct guess."

This participant draws a link between a correct guess and the topic sentence of the paragraph that contains the new word. Another eleven participants express that they use this strategy in a very similar manner to the one reported above.

The participants' familiarity with the general idea or gist of the whole text is also found to be a factor that encouraged learners to guess. Participant DF reveals that he made a guess when he understood the whole text:

> "I rely on guessing and have more trust in my guessing if I fully understand the whole passage."

The participant indicates that his guesses could be right if he fully understands the whole text. Another nine participants state that they make guesses if they understand the gist of the passage they are reading. They may not have faith in their guesses like participant DF, but they generally guess when they comprehend the idea of the text. For example, participant FT expresses that he finished his reading of the full text before he made the guess:

> "I try to read the whole text. I continue the reading and later I go back to the word and try to guess."

The participant states that he kept reading and did not stop on the word he did not know the meaning of, until he finished reading. This could indicate that he kept reading to have a general understanding of what the whole text was about. Then he went back to the unknown word and tried to make a guess after shaping his comprehension of the whole text, which could lead to a more relevant guess.

Participant AF claims that he used similar ways of guessing such as reading the words before and after the new word. The following quotation is taken from his e-portfolio:

Figure 10
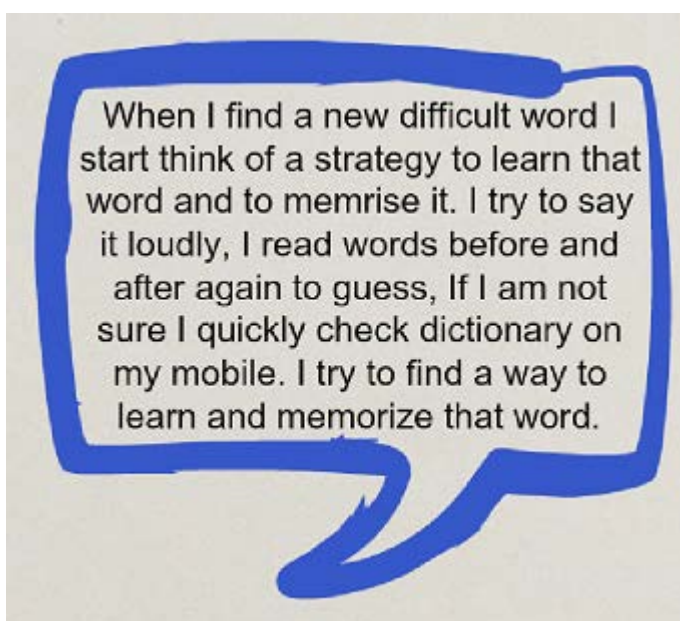
In the middle of this quotation, he says: " I read words before and after again to guess," which would lead to a guess that is relevant to the other words forming the same sentence or paragraph. This reinforces what has been discussed about guessing after reading or continuing to read. Another example addressing the same way of guessing is taken from participant HM's e-portfolio:

Figure 11
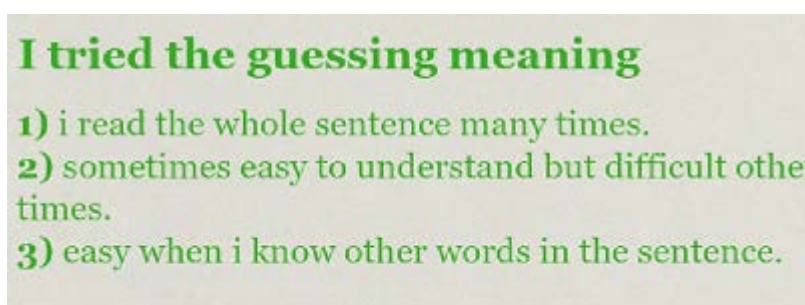
This participant explains that he guessed after he read the same sentence more than one time: "many times". He continues his explanation by stating that it became easy when he understood most of the other words in the same sentence. This is proved to be true by some scholars in the field of vocabulary learning (e.g. Nation & Meara, 2010) who claim that familiarity of above 90 percentage of the whole text makes the guess more informed.

6.2.5   Guessing: process and reasons

Nine participants reflect in some detail about the way they guess. This is found in their interviews and e-portfolios. When there is more than one new word in one sentence, participants deal with this problem differently. Participant SN tended to use dictionary with the first important or key word and try to guess the others. The following quotation is taken from his interview:

> "In case I have two key words and I need to discover their meaning, I checked the first one in the dictionary then I tried to guess the other one."

The participant does not say anything about why he used the dictionary first and then guessed second. However, it is believed that he did so to use the meaning of the word he checked in the dictionary to make a better guess of the second one. Other participants stopped guessing if they have more than one key word to guess. This also can be linked with the issue of familiarity of words in the same text that facilitates the word guessing suggested by Nation and Meara (2010). The following quotation from participant FN can explain this:

> "If I face more than one new word in the same text, I do not guess, I rely on translation because of time."

The participant states that time consumed is what prevents him from guessing. It is not clear in this example, whether he would guess if there is only one key word or not. However, this would be expected from the context of his speech.

Other participants have a different point of view about guessing. Three participants reveal that they do not guess the key words because of their importance to their learning. It should be noted that this was a minority of participants, but it was a pattern among them to explain why they do not guess or to give details about it. The following example was taken from participant RO:

> "I don't usually guess the important or key words, but if I do I should also check the dictionary to make sure my guess is correct."

This participant claims that he does not usually guess the important words. He consults the dictionary in the case of making a guess to confirm that the guessed meaning is correct. In a similar reflection about guessing, participant MO asserts that he seeks confirmation of the guessed meaning. The following picture was taken from his e-portfolio.

Figure 12
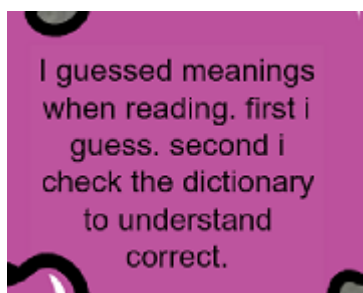
The participant states that he used the guessing strategy in reading. He makes confirmation by dictionary essential for him because it could affect his comprehension. In the same vein, participant SM expresses that guessing by itself is not enough and confirmation is needed:

> "I always ask my teacher if I made a guess, just to be sure that I am right, because if my guess is not correct, my understanding will be incorrect."

The need for confirmation is associated with guessing which makes the guessing unappealing to the participant. In other words, the participant may not value guessing alone as an independent strategy. This is not always passive in vocabulary learning. Regarding the value of guessing, this participant seems to underestimate the guessing as an independent strategy. Further, in this student's case, guessing may affect the whole understanding, which might mean that the guessing meant in his speech was guessing of important or key words.

6.2.6   Perceived value of guessing, and need for training

Another general pattern regarding guessing is that there is almost consensus among participants (15 participants out of the 19) that it could facilitate their vocabulary learning in general. For example, Participant MD links it with time saving and practicality. He reflects that guessing can reduce the dependency on dictionaries and this could save time. This was taken from his e-portfolio.

Figure 13

Translation:

2- Guessing is a good strategy as it reduces the dependency on dictionary and saves time.
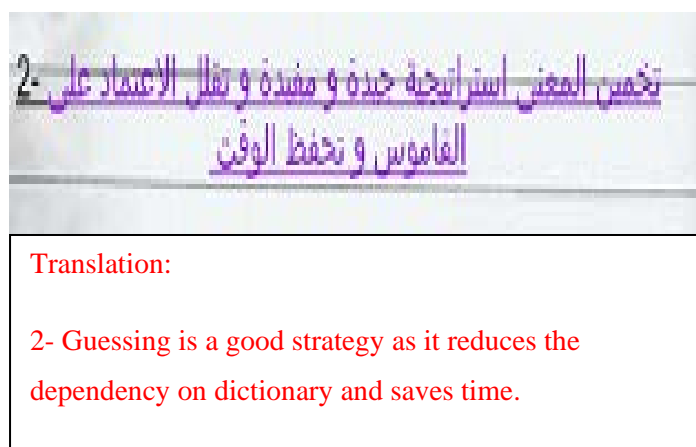
Another student shared the same idea in his e-portfolio by saying that:

"trying to guess is so important and helpful. It is better than checking the dictionary a lot and distracting the understanding." (Translation of his Arabic reflection about guessing in his e-portfolio as shown in the figure below).

Figure 14

Translation:

Trying to guess is very important. It is better than heavily checking the dictionaries and distracting the efforts to understand.

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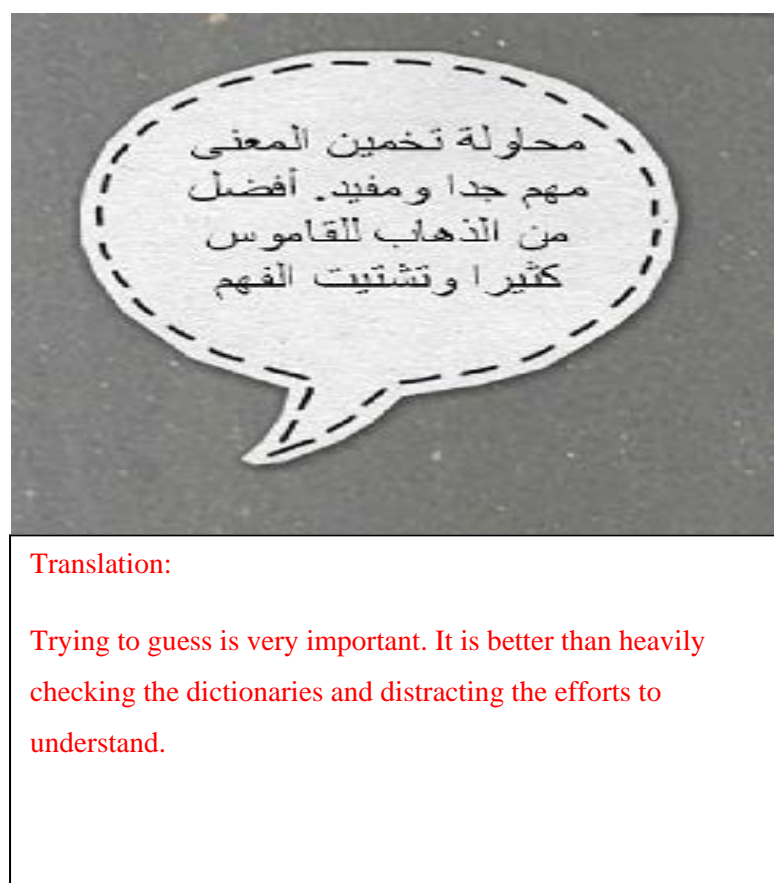
It is thought that this participant likes to use guessing strategy because relying on the dictionary could distract the reader from understanding the text. However, this participant in this artefact of his e-portfolio does not specify reading but it was understood from the context. Likewise, participant SA shares the same idea by stating reading vividly in his reflection below.

Figure 15

Guessing the meaning is very helpful because it is quickly and no need for dictionary. In reading it is nice and make my reading fast.

He claims that guessing makes his reading fast which can be understood as a better reading comprehension in shorter time than in the case of relying heavily on a dictionary. In regards to the guessing of new words meaning from context, there is also a trend, among participants, of valuing the effectiveness of this strategy. The following example from Participant MA's e-portfolio shows that he perceived this strategy as a helpful one.

Figure 16

It is helpful to guess the meaning of the from the context it helped me understand sometimes
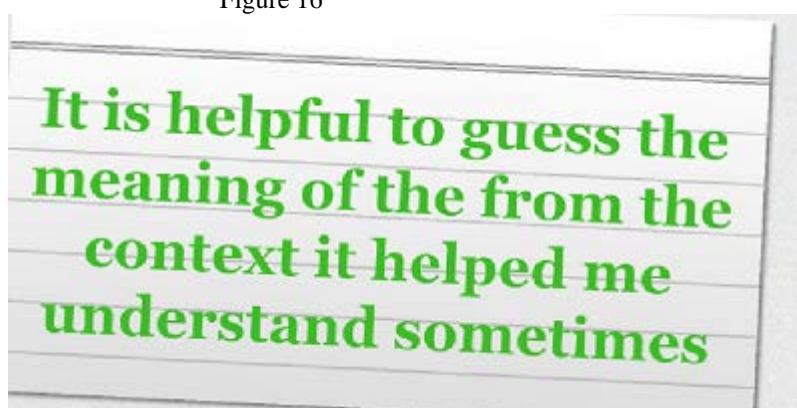
This participant says: "it helped me", which could indicate that he actually used the guessing from context strategy. Th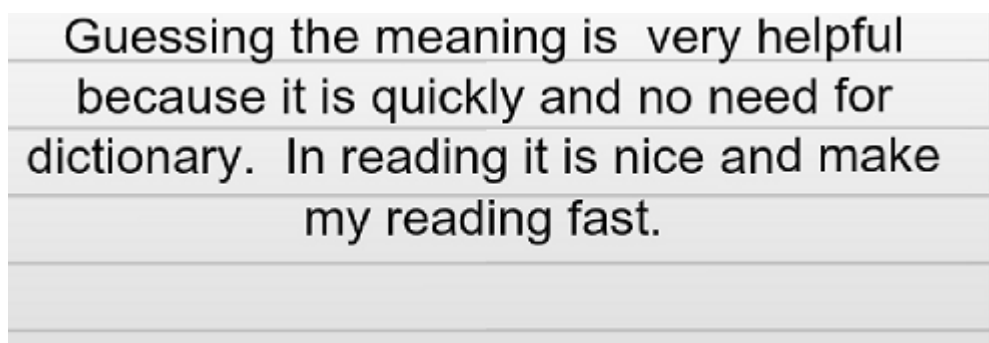e least that can be said about this reflection is that MA considered it a useful and effective strategy. In another case, participant SM lists guessing the meaning from context as his first step in a strategy chain he used to learn vocabulary as shown in the figure below.

Figure 17

1)first i guess the meaning from the context, then

2)if i am sure my guess is correct or i check my google translator, after that

3) i draw i picture or find any pictorial represenation and past it next to it.

4)I draw a circle around the word and it pictirial represenation and i draw a semantic map around it, then

5- i added words that can come with it or has relationships in it

6-at the back of this card i rewrite until know it 5-7 times. Finally

7- i write the word in two sentences; on from my mind, second from google. and always ask my teacher about my sentence correct or not.

Using guessing the meaning from context, as the top strategy this learner used when learning vocabulary demonstrates that he is aware of the effectiveness of this strategy. From the context of this e-portfolio reflection, it seems that this learner actually uses guessing from context when learning vocabulary. The following example from another student's e-portfolio would reinforce what this research accepts about the effectiveness of this strategy. It is taken from participant AR's e-portfolio.

Figure 18
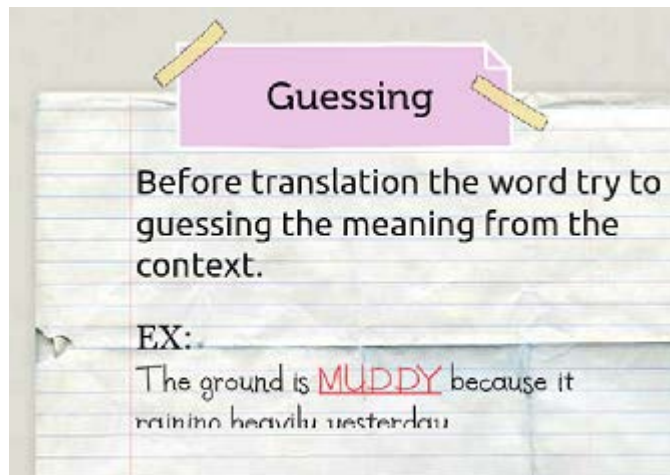
This participant states that he used guessing from context before finding the translation of the target word. Furthermore, the example he uses to show this, is believed to be an ideal example of guessing the meaning from the context that explains his reflection in practice.

As discussed earlier, there is an agreement among the vast majority of participants on the usefulness of the guessing strategy to discover the new words' meaning. However, this does not mean that there is no uncertainty or neutrality towards this strategy among participants. The following screenshot is taken from participant KA's e-portfolio who seems to be neutral about using guessing.

Figure 19

أحاول تخمين المعاني للكلمات التي لا اعرفها
وأحيانا تنجح معي وأحيانا لا تنجح

ليست مفيدة دائما

Translation:

I try to guess the meaning of the words that I do not know and sometimes it works sometimes it does not. It is not always helpful.

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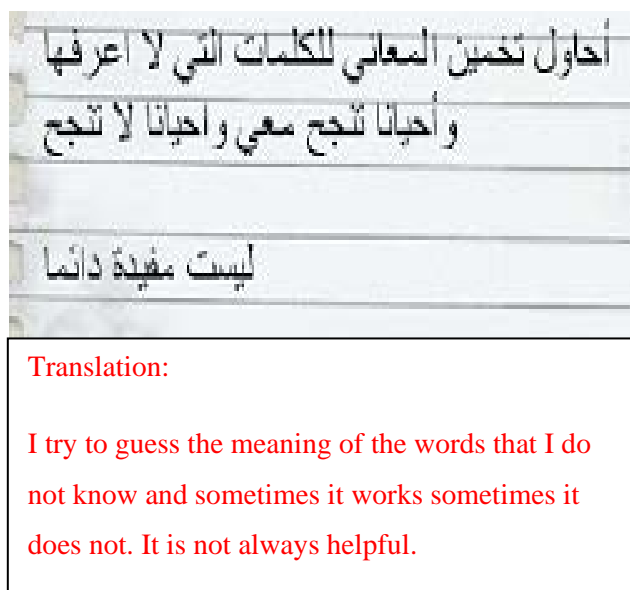
This participant is not in line with most of the other participants who valued the guessing strategy, by being hesitant about the usefulness of guessing as he states that it sometimes works for him but also it sometimes does not. He states that this strategy is not always helpful which might indicate that this participant is not using guessing as a strategy as frequently as most of his classmates.

While this research reveals that there is consensus towards the effectiveness of this strategy among participants, a desire to master this strategy is also noticed. Some participants reveal that they have spent effort to train themselves in guessing from context. For example, participant TS has used a website that offers training in guessing from context.

Figure 20
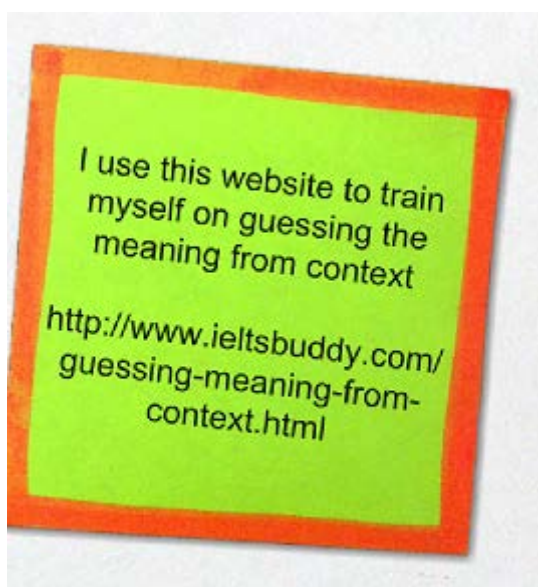
This piece of evidence of using this strategy demonstrates a higher level of strategy involvement by finding training and chances of practice not only to use but also to improve the use of this specific strategy. This was also found in another student's e-portfolio. The following example is taken from participant SM.

Figure 21
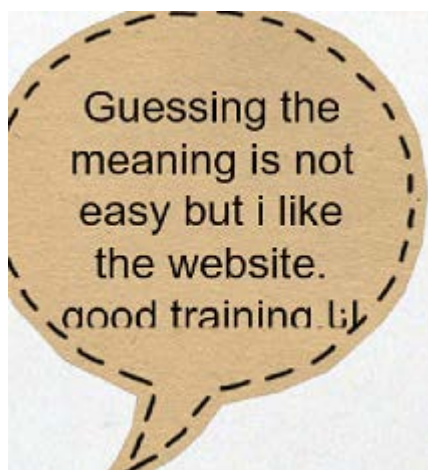
This participant has used a website to train himself on guessing. It was not clear which website he used, but it might be the same website that his classmate in the previous example recommends. This is believed to be one of the affordances of having the e-portfolio where participants can look at their classmates' e-portfolios content of strategies. This would enhance their awareness and use of the strategies.

6.2.7   Skipping

It is logically found that the learners would attempt to guess the meaning in various ways when they face new words as discussed earlier in this section. However, if guessing was found to be less effective or not suitable for the learning situation or for the learners themselves as individuals who differ from each other, they might tend to skip the new words and stop trying to guess. The reasons for skipping the new words and stopping guessing varied between failed guessing attempts, learners' individual preferences, learning situation, lack of a dictionary and access to other resources and not noticing the unknown words as such. Learners could skip consciously or unconsciously. Therefore, the second set of strategies that will be discussed, in this section after guessing, is skipping.

There was no general pattern or trend towards skipping as a learning strategy. However, it is observed that this strategy was not seen as a strategy that could be employed in all vocabulary learning situations. It was felt that participants prior to the VLS instruction and e-portfolio instruction were less aware of this strategy. What can support this argument is the following quotation that is taken from participant DF's post interview:

"I thought avoidance was not a good practice in general and skipping in vocabulary because simply if you skip or avoid you will not learn. But, now it seems to me that skipping can sometimes help, because not all words need to be learned."

This participant states that he "now" understands that skipping can be helpful. Nevertheless, it is also suggested that this participant was viewing the skipping as purely passive learning practice. Therefore, it could be said that the course of VLS instruction and e-portfolio training might have an influence in raising the learners' awareness of other learning situations where skipping can be used. Another example that could also reinforce the same idea is taken from participant FT's e-portfolio.

Figure 22
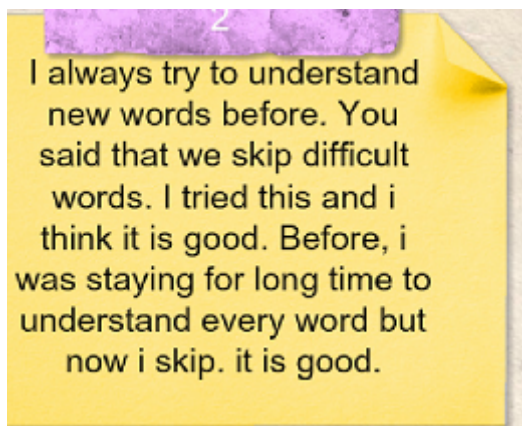
This participant also uses the word "now" which could indicate that he was not considering skipping before. It also could indicate that he was not positively viewing skipping because he states that "it is good." He gives a reason why skipping can be useful which is due to the time that it could take to discover the word meaning.

Four participants express that they are in favour of this strategy as it could save them time, which would enhance their motivation, feelings and learning. The following example is taken from participant AF's e-portfolio.

Figure 23
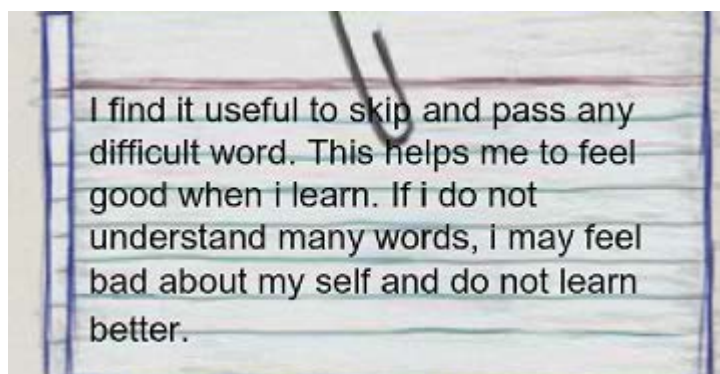
He claims that "it helps him to feel good", which can be linked with a positive attitude towards using this strategy. The next participant's quotation from his e-portfolio also reinforces that some participants consider the time that guessing or discovering the new words' meaning from other resources such as dictionaries could take. Thus, skipping is viewed as a useful strategy. The following example is taken from participant HM's e-portfolio.

Figure 24
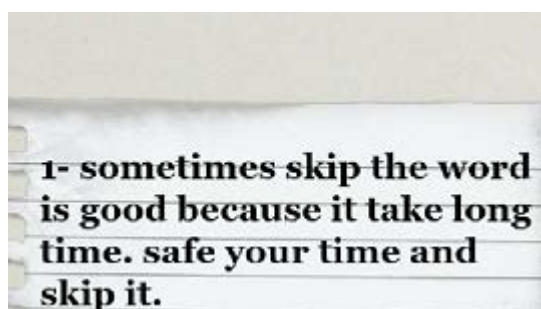
This participant makes a statement probably to his classmates to advise them to skip if word discovery takes a long time.

However, other participants express their rejection or low interest in employing skipping. Three participants reflect in this sense. The following screenshot is taken from participant RM.

Figure 25
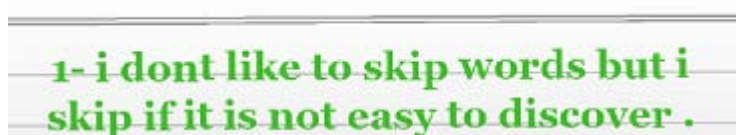
In the above example, the participant clearly states in his e-portfolio that he did not like skipping but would consider skipping if word discovery becomes time consuming. In this

example, the expression of dislikes is conditional and thus it could be argued that it might not be evidence of low interest in the strategy. However, in the example below that is taken from Participant SA, there is a vivid expression of dislike of using skipping as a strategy.

Figure 26

انا لا احب ان اتجاوز الكلمة
الى بعد فهما و معرفة
استخداماتها لكن احيانا ياخذ
ذلك وقتا طويلا و لذلك ربما
skipping تكون ممكنة جدا
is not a solutionso i try
to figure out the
meaning before
skipping
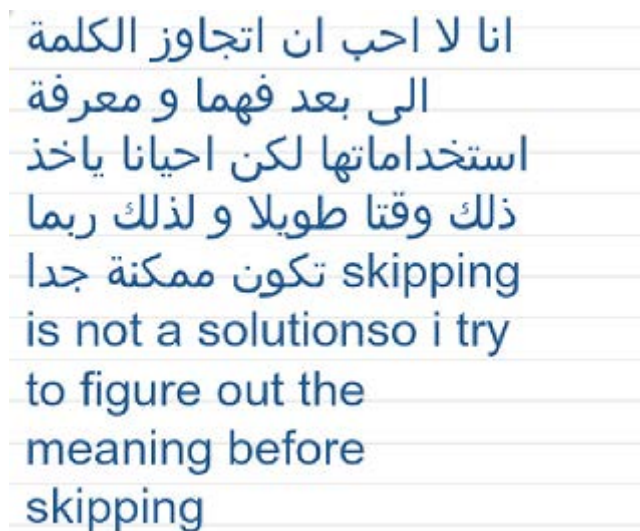
This learner does not view skipping as a "solution" in his terms. This might mean that he is not considering skipping as a strategy. This corresponds with another student who shows that he does not skip or skips limitedly. The following example is taken from participant SB.

Figure 27

I dont skip or i skip very very few. if i want to learn i search but you are right save times.
sound systems are not easy but very very important
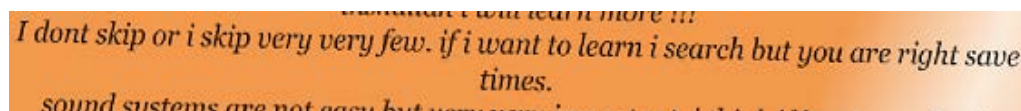
This quotation with previous quotations might provide supporting evidence that some participants view skipping as a less effective strategy.

It is also noted that some participants decide to skip based on criteria. Time-wise skipping has been discussed within previous examples, but other reasons will be discussed here. One of the key findings in this matter is that participants usually decide whether the word is important to them, to the text they are reading, or to the language course exam. For example, participant MO, in the screenshot below, demonstrates that he skips any difficult word as long as it does not affect his understanding.

Figure 28

I skip new difficult words when i read if I understand but if I dont understand I try to look at the word before and after and I underline thw word and write it in my vocabulary notebook to check the meaning in the dictionary
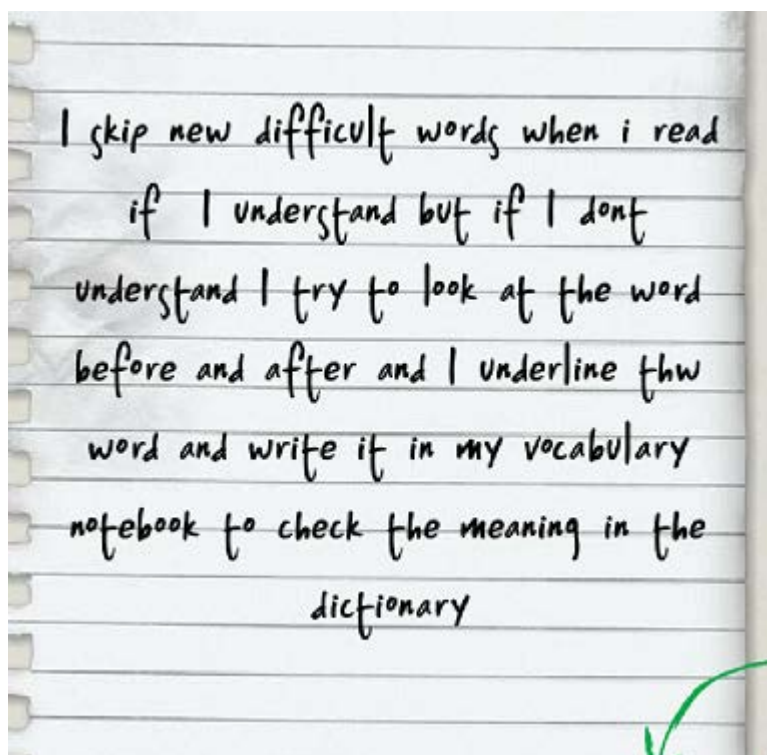
He provides a detailed explanation of how he employs skipping. Reading comprehension seems to be the main factor that affects this student's decision on skipping. Based on that, it could be said that this participant treats a new word as an important word that he should not skip if it will influence his understanding of the reading text. In another similar case, participant FN claims that exams play an important role in deciding what to skip:

> "If this word is in the words bank or in the exercises that come after the lesson then I think it might come in the midterm or final exam. In this case, I will not definitely skip, you know."

This participant expresses that the exams were mainly what influenced his decision about using skipping. Further, individual student learning needs would affect their decision about skipping. If a learner considers a new word important in language teaching, for example, he would consider it important and then he would not skip. The following quotation has been taken from participant SN's post interview.

> "if the new word is in the linguistics class, I do not skip it because it is very important to me to know this word's meaning."

It might be argued that because the participant is doing a degree in language itself and is expected to be EFL teacher in the future, he decides not to skip any linguistic term that might be important in his speciality. Therefore, it can be understood that learners' goals and needs could affect their use of skipping. Another participant expresses his criteria for skipping by stating that if the word is important for his "communication skills," he would not skip the new word. The following quotation is taken from participant FN's post interview.

> " if this new word could affect my communication skills and make my interaction difficult, I think I need to learn it and not to skip it."

This participant is quite different from the previous example in the sense that he does not consider his speciality (language teaching), but rather he concentrates on his need for successful communication and maybe his general language proficiency. However, he and his classmate in the previous example use skipping based on their learning needs. Having reported findings for guessing, as the second logical step of dealing with new words according to Marin (2005), the next section will present the findings for dictionary use.

6.2.8   Dictionary use as a discovery strategy

Second language learners may consult other sources of knowledge including dictionaries. In this section, findings about dictionaries and other resources' use strategies will be introduced. Dictionary use can be influenced by different factors including the nature of the vocabulary learning task and situation, level of language proficiency and the language skill (reading, writing, speaking or listening).

First, evidence that shows dictionary use are noticeably reported by participants. This could be a clear statement or sign of dictionary use. However, there were some other situations where dictionary use was probably employed with no clear statement about it. In the following screenshot from participant DF's e-portfolio, dictionary use was clearly labelled with examples.

Figure 29

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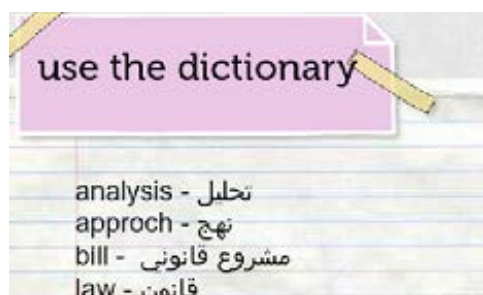
This participant uses the above example to show that he used a dictionary in dealing with new words. However, participants' e-portfolios are full of examples that seem to show dictionary use but without any clear labelling like the following screenshots that are taken from participant MD's e-portfolio.

Figure 30

Piece of cake   سهل جدا

Figure 31

Read one's mind   توقع ما ينوي الشخص .

Figure 32

Get on one's nerves   ازعاج الشخص
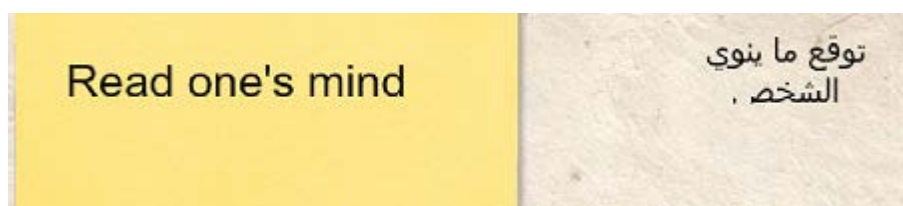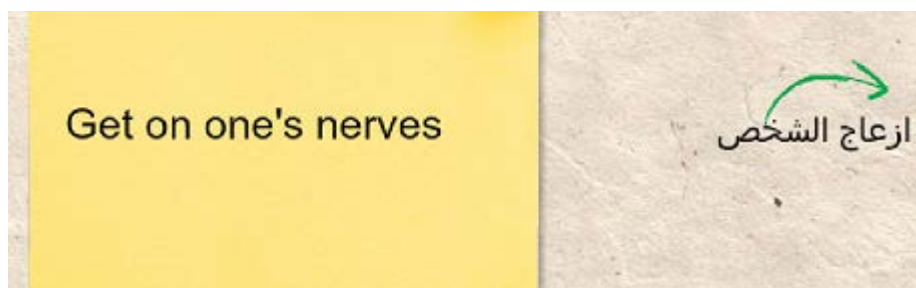
The English expressions and their translations in figures above might suggest that a special dictionary of expressions and idioms was consulted. Similar evidence from other participants' e-portfolios are also observed. There are some Arabic proverbs and famous sayings translated into English like the one in the example below from participant SM's e-portfolio.

Figure 33

الفتى سرّ أبيه

Like father like son

الصبر مفتاح الفرج

Patience is the key to relief
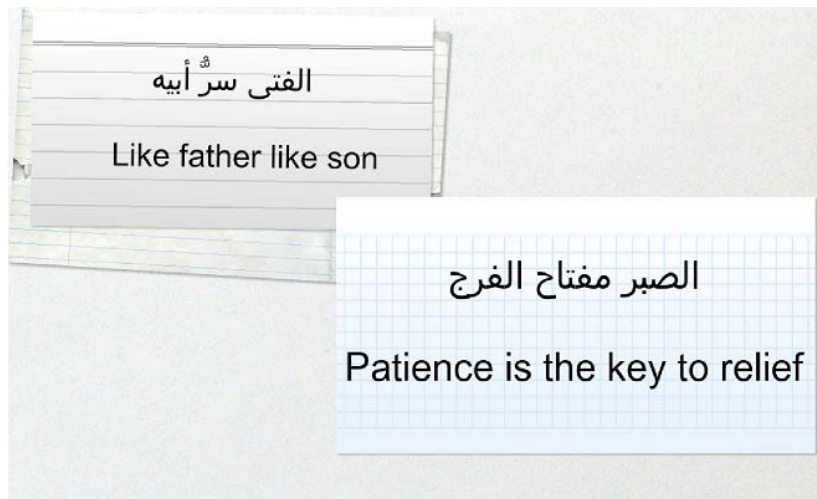
This would also suggest that either a social dictionary of proverbs and famous sayings was used or a normal bilingual or monolingual dictionary was consulted. This research accepts that these pieces of participants' e-portfolios are used to show that the dictionary strategy was employed, because they mostly come in the same session, when the dictionary use strategy was introduced in the VLS instruction.

There was enough evidence of dictionary use and traditional vocabulary notebooks where the Arabic translations and equivalents are recorded like in figure 33, 34, and 35.

Figure 34
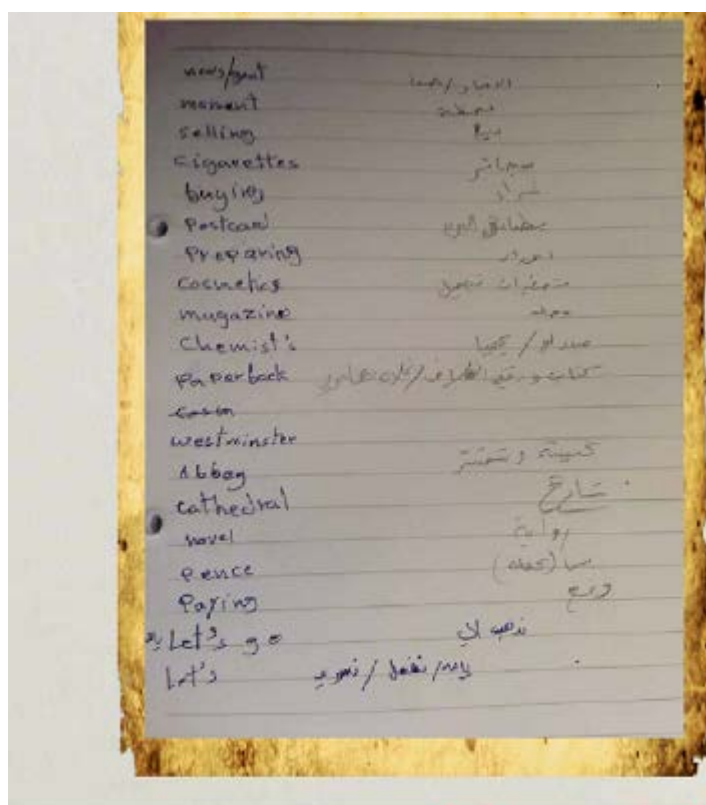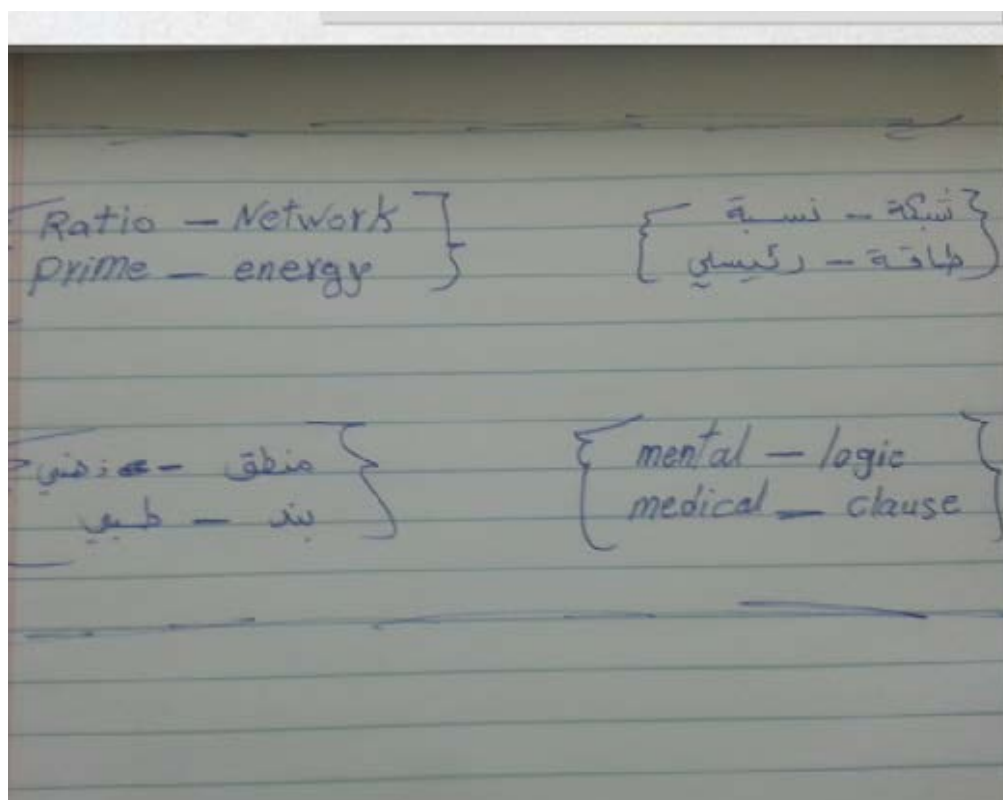
Figure 35

Figure 36
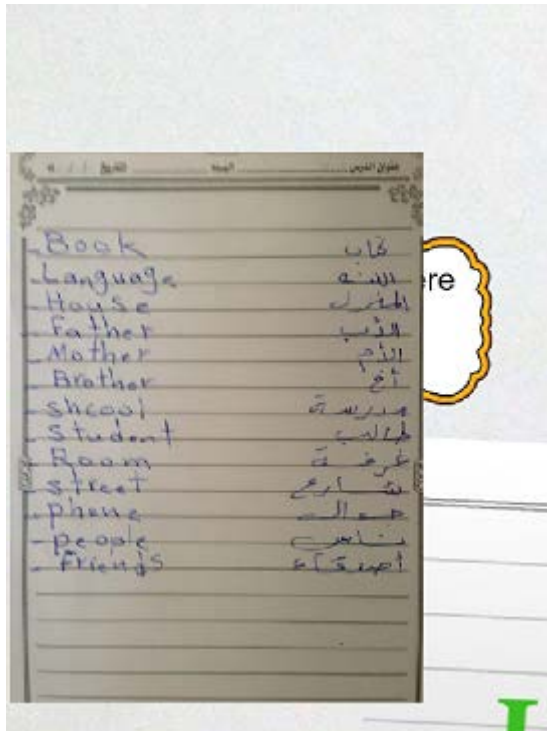
In the above examples, it seems that direct dictionary consultation was employed and thus it could act as evidence that this strategy was highly used. Other evidence from the e-portfolios shows those digital notebooks were also used to record translated words, which could also suggest that dictionary use was involved such as figure 36 from participant TS's e-portfolio.
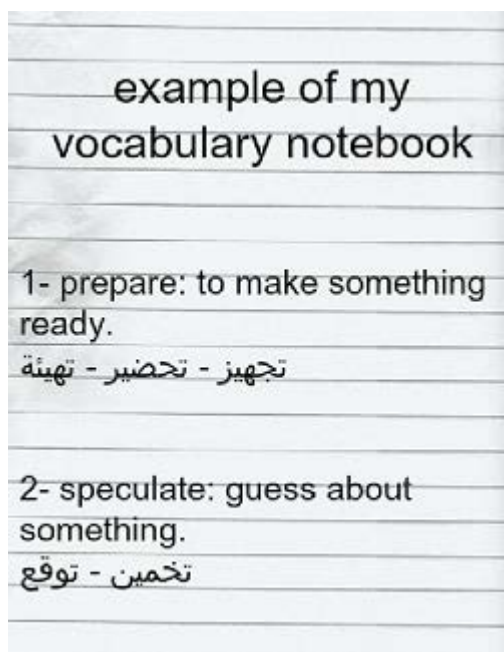
Online, mobile and picture dictionaries were also used by learners to discover the new words'
meanings. For example, Figure 37 from participant RM's e-portfolio shows that this participant
used both his iPhone and Google translate.

Figure 38
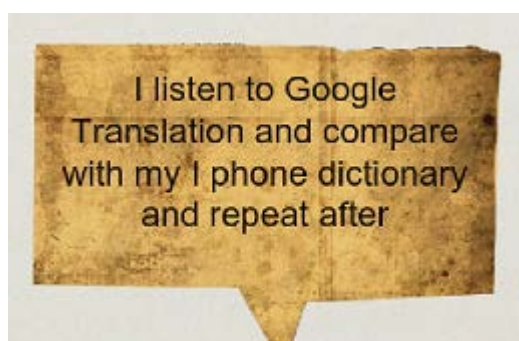
It also shows that these two different dictionaries (Google translate and iPhone) were consulted
for listening and speaking purposes. It demonstrates that there was a comparison between the
two dictionaries pronunciations. Comparing between the pronunciation produced by these two
different dictionaries indicates that this participant might have developed sophisticated
awareness of using dictionaries. It is worth noting that Google translate was not part of the
training materials about dictionaries in the VLS instruction in this study. However, four

participants reflect about using it in the context of vocabulary learning in their interviews. For example, participant SB states in the interview that he used Google translate when there is a limited time to consulate his Oxford paper-based dictionary. He claims that finding a new word in Oxford dictionary during a timed reading task is time consuming. Thus he tends to use Google translate on his phone to check the meaning quickly. Nevertheless, participant FN describes his use of Google translate as temporary. He indicates that he uses it during class time but does not rely on it as he checks his specialised dictionary afterwards to confirm the meaning and to find examples using the new word. Finally, participant MO was cautious and claims that he does not use instant dictionaries such as Google translate as one of his teachers warned them against using it. He claims that the teacher warned that some of the meanings are not accurate and can lead to misunderstanding. In the same vein, participant SN reveals that he is against using unspecialised dictionaries such as Google translate as anyone can edit the translation to an inaccurate one. This makes the use of Google translate risky according to him. These reflections show that there are different views about Google translate but also demonstrate that participants are aware about the pros and cons of using it in vocabulary learning. A discussion about the use of Google translate in this study will be introduced in the discussion chapter.

6.2.9   Types of dictionaries and information checked

In terms of dictionary types (monolingual and bilingual dictionaries), there was enough evidence demonstrating that the two types were used. However, what is interesting is the employment of bilingualised monolingual dictionaries. This was captured in the post interviews. Participant KA claims that he is using this helpful dictionary that mixes the English definition of the new word and the relevant materials such as sentences and examples with the Arabic translation and equivalent at the very end of every entry in this dictionary.

> "yes, my Oxford English-English-Arabic dictionary is always with me in class and outside the class. When you told us about them I was happy because I had it from semester one. I am even using it more now."

This participant demonstrates that he is using what was described by Nation and Meara (2010) as the most useful type of dictionary because it offers the benefits of both monolingual and bilingual dictionaries all in one powerful dictionary. At the same time, this participant claims that his use of this type of dictionaries predates this study and its VLS instruction. Therefore, it might be argued that this learner already developed this strategy and the VLS instruction has no impact on this. However, this participant expresses that he became happy when this type of dictionary was introduced to him in the VLS instruction sessions and he claims he has used it more often after that.

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Five participants put dictionary use in the context of a skill like the one in figure 37. In this figure, participant AR says that he translates words in reading which could suggest that dictionary use was involved.

Figure 39
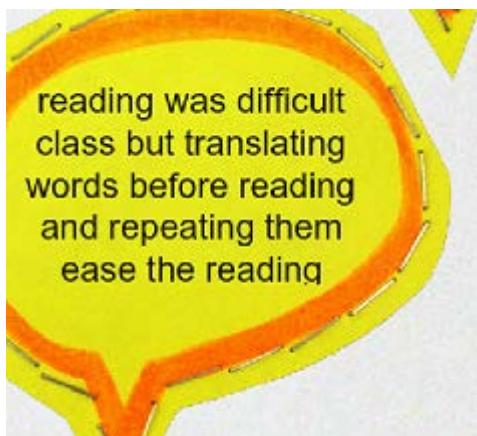
Reading was difficult for him before he developed a strategy of preparing for reading by translating the new words beforehand. This seemed to be working with this participant because he claims that it made his reading easy. Dictionaries were used in writing, speaking and listening, too, as reported by another four participants.

Other strategies related to dictionary use are also observed. Finding the English definitions of new words and then rewriting them in the students' simple words like in figure 38 and 39 is found to be employed by learners.

Figure 40
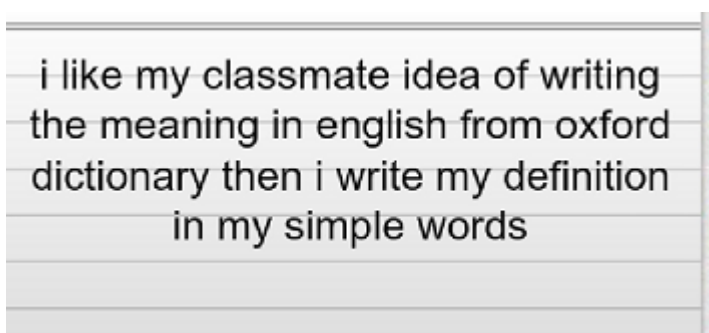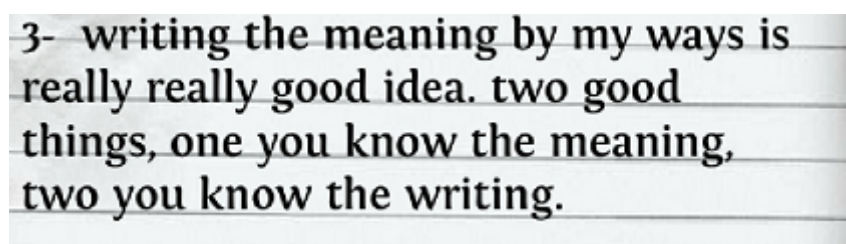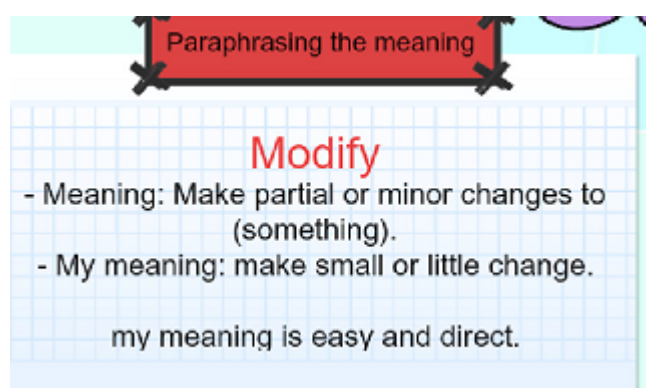
Figure 41

> 3- writing the meaning by my ways is
> really really good idea. two good
> things, one you know the meaning,
> two you know the writing.

From these two excerpts from participants AA and MA's e-portfolios, it could be said that rewriting the English meaning in students' simple language could assist in vocabulary learning. Participant MA in figure 39 says that he gained two benefits from this strategy which are meaning discovery and practising writing. This could propose that this strategy works well with participants. The same strategy is referred to as meaning paraphrasing by participant SN in figure 40.

Figure 42

> Paraphrasing the meaning
>
> Modify
> - Meaning: Make partial or minor changes to (something).
> - My meaning: make small or little change.
>
> my meaning is easy and direct.

This participant uses the dictionary meaning or definition of the new word and then he paraphrases the definition with his own words. This strategy also seemed to be working with this participant because he describes his paraphrased meaning as "easy and direct". After presenting the findings of guessing and dictionary use, the next section will report the findings of the social discovery strategy of asking others as learners might tend to ask others including their teachers, classmates and other speakers of the language.

6.2.10   Social discovery: asking teachers

This section will discuss the last set of strategies in the dealing with new words section, which are asking others strategies. These strategies come after other strategies learners may use to discover the new words meaning, namely: guessing and dictionary use. Learners may seek help

from other social resources. This might include asking teachers, classmates, family members, native English speakers. It is an even wider category that would include any kind of social interaction for the sake of new word meaning discovery. Social strategies at the broader level of LLS include social strategies that can be used for further practice and not for new learning consultations. This section, does not intend to include these social strategies, but is interested in the social strategies that are straightforwardly linked with new words' meaning discovery.

The first pattern that was obvious from the qualitative data was that learners tended to ask the teacher about new words' meaning. This was the dominant social discovery strategy trend in the qualitative data. Figure 41 is taken from participant FN's e-portfolio and works as evidence of using this social strategy.

Figure 43

While this participant does not say anything about why he asked about this word specifically and why he asked for a sentence not a meaning, it seems that he asked for assistance in using this word. The same participant says in the post interview that he usually asks the teacher for a translation, examples and pronunciation. The following is a quotation from his interview:

> "I usually like to ask my teacher about the new words meaning, you know he is a teacher and he knows better than us. But I also ask him about examples after meaning. In addition, if the word is long and difficult word I ask him about pronunciation. It is difficult to pronounce long words."

It is thought that because this participant views the teacher as the source of knowledge when he says "he knows better than us," he tended to ask about the new words' meaning. This might be linked with the learners' culture where teachers are seen as the only source of knowledge. This will be discussed further in the discussion chapter. What is important at this stage is to show that participants predominantly tend to ask the teacher when dealing with new words. Participant MO reflects upon this strategy in a similar way in his e-portfolio. Figure 42 shows that he also views the teacher as a source of knowledge when he says: " they know a lot than me."

Figure 44

The participant uses, "always" to describe his frequency of teacher asking, which could indicate that he uses this social strategy more frequently than others. Although he states that he always asks his teacher, he also indicates that "some classmates" might be suitable for asking, especially if he already discovered the meaning, maybe after asking the teacher. The classmates could then be asked about the use of the new words. Eight participants are generally in favour of this strategy. In figure 43 below, participant SB expresses in his e-portfolio that he prefers asking the teacher only if he needs a quick answer.

Figure 45

4- سؤال المدرسين جيدا اذا كنت تريد جواب سريع

Translation:
4-Asking teachers is good if you need a quick answer.
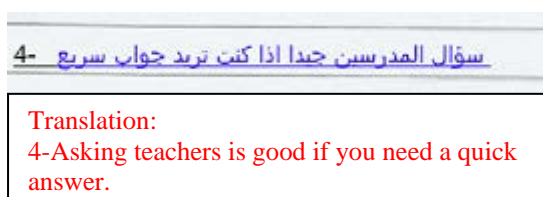
This participant asks his teachers when he needs a quick answer which might indicate that he does so when he performs a task with a limited time or with limited access to other resources such as dictionaries, classmates and friends. Accordingly, it might be argued that the nature of the vocabulary learning situation affects the use of this strategy. Therefore, it can be argued that the nature of the learning situation should be taken into the account when designing VLS instruction. The discussion and conclusion chapters will further discuss this issue in greater detail.

In a related issue, six participants reflect upon the situations and conditions that make them ask their teachers. Other factors could also affect the learners' use of this strategy. For example, in the following quotation, participant SA claims that he asks his teacher about nonstandard English and slang words that he encountered in American movies.

> " yes, I love to watch American movies and I like to ask my teacher a lot about the words that I do not find in the dictionary. Words that are slangs and nonstandard English. This makes my teacher believes I am a good student."

This participant says that he asks his teacher when other resources such as dictionaries could not help. In his case, the dictionary would not help him to figure out the slang that he heard in American movies. The teacher then is believed to hold a better opinion of him for asking. He also states asking my teacher these questions would make him think he is a good student. This could indicate that this student is using this strategy for another purpose, which is giving his teacher a feeling that he is a good student. This could possibly affect his assessment in the course. Therefore, it could be argued that asking the teacher is not always something he tends to do because of the nature of the task, but also might be a practice used to have a voice in the class that might make the teacher think positively about the student.

As discussed earlier the vast majority of participants tend to employ the asking the teacher strategy. However, some of them demonstrate some reservations and concerns about it. For example, participant HM in figure 44 asserts that while it is important to ask the teachers because it could help, it is not always possible, especially with teachers who are not cooperating and responsive.

Figure 46

سؤال المدرس هام ومفيد جداً و لكن (1
يعتمد على المدرس ومدى تعاونه وتفاعله
في الاجابة على الطالب

Translation:
1) Asking teachers is very important but it depends on the teachers' cooperation in answering the students.
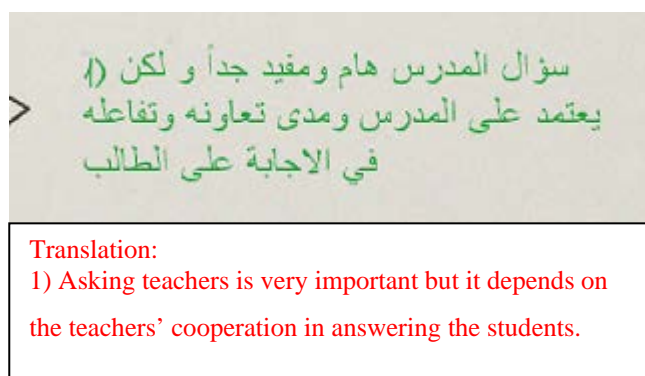
According to this participant, the teacher's willingness to answer students' questions is not always granted. This participant might be pointing to the fact that teachers' unwillingness to answer students' questions might make him not employ this strategy at all. This participant does not provide any further information in his post interview or anywhere else in his e-portfolio to indicate whether he is using the strategy or not. Therefore, this research understands that teacher attitudes towards students' questions could affect the use of this social discovery strategy.

6.2.11   Social discovery: kind of information asked about

In regards to what students ask their teachers about, various responses were noticed. However, the dominant finding is that students ask their teachers primarily about L1 translation. This is

found to be true in 12 participants' e-portfolios and post interviews. In the following excerpt from participant AF's interview, he claims that he asks directly about the L1 translation:

"yes. I ask my teacher about the translation of the word in Arabic."

This answer is very popular in the interviews of the participants. While this is the dominant trend in the participants' answers, there are other patterns about what to ask the teachers. The second pattern in this sense is asking the teacher for examples of the new words. This varies from asking for examples to provide a better context for guessing, to asking to provide information about the use of words. The following quotation is taken from participant MA's interview.

"yes, I ask my teachers for more examples of the same word. This allow me to discover the meaning from the examples, especially if the word was not used on another place in the book."

It could be understood from this quote that this participant seeks a better context for the word so he can guess before asking about the L1 translation. This would also be seen as a continuous effort to discover the new word meaning because this student could simply ask his teacher to give him the L1 translation. He rather to challenge himself and try to discover the meaning by himself by asking the teacher to provide him with examples and sentences. In the following excerpt, participant AA claims that he asked for examples to know the different uses of the same word.

" I ask my teacher usually for different examples of the same word. You know if you know the meaning, sometimes you cannot use the word or the word can be used in different ways."

This participant might be considered a pragmatic seeker. This means that he asks for examples of the same word to see how it can be used in different contexts and situations. Another participant gives a similar response to the question about teacher asking. Participant AR states that if the word has two meanings, he would ask the teacher for more examples, so he can decide what the intended meaning is.

"yes sometimes I ask my teacher about examples, especially if I have two possible meanings for the same word. I think the teacher will be better than the dictionary."

Examples given by teachers seemed to work as illustrations for the student to enable him to choose the right meaning. To sum up, students tended to ask for examples to guess the meaning of the new word and to check the usage of the new word.

Another type of information students tended to ask their teachers about was spelling and pronunciation. Nine participants reflect upon this strategy mostly in their interviews. The following quotation is taken from participant FN's post interview and is used in a previous part of this section.

> " I usually like to ask my teacher about the new words meaning, you know he is a teacher and he knows better than us. But I also ask him about examples after meaning. In addition, if the word is long and difficult word I ask him about pronunciation. It is difficult to pronounce long words."

This quotation shows that this participant asks his teacher for different types of information. It seems that it is more relevant to asking teachers about pronunciation because it gives explanation and details about it. The same quote is used again here for this reason. This participant says that he asks the teacher among other information about the pronunciation. He puts a condition for asking about pronunciation by stating that if the word is long or difficult to pronounce, he would ask him to pronounce it for him. Similarly, participant TS explains why he asks about pronunciation in his response to a question about the teacher asking strategy:

> "yes I ask him about pronunciation of some difficult words. You know English is not like Arabic. There are no rules of pronunciation and I will be a teacher in the future, so I need to know the pronunciation."

This participant says that he uses this strategy and he asks about the pronunciation. He does not stop at this level, but he explains why he used this strategy. It seems that he believed that English pronunciation rules are not easy to know unlike his L1. This led him to ask his teacher, because he probably wants to be a good language teacher in the future. Thus, it could be said that the nature of English language pronunciation system might influence the use of this social discovery strategy.

 In regard to spelling, there is evidence that participants asked about spelling of new words. However, unlike asking about pronunciation, meaning and examples, this kind of information was asked about by a small number of participants. The following excerpt shows that participant SM actually asked for the spelling of a word he does not know.

> " yes I ask my teacher. Last class, I asked him about uncertainty spelling. This word is difficult to spell and pronounce."

This participant proved that he used this strategy and asked about the spelling. Another student gives an in-depth answer about asking the teacher about spelling. The following quotation is taken from participant MD's post interview.

> "I ask about spelling because I want to learn about spelling rules. It is difficult to find these rules well explained or in the dictionary. Another problem is writing is different from pronunciation. My teacher can help me with this."

The difficulty of spelling rules and the disconnection between the orthographical and phonological systems in English makes this student tend to ask the teacher about spelling rules. This would suggest that any future VLS instruction should include aspects of words spelling.

Reflections and quotations from e-portfolios and interviews about asking teachers about synonyms and paraphrasing were very limited. Therefore, this research does not see any clear pattern about asking the teacher for a synonym or paraphrasing due to lack of evidence.

6.2.12   Social discovery: asking classmates and group work

The asking classmates strategy is the second social discovery strategy that this research introduces. While there is evidence from the e-portfolios and interviews, the number of coded segments in the asking classmates category is considerably less than in the asking teacher strategies. However, there is more evidence of this strategy than in the asking native English speakers section. The following example is taken from participant HM's e-portfolio.
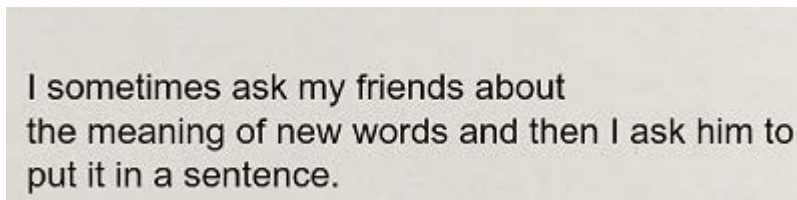
Figure 47
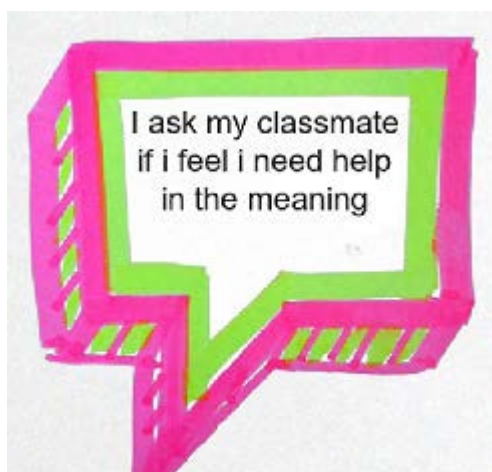
In this piece of e-portfolio evidence, the participant states that he asks his classmates. It is straightforward evidence that proves the classmate asking strategy was employed. The meaning seems to be the information this participant tends to ask about when asking classmates. In

another e-portfolio, participant RM says that he asks his friends about meaning as shown in figure 47.

Figure 48

I sometimes ask my friends about the meaning of new words and then I ask him to put it in a sentence.

This participant seems to be asking his friends about meaning but also about the use of the word because he asked for an example sentence. This participant used friends instead of classmates, which might indicate that he asks other friends who are not in the same class. This was proved true in figure 48, which is taken from participant RO's e-portfolio.

Figure 49

احيانا اسال زلائي او اصدقائي
من المستويات العليا عن بعض
معاني الكلمات

Translation:
"Sometimes I ask my classmates and friends from higher levels about words meanings."

The translation of this reflection shown in Figure 49 suggests that this participant used this strategy with classmates and friends from higher levels, which would offer him exposure to more experienced learners. This could affect his vocabulary learning. Social interaction to solve a learning problem is believed to be one of the practices that should facilitate learning. This will

be elaborated more in the discussion chapter in section 8.3.2.2. In the same vein, participant FN states that he asks his more experienced classmates as shown in figure 49.

Figure 50

كثيرا ما أسئل زميل لي ممتاز عن معاني كلمات

هذا الشيء يسهل علي تذكر الكلمة خصوصا لو اني محاول فهم معناها قبل ما أسئله

جدا مفيدة هذه الطريقة بالنسبة لي وافضل عندي من سؤال المدرس

لو بسأل المدرس احس لازم انتبه وما اخربط بس زميلي عادي واكون مرتاح

Translation:
"I always ask my advanced classmate in higher levels about words meanings. This makes it easy for me to remember the words, especially if I have tried to understand the meaning before asking. It is a very good strategy for me and it is better than asking the teacher. If I want to ask the teacher I need to be focused and do not make mistakes but with my classmates I feel more comfortable."

This participant states that asking his more experienced classmates from higher levels of study is better than asking his teachers. He explains that asking his teacher is more stressful than asking a classmate. This might indicate that asking teachers may not be as informal as asking classmates or friends. Thus, some students might find asking teachers as a social vocabulary learning strategy less appealing based on the situation, preferences and context. It is important to highlight other participants express different views where they place more emphasis on asking teachers as a trusted source of information about vocabulary learning.

Finally, there is almost no evidence about group work in the e-portfolios and little about them in the interviews. Therefore, this research argues that group work may not be employed by learners. It also accepts the probability that research instruments used in investigating this area were not successful in capturing group work strategies.

6.2.13 Social discovery: asking native speakers

Participants' reflections and explanations reveal almost no use of this strategy due to the fact that these participants are in an EFL context where native English speakers are not available. There were some exceptions where some students expressed their attempts to ask native speakers by using specialised online websites. However, virtual access to native speakers is also limited. The following example is taken from Participant RO's e-portfolio.

Figure 51
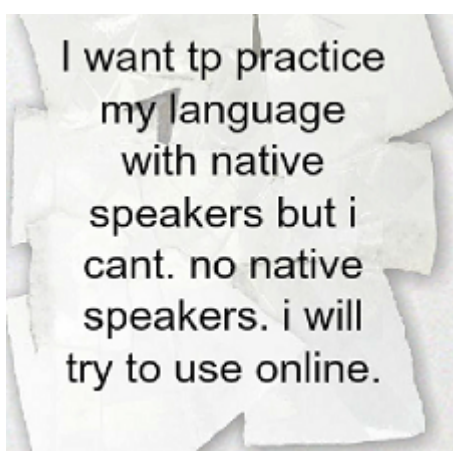
This participant reveals that he wanted to practise his English with a native English speaker in Saudi Arabia but due to the lack of them, he intended to find them on the internet. Participant HM says that he has never met a native speaker to ask him about meaning.

> "I never saw a native English speaker even in Riyadh, so I can ask him about the new words meaning."

Other participants express that it is difficult to find native English speakers in Saudi Arabia. There is some evidence that participants intend to use this strategy either online or when they travel abroad. Communication with native English speakers was almost impossible in the past in EFL contexts such as Saudi Arabia. However, this has become more possible through new social media platforms, specialised English learning websites and instant messaging mobile applications. While there were intentions to take steps to find native speakers on the internet, there is little evidence in the qualitative data of this research that shows real successful attempts in this matter. Once learners discover the meaning of new words either by guessing, using dictionaries or asking others, they might tend to take notes about them. Therefore, the next section will report the findings about note taking strategies.

6.3   Note-taking

The definition of note-taking strategies that seems to be suitable for this research context is: "writing down key words and concepts in abbreviated verbal, graphic, or numerical form to assist performance of a language task", O'Malley and Chamot (1990, p. 138). In addition, the second logical step learners may take after revealing the new words' meanings is writing down information about these words. This could be employed after discovering the new words' meanings by using dictionaries, guessing or asking others as previously discussed in the previous section. However, in some cases note-taking could precede the discovery of new words' meanings such as noting down new words while listening or reading. Learners may tend to use strategies for note-taking based on their needs. Therefore, it seems that words that are chosen to be written down are usually important words to the learner. The importance of the words recorded lies in the learners' beliefs about them. For example, learners may write down a word if they believe it is important for their general understanding and comprehension. In other situations, learners might record new words if they are relevant to learners' speciality or field of work or study. According to Marin (2005), it is important to understand how learners employ note-taking strategies. This can be achieved if the type of information that learners write down about the words, where these words are kept and how these words and information are organised are understood. Thus, this section will report the findings from the e-portfolios and interviews about these three main aspects of note-taking strategies. The content of the e-portfolios about note-taking strategies is believed to be helpful and informative for deepening understanding about how these strategies were employed. This is because the way the e-portfolios were applied adds more valid and authentic contexts for the use of the strategies.

6.3.1   Noting down L1 translation and equivalent

Noting L1 equivalents of new words is one of the common vocabulary learning strategies. It is a logical step to take when facing new words for most learners. In the current study, noting down L1 translation of new words was one of the major patterns among 15 participants. Figure 1 is taken from participant RA's e-portfolio.

Figure 52
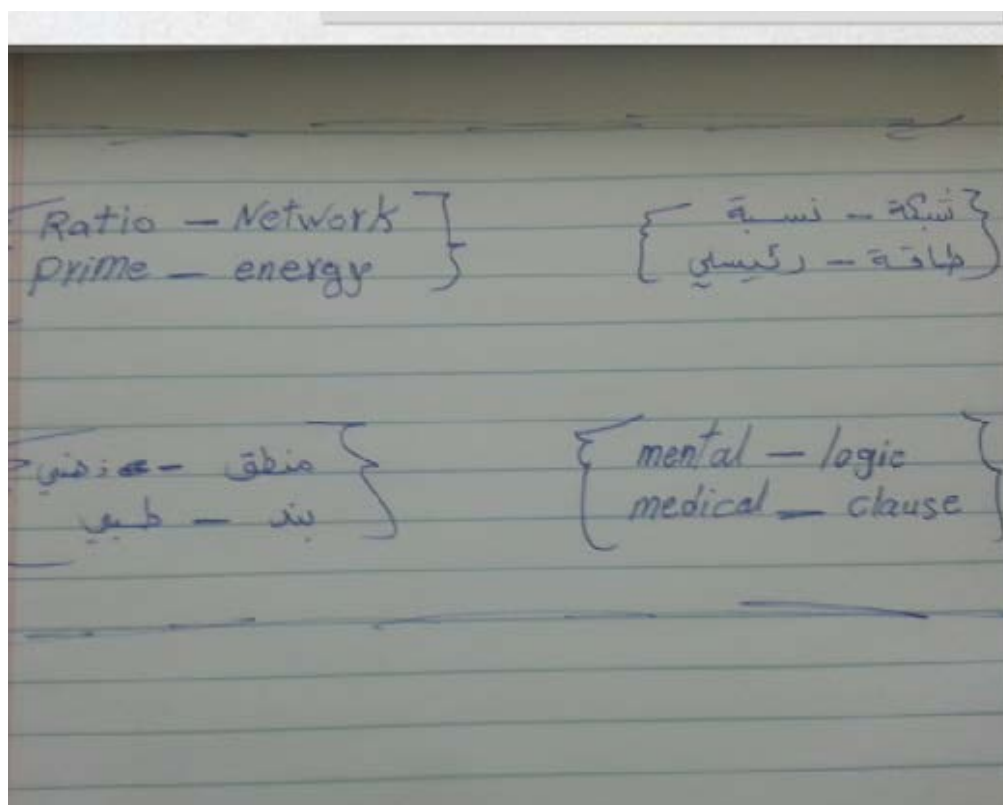
This screenshot is basically evidence of L1 translation strategy use uploaded to the e-portfolio by this student. It seems that it was a scanned document taken from a paper-based notebook. It is a very direct employment of translation strategy where the new English words are written with their L1 (Arabic) equivalent. As shown in the figure above, two English words were put together between big brackets and their equivalent in the same way. There are no explanations in any other source of data as to why these translations are organised in such a way. However, it is possible that these pairs of new words are taken from a textbook that learners are using in their other language classes. The organisation of the recorded information about new words will be discussed later in this section. Similarly, the figure below is taken from participant MO's e-portfolio.

Figure 53
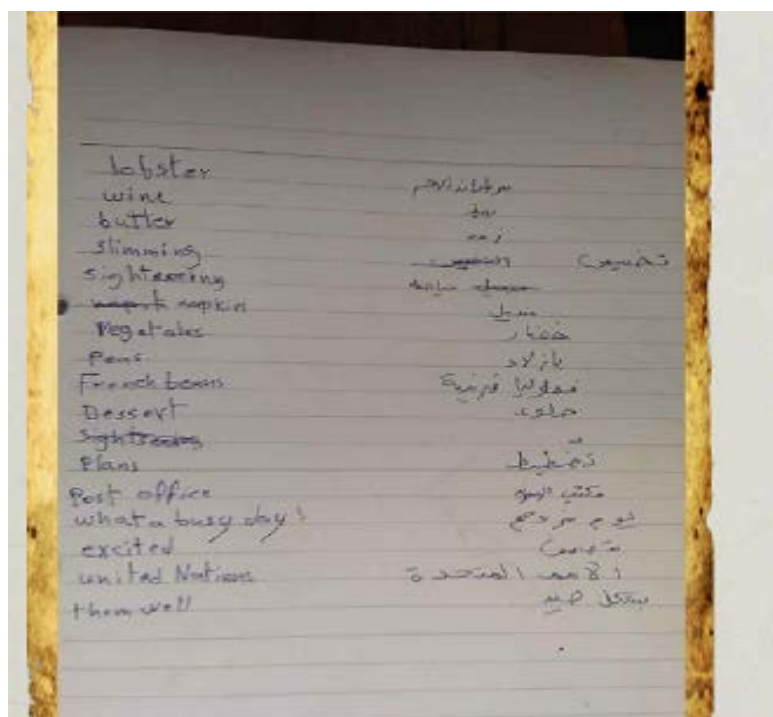
This document also is uploaded by the student as evidence of using L1 translation. The new English words listed in this scanned paper-based document are varied. However, there is some sort of relationship between some of them, especially the ones about food or maybe a restaurant. It is also not obvious where these words come from but, as discussed earlier, it is possible that these words are part of the students' modules.

Furthermore, there is an obvious pattern in learners' responses about translation as a vocabulary learning strategy in the interviews. This strategy was widely employed, sometimes on its own, and in combination with other strategies on other occasions. The following quotation is taken from participant KA's post interview.

> "yes, of course. I heavily rely on this strategy because what I need to write down is simply the Arabic meaning."

The reason for only noting down this kind of information is not clearly stated in this participant's answer. It might be argued that this learner indirectly expresses that L1 translation is the only important information he is seeking when he states: " what I need to write down is simply the Arabic meaning." However, other participants are more direct in explaining why they choose to write down the L1 translation. For example, participant SN reveals that he does not care about the other aspects of knowledge of new words such as pronunciation. The following is a quotation from the same participant.

188

> " Yes, it is always my first thing to do especially if the word is directly related to my studies. I am not interested in any other information about the new word. The Arabic translation is the most important. Pronunciation is not my focus and it is difficult to write it down"

This learner, unlike the first one, is very informative and gives details and an explanation about this strategy. He is clearer in explaining why he notes down the L1 translation and not any other kind of information. He expresses that the pronunciation is difficult to write down, which is true if the participant's proficiency level is taken into account. Participants are at the 4th level of an 8-level bachelor degree TEFL programme. Thus, it could be argued that phonetic symbols are still quite difficult for them at this stage of study. In fact, many EFL teachers are still unfamiliar with the phonetic symbols that help in writing and reading the English pronunciation. However, only one participant expresses that he is interested in writing down the new words' pronunciation. Participant SA expresses this in his e-portfolio in the following screenshot.

Figure 54

عندي نوت للمفردات اسجل فيه الكلمة ومعناها العربي ونطقها

مفيد واذاكر منه

Translation:
"I have a vocabulary notebook where I write down the word and its Arabic translation and pronunciation. It is useful and I study from it."
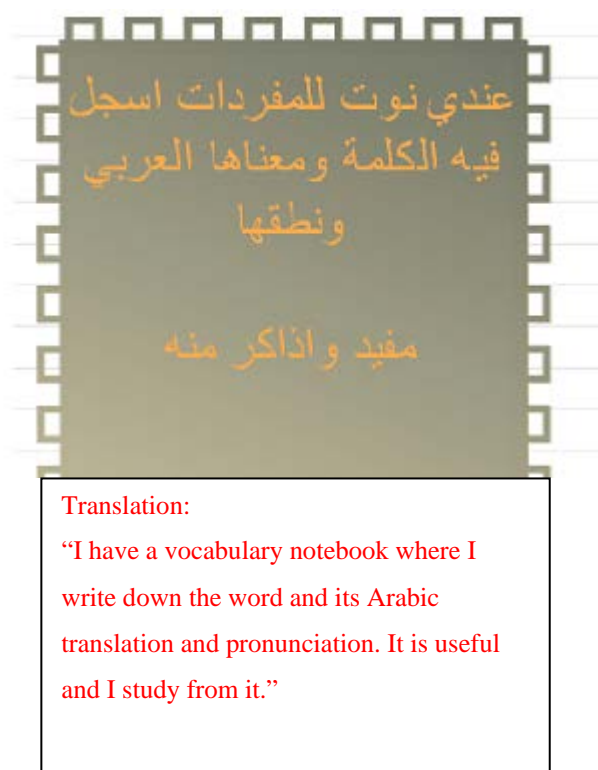
This participant states that he keeps a notebook for new words where he notes down the new words and still their Arabic equivalent but more interestingly the pronunciation. It is interesting because he is the only participant who expresses that he is writing down the new words' pronunciation. It becomes important to look at this participant's performance in the AVST to see if it correlates with his strategy employment that is not in line with the main tendency of this strategy use among all participants. More interestingly, this participant's AVST score was among the highest scores on the test. His score was 22 out of 30 before instruction which indicates that this student had already a high performance proficiency. His score also improved significantly after the instruction to be 26 which means he knows about 494 academic words out of 570. This could indicate that because this learner is a high achiever and has a good performance he chooses to employ more difficult strategies such as noting down a new word's pronunciation. It is also worth mentioning that there is no evidence that he used the formal, professional, phonetic symbols to note the pronunciation down. There is also a possibility that he used simple phonological system or using Arabic phonetics to write new words' English pronunciation. In any case, it is interesting that this learner who does not fit in the mainstream employed a difficult strategy that correlated with his performance and general learning. The following quotation is taken from participant RA's post interview:

> " after checking the meaning in the dictionary, you mean? Yes, I write down the Arabic meaning and I usually do not write anything else especially the pronunciation."

This learner specifies the pronunciation as an aspect of knowledge of words that he does not note down. He does not give any reason for not writing down the pronunciation of new words but it could be argued that the difficulty of writing down the English pronunciation is the reason. The researcher claims it is difficult when compared with Arabic pronunciation writing. Arabic pronunciation writing is very simple and straightforward and what is written is what is pronounced unlike English that has irregularities.

6.3.2   Noting down synonyms and antonyms

Another kind of information students tended to note down was synonyms and antonyms. The general pattern was that it is widely used as participants report. In the e-portfolios, most of the evidence showing use of synonyms and antonyms are in the context of association strategies. These artefacts of learning are in fact a kind of information recorded by participants. This is simply because this kind of information is recorded either in the digital or traditional paper-based format. In the following picture, the participant includes a list of words with its synonyms and antonyms.

Figure 55

Synonym	Antonym
Move out	Restore
Position	None
Unite	None
Upper limit	Minimum

It is not clear if the learner uploaded the whole list from a different source or if he created the list himself. What is clear is that this learner made efforts in noting down synonyms and antonyms as a kind of information. This list is not too long or too short. However, some participants tended to keep short lists or sometimes write down a single word pair such as in figures 56, 57 and 58 below.

Figure 56

polite / impolite

Figure 57

antonymy

available - unavailable
غير متاح   متاح
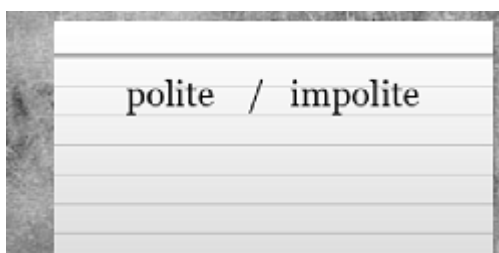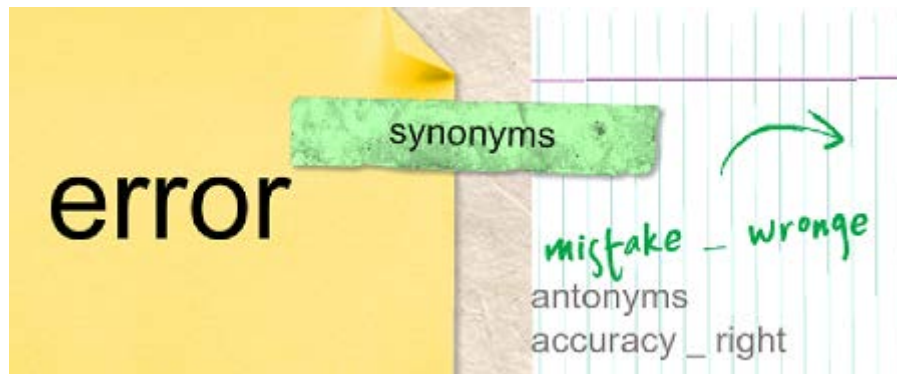
Figure 58

Other participants kept medium size lists of synonyms and antonyms such as the two figures below from participants SA and TS, respectively.

Figure 59

Figure 60

These lists seemed to contain simple words compared to the participants' speciality in TEFL and level of study. This could mean that they just want to practise this strategy or maybe they just became aware of the existence of this strategy. These students reflect about the synonyms and antonyms strategy in their post interviews. Participant SA states that he likes the strategy but with difficult words, it becomes difficult to find a synonym or antonym:

> " synonyms and antonyms are good things to write down. I like them but sometimes it is not easy to find the synonym or antonym when reading, so I like to use them with the words I already know."

This participant expresses that he makes notes of synonyms and antonyms mostly for the words he is already familiar with. He explains the reason by stating that it could be difficult to find the appropriate synonym for a newly discovered word. On the other hand, participant TS claims that he notes down synonyms, antonyms and L1 translation whenever it is possible without giving any explanations of when it is possible.
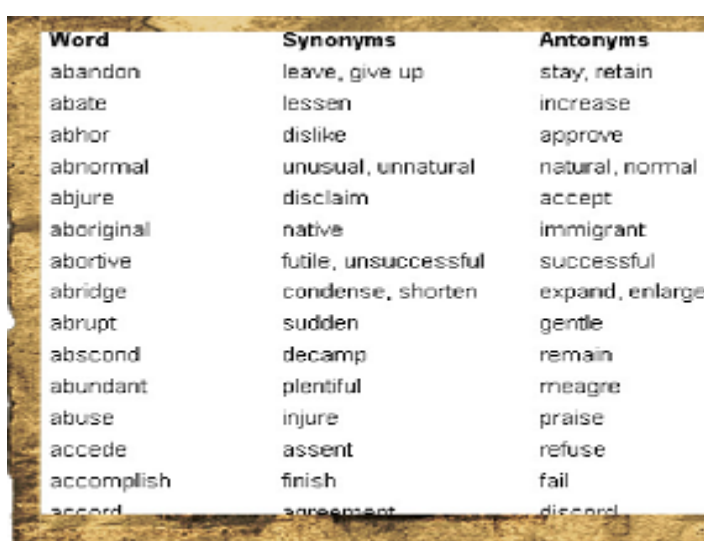
> " yes, I write down Arabic meaning, synonyms and antonyms and any information when it is possible."

While there is little in the above quotation about when he writes down the synonyms and antonyms, it is clear that this student actually employs this strategy when learning vocabulary. As this is what this section is concerned with, this quotation supports the argument of this finding.

Other participants tended to keep longer lists, which might indicate that students who kept longer lists in fact use this strategy more practically. In other words, this use of this strategy is believed to be more sophisticated due to the fact that it contains more specialised words (i.e. words that are related to their speciality in the academic context). Before introducing examples from students' e-portfolios, it should be noted that sophisticated use of strategies as a level of strategies use will be discussed in greater detail in a different section dedicated to the different levels of strategies use. The following screenshot is taken from a participant's e-portfolio.

Figure 61

Word	Synonyms	Antonyms
abandon	leave, give up	stay, retain
abate	lessen	increase
abhor	dislike	approve
abnormal	unusual, unnatural	natural, normal
abjure	disclaim	accept
aboriginal	native	immigrant
abortive	futile, unsuccessful	successful
abridge	condense, shorten	expand, enlarge
abrupt	sudden	gentle
abscond	decamp	remain
abundant	plentiful	meagre
abuse	injure	praise
accede	assent	refuse
accomplish	finish	fail
accord	agreement	discord

The list contains words that are either academic or general from a high level of vocabulary size. Words like abjure, abridge, abrupt, abuse and accede are all considered more academic or less frequent words. This word list might reflect an excessive and long employment of note taking strategy but it is also reflecting irregularity from the main tendency in using this strategy. It reflects less frequent words, which is not the common pattern among the participants. It is, then, believed that looking at this participant's score in the AVST is crucial to see if it explains the inclusion of less frequent words. This particular participant's pre AVST was among the highest in the whole group. More interestingly, he scored the highest in the post instruction AVST. His pre score was 21 which indicates that he knows about 399 academic words. His post score is 27, which means that he knows about 513 out of the 570-word academic word list. Part of the power of this research is that it makes use of the quantitative data to explain the qualitative data while acknowledging the significance of the quantitative findings when they stand alone as indications of performance and learning processes. Likewise, the example below shows a long list of words and their English synonyms. As argued earlier, it is believed that the longer the list is, the higher the level of this strategy use. This list contains about 108 words and their synonyms. It is not clear whether this participant wrote it by himself or took it from other sources.

Figure 62

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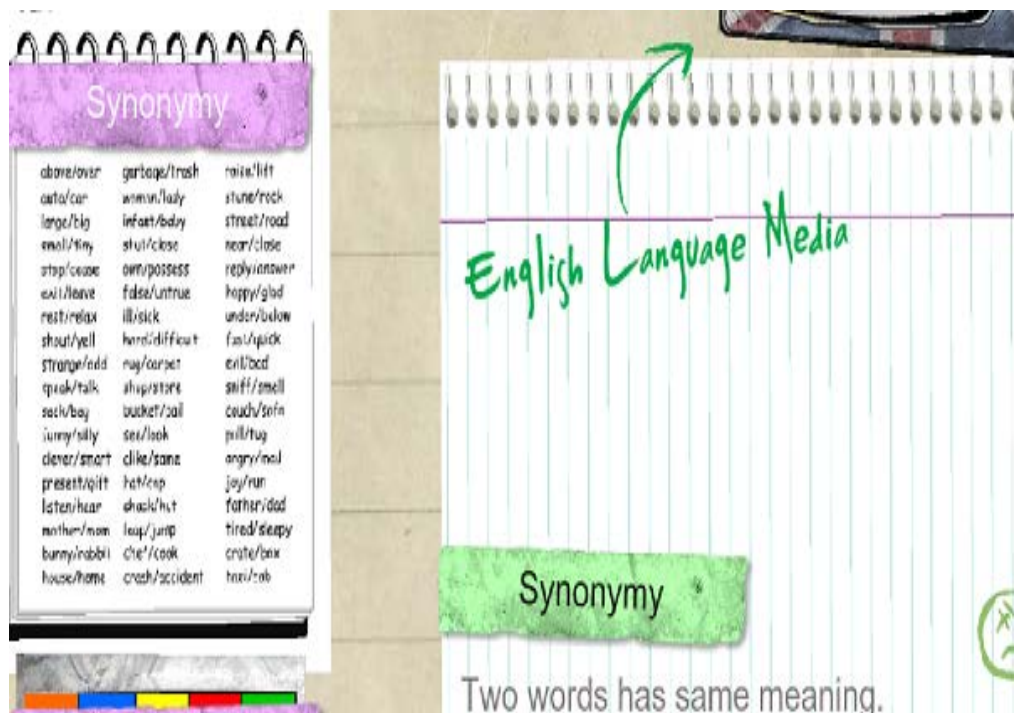
This participant also explains what synonym means as shown in the figure above at the bottom right of the screenshot. This could indicate that the participant has just discovered the meaning of synonym or just wanted to explain the use of it to the audience that included his classmates and teacher. This participant's score in the pre and post AVST was checked. His score was 15 before the instruction and increased to 24 in the post test. This was not similar to the previous participant; however, they both have significantly improved in their post-test. Therefore, it can be argued that the more words they know, the more synonym and antonym notes they make. It is also important to draw attention to the fact that synonyms and antonyms were used together in several cases. However, synonyms by their own are always present in students' e-portfolios more than antonyms. Thus, it can be said that finding synonyms is more useful or maybe easier than finding antonyms.

Likewise, it is clearly stated in the post interviews that learners tended to note down synonyms and antonyms. Therefore, this research accepts that participants note down synonyms and antonyms about new words as a kind of information. It is worth mentioning that this is considered a strategy in itself according to Marin (2005). This strategy and related strategies such as keeping a vocabulary notebook are classified as cognitive consolidation strategy in Schmitt's (1997) taxonomy. However, they are at the same time considered association strategies that assist in the recall of the word in Marin's (2005) taxonomy. It should be noted that Cohen (1996) claims that a strategy can coexist in two different levels because it can function differently. More recently, Cohen (October 17, 2015), in a personal communication, reconfirms this claim. Cohen talks about the coexistence of two strategies in two different levels at the same time. He uses himself as an example of a new language learner. He was trying to practise his 13th language, which is Mandarin. He says he wanted to practise his newly learned language. Therefore, he observed two people speaking and wanted to interrupt to practise his language, so he was thinking when is the right time to interrupt and jump into the talk (meta-cognitive thinking) but at the same time he was also thinking about words or expressions to use to interrupt (cognitive). In the current study context, it is thought that this could be true in the case of synonyms and antonyms as both a note-taking strategy and an association strategy. It is important to note that synonyms, antonyms and L1 translation are all considered meaning-oriented note-taking VLS according to Gu and Johnson (1996), while usage-oriented note-taking VLS include grammatical and collocation information and any notes concerned with when and how words can be used. They also find positive correlations between note-taking strategies and L2 proficiency, which is also true in the present study. However, the current study provides more qualitative evidence that supports the quantitative findings.

6.3.3   Noting down the definition of new words

Another kind of information students tended to note down is new words' definition. This varies from dictionary-entry-like definitions to simplified definitions in students' own words. Some students mix the two methods by using the official dictionary definition of new words and then explaining the words in their own simple words like the example in the figure below, taken from participant FT's e-portfolio.

Figure 63
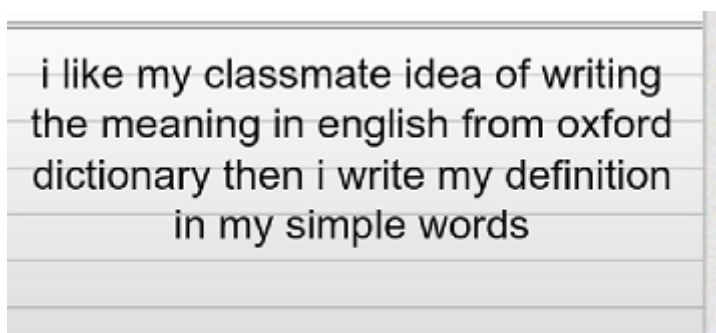
This participant expresses his positive attitudes towards the idea of simplified definitions after writing the definition from the Oxford dictionary. The same student confirms that he in fact uses this strategy in his post interview in the following quotation.

> " I write the English definition from the dictionary, but I also try to paraphrase it if it is difficult or long."

It is believed that this participant at the beginning likes the idea of writing the definitions and simplified definitions as reflected in his e-portfolio in the figure above, but starts using them at a later point as he states in his post interview. While there is still a lack of qualitative evidence about the actual use of this strategy, it is thought that the two reflections support each other. Another student shows use of noting down the new word definition and then translating the definition into simple Arabic words. The figure below shows that this student employs more than one strategy to learn the word "Approach". However, as this part of this section is concerned with note-taking, it only concerns the translated English definition in this reflection.

Figure 64
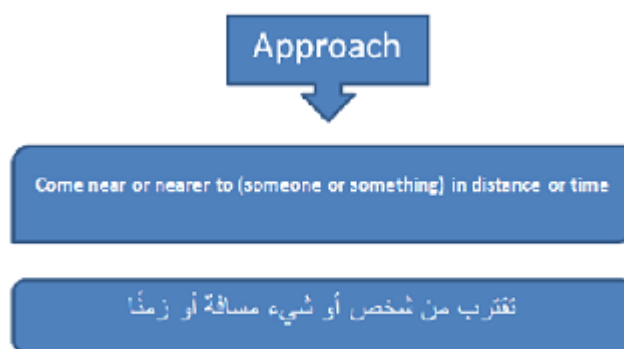
The participant translates the English definition in his L1 which could facilitate his learning. It is worth noting that this strategy employed in this way is not the common practice among the study subjects. It is the single and unique way of employing this VLS. It is unique because the mainstream in the current study is either translating the word itself or writing down the English definition but not translating the definition. Therefore, it is thought that it is an interesting aspect of note-taking strategy. Likewise, the uniqueness of this student's employment of this strategy lies in the fact that he seems to be systematically applying this strategy in this way . Although, he says nothing about it in the post interview, he uploaded a scanned document showing the same practice, that is translating the word's definition into his L1.

The scanned document shows that he applied the same strategy again but this time with the word "authority" in a traditional paper-based document. He translated the English definition into Arabic. This could indicate that this participant employs this strategy in a more systematic way in all possible situations because he uses it in two different learning situations (two different words) and in two different modes (traditional and digital).

6.3.4   Noting down grammatical categories and usage of words

Students report that they note down words' grammatical category. They write down words and then what grammatical category they are such as noun or verb. The following quotation is taken from the post interview of participant AA:

> "I write down the Arabic meaning and I also write down verb, noun etc. it helps me when I see the word again in the reading, so I can know is it a verb or a subject"

This participant seems to be writing down the grammatical category of new words because it could help him to know the meaning based on the grammatical function in an authentic context when he says "in the reading." Other participants claim that they note down the grammatical

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category as a piece of information about the new words. In a similar quotation participant FN expresses that he notes down the grammatical category of new words for the same reason:

> " if you find the word in a sentence and at the beginning, then I would say that it should be a noun and this can help me to know the meaning. Therefore, I think it is a good idea if write down the grammatical category I mean verb noun adjective, and you know."

While this participant does not say that he writes down the grammatical category vividly, it seems that he employs this strategy because of the reasoning he explains in the post interview. This research accepts that he will not give such details and explanation without actually using this strategy.

The final information recorded about new words, participants in this research systematically reported is the usage of the words. In the current research context, this includes any information about the use, situation, example sentences and context of new words. The post interview includes responses of participants that address this kind of information about new words. The e-portfolios have very limited reflections or evidence of such kind of information. The usage of new words is reported to be noted down by learners in different contexts and situations. The following quotation from TS describes what this participant records in his notebook about vocabulary:

> "writing down Arabic meaning first, then it is very very important to write down an example of the word because I want to know how to use it."

This participant directly links the example sentence with the use of the word. Therefore, his reflection is relatively supportive of the claim that participants in this study record the usage of new words. This reflection explains itself. However, there are other quotations that do not clearly state that they write down the usage of new words. As this section is interested in knowing that learners actually write down this kind of information, this research found some quotations that highlight the significance of the usage of the new words but not clearly writing them down. The following quotation is an example of vague reflection about this matter by participant RO.

> "I write down the Arabic meaning in my notebook, and I think the sentences in the dictionary are also important to help in using the word in real life."

This participant does not say that he writes down the usage of new words but he expresses his beliefs about the significance of the usage of new words. However, this research accepts that because the participant expresses his views about this kind of information in the context of note-taking, this learner might actually employ this strategy. In analysing the qualitative data about

this specific finding, it is found that employing this strategy is almost a pattern. That excludes the ambiguous or less direct quotations. Before finishing this section that deals with the kind of information recorded about new words, it is worth mentioning that writing down more than one kind of information is also a pattern. Almost all learners record at least one more kind of information in addition to the L1 translation. Looking at figure 64 again, this participant noted down the English definition of the target word, a translation of the definition, an example sentence and the L1 equivalent. In most of the quotations, reflections and answers reported above in this section, participants express that they write down the L1 translation and at least one other kind of information about new words. Learners might attempt to discover the meaning of new words first, take notes about them second, and then try to memorise and retain them to be part of their known words. Therefore, the next section will provide a full account of the findings about memorisation and retention strategies.

## 6.4   Memorising and retention

Once learners discover the new words' meaning and take notes about them, they usually and logically tend to make some effort to memorise and retain the words. According to Marin (2005) the natural, expected steps learners take to commit new words to memory are verbal and written repetition and association or mnemonic techniques. Therefore, this section will report the strategies that participants in the study employ in order to memorise and retain the new words. This will include three main strategy types, namely: repetition, association, and further practice and consolidation strategies.

6.4.1   Verbal repetition

Learners tend to first repeat the new words orally as discussed earlier. However, it is vital to know how learners do this in practice and what they say about it. Being able to understand this would enable other learners to benefit from the tricks, techniques and efforts engaged in employing these strategies. Likewise, research, of course, would be able to look deeply at these strategies and how they are employed which could increase understanding about this particular area. Thus, it is found that it is important to report the patterns and trends found in the participants' e-portfolios and interviews.

It is noticed that participants employed repetition strategies in different manners in different conditions. Some participants tended to employ repetition strategies verbally more than in writing. The following screenshot is taken from participant RM and it shows that he reflects on verbal repetition.

Figure 65
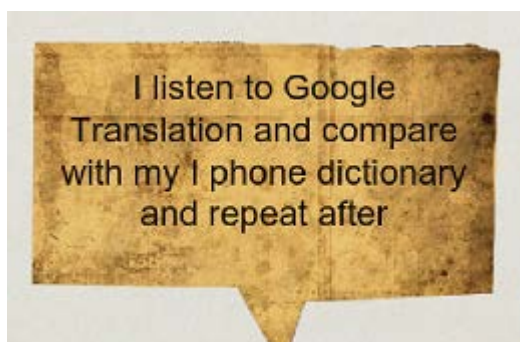
Participant RM's reflection demonstrates that he uses technology to listen to the correct pronunciation and repeat the sound after. RM specifies the applications he uses, namely: Google translate and his iPhone dictionary. As figure 65 shows, there is no reflection about written repetition. Therefore, this participant seems not to use written repetition. This is supported by a quotation from his interview. He elaborates about repetition and says:

> "yes, I do repeat. I repeat many times silently and loudly after that. It works for me to remember the word. Repetition in writing is useful but time consuming, so I usually do not repeat in writing."

The answer of this participant shows that he is aware of written repetition as a useful strategy as he describes, but he thinks it could take more time than verbal repetition. This might seem to be the reason for him not to repeat in writing. Thus, this participant would be classified in the section of verbal repetition in the findings.

Other participants who claim to use verbal repetition more than written repetition show different methods of repetition. Participant HM, in figure 66, shows that he employs verbal repetition within a context of watching movies.

Figure 66
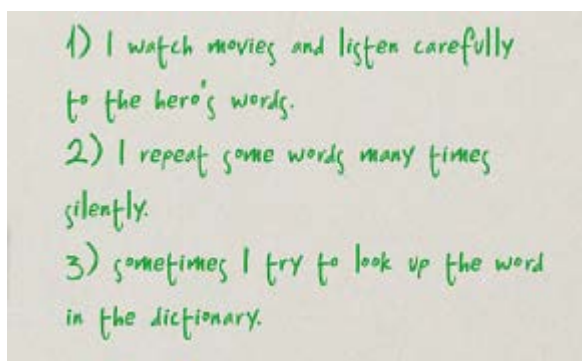
This participant shows that he uses this strategy in a more authentic and contextual way. It is not obvious from this quotation whether this participant only repeats silently when he listens to a

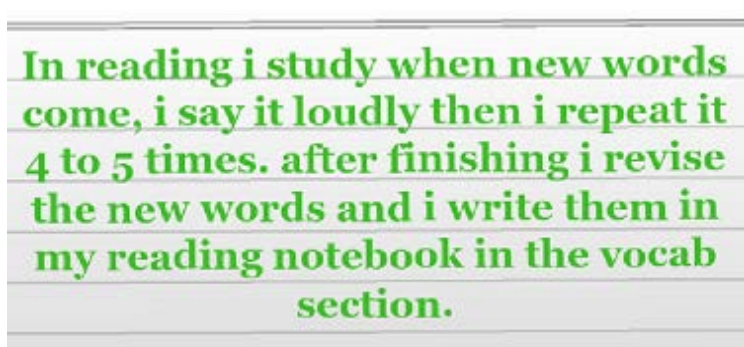new word in the movie. This participant is unique in his reflection because he is almost the only participant who uses the verbal repetition in the context of watching movies. This participant found this strategy useful because it could help him pronounce new words in an authentic and more natural way. This participant shows interest in learning the American accent of English in a quotation taken from his interview.

" I want to learn English and speak like Americans. I love the American accent"

This might explain why this participant uses verbal repetition in the context of watching a movie. The participant's interest in learning accents might be what triggers the use of verbal repetition in this way and condition. Participant RM does not show any interest in written repetition in any source of his data. Thus he is labelled in the verbal repetition area rather than written repetition.

Verbal repetition as a strategy to memorise new words has been obviously employed by participants in this study. However, the details about how it was used are what make the current research findings different. As discussed earlier, participant RM used this strategy in a contextual way, participant HM also employed this strategy in context. He employed it in the context of reading as shown in figure 67.

Figure 67

In reading i study when new words come, i say it loudly then i repeat it 4 to 5 times. after finishing i revise the new words and i write them in my reading notebook in the vocab section.

This participant says nothing about written repetition in his reflection above. He claims that when he reads he repeats new words aloud 4 to 5 times. He also states that he then writes the new words down in his notebook but he does not clarify whether he repeats them in writing. He is simple and short in his answers in the interview, but he also claims that he uses verbal repetition. This gives the feeling that he uses more verbal than written repetition.

"yes, I repeat new words several times loudly."

This participant does not provide any indication that he uses written repetition in any form, at least in the data available about him. This makes him labelled in the section of verbal repetition users rather than written. It is worth mentioning that this research does not assume that this participant does not use written repetition in his learning of vocabulary, but rather suggests that he might favour verbal repetition over written. While there is limited evidence of why he prefers verbal to written repetition, other participants state or indicate some reasons for preferring one over the other, for example: time wise reasons such as participant RM.

Other participants show that they used verbal repetition but with no context or elaborations about the conditions they employ this strategy in. Participants AF in figure 68 and FT in figure 69 demonstrate in simple statements that they use this strategy.

Figure 68
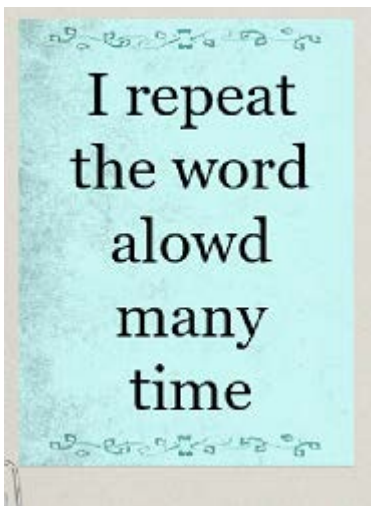
Figure 69

These reflections are seen to be short and less descriptive about the context and conditions this strategy is used in unlike the reflections in figure 66 and 67, which were more detailed and reflective. Both participants also provide short, general statements about repetition in their interviews. For example participant FT states that repetition is important and useful but he does not specify which type of repetition he means, verbal or written:

"yes, I repeat. Repetition is helpful."

In this short answer, participant FT is not clear whether he means verbal or written repetition or both, but because this research draws distinctions between participants who tend to use more verbal or more written or both, it is thought that this would be classified with the verbal repetition. The reason for this argument is that the same participant specifies the type of repetition he uses in his e-portfolio reflection.

6.4.2   Written repetition

Other participants tended to use more written than verbal repetition as will be shown in this section. Participants report different contexts, conditions and explanations about the use of written repetition. For example, participant DF in figure 70, shows that he actually uses repetition when he repeats writing the word "evaluate" three times. He also provides a reflection about written repetition.

Figure 70
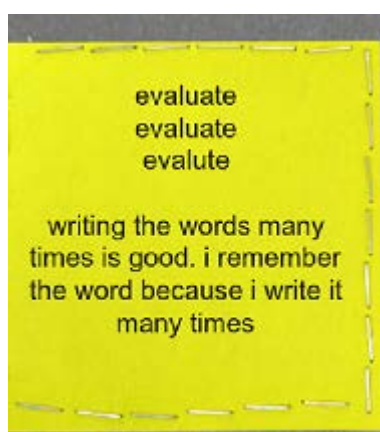
This participant draws a direct relationship between written repetition and memorisation of new words. He states that he writes new words many times because it helps him to remember the words. This direct linkage between written repetition and remembering is believed to be the

motive that made this participant use this strategy more than verbal repetition. This is supported by a quotation from his interview:

> "written repetition is useful because it helps me feel the words and then this eases remembering them."

This quotation shows that this participant believes in the usefulness of written repetition as a facilitator of word recall. There are no signs or indications of using verbal repetition in this participant's interview or e-portfolio. Thus, it is thought that he would be classified within the written repetition label.

Figure 71 is taken from participant MD and shows a different method of written repetition. It is different from other evidence because it combines the repetition of both the new English words and their Arabic translation. Likewise, it combines written repetitions across different platforms. It contains writing in traditional paper-based and digital forms.

Figure 71
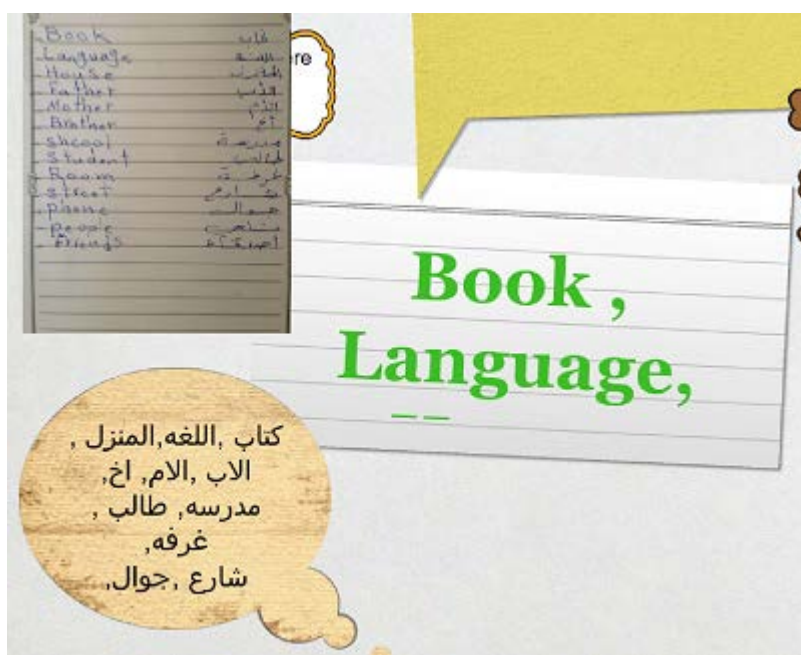
Combining the repetition of the English and Arabic words is believed to be a unique form of written repetition. His answer in the interview might explain his e-portfolio:
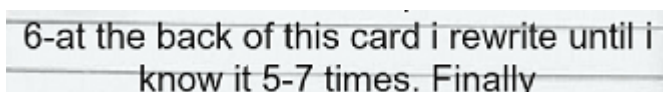
> "yes, I like to repeat in writing but I write also Arabic meaning couple of times. This makes it easy to remember both the English spelling and the Arabic meaning."

This participant explains why he likes to repeat even the Arabic meaning of the new words as well. He states that it helps him to recall the English form and the Arabic meaning. This was

proved to be true in his e-portfolio which reflects his actual use of the strategies as shown in figure 71.

In a different situation and context, participant SM also uses written repetition. Figure 72 showed that this participant used written repetition of new words on the back of what looks like a flash card. He states that he rewrites the new words 5 to 7 times.
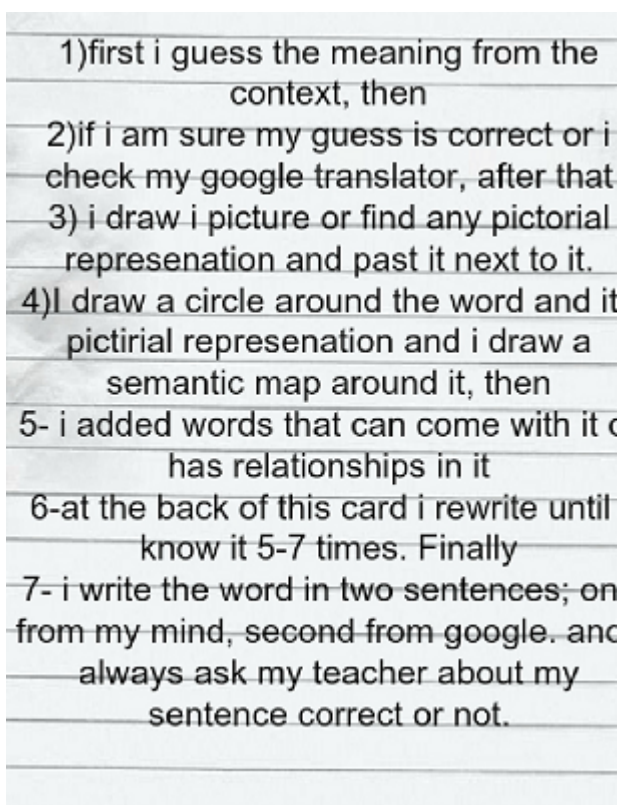
Figure 72

6-at the back of this card i rewrite until i know it 5-7 times. Finally

It should be noted that this strategy comes in a chain of strategies this participant used to learn vocabulary as shown in figure 73 below.

Figure 73

1)first i guess the meaning from the context, then
2)if i am sure my guess is correct or i check my google translator, after that
3) i draw i picture or find any pictorial represenation and past it next to it.
4)I draw a circle around the word and it pictirial represenation and i draw a semantic map around it, then
5- i added words that can come with it o has relationships in it
6-at the back of this card i rewrite until know it 5-7 times. Finally
7- i write the word in two sentences; on from my mind, second from google. and always ask my teacher about my sentence correct or not.

It seems that this participant after going through the learning processing of the new word by guessing and then confirming the meaning, he turns to start remembering the new word by

rewriting it many times. This is in line with the logical learning steps on which Marin (2005) builds his taxonomy.

Participant TS is more detailed about the situation in which he used repetition. Figure 74 below shows that this participant utilised technology to facilitate written repetition.

Figure 74

> when my teacher give me
> the translattion i write it in
> my mobile then i write more
> times inmy note book.
> Iphone helps me in noting
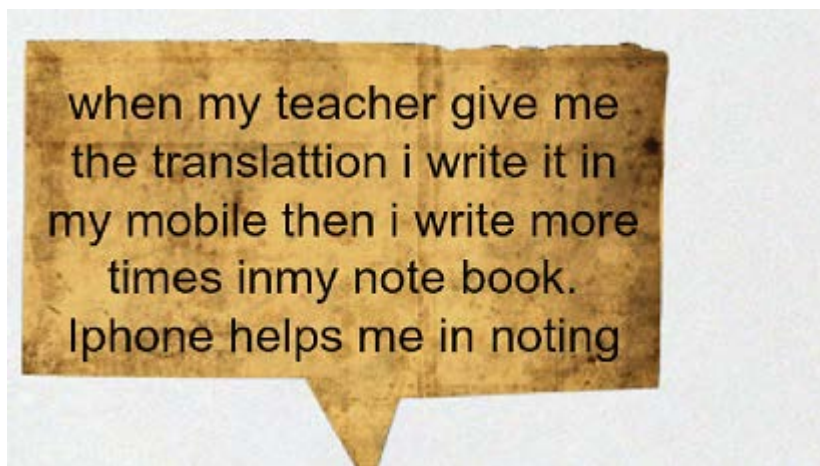
While this reflection might seem to be related to noting strategies, it gives details about written repetition. It shows that this participant might be writing important new words during class time for later repetition practice because the meaning is already given by the teacher. Class time is obviously restricted and thus does not allow learners to practise written repetition. Therefore, this participant believed that his smart phone helped him to note the targeted new words quickly for practice later in any format, traditional or digital.

Another participant used written repetition in a different context. Figure 75 from participant RA's e-portfolio shows that he uses repetition in the context of learning spelling.

Figure 75

> 2-spelling is very important and i have
> my way of studying spelling. i first
> write by my hand in the air not in my
> notebook. i do it many times and i
> imagine it also. then last thing i write
> down many times. i repeat the writing.
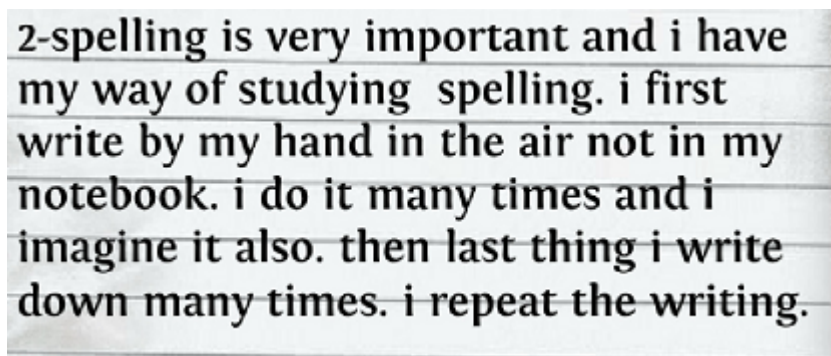
Written repetition is usually employed to facilitate remembering the meanings of new words. However, it is equally important to remember the spelling of the new word as an aspect of

knowledge about words. Thus, this participant's reflection about written repetition is related to this study's findings. Written repetition to facilitate the learning of spelling is also noticed in other participants' reflections and practices such as the one shown in figure 78. It shows that participant practises written repetition of spelling words' syllables which could assist in learning spelling and pronunciation of words.

It is also noticed that written repetition took place on different platforms and in different forms. It was practised in both digital and traditional paper-based forms. Figures 76, 77 and 78 are samples of both paper-based and digital written repetition. This could suggest that participants become more willing to use and show their use of written repetition in different formats. Participants used written repetition in traditional paper-based format, as it has been widely employed in the past. However, employing this strategy digitally could be attributed to the use of e-portfolio. Practising written repetition digitally, as technology is becoming an integral part of learning for the new 21st century learners, is expected. There is enough evidence from the e-portfolios and interviews that technology facilitates both the documenting and the actual practice of linguistic learning. The ways that technology impacts the use of the portfolio and learning of VLS will be discussed in the next chapter.

Figure 76

Figure 77

Figure 78

6.5   Overview of findings

After analysing the data related to dealing with new words strategies, various patterns are found. Guessing is the first set of strategies that participants reflect upon heavily. Two analysis strategies that could lead to better guessing of new words' meaning are reported. First, word structure analysis, which involves breaking one single word into smaller parts. This strategy stimulates more reflections and justifications by participants. Generally speaking, it is found that this strategy was valued and considered helpful by participants on different occasions. Second, sentence structure analysis, which was seen by most participants as either less useful or irrelevant to guessing strategy. There were some exceptions to this pattern where this strategy was found to be useful. This strategy, due to its complex nature, does not generate reflections and explanations by participants like the first one. Familiarity with the title, context, and situations in reading passages are also found to be conditions for using guessing strategies. It is

found that the learners would attempt to guess the meaning in different ways when they face new words. However, if guessing is found to be less effective or not suitable to the learning situation or to the learners themselves as individuals who differ from each other, they might tend to skip the new words and stop trying to guess. The reasons for skipping the new words and for stopping guessing vary between failed guessing attempts, learners' individual preferences, learning situation, lack of dictionaries or access to other resources, and not noticing the unknown words as such. It is found that participants used bilingual dictionaries. However, there is evidence that participants consulted monolingual, bilingualised monolingual and specialised cultural and social dictionaries. Information looked up in the dictionaries varied from simple L1 equivalent to rewritten simplified definition and pronunciation. In terms of social discovery strategies, it is found that participants mainly asked their teachers first and their classmates second. There is very limited evidence of socialising and asking native English speakers. Group work as a social strategy is not reported by participants in any source of data. Participants mainly asked about the meaning and use of new words. However, spelling and pronunciation are also found to be asked about but at a lower degree of frequency.

L1 equivalent or translation and synonyms and antonyms are the main kind of information recorded. However, there is some evidence that learners recorded other information about new words, such as example sentences, pronunciation, simplified definitions, English definition, and grammatical category. Participants kept traditional paper-based and digital records and vocabulary notebooks. Further, participants dedicated digital and traditional notebooks to vocabulary or dedicated sections to vocabulary in their normal language classes' notebooks. Verbal and written repetition is found to be one of the major strategies participants tended to employ to assist in remembering and retaining new words' meaning. There is also evidence that it was used to help in remembering spelling and pronunciation in addition to meaning. It should be noted that it is found that participants were different in terms of their use of repetition. Some participants tended to use more verbal than written and vice versa. It is found that the participants practised written repetition both digitally and traditionally in normal notebooks.

Chapter 7:   E-PORTFOLIOS AND LEVELS OF STRATEGY ORCHESTRATION

7.1   Overview of findings

This chapter is concerned with the role of the e-portfolio in the context of VLS. This section serves as an overview of the qualitative findings related to the use of the e-portfolio in the context of this research. It briefly summarises the general themes emergent from the qualitative data. Generally, the use of the e-portfolio in the context of VLS was found to be effective as this was a major result in quantitative and qualitative data which is in line with many previous studies of the e-portfolio (e.g. Hiradhar & Gary, 2008; Huang & Hung, 2010; Baturay & Daloglu, 2010; Valdez, 2010; Alshahrani, 2011; Aliweh, 2011; Cepik & Yastibas, 2013). However, a number of aspects of the e-portfolio in the context of the current research were identified in the qualitative data.

A commonly observed pattern among participants is that they tended to adopt a systematic and consistent method of using and learning the different VLS with the assistance of the e-portfolio as will be shown in section 7.2.1. A recurrent theme in the qualitative data was a sense among participants that their awareness of the importance of the VLS is believed to be increased and this was attributed to the use of the e-portfolio as will be presented in 7.2.2. Likewise, the interest in using and learning VLS was found to be improved among participants as section 7.2.3 will show. Nevertheless, the e-portfolio was found to encourage participants to become critical in their thinking and self-reflection. This will be discussed in section 7.2.4. Furthermore, different technical, digital features and simplicity and ease of use of the e-portfolio were all found to encourage participants to adopt more effective learning practices such as learning management skills, lifelong learning conceptualisations and maintaining positive motivation as will be detailed in section 7.2.5.

The second area that this chapter is concerned with is strategy use orchestration. With regard to the levels of strategies use, it was found that participants used lower levels of orchestration which corresponds with the vast majority of previous studies (e.g. Ozeki, 2000; Carrier, 2003; Ikeda and Takeuchi, 2003; Oxford et al., 2004; Nakatani, 2005). However higher levels of strategy orchestration are also reported with different degrees of use. For example, participants have shown that they formed clusters of strategies to learn words to a great extent. However, they have not shown the same when it comes to the highest level of strategies' use, that is being

able to transfer the strategies from one learning situation to another. Very limited evidence is available to argue that learners actively transfer the already formed clusters of strategies from one learning situation to another. Thus, the use of this high level of strategy orchestration is believed to be very limited among the participants in the current research study.

7.2   E-portfolios

7.2.1   Self-consistency in VLS learning and use

Self-consistency in learning and employing the VLS is the main pattern in the findings of the e-portfolio. Participants express in various ways that the e-portfolio encouraged them to adopt a consistent approach to learning and using the strategies. Participant TS is very direct in explaining this:

> " I think the e-portfolio makes me more fixed in learning and applying the VLS. I have to submit an e-portfolio in two weeks' time. I think deeply about the new strategies, I try to use them and then I document my use and upload it into my e-portfolio. Every other two weeks I have to do this."

TS expresses that he became more consistent in learning and using the strategies when he uses the word "fix" which might mean that the e-portfolio has made TS more consistent in developing approaches to learning and to using the newly learned strategies. This is reflected in another participant's answer. Participant DF says:

> "the benefit of the e-portfolio is in making me think, learn and then use the strategies taught to us in class. After that I know that I have to use and apply what I have learned and then document it because I will need in my e-portfolio. Repeating this procedure every submission made my learning more stable and increasing."

This participant implicitly expresses that the e-portfolio made him more consistent in learning strategies when he says: "stable and increasing." This could be linked with what he says in the middle of his reflection: "repeating this procedure," because this supports the claim that this became consistent in learning to use the strategies.

Participant SB also expresses that he becomes more consistent in learning and using the strategies:

> "I also think that e-portfolio made me more aware of how to be self-consistent when learning in general. Now, every two weeks I know what I will be doing. First, think and try to understand the new strategies, think about situations where I can employ them in learning the academic words, apply them and lastly document this use so I can use it in my e-portfolio. This is what I need to do every time I need to submit the e-portfolio."

SB is clear and detailed in explaining what he means by self-consistent in learning and using the strategies. He explains the procedures he followed by saying: "first", "lastly." He states the steps he used in sequence to finally submit an e-portfolio. This could be used as evidence of how participants adopted a consistent approach when dealing with the new strategies.

The claim about consistency in learning and using the strategies because of the use of the e-portfolio is also supported by the fact that all participants submitted their e-portfolio at the right time. Moreover, each participant's e-portfolio contains evidence of using at least two strategies and reflections about them and the e-portfolio. Eight of the 19 participants included at least 4 strategies in every e-portfolio they submitted. This could mean that almost all of the participants adopted a consistent approach to learning and using the strategies taught to them in class time. Although most participants seemed to be consistent and actually submitted their e-portfolios, two of them were not systematic. Participants RA and RO submitted nicely reflective e-portfolios in some sessions containing more than 4 strategies but in other sessions their e-portfolio seemed to be poor and less reflective (see examples in figure 1 & 2 in appendix J). This might indicate that these two participants were not systematic in their strategies' use and thus did not reflect enough about them.

7.2.2   Raising awareness towards VLS

One of the obvious patterns about VLS is that learners became more aware of the importance of the strategies to their language learning. This was linked directly with the e-portfolio. Students expressed their understanding of the significance of the strategies for their learning. For example, SB expresses that the e-portfolio made him more aware of the importance of the strategies:

> "I think one of the major benefits of the e-portfolio was to make me think about the strategies. I now think the vocabulary learning strategies are much related to my vocabulary learning. I think it is important."

This participant clearly and directly linked the use of the e-portfolio in this study with his thinking about the importance of VLS. This could suggest that the use of e-portfolio raised participants' awareness of strategic learning and the importance of strategies in language learning. This, as said earlier, is a pattern and reflected in the students' answers about the e-portfolio. Participant RO expresses almost the same in answering a question about the e-portfolio:

> "I think generally, the first thing is that it makes me think about the strategies. I know how important the strategies to my learning. At the beginning I thought it is a waste of time, but now I think the e-portfolio makes me link directly between my knowledge of

strategies and the vocabulary learning. This is to answer your question about the e-portfolio."

RO gives a detailed answer to a general question about the e-portfolio. The answer shows that he, like his classmate BS, believes that e-portfolio has raised their awareness of the importance of the strategies to their learning. In the same vein, MM also expresses in a similar reflection, that e-portfolio contributed positively to his understanding of the importance of the strategies:

> "ahhh, I think the e-portfolio makes me think about my learning. it also makes me think about the organisation of the e-portfolio. At the beginning I thought this course is not for me, because I know some of the strategies, but now I think it is very important to be able to use the different VLS."

From the context of the quotation, it seems that MM expresses that e-portfolio enhanced his awareness of the strategies and strategic learning. At the beginning of his answer he states that the e-portfolio makes him think. At the end of his answer he clearly expresses that being able to use the different VLS is important. Linking these two parts of the same answer to a question about the e-portfolio shows the participant in favour of the e-portfolio and reflects how it forms his awareness of the importance of the VLS. While awareness of the importance of strategies is a clear pattern in the data, there is very limited reflection about this specific aspect in other participants' data. This might suggest that either participants were just less reflective or their awareness might still not be increased.

7.2.3   Growing interest in VLS

Another pattern related to the importance of the strategies and how the e-portfolio contributed to it is showing a growing interest in the VLS. Participants also reflect that their interest in strategic learning has grown. They in one way or another link this growing interest in VLS with the use of e-portfolio. Therefore, it is believed that the e-portfolio has shaped their interest in strategic learning. SA reflects this in the following quotation:

> "in the past, I was most of the time thinking about the exams, but now I think it is even more important to understand. After I use the e-portfolio I became more interested in learning in general and in VLS in particular."

SA in this statement expresses that his interest in strategies has grown after the implementation of the e-portfolio. This direct statement can be used as evidence of how e-portfolios enhance interest in strategic learning. This is slightly different from the belief of the importance of the strategies, because it uses the word interest. This is not an isolated, individual participant's answer, but it is a noticeable pattern in participants' reflections. In another reflection, the same participant SA also expresses the same:

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> "the e-portfolio has helped me in learning and using the strategies, that is for sure, but more importantly I now love strategies more than any times before, because I understand them."

This reflection reinforces what was introduced in the previous paragraph because it is said by the same participant which might mean that this is not by chance. This statement by SA directly links the e-portfolio with the growth of interest in VLS. The participant justifies why his interest increased in the strategies by explaining that he is now able to understand the different strategies. This suggests that e-portfolio as a learning tool has positively contributed in understanding the different strategies which then increased the interest in this participant towards strategies.

Participant AM reflects a similar idea when he answers a question about e-portfolio:

> "I think one important benefit of e-portfolio is to make me more organised. I now like strategies because the e-portfolio helped me to organise my learning and use of VLS."

AM implicitly links e-portfolio with his interest in strategies when he explains how the e-portfolio helped him in organising his learning and use of the strategies. This probably makes learning of VLS more organised and maybe easier which led to more interest in learning the different VLS. While there is no explicit statement that links the e-portfolio with the interest growth in VLS, there is an implicit link between them.

In a more explicit reflection that links e-portfolio with interest in strategies, SM expresses that the e-portfolio has influenced his attitudes towards strategies positively:

> "the use of e-portfolio influenced my views towards strategies. It made me likes VLS because I simply can learn them in a more structured way."

This quotation supports the claim made about the findings of e-portfolio that it influences the participants' interests in strategies. All in all, it is obvious in the previous quotations and others that learners became more interested in learning and using the strategies. This is either directly and explicitly claimed by the participants or implicitly stated. It is also noticeable that in most of the reflections there are justifications and explanations of how the e-portfolio increased interest in VLS. These explanations and justifications will be discussed in a different section in qualitative findings of the e-portfolio. It is worth noting that one participant is not very eager about the idea of strategies in general. Participant AF states on different occasions that employing some strategies is not effective or sometimes a waste of time. For example he states:

"I think writing down the meaning of new words is making me lazy and reliant on the notebook. I just simply try to memorise it if I could or just skip it until it comes again and again."

This might indicate that this participant may treat some strategies as less important which does not correspond with the vast majority of his classmates.

7.2.4   Self-reflection and critical thinking

Self-reflection is one of the basic practices in e-portfolios (Joyes et al., 2010). Participants in the study reflected upon their learning and use of strategies, use of e-portfolio and their general learning experience. There is a pattern in the qualitative findings showing that participants consider e-portfolio to be an electronic tool that encourages critical thinking and leads to reflection. Participant FN states that the e-portfolio helped him to think deeply about learning and using the different VLS before uploading any documents or evidence of using them:

> "the e-portfolio makes me think deeply before putting anything in my e-portfolio. I found it useful to write what I think about strategies in my e-portfolio. This makes me think and think again."

While this participant does not use the word "reflection", it is clear that he means reflection when he says "to write what I think." He also states that he thinks deeply which could mean that this learner is aware of the effectiveness of critical thinking and reflection.

Another participant explains that the e-portfolio made his reflections more beneficial because he could receive feedback from his classmates and teachers about what he thinks. Participant MO states:

> "when I write what I think about the strategies, my classmates and teachers can support my thinking or correct it if it is inaccurate. It is important to do so in your e-portfolio"

MO expresses clearly that thinking and reflecting could generate feedback or discussion about his reflection. He shows awareness of the importance of such practice in the e-portfolio. MO and FN are not the only two participants who express their ideas about critical thinking and reflection that the e-portfolio encouraged. Participant SN explains similar ideas when he answers a question about the e-portfolio:

> "the good thing about the e-portfolio is that I can revisit what I have uploaded in it. Every time I review it I think about new aspects of the strategies I used."

This participant also expresses that when he revisits the e-portfolio he thinks again which can be classified as a form of critical thinking about the strategies. This is directly linked with the e-portfolio. This suggests that the e-portfolio in this case encouraged the participant to think critically about the strategies which is supported by the claim made by SN about bringing new aspects to the strategies. This could also be true for other participants like the ones discussed earlier in this section. Revisiting and reviewing the evidence and artefacts of strategies use and

learning would enhance learners problem solving skills. In this research case, this could lead to more strategic learning and thus better language learning.

In relation to the self-reflection and critical thinking, it is noticed that participants show systematic patterns of reflection. The reflection varies from simple reflection explaining simple learning processes to complex and detailed reflections that address deeper and longer learning processes. It also varies from reflections on language learning in general or vocabulary learning in particular to reflections that focus on the main study scope, the VLS and strategic learning. To show this pattern among the participants, samples from the participants' e-portfolios will be included to explain the content of them.

First, participant SB shows a systematic trend of reflection in almost all of his 5 e-portfolios. The following examples explain his reflective behaviours. The first screenshot is taken from SB's first e-portfolio shown in figure 3 in appendix K. He uses his first language (Arabic) to reflect. The reflection talks about the chain of strategies he employed in learning 14 new words. He explains the sequence of strategies he employed when learning every single word from the 14-word list. The participant does not specify the words he tried to learn but he includes two words as examples of what he did. These words are "approach" and "authority". It is possible that this participant's reflection is part of the thinking and reviewing process as well as documenting the actual use of the strategies. Therefore, it might be an example of reflection. In the coming paragraphs, this research will explain and interpret different reflections by the same participant taken from his e-portfolio. All of the reflections that will be discussed are grouped in appendix K for easy reference.

In figure 4, appendix K , participant SB describes a video about suffixes and how they can be added to words to form new meanings. The explanation he provides in L1 Arabic indicates that he watched and thought about the content of the video and then explained it in Arabic which required some comprehension and translation. This reflection required thinking, comprehension and production at the same time. This is to support the claim that reflection was a systematic practice experienced when using the e-portfolio in this study context. It will discuss how this could impact the learning in the discussion chapter.

Participant SB's reflections became more detailed, descriptive and rich with passing time. This is shown in figure 5, appendix K that is taken from a late e-portfolio. In this reflection, the participant provides a detailed description of his thinking about strategies. He gives an example of how he employs strategies to learn the word "SAW." In addition to the detailed description of his cognitive and meta-cognitive efforts to learn the word, he uses English to write this reflection. This is also noticed in almost all of his remaining recent reflections. This might also indicate that the participant has become more confident to reflect in the target language instead

of his L1 that is used in his early reflections. It is worth mentioning that this is not always true for other participants. There are some irregularities in using L1 and L2 in other participant's reflections. The reason for believing that SB's reflections became more detailed and rich is that this reflection describes complex use of strategies that involved meaning discovery strategy, by defining the word "SAW" in his own words, and a remembering strategy to assist the memorising of the same word.

The same participant continues to use English in his reflections as shown in figure 6, appendix K. This reflection demonstrates a complex strategy use. It describes the participant's strategic thinking about how a word could help him to remember other words. It is an association vocabulary strategy that is classified as a memorising strategy. Association strategies are sophisticated and involve meaningful processing of learning. While this reflection is a short statement, it reveals critical thinking towards vocabulary learning.

In figure 7, appendix K, participant SB writes a reflection about how he deals with words that can confuse him in spelling. He uses words such as "except, expect and accept" as an example to clarify his point of view. He still uses English in this reflection as well which might support the claim that this participant has become more confident in using L2 in reflections. This might also indicate that reflection in L2 became more suitable for him to describe the L2 learning processing rather than L1.

Figure 8, appendix K shows a new reflection by participant SB about online games he plays to learn vocabulary. He includes the website he visits to practise some vocabulary learning games. This might indicate that this participant found these games useful and wanted to share the website with his classmates. However, there is no obvious statement to support that he wanted to share it with classmates. As noticed in the figure, this participant still uses his second language to reflect. This might indicate that this participant has improved in terms of vocabulary learning because he uses more L2 than L1.

Participant SB reflects in figure 9, appendix K that he prefers acronyms and abbreviations as a memorising strategy. Abbreviations, initials, acronyms assist remembering and recalling new words. However, this participant uses a website to double check that his guesses of abbreviations are accurate. This participant in his reflection continues to describe how he employs the VLS by telling that he also asks and challenges his classmates. This might indicate that this participant has positive attitudes towards using abbreviations as a memory strategy because he was keen to challenge and exchange the knowledge with his classmates. This reflection, as described earlier, is rich and states the exact steps and sequence of the strategies used by the participant. English is also used in this reflection. It is considered that this reflection provides evidence that the reflections are systematic and detailed.

In figure 10, appendix K, the participant describes the association strategy he uses to learn vocabulary. He associates the English words with the Arabic words that have similar pronunciation. He differentiates between two types of word sound associations. The first type is similar in meaning and close in pronunciation, such as the English word " minaret", and Arabic word " منارة/manarah/", which means exactly the same. The second is different in meaning and similar in pronunciation, such as the English word "come", and Arabic word " كم/kum/" meaning "how much." He states that he uses them to remember the new words' pronunciation and meaning. This reflection is considered very rich because it provides details about how a single association strategy is employed. This involves meaningful and deep thinking and processing because it differentiates between the two types of associations. Thus, it can be concluded that this reflection reinforces the claim about systematic and regulated reflections. In addition to that, this reflection includes details and descriptions of sophisticated strategy by nature, namely: the associations between English and Arabic sounds.

Participant SB in his last reflection, shown in figure 11, appendix K, becomes more explicit about his strategic thinking. He states that he thinks about what strategy to use when he faces a difficult word. This might indicate that the participant has become more critical and strategic. This is because he started thinking of strategies that could suit the learning situation. In previous reflections, the participant reflects about the strategies and the steps and procedures he takes when he employs them. However, in this reflection it seems that the participant now thinks about the strategies themselves to choose the one or ones that could fit the learning situation. In practical terms, he states that he thinks of a strategy that is suitable to the learning of new words and a strategy that is suitable for memorising them. Then he provides examples of the strategies he uses to learn the words. He claims that he says the word aloud and then employs guessing strategies by reading the words before and after the target word. He sometimes checks the dictionary to confirm his guess if he is not sure about it. This reflection is no different from previous ones in terms of using L2 and the details provided in it. However, it is different in terms of thinking strategically in advance before employing the strategies. This suggests that it provides support for the claim that reflections are systematic and become more sophisticated as time progresses. The reasons for this regulated norm of development of the reflections will be addressed in the discussion chapter in greater detail.

In conclusion, these participants' reflections are systematic, detailed, rich and critical. The reflections become more detailed, rich and critical beginning from the simpler reflections in the first e-portfolio and ending in more sophisticated reflections in the final e-portfolios. There is a gradual replacement of L1 (Arabic) with L2 (English) as the language of reflection.

The second sample of e-portfolios is taken from participant SA. For easy reference, all of his reflections are grouped in appendix L. This participant's reflections in his e-portfolios seem to be also systematic and developing. Samples of the reflections he makes from his first to his last e-portfolios will be used to show how his reflections are systematic and develop from one instance to another. In his first e-portfolio, SA uses L1 (Arabic) to describe what he believes about using media as a strategy to learn vocabulary as shown in figure 12, appendix L. He states that media is the best way to learn vocabulary. This participant starts his first reflection in his L1 (Arabic) like participant SB, discussed earlier. This is the case in almost all participants' e-portfolios. They usually start by using their L1 to reflect upon their learning and use of the strategies. It is possible, therefore, that they use their L1 at the beginning because they feel more confident in terms of proficiency in their L1 than L2 (English). Besides, their limited L2 vocabulary might restrict their ability to reflect upon deep and complex learning processes.

On another occasion in an early e-portfolio, participant SA continues to use his L1 in a very short and simple reflection as shown in figure 13. He lists 3 English words with Arabic words that have similar pronunciation but different meaning. This reflection includes what looks like an association strategy because this participant might use the Arabic pronunciation to remember the English word. However, the participant does not say anything about association strategies. He just lists the words and states that they have similar Arabic sounds in Arabic words. This is also short compared with participant SB who explained deeply the process of the same association strategy in figures 5, 6 and 10 appendix K. Participant SB uses examples to illustrate the sound association strategy, but he also describes how he uses this strategy to help him remember the words. He also is more detailed when he explains two different types of sound association strategies, namely similar/sound similar meaning and similar sound/different meaning. It should be noted that the former participant SB also starts with simpler reflections in his L1 (Arabic), but his complex reflection about sound association strategy comes in one of his advanced e-portfolios. The comparison between them in this case is used just to prove that Participant SA's reflection is simple and short as it is one of his very early reflections. Part of being systematic in reflections is to develop steadily from simple reflections at the beginning to more complex and rich reflections that describe deeper learning processes in the final e-portfolios.

Figure 14 shows that the participant starts to shift the use of the language of reflection from L1 to L2. This could mean that the learner is becoming more willing to use L2 to reflect about learning it. He states that he prepares by reading questions before he listens to the CD. While this reflection is also considered simple, it at least describes a meta-strategy, namely: planning. Therefore, it is concluded that reflections are improving and becoming deeper. This is in addition to the use of L2.

Figure 15 shows a short reflection in English. This reflection describes a strategy he employs without giving examples for elaboration. This reflection is also considered simple but it uses L2. Participant SA in figure 16 writes a reflection that describes grouping as a vocabulary learning strategy. He states that he groups the words he learns according to subject. This reflection could be seen as an improvement on first early reflections because it describes a specific VLS strategy which is the main focus of the instruction and it also uses L2 (English).

In figure 17, the participant's reflection has become longer and more descriptive. It includes examples and details about the strategy. The participant states that he used words that have similar spelling in the same sentence which helps in differentiating between them. This could mean that this reflection is much richer and more detailed more than previous ones. The next reflection for this participant is more detailed and descriptive, as shown in figure 18. This is because it includes several strategies with descriptions and examples for elaboration. It includes an introductory statement describing what will be included in the reflection. English is used.

Similarly, figures 19, 20 and 21 contain longer reflections that are rich and detailed. They include strategies in practice and how the participant employs them in real life. It sometimes includes a step-by-step guide to the strategies used. The figure 19 reflection describes an authentic learning situation that involves guessing, dictionary checking and a social strategy of asking a roommate for confirmation of guessed meaning. Figure 20 shows also how the participant creates opportunities to learn vocabulary authentically through media by reading newspapers and watching the news on BBC. Finally, figure 21 shows that the participant employs skipping strategy in specific situations when it does not affect his comprehension, but when it does, he provides steps he employs to learn the new words. These reflections are taken from late and advanced e-portfolios. This reflects the systematic pattern of progressive improvement of reflections during the course of instruction, strategies and e-portfolio.

7.2.5 The role of technology in the e-portfolio

E-portfolios are digital versions of traditional paper-based portfolios at the simple level. However, the construct of the e-portfolios is considerably different from traditional ones. Traditional portfolios are widely described as effective and useful tools in the literature of portfolio. Thus, this research here acknowledges the effectiveness of traditional portfolio pedagogy. However, in this section the findings about the technical side of the e-portfolio will be reported. It is not meant to prove that electronic versions of portfolios are better than their paper-based counterparts. It is mainly to present the technical findings that might tell how electronic portfolios differ from traditional ones.

The first pattern to emerge from the data analysis is mainly about features of technology that allow the participants to include various multimedia components. The e-portfolio platform they used offered them the freedom to upload files in a range of different formats, such as videos, photos, graphics, pictorials, text, links and almost all available formats. Participant FT states that the ability to include videos was essential for him to show materials relevant to his strategic learning:

> "the most significant feature in the e-portfolio is the videos because I like to watch videos in YouTube all the time. I found YouTube videos about word structure analysis which a strategy I learned and used to guess meaning. With one click you can view them in your e-portfolio."

This participant places emphasis on the multimedia features in the e-portfolio as facilitating his structuring of his own e-portfolio. This suggests that such features helped this participant to document his preferred method of learning (watching videos on YouTube). He was able to link it with the strategies, when he specifies the video he was able to include in his e-portfolio which obviously addresses a guessing strategy. Other participants hold similar views about the multimedia features of the e-portfolio. For example, participant SB says that being able to upload videos and video links enabled him to use this strategy of learning the language in general and vocabulary in particular:

> "we have been taught that media can be used as a strategy to learn vocabulary, but I say it is very useful in learning English in general because you listen and watch at the same time. I like watching videos on the internet and I love it when I can share my videos with my classmates in my e-portfolio."

It is obvious that videos were used in the participants' e-portfolios. Figures 22, 23, 24, 25 and 26 in appendix M show that these students used videos and video links in their e-portfolios.

While video is the main format participants talk about in their interviews, photos, texts, links, hyperlinks, pictorials and graphics were all used in the participant e-portfolios. Figures 27, 28, 29, 30, 31, 32 and 33, appendix N, show that participants used different sorts of formats in their e-portfolios. These figures are in fact pieces of students' learning artefacts and are used in other sections to discuss strategy use such as the lists of words in figures 32 and 33 as they are regarded as note-taking strategies. They are used in discussing whether these lists of words are contextualised or not in section 8.3.2 in the discussion chapter.

Participant FN states that being able to use his phone and taking photos of everything he used to learn vocabulary in class and outside the class settings was helpful and handy:

> "what I love about e-portfolio is whenever I am learning vocabulary I always have the ability to use my phone to take photos of my work and then upload it in my e-portfolio either in class or any time outside the class. This is practical."

Another participant shares the same idea but adds more to it. Participant AF believes that the spontaneous documenting has become possible because of phone cameras:

> "using my phone to take photos of my learning spontaneously and adding them to my e-portfolio is really useful and fun."

This participant shows that whenever learning happens, he is able to document it by photos featured in his phone and e-portfolio. It seems that this way is effective for documenting and structuring the participants' e-portfolios.

Generally, using multimedia features in the e-portfolio seems to enable the participants to collect and organise artefacts in many formats which learners can reflect on. Thus, technology is playing a vital role in facilitating the structuring of the e-portfolios which could positively impact the participants' general performance in achieving their goals in using the e-portfolio. According to Meyer et al. (2010), portfolios can reinforce the learning experience because they centralises the learners in an accessible engaging and dynamic process. Deeper discussion about how this can impact learners' performance will be reported in the discussion chapter.

There is a pattern in the data that addresses the ease, simplicity, directness of the e-portfolio platform technical features. According to the participants these aspects affected their skills in managing their learning, lifelong learning and motivation. It is worth mentioning that these elements were not expected as predetermined themes before analysis but are obvious in the qualitative data as patterns.

Participant SB states that the ease and simplicity of the e-portfolio platform helped him to manage his learning of the VLS:

> "Glogster is really cool portfolio. It is very easy to use from one orientation class I almost mastered all of its features. This makes my learning of vocabulary strategies more controllable. I can think and plan in advance what strategies I will include in my e-portfolio."

In a related quotation, participant AR states that the e-portfolio platform is simple and direct:

> "I think Glogster is simple and direct. You do not need to watch a lot of tutorials to understand how it works. This was very important to me because I enabled me to organise my e-portfolio."

Other participants give detailed explanations of how the e-portfolio platform was easy and simple. For example, participant HM states that Glogster offers a ready template that is easy to customise:

> "what I like the most in Glogster is the template it has. It is very easy to edit and make use of. It really helps me build a well organised vocabulary strategies e-portfolio."

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It is obvious that this particular participant made use of the templates to make his e-portfolio looks more organised. Figures 34 and 35, appendix O show a sample from this participant's e-portfolio which would support his claim about the templates and organisation of the e-portfolio.

As a conclusion, the e-portfolio platform technical features of simplicity, directness, richness of resources and templates and ease of use all facilitated the management of learning of VLS by offering chances to plan and organise the content of the e-portfolio. In the discussion chapter, discussion on how this could affect learning and learners' performance will be provided.

The other pattern of answers and reflections links these technical characteristics with the lifelong learning. Participants show that they are willing to maintain an e-portfolio when the course of the current study finishes. Participant SA claims that simplicity and ease of the e-portfolio makes him think that he will continue using it for his other modules in the future:

> "I like e-portfolios because they are simple and easy to use. I am seriously thinking to keep one for writing next semester because writing is important but also difficult."

This participant believes that because e-portfolios are easy to use and seem helpful, he might use them with an important but difficult language skill, namely: writing. Another participant reveals he is also thinking of continuing using the e-portfolio after the course finishes. Participant MD states that he will continue using the e-portfolio to manage his learning of academic vocabulary words:

> "Glogster is very easy to use and very direct. It is not complex. It helps me in learning vocabulary and I am willing to keep this e-portfolio until I master all the academic words even if takes me years."

This participant is willing to continue using the same e-portfolio in learning vocabulary items that he thinks more important, namely academic words. He states that he will use it for his lifelong learning of vocabulary even if it takes him "years" in his own words. This is clearly linked with the ease, directness and simplicity of the technical features of the e-portfolio platform, Glogster. This might suggest that lifelong learning was facilitated by these technical features that make the use of the e-portfolio appealing.

The last aspect participants link these technical features with is motivation. Participant RM claims that his motivation towards learning has increased because of these characteristics:

> " at the beginning I thought this will be very complicated and require higher levels of skills. But in fact e-portfolio was very easy to use and very simple. I should say that this has maintained a good motivation towards learning until the end of the course."

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It is possibly the simplicity that the participant did not expect in an online platform was what made the difference in having a positive impact of his motivation. This participant is not alone in his point of view about motivation. Participant HM demonstrates that the graphics in Glogster platform were very appealing and attractive to him:

> "Glogster is graphic blogging and since I love graphics and info graphics, I become highly motivated to use these beautiful graphical templates. I took some training on September on graphics."

It seems that this technical feature of the e-portfolio platform coincided with this participant's area of interest. This significantly affected his motivation towards learning. While this participant is the only participant who is interested in graphics, he still links this technical feature with the motivation which is found to be relevant to this theme.

7.3 Levels of strategy orchestration

7.3.1 Introduction

It is common in the literature of LLS and VLS that the focus of strategies' studies is largely on individual strategies. In the last 7 years of research in this areas, there has been emphasis on the usefulness of combining strategies instead of using them individually in the different learning situations, most recently, for example, in Griffiths (2013). Therefore, the combination of strategies is considered more helpful according to scholars such as Anderson (2008), and Grenfell and Harris (2013). As this is considered a new concept in the field of LLS, there has been little research in defining the different forms of combining strategies such as clusters, chains and sequences. It might be argued that the uncertainty in defining these terms comes from the idea of the fuzzy definition of LLS itself that has been addressed in Tseng et al. (2006). It is worth noting that the vast majority of scholars in this field set a dichotomy or differentiated between these terms (e.g. Murphy, 2008; Oxford, 2011). However, most recently Briggs (2016) differentiates between the cluster and chain terms. Therefore, this study will be adopting a general understanding of these terms to analyse data. The understanding of combining strategies will include 4 main levels. This model comprises: single strategy use level, 2-3 strategies' use level, cluster (more than 3) of strategies use level, and cluster transfer level. The pyramid below, in figure 110, shows how these levels are classified in terms of their importance. Similar to Bloom's taxonomy of thinking skills, the bottom of the model is considered a lower level of strategies' orchestration and the top represents the highest level of strategy use.

Figure 80: Levels of strategy orchestration
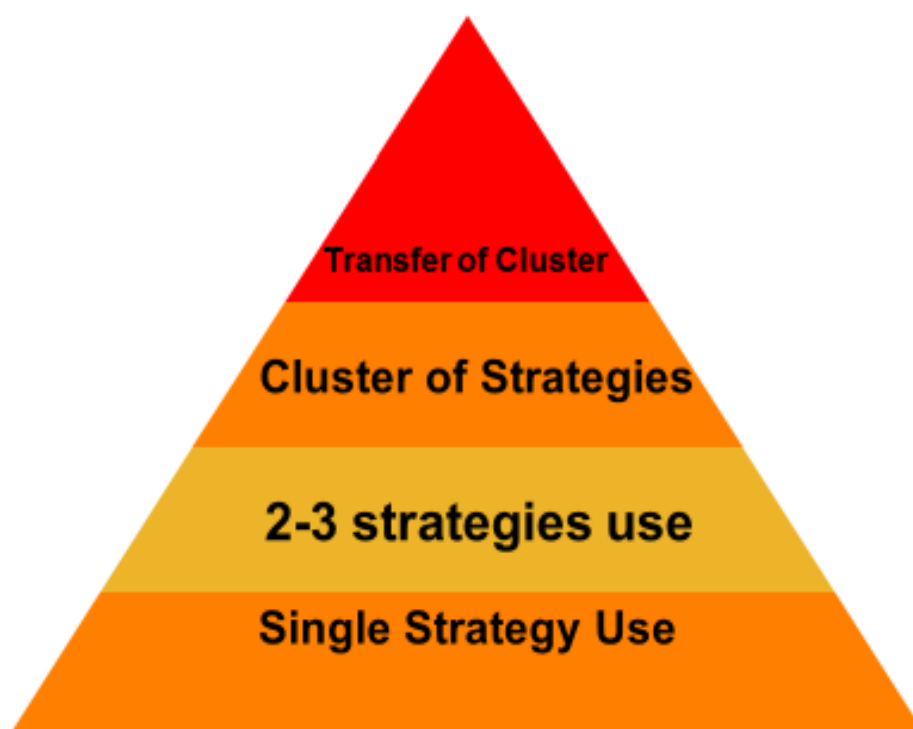
The actual single strategies used by participants are given a full account of reporting in chapter 6. Therefore, this research will be discussing higher levels of strategies use, namely: clustering and transferring, in this section.

7.3.2 Orchestration of strategy clusters

As discussed earlier in 7.3.1, there is near-consensus in the literature in recent years that combining strategies is more effective than using them individually. In the present study, one objective is to promote higher levels of strategies' employment such as clustering and transferring. This section will report the higher levels of strategies use found in the participants' e-portfolios mainly and any reflections or justifications found in their post interview. There has been evidence of reaching this high level of strategies' orchestration throughout the participants' e-portfolios. More evidence will be presented and elaborated. The first figure that shows a cluster of strategies used against one learning situation is figure 36, appendix P It shows that the participant used more than two strategies to learn the word "approach". First of all, choosing this word to learn is considered strategic, as it is one of the most frequent English academic words. This reflects that the participant thought about what words should be learnt first, which

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is strategic at the meta-cognitive level. Then, the participant wrote down the English definition of the word. He included a translation of the English definition into Arabic. An example sentence was added to the same entry. And finally the L1 equivalent was also noted down. Using these strategies to discover the meaning of a new word, noting down information about it and to memorise it , form a cluster of strategies. Therefore, it can be concluded that this entry from this participant's e-portfolio can be classified in this higher level of strategies' use.

Another participant states that he employed almost 7 different strategies to learn words. This is shown in figure 37, appendix P. It seems that this participant uses them in sequence because he used connectors of sequence such as "first", "then" and "next". While these strategies seemed to be used in sequence, it included complicated strategies such as semantic maps. Thus, it is also concluded that this set of strategies in the way they are employed can also be placed in the clustering higher level of strategies.

Another participant shows that he is qualified to be in this higher level of strategies use as he includes several strategies all used to learn one single word. Thus it seems to be a cluster of strategies used against one learning situation. Figure 38, appendix P shows that this participant is also strategic in his choice because the word "analysis" is in fact the most frequent word in the academic word list according to the University of Nottingham list.

These strategies include a simplified semantic map, YouTube video as a media strategy, written repetition and the Arabic meaning. Other participants used social strategies in their cluster to learn new words. For example, the participant in figure 39, appendix P asked his teacher to give him an example in which the word can be used.

In addition to asking his teacher, this participant also used synonyms and antonyms, media, and looking up the meaning of the same word in an online dictionary. This participant's cluster of strategies demonstrates that he orchestrates them in a higher level of strategy use.

7.3.3   Transfer of clusters

It must be said that this level of strategies' use is considered the highest in the proposed model. Further, this level is difficult to achieve in a short period of time. Likewise, it is also difficult to document and difficult to capture. Thus, there is very limited evidence of this level in the participants' work. There are some indirect indications in the participants' reflections. For example, participant HM states that he uses the same strategies in learning new words but he does not provide any context or further explanation about it:

> "when I finish studying the strategies, I think I will be able to use them. I can use them with one word and reuse them again with another word."

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As the quotation shows, there is ambiguity in this participant's statement. It is not clear whether he means transferring a cluster of strategies of just reusing the strategies differently in single form. Hence, this research decided not to consider this quotation and similar quotations as indications of transfer of clusters due to the lack of evidence. The only obvious evidence of cluster transfer is found in participant SB's e-portfolio. He, first, used a cluster of strategies to learn the word " approach" as shown in figure 36, appendix P. He lists these strategies in his e-portfolio in a digital format. However, he came in a different learning situation in a different context and employed the same list of strategies again. Figure 40, appendix Q shows that this participant transferred the cluster of strategies he digitally used to learn the word "approach" to a different learning situation which is learning the word "authority".

Transferring the cluster of strategies from the first learning situation to the second in this participant's example might indicate that this participant transferred the cluster of strategies in a different context of learning because it was used digitally in the first example then it was transferred in a traditional paper-based document. This could suggest that participant SB has transferred the cluster of strategies when he was learning in normal language class where he uses traditional notebook. He was able to include this natural learning situation because of the ease of documenting that the e-portfolio platform affords. Participant SB scored the highest in his academic vocabulary size test and his VLS inventory. This could probably explain his success in using higher levels of strategies such as forming clusters and transferring them. It is worth noting that participant SB, like his classmates used strategies in lower levels on several occasions. It is not part of the argument to say that lower levels of strategies use are not important. They are essential to build on when using higher levels of strategies use.

Chapter 8: DISCUSSION

8.1 Introduction

This chapter discusses the findings of the current research that were introduced in chapters 5, 6 and 7. The discussion of the findings of the current research will be organised based on the proposed research questions. In this way, aspects of the findings will be used to answer the various research questions in different sections throughout this chapter. Thus, the findings will be revisited to further discuss them in relation to previous research findings attempting to answer the proposed research questions. As discussed in section 1.4, the following research questions were proposed:

1- What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduates' academic vocabulary size?
2- What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduates' vocabulary strategic learning?
3- How do learners orchestrate their VLS in the e-portfolio?
4- What is the role of e-portfolios in supporting the development of VLS?
5- What is the role of technology in e-portfolios, in supporting VLS learning and use?

8.2 Impact on academic vocabulary knowledge level

As the findings of the current research suggest that there were significant improvements in learners' academic vocabulary knowledge, discussion of these findings in light of what previous research found will be introduced in this section. The discussion of these findings would answer the first research question:

Research question 1: What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduates' academic vocabulary size?

The findings of the current research showed that all three groups have significantly improved in terms of their academic vocabulary size as shown in section 5.2. This was also true of their strategic learning of vocabulary as they all significantly improved as discussed in section 5.3, it is worth noting that all groups significantly improved regardless of the instruction they received. While these findings seem to challenge preliminary assumptions of the current research, it is important to highlight that the literature suggests that there is a correlation between strategy use and proficiency (Oxford, 1990; Cohen, 1998; Grenfell & Harris, 1999; Macaro, 2001; Oxford, 2011). Taking into account the other findings of the current research about strategy use, which

are discussed in section 8.3, improvement at the vocabulary knowledge level is expected among the three different groups. In other words, the findings of the current research suggest that the learners' strategic learning has significantly improved in all groups which seems to lead to a better academic vocabulary knowledge. Therefore, the current research findings in regard to both strategy use and academic vocabulary correspond with the consensus in previous research that indicates a direct relationship between strategy use and proficiency (Cohen, 1998; Grenfell & Harris, 1999; Nyikos & Fan, 2007). Likewise, similar to the argument about the improvement in strategy use, this research argues that the fact that participants in these three groups are studying English as their speciality might explain the improvement of the control group who did not receive any training on strategies or e-portfolio. Further, the assessment of vocabulary knowledge through the use of the AVST was conducted after a period of almost one academic semester. Therefore, improvement in all levels are expected among learners who are in fact receiving formal education at the university level. Thus, further research is required to confirm whether having different subjects and participants from different departments would generate different results from those in the current research (i.e. TEFL major students). The findings of such research might confirm or contradict the findings of the current research.

The previous argument was about individual groups and how they perform in the academic vocabulary knowledge test. Now, discussion about the groups' performance comparison needs to be established to draw conclusions at the vocabulary learning level. The experimental group who used e-portfolio in addition to the VLS instruction outperformed the other two groups as shown in section 5.2.3. Interestingly, the semi-experimental group who received instruction on VLS only did not statistically outperformed the control group who did not receive any instruction on VLS. It is worth mentioning here, that the results show that the semi-experimental outperformed the control group but with low statistical significance value. Based on these findings, this research argues that VLS instruction alone has led to better learning but not to the significant level, whereas using e-portfolio in the context of VLS instruction seems to lead to significant levels of improvement. Several studies have shown that the use of e-portfolio has led to better language learning in general (e.g. Alshahrani, 2011; Kuhn & Cavana, 2012; Kohonen, 2012; Warni, 2016; Cepik & Yastibas, 2013) making the findings of the current research at the vocabulary knowledge level in line with previous research. A note of caution is due here as this research is not able to claim that the use of the e-portfolio is the only reason to which the improvement can be attributed because it has not adopted a cause-and-effect approach to the research. Therefore, the qualitative findings of this research are perceived vital to provide richer insights into the use of the e-portfolio to explain the possible impact of using it in the context of the current research study. This is done in reaction to previous research that focuses on strategies as final products and neglects the more insightful part of strategic development

which is the process. This is part of the current research criticism to previous research that adopts such approach. The current research incorporated the e-portfolio accepting that it would bridge the gap in knowledge about the process of developing strategic learning. Accordingly, this research discussed in greater details the qualitative findings of the role of e-portfolio and technology in sections 8.4.2 and 8.4.3. In support of the arguments made earlier about the improvements in academic vocabulary knowledge, it is important to link them with what has been found about the use of e-portfolio and the role of technology in e-portfolio. The qualitative findings give strong indications that the e-portfolio plays an active role in learning and using the different strategies. E-portfolio was found to promote systematic and consistent use of strategy. Learners were not left with the taught strategies to use on their own, but rather were supported through the integration of the e-portfolio in the design of the instruction programme. This afforded learners opportunities to consistently and systematically use and learn the taught VLS which enabled them to have more than one starting point to think critically and reflect upon their use of strategy.

8.3   Impact of e-portfolios on vocabulary strategic learning

In this section, the impact of using e-portfolio in the context of VLS instruction on learners' strategic learning of vocabulary will be discussed. The main research question that will be answered in this section is the following:

Research question 2: What is the impact of integrating e-portfolio with VLS instruction on TEFL undergraduates' vocabulary strategic learning?

The answer to this main research question will be discussed in two sub-sections. The first sub-section, 8.3.1, will be dedicated to discussing how the participants' strategic learning has improved, based on the general results of the quantitative findings. It will relate the current research findings with previous research that used e-portfolio for learning in different world contexts. The second sub section 8.3.2 will discuss the impact of the e-portfolio on participants' use of named vocabulary learning strategies. It will discuss in relation to the previous research the exact use of named VLS based mainly on the qualitative findings and partially on the quantitative results. Namely, it will discuss the findings of the actual use of strategies of word discovery, note-taking and memorisation.

8.3.1   Impact on general strategic learning of vocabulary

Strategic vocabulary learning among learners has witnessed improvements in all three groups as the quantitative findings show in section 5.3.2. In other words, all groups including the natural control group have significantly improved their strategic learning in vocabulary which challenges the assumption that the control group may not significantly improve due to participants in it not receiving any training on VLS or e-portfolio. However, it should be noted that these participants are learning English as their major as they will become TEFL teachers after they finish their degrees. Thus, it is expected that they are highly motivated in their language learning. Furthermore, it is not true to assume that learners' brains are blank, as emphasised by Cohen (1998). When it comes to using and orchestrating strategies, it appears that learners use strategies in more sophisticated ways, both consciously and unconsciously, as they make progress in their language learning (Lee, 2010). Furthermore, participants in the present study were studying English as their major and were expected to improve due to their normal language teaching and learning, and due to the assessment of their strategic learning of vocabulary taking place over almost a whole academic semester. Previous research suggests that learners' strategic learning is expected to improve as learners make efforts to learn the language (Cohen, 1998). While participants in the control group did not receive any formal explicit strategy instruction, they are expected to improve consciously and unconsciously in their strategic learning as they learn English in their regular education.

The findings of the experimental and semi-experimental groups' performances on strategic learning of vocabulary demonstrated improvements, which is in line with previous research that views strategy instruction and assistance as positive factors (Hassan et al., 2005; Taylor et al., 2006; Nyikos & Fan, 2007; Oxford, 2011; Plonsky, 2011). The assumption that strategy instruction on its own may not lead to significant strategic learning improvement in the current research is rejected as the findings show significant improvement. The findings of the current research regarding the semi-experimental group who received training on VLS only, confirms previous research findings where explicit instruction was found to be effective (Oxford, 2011). While this challenges the main assumption in the current research as more emphasis is placed on the use of e-portfolio in conjunction with the VLS instruction, statistical analysis of the three groups sizes of improvement were in favour of the experimental group who used the e-portfolio and received VLS instruction.

This could suggest that while VLS instruction in its own is useful and could lead to better strategic learning, using e-portfolio in the course of VLS instruction is even more effective as the comparison results showed. Detailed discussion of the role the e-portfolio and how it impacted the use of strategies will be presented in section 8.4. The findings of this research

correspond with previous research as the use of the e-portfolio has been found effective in the context of training future teachers (King, 2002; Baker & Christie, 2005; Peters et al., 2006; Bartlett, 2006; Ring & Foti, 2006; McNair & Marshall, 2006; Sherman, 2006).

The University of Maryland Baltimore has integrated e-portfolio into its teacher training programme in order to promote changes in culture, policy and practice (Huang, 2006). The University of Baltimore's e-portfolios, used as artefact manager, narrative manager, review manager and publishing manager, have been found effective in promoting desired and required practices among teachers in its teacher education programme. The current research findings suggest that e-portfolio has significantly promoted systematic, regulated and sophisticated use of strategies for vocabulary learning. How e-portfolios practically supported these practices will be discussed in sections 8.4.2 and 8.4.3. Since the e-portfolio system used in that context was developed by the same university based on pedagogical and national standards accountability objectives, Huang (2006) reported a number of challenges that are normally faced by institutional initiatives for implementing e-portfolio. These challenges include technological issues which have been experienced by some participants in the current research, especially at the beginning of the instruction and use of e-portfolio. A number of precautions were taken before the start of instruction, including availability of enough online tutorials in addition to technical support in the computer lab in the current research study context. This has been found useful in dealing with most of the technological issues reported by participants. By the second week of instruction, these issues had been dealt with and solved to a great extent where the available online tutorials of the chosen platform (Glogster) have been successfully referred to. Therefore, the current research emphasises that the choice of the e-portfolio is crucial as it eases the process of implementing the e-portfolio. This corresponds with Jafari's (2004) study where he called for careful selection of the e-portfolio system and named technical support as one of the key requirements in any e-portfolio system or platform. This is if the selected e-portfolio to fulfil targeted learning objectives (Hall et al., 2005). Similarly, Himpsl and Baumgartner (2010) proposed several criteria to evaluate the different e-portfolio platforms which included meta-level and pedagogical criteria.

The findings of McNair and Marshall (2006) suggest that beginning teachers have found the e-portfolio effective as it facilitates the transition from early teacher education to induction and teaching. The current research participants are expected to be English language teachers soon after they finish their undergraduate degrees and thus expected to experience similar challenges in terms of transition from teacher education to induction and teaching professionally. The findings of the current research suggest that participants were able to improve in terms of their strategic learning through the systematic and regulated use of e-portfolio which might lead to adoption of these effective practices in the long term. Adopting such self-regulation and self-

reflection practices is expected to ease the transition process for these future teachers. As the subject of the current research will be TEFL teachers of the future, it argues that the e-portfolio could be used for training future teachers as an effective tool for professional development, as the current research findings and previous research suggests. This will be discussed in greater detail under implications in the conclusion chapter.

8.3.2   Vocabulary learning strategy use

The findings about the actual use of the different VLS used in the e-portfolio suggest a number of issues related to their use. In this section, the current research will discuss the findings about discovery strategies, note-taking strategies and memorisation and retention strategies in relation to the previous research in each set of strategies.

8.3.2.1   The use of guessing strategies

The first set of findings is concerned with revealing the new words meaning strategies. Guessing as a word discovery strategy was employed extensively by the vast majority of participants. However, what is interesting is to reveal how learners employ guessing strategy. First, there was almost consensus among participants that word structure analysis was used and found effective in making guessing more informed. There was enough evidence that this strategy has been employed heavily as it was perceived useful. This is unlike the findings of Alqahtani (2005) where guessing from the analysis of the word structure was not common among the participants in his study. However, he found a correlation between the high levels of vocabulary knowledge and the use of this strategy. In other words, participants in Alqahtani (2005) study increased their low use of this strategy when they have a higher level of vocabulary knowledge. Marin's (2005) findings suggested that this strategy was found to be used more frequently by those learners whose level of vocabulary knowledge is high. He argues that such guessing strategy requires a high level of L2 knowledge that facilitates the guessing. The current research argues that the level of vocabulary knowledge may not always be linked with more use of this strategy as the required L2 knowledge for this strategy is not sophisticated. It is more or less related to the knowledge about words form analysis such as prefixes and suffixes. Thus, it might be argued that more successful use of this strategy might be linked with syntactic knowledge of word form analysis as this was one of the patterns found in the current research qualitative data. For example, participant MD expresses that this strategy is important but it requires knowledge about the meanings of "suffixes". He, then, has made some efforts in the training in this strategy as shown in his e-portfolio in figure 1 in chapter 6.

The findings of the current research in relation to this specific guessing strategy coincide with what has been suggested by Kelly (1990) as guessing informed by word structure analysis was found successful in most of the cases. This strategy was put into practice in the participants e-portfolios and was reflected upon in both their e-portfolios and their interviews. The use of this strategy in the e-portfolio and reflections about it indicated that this strategy was seen to be effective and practical as a number of participants perceived it more practical than other strategies such as sentence structure analysis and guessing from context. This is also true in Kelly's (1990) study where guessing from word form is perceived more practical than guessing from context which requires familiarity with most of the text that providing the context for the word.

The findings of the current research in relation to sentence structure analysis comes in contradiction to previous research, as this strategy was not popular among the participants in the current study. However, this strategy, in its broader context, where it is linked with guessing from context, grammatical category and parts of speech was found to be popular in previous studies (Nakamura, 2000; Jimenez-Catalan, 2003; Marin, 2005; Alqhatani 2005). This research argues that one of the reasons for this strategy being not commonly employed is that some participants expressed that it is a complex structure that requires more decoding than a word unlike the previous strategy where the structure of only one word is analysed. Therefore, this research accepts that the instruction of the VLS seems to be less successful in raising the learners' awareness about the usefulness of this strategy. It, thus, calls for more awareness when designing any vocabulary learning strategy instruction to focus on this strategy by showing practical examples of how it could inform the guessing of new words' meaning.

Using visual aids, mainly pictures, to guess the meaning of new words was a common practice among participants in the current research. Similar findings were found in Alqahtani's (2005) study. Saudi students tended to use pictures to guess the meaning of new words. Likewise, in the Mexican context, Marin (2005) found that university students in Mexico employed this strategy with a moderate degree of frequency in his main study. However, in his pilot study this strategy seemed to be less common among participants. It is possible that this strategy was popular among the participants in the current research due to the fact that it does not require linguistic knowledge. Using this strategy is relatively easy but it could provide a good context for guessing, which probably makes it appealing to some participants. However, a note of caution is due here, as many texts that advanced learners, such as the participants of the current study, may read are texts where pictures are not always available. Therefore, this strategy may not be as effective and useful as for beginners or intermediate learners. It is worth noting that many language textbooks consider this strategy an essential skill especially for reading. Further, Nation (2001) listed using pictures among other strategies that can lead to better guessing.

Alfuhaid (2004) reported that pictures were employed to guess meaning by the participants in his study but was not listed in the five most helpful strategies, unlike Schmitt's (1997) findings that suggest picture use was among the most five helpful strategies.

Guessing from context was found to be employed by learners in the current research as there was evidence in the students' e-portfolio and interviews. This is in addition to the significant increase of the use of guessing strategies that were captured through the quantitative data, namely vocabulary learning strategies questionnaire. Similarly, Jimenez-Catalan (2003) found that this strategy was used with high frequency among her sample which consisted of male and female participants. He did not find any significant difference in the use of this strategy between the female and male participants in the study which indicated that this strategy was used more frequently than other strategies. Likewise, guessing from context was reported the most frequently used discovery strategy in Schmitt's (1997) study. Guessing from context was found useful and was employed by participants whose level of proficiency was low (Nakamura, 2000). As the current research findings suggest that guessing from context is perceived useful and is employed by the vast majority of participants whose level of proficiency varies from poor to advanced, it argues that this strategy can be used by all levels of proficiency. However, it argues that such strategy requires a considerable amount of semantic and syntactic knowledge which might make this strategy more appropriate to be used by more advanced student than those with lower proficiency. This argument is supported by the findings of Gu and Johnson (1996) who found that more proficient learners employed more guessing from context strategies. In the same way, Alqahtani (2005) reported that higher-proficiency students tended to use more guessing from context strategies than lower-proficiency students.

As the strategy of skipping is related to guessing, the findings of this research suggest that students became more aware of this strategy over the course of the instruction. However, even those participants that became more aware of the existence of the strategy tended to avoid using it. Some participants perceived it as a passive strategy that should not be used. Other participants have shown increased interest in skipping as it saves time in some situations. Reading comprehension was found to be one of the conditions for using skipping. In other words, if the text is understood in general, then some participants tend to skip some of the unknown words as the whole meaning is comprehended. This corresponds positively with He's (2001) findings. Similarly, relation of the unknown words to students' official modules seems to be another factor that affected the use of skipping. For example if the unknown word is related to students' linguistic courses they tend not to skip. This research argues that since participants in the current study are English language specialists and will be English language teachers in the future, they tend to discover the meaning of all specialist terminologies and vocabulary items. Thus, it can be argued that the learners' needs and goals affect the use of skipping as a strategy.

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This is more or less in line with what Alyami (2011) found as he indicated that more advanced students employed more skipping. This is probably because skipping requires more meta-cognitive knowledge that is expected to be achieved by advanced learners (like those in Alyami's study) and language specialist students (in the current study). This knowledge involves deciding the importance and relation of the new words to the learners' needs and goals and then deciding whether to skip it or not which has been identified in the findings of the current research. The previous argument can be justified by the findings of Alsweed (2000), who classified the skipping as good and bad where good refers to when the skipped new words are not necessary to the general understanding of the text and bad refers to the skipping of new words that are essential for the general comprehension of the text.

8.3.2.2 The use of dictionary and social discovery strategies

The use of bilingual dictionaries was reported in the findings of the current research which is commonly found in previous studies (Nation, 2001; Alqahtani, 2005; Alyami, 2006). The findings of the current research reveal that bilingualised monolingual dictionaries were employed by some participants which was not found in Alyami (2011) study as he only found high usage of bilingual dictionaries and moderate usage of monolingual dictionaries. It is important to highlight that scholars such as Laufer and Kimmel (1997) and Nation (2001) are in favour of dictionaries of this kind as they offer the features of both monolingual and bilingual dictionaries in a single dictionary. Therefore, this research argues that the instruction of the VLS might have increased the participants' awareness about the potential of this type of dictionary. Likewise, and similarly supported by previous research, monolingual dictionaries were also employed by participants in the current research. Monolingual dictinaries only contain information about words in the target language, offering rich input in the target language (Hsien-Jen, 2001).

Electronic dictionaries (web dictionaries and mobile translators) were also found to be used by participants in the current research study. Using electronic dictionaries is more effective than traditional paper-based dictionaries (Dziemianko, 2010). Electronic dictionaries are usually favoured because of their ease of use, time saving, portability and accessibility. The use of mobile translators and dictionaries were not found in previous studies (e.g. Schmitt, 1997); Alqahtani, 2005). The reason might be attributed to mobile phones and the mobile internet connections becoming more widespread over the last decade.

Given the debate among language teachers about the appropriateness of using Google translate for vocabulary learning, the findings of this research show that participants used it. Participants

showed that they are aware of the limitations entailed in using Google translate in the academic context. Due to the lack of research-based studies on using Google translate for vocabulary learning, there is no consensus in the research community about the use of Google translate for vocabulary learning. This research accepts that Google translate might be used widely in today's language classrooms. Therefore, it is not justified to be totally dismissive of using it for language learning. Instead, it calls for raising student's awareness about the advantages and equally the disadvantages of using it. This can be done in a similar way to Paige et al. (2006) raising awareness about the use of different types of dictionaries by introducing the advantages and disadvantages of each type and giving students the freedom to choose what works for them. In their well-known strategies book *Maximising your study abroad,* they proposed a dictionary use guide that can be taught to language learners. This was part of the current research instruction (see appendix D for a sample). In this guide, different types of dictionaries were discussed, namely bilingual, monolingual, bilingualised monolingual, electronic and learner dictionaries. Hence, participants have enough knowledge about the different types of dictionaries and how they can be used.

Given that this research emphasises the role of clustering as an effective and sophisticated level of strategy use, it is important to understand that using Google translate on its own as an isolated single strategy might be less effective. This is simply because some vocabulary items do not necessarily have direct equivalent in students' L1. Consequently, alternative translation might be misleading for some students. This is in addition to the fact that part of the Google translate database is built on users' feedback which is not reliable or authentic in some cases. Accordingly, this research would encourage teachers to highlight these issues about Google translate to their students. Likewise, it is well-established that using strategies in clusters is more effective than using them individually. Thus, if Google translate is used in combination with other strategies, some of its limitations would be minimised as the meaning would be checked and confirmed through other strategies such as using examples and synonyms and antonyms. Furthermore, Google translate can also be used for gaining other aspects of knowledge about vocabulary such as pronunciation. According to Godwin-Jones (2011, p. 5): "Google Translate for Android offers an interesting experimental feature using voice." It recognises varieties of English accents including, in recent years, non-native accents. In EFL context, students often pay less attention to the nativism model. Instead, an English as a lingua franca (ELF) model is more recognised by students which is supported by Google translate. According to the lingua franca core (LFC) model proposed by Jenkins (2000), the intelligibility of pronunciation in the communication is the key rule for successful communication. Therefore, learning pronunciation as an aspect of knowledge about vocabulary, can be facilitated by Google translate which makes it a legitimate learning tool for some learners in some contexts.

Furthermore, the current research findings reveal that social dictionaries of proverbs and famous sayings, cultural dictionaries and picture dictionaries might have been consulted by learners, which was not reported in previous research. There was a kind of negligence of the special dictionaries such as cultural dictionaries in the literature probably because they are used for contexts other than the academic context such as by those who are interested in learning accents and local cultures of specific groups.

Employing dictionary use in the context of skills has emerged as a pattern among some participants. Using dictionaries in the context of reading has been reported, which relates to Nation's (2001) ideas about the purpose of dictionary use. Nation (2001) explained that dictionary are used when learners aim to comprehend materials in both receptive skills reading and listening. In this context, he argues that usually learners tend to check the meaning as it is essential for the comprehension. This is true as data reveal that looking for the meaning was highlighted by participants when they try to comprehend a text in their reading. Meaning was the most sought information in the dictionary in Alqahtani's (2005) and Marin's (2005) studies. Interestingly, the findings reveal that participants checked the dictionary for the English definition before they write their simplified English definition. This specific kind of practice associated with dictionary use is not reported in previous research. Due to these participants' language specialism, checking sophisticated information in the dictionary and then rewritting in a simplified way has been employed. Another interesting point is that participants checked the dictionary for pronunciation which indicates that these participants are able to read the phonetic symbols: something that requires a high level of linguistic knowledge. This is justified by the fact that these participants are studying different language courses where phonetic symbols are taught. According to Nation (2001), participants who check pronunciation, spelling and grammar in the dictionary are usually using the dictionary for productive tasks in writing and speaking skills. All in all, this research argues that the dictionary was used in both receptive skills where meaning is the most important sought information, and also in productive skills where pronunciation is the kind of information sought in the dictionary.

Participants in the current research have employed several social discovery strategies. Participants showed that they have asked their teachers, classmates and friends about new words. Asking teachers appeared to be the most common social strategy employed by participants. This is in line with Alqahtani's (2005) study where asking teachers was found to be frequently used. Therefore, this research argues that asking teachers as a social strategy needs to be taken into account as it seems to be preferred by learners. Alyami (2011) perceived the overuse of this strategy negatively and blames the Saudi education system for encouraging learners to be reliant on their teachers. This research accepts that the Saudi education system might seem to be traditional, and might encourage students to be reliant on teachers. However, it

does not perceive this strategy as purely negative but rather argues that such strategy in fact is effective and was widely reported in other contexts and studies (e.g. Schmitt, 1997). This research also argues that the students' culture, more than the education system, is what might be influencing the use of this social strategy. The teacher used to be considered the only source of knowledge and is highly respected by the society. The teacher's mission is perceived like a prophet's mission to bring knowledge to people and students should have faith in them (Alghamdi & Abdaljawad, 2005). This is reflected in the classic Arabic literature as the famous poet Ahamed Shawki said in one of his famous poems:

قم للمعلم وفه التبجيل ************** كاد المعلم ان يكون رسولا

احمد شوقي

Which could be translated as something similar to

Stand up in respect for the teacher ******* S/He could have been a messenger.

Poet: Ahmed Shawki

This might explain the popularity of such strategy in the context of the current study but does not imply any dismissal of asking teachers as a social discovery strategy. This research does not intend to argue that this culturally promoted strategy is not effective. Instead, it argues that culturally promoted strategies should not be underestimated as recommended by Oxford (2011) because they might involve unseen complex processes that makes them effective for specific groups of people. It argues that the overuse of this social discovery strategy can be decreased by the introduction to students of new strategies of which they are not aware, to reduce the dependency on one type of strategy and increase the chances for more combining of strategies.

The use of this strategy in the current research study is sophisticated as participants provided context, explanations and conditions of asking teacher. Such details about asking teachers are believed to be unique to this research compared to previous research which mainly reports the frequency of use. This is attributed to the research design that incorporates two qualitative data sources, namely: e-portfolio and interview. This assisted with obtaining the authentic voices of learners which reflected more accurate results. Asking teachers was dedicated to particular situations such as when words cannot be found in dictionaries (slang). Some participants stated that they ask the teacher only if they need a quick answer or when pronunciation is difficult. Therefore, this research accepts that the learning situation affects the use of this strategy. This needs to be considered when designing any instruction as the current research findings suggest

that the situation can promote or demote the use of such strategy. It is worth noting that few participants tended not to employ this strategy. Teachers' unwillingness to answer students' questions seems to be the main reason for not asking them. Therefore, the current research argues that teachers need to be addressed in any instruction programme if this strategy to be effectively used by learners.

The findings of the current research in relation to asking teachers as a social discovery strategy reveal that the L1 translation seems to be the first and most frequent information students ask about. This corresponds with previous studies' findings that reached the same conclusion, such as those of Nakamura (2000) and Alqahtani (2005). Likewise, asking teachers for example sentences incorporating the new words were reported by participants, which is also found in Marin's (2005) study. However, as this research is interested to know more about the details and the process, participants explained that they ask teachers for example sentences for two reasons. First, examples provide better context for the new word to be guessed correctly. Second, examples help in understanding the use of the word which is a deeper level of knowledge about new words. Thus, this research argues that reaching such higher level of knowledge of new words, teachers could provide more examples to show the use of new words, which goes beyond discovering only the meaning.

Spelling comes as the least common information students ask about as the findings of this research suggest. The main reason for asking about spelling provided by participant is the irregularity and difficulty of spelling in English. The disconnection between what is being pronounced and what is being written is a characteristic of English. The current research findings about spelling contradict those of Alqahtani (2005), where asking teachers about spelling ranks second after asking about the L1 translation. Asking teachers about spelling might appear to be influenced by students' preferences which should be considered in any VLS instruction planning. Finally, there was almost no evidence in the current research data in relation to asking the teachers about synonyms and antonyms. This is also in contradiction to Alqahtani (2005) who reported asking teachers about synonyms and antonyms among the popular after-sought information.

The second social discovery strategy is asking classmates and friends. The findings revealed that asking classmates comes in second place in terms of frequency of use after asking teachers. Meaning, and examples were the popular information asked about. The interesting part of the findings is what participants reveal about the type of classmates and friends they tend to ask. It was found that friends from higher levels of studies were consulted mainly about new words' meaning and examples. Social interaction between more experienced and less experienced learners to solve problems is considered scaffolding which is one of the sociocultural theory

aspects (Mitchell et al., 2013). Thus, this research argues that revealing such findings about this social discovery strategy is significant in terms of understanding how the social strategies are employed. This suggests that strategy instruction and training providers should pay attention to such possible effective interaction between more experienced and less experiences learners and teachers. Such interaction is believed to lead to cognitive and meta-cognitive development which is necessary for language development. The cognitive development can be seen in linguistic improvement: vocabulary size improvement, in the current research context. The meta-cognitive gain lies in the idea that learners will be able to decide their level of knowledge and then find a suitable more knowledgeable classmate from the same class or higher levels to interact with and try to solve linguistic problems. Such practice requires thinking and planning before application which is considered meta-cognitive.

Asking friends and classmates seem to be preferred by a small number of participants as they indicate that asking classmates is less stressful. Such details about asking classmates and friends were not reported in previous research. However, what has been reported is that learners employed this strategies with different degrees of frequencies (Schmitt, 1997; Nakamura, 2000). Marin (2005) found that learners did employ social discovery strategies such as asking classmates but more interestingly found that type of personality predicted the use of such social discovery strategies with extroverted learners tend to employ more social discovery strategies. Such justification for asking classmates more than teachers might suggest that strategy instruction should look at students' individual preferences with regard to social discovery strategies. This is because the current research findings suggest that some students might feel uncomfortable asking teachers publicly in class where there are possibilities of receiving corrections and feedback in front of other classmates. There were almost no reports of the use of group work as a social discovery strategy. Marin (2005) indicated that learners with introverted personalities tend not to employ group work. Although personality type is beyond the scope of the current research, such aspects might be one of the possible justifications to explain the findings of the current research that contradict those of previous research. Previous research suggests that the use of this social discovery strategy was not as common as other social discovery strategies, such as asking teachers and classmates (Schmitt, 1997; Nakamura, 2000; Alfuhaid, 2004).

Asking native speakers about new words as a social discovery strategy has been reported in previous research (Marin, 2005; Alyami, 2011). However, the findings of the current research indicate that this strategy was not employed by participants. This research argues that the context of the study as an EFL setting where there is a lack of native speakers is the reason behind not employing this social discovery strategy. The findings suggest that learners hold positive attitudes towards this strategy. Their awareness about this strategy is expected to be

raised as their quantitative findings suggest. Participants indicated in different reflections in their e-portfolios and interviews that they wanted to use this strategy and they are willing to do so with the help of new technologies that bridge the gap between people and cultures. This research argues that as these participants hold positive views about this strategy and have awareness about it, they might employ it whenever they have a chance such as studying abroad. Therefore, the current research expects that this strategy might be employed by learners in ESL contexts where learners study in an English speaking countries, more than their counterparts in EFL contexts. This research also calls for considering this specific issue when designing strategy instruction in EFL contexts as alternatives should be offered to learners to employ this strategy using electronic platforms. In the same vein, Alhazemi (2000) encouraged EFL learners to use technology to communicate with native speakers and to find opportunities for authentic learning. He also suggested that native-like students in EFL contexts can contribute positively in students' learning experience.

8.3.2.3 The use of note-taking and memorisation strategies

In the category of note-taking, L1 translation emerged to be the more popular method of recording information about new words. This corresponds with previous research as Alqahatani (2005) and Marin (2005) reported this strategy with high frequency of use. The noting down of synonyms and antonyms was also commonly employed by participants in the current research which contradicts the findings of Leek and Shaw (2000). Their findings suggest that this strategy was not popular among participants as it came late in the list of ranks. Interestingly, the use of synonyms and antonyms strategy in the current research correlates with academic vocabulary size. Those who achieved high in the AVST have employed this strategy widely which has not been reported in previous research. Therefore, this research argues that vocabulary size should be taken into account when asking learners to use this strategy.

Writing the new word definition was employed by participants in the current research. This use was a pattern in their e-portfolios. However, as the current research utilised e-portfolio and interview as qualitative data sources, interesting findings have been revealed. This is in line with the findings of Marin (2005) as the definition came after the L1 translation as a kind of information recorded about new words. However, what is more interesting to know is how learners employ this strategy. The findings of this research revealed that participants write the definitions in four ways. First, dictionary-entry-like definition was found to be the most common used way of recording definitions. Second, simplified definition of the new word was also reported. Third, mixing the two by noting down the dictionary definition, and then adding new simplified definition written in students' own words. Fourth, similar to the third way but Arabic translation of the simplified definition is added. These four ways seemed to be employed

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by participants in the current research which was not looked at in any previous research. This research argues that the use of the e-portfolio and the interview as the qualitative tools enabled this research to look deeply into the process which reveals some interesting findings that were not touched on in previous research.

The findings of the current research suggest that grammatical category as a type of information is recoded. This has been reported in previous studies (Marin, 2005). Usage of words was also reported in the current research which corresponds with Alyami's (2011) findings. Finally, pronunciation was not a popular recorded information among the participants in the current research. Previous research reported the pronunciation as one of the least recorded kinds of information (Alhatmi, 2012; Alqahtani, 2005; Nakamura, 2000). This was attributed to the difficulty of noting down pronunciation as it requires knowledge of phonetic symbols. It is possible to argue that the participants are studying the language itself and are expected to have knowledge about phonetic symbols as they are found to be able to check pronunciation in dictionaries. This is true as the findings of this research about the kind of information checked in the dictionary suggest. However, reading the phonetic symbols seem to be easier than writing them and thus such practices are not in fact contradictory.

The current research findings reveal that traditional paper-based and digital notebooks were kept by learners. This was a common location to keep notes about words. There was almost no mention to writing notes in the textbooks and in the margins which contradicts with McCrostie's (2007) and Alhatmi's (2012) findings that revealed the textbook was a popular place of keeping the notes about vocabulary.

Examples of digital and traditional notebooks found in participants' e-portfolios mainly contain lists of words and their L1 meaning. Research argues that need and evaluation in higher involvement load, that can be achieved more effectively through meaningful learning situations, lead to deep processing of learning (Keating, 2008). Thus, learning words from meaningful contexts would increase the chances for deeper processing that can lead to better vocabulary learning (Min, 2008). The current research argues that these simple lists of words are not decontextualized. They often come from the context of students' extensive language and linguistics modules they are studying for their undergraduate degree. However, while this research accepts that most of the word lists come from their language learning classes and thus are coming from meaningful context, it at the same time argues that part of being strategic is to prioritise vocabulary learning. This means that learners should decide based on their needs and objectives which words they need to start learning before the others. This is simply because there is a large amount of vocabulary needed to start, to be able to use the language in academic contexts or to be able to pursue a degree in language teaching. Therefore, writing down these

words in lists and paying explicit efforts to learning them either in or out of context seems to be justified practice. Nation and Waring (1997) claimed that learning words from lists and flashcards might lack meaningful context but it leads to fast vocabulary improvement which cannot be achieved by learning from context. It is worth noting that neither the current research nor Nation and Waring (1997) argue that learning from context is not effective. Instead, it argues that learning from lists might lead to faster vocabulary improvement which is needed by learners at the beginning levels. Similar to the recommendation about combining incidental and intentional vocabulary learning by (Laufer & Hulstijn, 2001; Nation, 2001; Schmitt, 2000), the current research proposes that learning vocabulary from lists can complement and be complemented by learning new words from meaningful context.

Verbal repetition was found to be employed by participants in the current strategy more than written repetition. This is in line with previous research as the findings of Alyami (2011), Alqahtani (2005) and Marin (2005) revealed. Interestingly, participants reflected upon the use of this strategy providing detailed information on the conditions and the ways they employ this strategy. Technology has been used by participants to listen to the words before repeating them as participants used their phones and instant translators. Participants revealed that they repeat in contexts, for example, when they watch movies and in reading. Time was one of the main reasons students provided for preferring verbal repetition to written repetition.

Written repetition was found to be employed less often than verbal repetition by the participants of the current research. The modes and situations of practising written repetition was revealed in the current research findings. First, it was found that the new word and its Arabic translation was written several times to scaffold the retention of the new word and its meaning. Such findings were not reported in any previous study. Second, participants showed that they repeat the writing of new words in digital and paper notebooks. Digital and traditional flashcards were used to write the new word on several times. Third, the spelling seems to be a goal of repetition in addition to the meaning and pronunciation of the new word. Writing the word several times to remember its spelling was found to be frequently used in Nakamura's (2000) study that took place in the Japanese context.

A final thought about the impact of strategy instruction on students is that it seems to be raising their awareness not only about VLS but also about general learning strategies. Although there is a lack of evidence to support this claim and that is why it was not reported as a finding, some fellow teachers indicated that those students who participated in the study seem to apply strategies in other language skills and not only VLS. Before discussing this, it is worth mentioning that teachers did not participate in this study as they have a high teaching load. However, most of them thankfully did encourage their students to participate in the study. Some

teachers, in short, informal meetings often between classes, reported that some of the participants in the current study seem to apply meta-cognitive strategies, especially in writing. The writing teacher praised the instruction of the strategy as he noticed some of his students are now planning, revising and drafting before they start writing which was not common before the instruction. Alshahrani (2011) indicated that planning as a meta-cognitive strategy often leads to a better writing product. Likewise, the reading teacher indicated that participants are improving in their reading skills because of their preparation and planning before reading. Meta-cognitive strategies are linked with successful reading according to Alsheikh and Mokhtari (2011). It is important to point out that these participants used the e-portfolio which is believed to be promoting meta-cognitive strategies in general (Meyer et al., 2010) and not only in VLS. Although this information came from teachers in informal settings, it might be applicable to other EFL teachers in similar contexts. Teachers might become engaged more with strategy instruction and e-portfolios if they see noticeable results in their students' performance. Therefore, this research argues that involving other language skills and modules in strategy and e-portfolio instruction is important for more effective strategy and e-portfolio instruction.

8.4 Impact of e-portfolios and VLS instruction on specific aspects of VLS and the role of e-portfolios

To draw a better picture of the impact of the e-portfolio and VLS instruction on the participants in the current research this section will provide a discussion to answer the following 3 research questions:

How do learners orchestrate their VLS in the e-portfolio?

What is the role of e-portfolios in supporting the development of VLS?

What is the role of technology in e-portfolios, in supporting VLS learning and use?

8.4.1 Impact on VLS orchestration

This section discusses the ways the different taught VLS were orchestrated in the participants' e-portfolios. The different levels of strategy orchestration in light of previous research findings will be included in this section in an effort to answer the following research question:

Research question 3: How do learners orchestrate their VLS in the e-portfolio?

The simple use of strategy has been found dominant among participants in the current research. This is in addition to the statistically significant improvement in the general use of strategies discussed in section 5.3.

Combining the quantitative and qualitative findings of the current research, it is argued that the use of VLS by subjects of the study has been improved in both quantity and quality. This is supported by participants' quantitative results that show their general performance, but more importantly by the qualitative findings that show in different situations and instances that learners became more sophisticated in orchestrating strategies. The increased frequency of use of strategies is seen as an improvement and effective way to use strategies; however, cluster forming and transferring of clusters is believed to be more effective. As mentioned in chapter 7, section 7.3, the current research focuses on the top two sophisticated levels of orchestrating strategies, namely clustering and transferring.

There has been enough evidence from students' e-portfolios that there has been clustering of strategies to deal with different vocabulary learning situations as the findings in section 7.3.2 show. Therefore, this research argues that the participants showed improvement in combining more than one single strategy to deal with vocabulary learning by forming clusters of strategies. This level of strategy use is considered sophisticated and desired for more effective strategy use (Chamot & Kupper, 1989; Wenden, 1998; O'Malley & Chamot, 1990; Vandergrift, 2003; Macaro, 2006; Graham & Macaro, 2007; Blanco et al., 2010) The findings of the current research in this level of strategy orchestration is similar to those of Blanco et al. (2010) who found that forming clusters of strategies were reported in students' strategy use. This is also true in the findings of Vandergrift's (2003) study which found students systematically create clusters of cognitive and meta-cognitive strategies after receiving strategy assistance. Likewise, Graham and Macaro (2007) found French learners formed clusters of strategies in both their listening and writing which was perceived effective. The orchestration of strategies requires understanding of cognitive process and the skill to monitor and evaluate these processes (Flavell, 1976).

Macaro and Erler (2008) concluded that there was a significant change in the use of strategies including forming clusters after the intervention they conducted. This suggests that the findings of the current research are in line with the majority of studies focusing on the orchestration of strategies as an important meta-cognitive skill. It is vital because it leads to better strategy use where some clusters of strategies are more suitable for certain tasks and activities than others (Graham & Macaro, 2007). Therefore, this research argues that reaching this high level of strategy use (i.e. combining more strategies together when dealing with a learning situation) is a

significant improvement among the participants of the current research which is perceived effective in previous research.

While this study argues that the participants have become more strategic in terms of strategies frequency of use and in terms of strategy combinations and clusters, it accepts that there was very limited evidence to show that the participants have reached the highest level of strategy use, namely: transferring strategies from one learning situation to another. Participants have shown that they formed clusters of strategies to learn words to a great extent in the current research. However, they have not shown the same when it comes to the highest level of strategy use that is being able to transfer the strategies from one learning situation to another. This is in contradiction with the findings of Blanco et al. (2010) who found that (66%) of their 24 participants transferred some of their strategies and clusters of strategies. It means about 16 out of 24 participants reached this high level of strategy orchestration. Interestingly, these participants transferred language learning strategies to other subjects which are presumably not related to language learning. Therefore, it can be argued that those language learning strategies transferred to other subjects are in fact general learning strategies. The transfer level of orchestration that the current research is interested in is concerned with vocabulary learning strategies being transferred from one vocabulary learning situation, task or activity to another. Thus, such transfer is believed to be sophisticated and involves complicated processes while transferring general learning strategies seems to be simpler. This might be one explanation for the apparent contradiction between the current research findings and those of Blanco et al. (2010). Further, it should be noted that the transfer has been captured by students' reports only and not by real evidence or artefacts of authentic strategy use. Therefore, the current research argues that without having artefacts of strategy use and orchestration, the evidence will still be limited and subject to the reliability of students' self-reports. Using the e-portfolio as a tool to facilitate the process of capturing authentic strategy use and orchestration is one of the main contributions of the current research. Transferring clusters of strategies as discussed earlier is difficult to capture and, in part, the reason is that the formed clusters may not be suitable to all different learning situations. Some clusters of strategies might be more suitable for specific tasks than others (Graham & Macaro, 2007). Therefore, transferring a pre-formulated cluster of strategies does not take place frequently, as similar learning situations and tasks do not occur frequently. Thus, including authentic artefacts of cluster transfers in the participants' e-portfolios involves a great deal of effort and thought. This could explain the lack of evidence of cluster transfer in students' e-portfolios.

As discussed earlier, transferring clusters of strategies from one vocabulary learning situation to another is difficult to capture. It is argued that because such a high and complex level of strategies use involves deep and sophisticated learning processes, to reflect about it as a learner

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or to capture it as a researcher become challenging. This research argues that if a such level was employed simultaneously in normal language classes and general learning situations, it would be complicated for the learners to document and to reflect upon in their e-portfolio. Showing artefacts and evidence of such a level in the e-portfolio is thought to be time- and effort-consuming because it involves much work: from finding the right material to include, to organising the materials in the e-portfolio so it reflects the transferal. Therefore, this research accepts that while it lacks evidence to prove that the participants have used such high level of strategies use, it is not necessarily true that all participants have not in fact orchestrated their strategies to the level of transferring. Participant SB, first, used a cluster of strategies to learn the word "approach" as shown in figure 36 in appendix P. He listed these strategies in his e-portfolio in a digital format. However, he came again in a different learning situation, in a different context and employed the same list of strategies again as in figure 40 in appendix Q. It shows that this participant transferred the cluster of strategies he employed in a digital format to learn the word "approach" to a different learning situation which is learning the word "authority".

This example might indicate that this particular participant has transferred the cluster of strategies in a different context of learning because it was digitally employed at the first instance and in a traditional paper-based document in second situation. This might indicate that this student has transferred the cluster of strategies from the digital format to the paper-based in traditional language class. It is legitimate to argue that the first instance was the traditional employment of a cluster of strategies and then transfer to the digital format. In either case, it does not make a big difference whether it was first employed in the digital or in the paper-based format because what is important is that it indicates that they happen in two different learning situations.

It is worth noting that this participant scored the highest in both his academic vocabulary size test and his vocabulary strategic learning inventory. This might support the argument that such a high level of strategies use requires high level of proficiency and strategic learning. It is vital to explain that this participant, like his classmates has shown evidence of lower levels of strategies use as well. This research does not intend to claim that lower levels of strategies use are not significant to strategic development. Instead, it argues that increasing the use of lower levels of strategies use is vital to build on when employing higher levels of strategies use. For example, a learner with a limited number of single strategies, might find it difficult to form a simple cluster of strategies while learners with more strategies mastered would be able to form longer and more sophisticated clusters of strategies. Likewise, learners who have access to a wide range of strategies and strategies clusters would find it easier to transfer these clusters and chain of strategies from one vocabulary learning situation to another. Therefore, it is not part of the

conclusions of this research to underestimate the lower levels of strategies use, but similarly to Bloom's taxonomy of thinking skills, it accepts that higher levels of strategies are not easy to achieve and thus need more attention. After introducing the findings of research in the previous chapters, the participants not only used more strategies, but they tended to employ them more effectively. The participants in this research have shown improvement in the use of meta-cognitive strategies. Furthermore, participants tended to reflect analytically about their strategies' use and tended to justify their use of certain strategies. Reflections and justifications may indicate that participants become more aware of the potential of the strategies in their vocabulary learning which is considered one of the important objectives of any strategy instruction course (Cohen & Weaver, 1998; Hassan et al., 2005.

8.4.2   Role of e-portfolio

Discussing the current research findings related the role of e-portfolio in this study will provide an answer for the following research question:

Research question 4: What is the role of e-portfolios in supporting the development of VLS?

Engaging learners with their learning by making them active learners who are equipped with the required knowledge and skills of dealing with complex learning challenges should be the focus of any education change. Getting students to think meaningfully and strategically about their own learning is considered revolutionary according to Abrami et al. (2008). Furthermore, Tanaka et al. (2015) claimed that learners tend to need assistance before they adopt sustainable and independent vocabulary learning. Thus, this research is assuming that the study design and the elements it proposes meet these needs of learners, because it tries to empower them with required knowledge of VLS that can facilitate the vocabulary learning in a systematic way. According to Tanaka et al. (2015), the e-portfolio can be incorporated to enhance a sustainable method of vocabulary learning in general. In the current research context, e-portfolios were used to enhance a sustainable way of learning and using the VLS which in its turn enhances strategic learning of vocabulary and thus vocabulary learning. This was achieved in the current study as the AVST results suggest. There was a significant increase in participants' academic vocabulary size and strategic learning of vocabulary.

Abrami et al. (2008) described e-portfolios as one of the most important improvements in educational technologies as they promote self-regulation and other literacy skills. As shown in the previous chapter, participants who used e-portfolio in this study adopted a systematic and consistent method of learning and using the different VLS. This is in line with the literature as the findings suggest that participants tended to be consistent and regulated in terms of their

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strategy use. Developing skills of self-regulation is considered vital to the learners at the university according to Boekaerts et al. (2000). According to Zimmerman (2000), being self-regulated means being meta-cognitively, motivationally and behaviourally active in learning. The way the participants in this study learn and use the VLS seemed to be systematic and consistent as they kept showing evidence of their learning and documented the process over the period of an academic semester on a regular basis. This indicates that the consistency and self-regulation was achieved probably because of the integration of the e-portfolio as learners revealed in chapter 7. Similarly, Alshahrani's (2011) study findings revealed that those who used the e-portfolio developed a consistent and systematic use of process approach to writing which was desired in improving their academic writing. This is was found to be similar to the findings of the current research as the participants tended to consistently use the taught VLS and document this use in their e-portfolio. This research argues that it is because of this systematic and consistent use of the taught VLS, learners in the experimental group significantly outperformed their counterparts in the other two groups. In other words, it is not only the instruction that has led to improvement in students' strategic repertoire but more importantly the use of the e-portfolio that stimulates consistency in employing the taught VLS. Furthermore, those who tended to be more self-regulated in the current study were also high achievers in terms of their academic vocabulary and strategic learning performances. This is in line with the findings of the study by Van Wesel and Prop (2008). They claimed that e-portfolio encourages professional development which in the current research context lies in significant improvement of both strategy use and vocabulary size. In the same vein, Wall et al. (2006) claimed that e-portfolios can play an active role in facilitating students' professional development. Likewise, Desmet et al. (2009) found that using e-portfolio has led to development in performance and writing revision strategies' use. While their study was mainly about writing, it is related to the present study in the sense that it addresses the relationship between e-portfolio use and learning improvement. This is also found to be true in the general sense of using educational and social technologies as it often leads to self-directed and regulated learning (McLoughlin & Lee, 2010). Further, Canada (2002) claimed that general e-portfolios offer educational benefits that were stimulated by emphasizing the role of learner-centeredness in learning. As claimed in the findings of this study, that e-portfolio encourages a consistent, self-regulatory approach to learning and using VLS, previous studies have also revealed similar findings. For example, Wade et al. (2005) linked the use of e-portfolios with students' self-regulation that leads to meaningful learning of essential pedagogical gains such as literacy skills. Similarly, the current research findings coincide with those of Meyer et al. (2010) that revealed a direct relationship between the use of e-portfolio and an increase in self-regulated learning. While their study was mainly in the context of reading and writing skills, this research study found their result relevant as it established association between the use of e-portfolios and learners' self-regulation which

was also true in the current study context of strategic learning of vocabulary. What was not in line with the literature of e-portfolio was about feedback. Very limited evidence was found in the current research to draw such conclusion. Participants in the present study tended not to communicate with each other outside the classroom environment through the online platform of the e-portfolio. While this study was not sure whether such feedback practices did exist in other forms of communication that were not observable such as private emails or even personal communication, it had the feeling that such practices were limited because participants did not reflect deeply about it. Reflecting about feedback was found to be an effective practice when using e-portfolios in previous research as it facilitates the exchange of ideas and feedback (e.g. Ahn, 2004; Lorenzo & Ittleson, 2005; Alshahrani, 2011).

The current research findings indicated that the participants' awareness of the importance of the VLS was increased and this was attributed to the use of the e-portfolio. This result corresponds with one of the findings of Valdez (2010) who noticed improvement in learners' awareness about their learning changes. It might be argued that this is not directly related to the findings claimed in the current study. However, considering the concept of raising learners' awareness about learning process in general and how it is connected to the use of e-portfolios, it should be then relevant. Equally, this research argues that participants' awareness of their responsibility for their learning is promoted by raising their sense of ownership of the e-portfolio. Participants in the current study were generally committed to e-portfolio creation and development which indicates that they are constructing their unique collections that reflect their own authentic voice. E-portfolios usually have tools that enable learners to be active controllers of their creation of portfolios and thus their learning (Barrett, 2005). This was felt to be the case in the current study as participants showed an increase in their interest and awareness of learning VLS. Learners tend to engage actively with their learning when they have an increased sense of ownership. This sense of ownership often leads to a sense of accomplishment which in turn promotes a good motivation. This has led to learning development. This corresponds positively with Barrett (2005) who made the connection between sense of ownership, active engagement in learning and success. Furthermore, she associated this active engagement in learning with the regular use of e-portfolios which in one way or another is in line with the findings of this research. As far as learners' sense of ownership of their e-portfolios is concerned, it is worth noting that this is linked with their awareness of their learning which made their voices authentically reflected in their e-portfolios. This suggests that the content of the learners' e-portfolios is, to great extent, reflective of the true learner's challenges and strengths. Part of the learners' awareness about learning was evident in the evidence and documentation of learning they used in their e-portfolios. These items of evidence were seen to be varied to represent different occasions and learning situations. This was part of Abrami and Barrett's (2005)

argument about the diversity of proofs of learning included in the e-portfolios. According to them this encourages a better representation of learners' actual learning. In the present study context, the diversity of learning artefacts enriched and deepen understanding about learning with a more authentic, diverse picture of learning. This could assist learners in becoming active assessors of their own learning, and equally could inform teachers' feedback.

Deep understanding of learning by all parties involved in it, especially learners, encourage more critical thinking and self-reflection about the learning which is VLS learning and use in this study. According to Palmer et al. (2009), literature on portfolios suggests that reflection about learning gives vital value to portfolios. Sherman (2006) claims that reflection can be facilitated through the use of e-portfolio. According to Ellis (2001) educational technologies in general can encourage critical thinking practices especially when they are used in addition to the traditional methods of learning. Likewise, Spiro and Jehng (1990) assert that having open access to the learning evidence encourage learners to revisit and review their learning. Therefore, the e-portfolio would stimulate and encourage such reflection and thinking practices. Thinking critically and reflecting upon learning were evident in the present study because participants showed consistent reflection and thinking practices throughout their e-portfolios. This might lead to more effective learning as learners have access to their learning records, strategic repository and reflection whenever they need to. This, in practice, might make learners more aware of their individual learning growth. It is believed that the e-portfolio has played a role in this as the findings of the current research suggest. E-portfolios, ideally, should encourage learners to reflect upon their learning and why they choose certain pieces of evidence and products of learning. Participants in the present study used reflections to show their learning experiences and thus are doing what typically e-portfolio users should do as claimed in Hartnell-Young et al. (2007). It is mainly the reflection that makes the different artefacts of learning more connected and coherent. This was evidenced in the current study as the findings about reflection showed, which coincides with Cambridge (2001). Another potential aspect of reflection and thinking stimulated by the construction of e-portfolios is the encouragement of learners to have several starting points. Learners' could critique when they reflect and think about a certain aspect of their e-portfolio. Thus, it is expected to see new starting points and then revisions. This was true in Acker's (2005) study about authenticity of portfolio assessment. In addition, this is also in line with previous research that suggests that e-portfolios offer chances for learning and reflection on the process of learning (Barrett, 2004a; Carmean & Christie, 2006). This proves to be true in the present study because participants create, revise, edit and maintain their e-portfolio content to showcase their learning but also to reflect upon their learning in a variety of domains. Similarly, management of reflection and learning processes is one of the most important aspects of e-portfolios according to Bisovsky and

Schaffer (2009). This critical reflective thinking should hypothetically lead to a development of competencies according to them which seems to be true in this study because learners' competences of academic vocabulary and of vocabulary learning strategies were significantly improved.

According to Khoo (2012), reflection tends to be less explicit which reduces the potential of it as a means of enabling learners to deeply understand the learning processes. In this study, a framework that is not purely perspective nor restrictive was applied. That is by encouraging participants to be more explicit in their reflections without imposing a certain pattern of reflections on them. Awareness raising about reflection as a prominent aspect of e-portfolio was introduced to participants. As a result, the participant reflections tended to be explicit and critical because this study did not restrict their choices by imposing specific types of reflective practices on them. In this way, this study has reacted to the recommendations and limitations of other previous research (Khoo, 2012) in this specific practice of e-portfolios. Another element in this discussion about critical reflective thinking practices in e-portfolios is motivation and its relationship with reflection. It is worth mentioning that a deeper discussion about motivation in e-portfolios will be introduced in section 8.4.3. Abrami and Barrett (2005) claimed that there is an affective component of portfolios that facilitate and promote active and deep learning. Reflection leading to deep learning is described to be developmental, integrative, self-directed and lifelong (Cambridge, 2004, as cited in Barrett and Garrett, 2009). This is relevant to the present study because participants showed self-directed, developmental and lifelong learning in their e-portfolios. There is also a sense of ownership of the e-portfolio that leads to emotional satisfaction among the participants. The findings of the current research reveal that participants maintain good motivation towards their learning which is similar to the findings of Alshahrani's (2011) study. The use of the e-portfolio was found to be the main factor that promotes motivation in Alshahrani's study. This is similar to the current research in general, but the current research findings reveal the specific aspects of e-portfolio that led to better motivation as will be discussed later, in section 8.4.3. Therefore, it is thought that this corresponds positively but not identically with the findings of this research. Reflections of participants in the current study cannot be classified as storytelling style which was one of the aspects emphasized in previous research (Abrami & Barrett, 2005; Mcdrury & Alterio, 2003). Part of this might be due to the nature of the content of learning which was concerned with strategic learning. This might make the e-portfolio-as-story not easy to apply due to the complex nature of strategies themselves. The next section will provide a discussion about the role of e-portfolio but with specific focus on the role of technology.

8.4.3   Role of technology

In this section, a full account of the findings of the current research in relation to the role of the technology will be given. It will discuss these findings in the wider context of educational technology and previous research on e-portfolios. Such discussion should provide an answer to the following research question:

Research question 5: What is the role of technology in e-portfolios, in supporting VLS learning and use?

There is a consensus in the literature that educational technologies often facilitate learning. Educational technologies have led to profound changes in learning (Bryan, 2004; Beetham & Sharpe, 2007). According to Abrami et al. (2008), educational technologies could lead to education change that promotes a learning approach that puts the learner in the centre of the learning process. E-portfolios are part of the technical movement in education. This corresponds with recent developments in e-learning in general. It corresponds with the movement towards connectivity and social networking. This has changed dramatically the way that learning takes place. It shifted the orientations of learning to be learner-centred to a great extent (Khoo, 2012). Applications of e-portfolio have been growing in educational and professional sectors due to its potential for lifelong learning and professional development (Van Wesel & Prop, 2008). Therefore, the e-portfolio as an application for learning is expected to have an active role in learning. It is found that this is true in the present study because e-portfolios were vital to VLS learning in various aspects. Technical features, simplicity and ease of use of the e-portfolio were all found to encourage participants to adopt more effective learning practices as the findings show. These practices include learning management skills, lifelong learning conceptualisations and maintaining positive motivation.

E-portfolio used in this study has technical tools and features that encourage individual improvement and lifelong learning. These tools are considered to facilitate the management of learning as it facilitates the documentation of learning in any format at any time because it is a web-based folio. This has been reflected in participants' answers about e-portfolios. According to Hertels (2004), e-portfolios involve learners in managing and monitoring their learning at all levels including the cognitive, meta-cognitive and affective. The technical features of the e-portfolio platform used in the current study, such as digital publishing, file management, hyperlinking, file attachments and uploads, simple graphics and info-graphics facilitated the learning management process. Therefore, the e-portfolio can be partially used as a learning management system that facilitates learning and leads to lifelong learning. Lifelong learning is one of the current study findings that was supported by incorporation of the e-portfolio. This research argues that the technical tools and features in the e-portfolio encourage and reinforce

lifelong learning conceptualisation among participants. In other words, keeping an e-portfolio that has these technical tools, may enhance the chances of lifelong learning because it encourages learners to take more responsibility for their learning. It should in its ideal application assist in fostering active learning that leads to lifelong learning (Khoo, 2012). This is in correlation with previous studies (Abrami & Barrett, 2005; Khoo, 2012). Taking into account that learning is cumulative, lifelong learning should become a priority for learners because it assists in accumulating cognitive and meta-cognitive skills over time. E-portfolio accessibility to learners encourages learners to foster the skills needed to keep e-portfolio as a lifelong learning or maybe career development tool. Therefore, the current research argues that the e-portfolio tools and technical features have encouraged learners to think about keeping the e-portfolio for purposes other than strategy use and learning. Participants in the current research expressed their intentions to keep the e-portfolio for lifelong learning as it facilitates the management of their learning in a systematic and consistent way. This was attributed to the technical tools and features of the e-portfolio. This is in line with previous research that shows the e-portfolio role in promoting life-long learning (Foote & Vermette, 2001; Abrami & Barrett, 2005; Khoo, 2012)

Educational technologies in general can impact the motivation of learners positively as claimed by Hartnell-Young et al. (2007). This was also found to be true in previous studies such as Meshkat & Goli (2012), who claimed that technology could stimulate interest and motivate learners. Learners tend to be more motivated if the objective of the technology is encouraging active and creative practices. Therefore, technologies in e-portfolios as discussed earlier could motivate learners as it facilitates the learners' engagement with their artefacts of learning. This is because e-portfolios have the capability to foster and stimulate creativity among learners and thus maintain positive attitudes towards learning. This was found to be true in the findings of this research which also correspond positively with Barrett (2004b). Similarly, Driessen et al. (2007b) claimed that e-portfolios motivate learners because of the technologies they have when compared with paper-based portfolios. The time it takes to maintain a paper-based portfolio might be demotivating and this gives the e-portfolio an advantage over their traditional counterparts. Therefore, technology seems to be what is creating the influence in their case, which is in line with the findings of this research to a certain degree. Furthermore, this research argues that the technical tools of e-portfolio encourage learners to take control of their learning and to take more responsibility for their learning and this might generate a sense of self-satisfaction. This satisfaction about oneself may enhance positive motivation towards learning. In addition, the possibility of using media and multimedia as artefacts of learning in the e-portfolio might also motivate learners because of the creativity it entails. Creating an e-portfolio to showcase learning could lead to a feeling of personal accomplishment and self-satisfaction

which in turn maintains a positive motivation towards learning. This coincides with Canada's (2002) study that revealed similar findings.

All in all, it could be argued that e-portfolios were found to motivate learners. This corresponds positively with Meshkat and Goli's (2012) study. They found that using the tools in word processing software motivated learners. Therefore, it is expected to find the e-portfolio platform used in this study appealing and attractive to learners because of its graphical content, which motivates learners towards strategic learning of vocabulary. It is expected that if learners become more motivated the likelihood of better performance will be increased. Thus, technologies in the e-portfolio that could stimulate positive motivation among learners should be taken into consideration in selecting the e-portfolio platform.

While this study does not aim to prove that electronic portfolios are better than their traditional paper-based counterparts, it is worth noting that the e-portfolio platform used in the present study has unique features as discussed in the methodology chapter. Thus, it is important to discuss some of the important characteristics that were found to be effective by the participants. This research discusses them because they were found as an emerging theme. The findings showed that technology was found to be playing active roles in learners' experience with e-portfolio. The first aspect is the learning evidence and documentation. The e-portfolio platform used in the study allowed participants to include any kind of file format, such as: text, pictures, graphics, hyperlinks, video and audio. It is argued that such ease of learning documentation made the process motivating, as discussed earlier, but also offered the participants access to different forms of evidence of learning. This might encourage learners to document their learning anytime, anywhere and in any form. For example, participants documented their traditional learning of vocabulary by uploading photos of their paper-based vocabulary notebooks and worksheets. This might tell that the ease of documentation of learning encouraged learners to spontaneously pay attention to their vocabulary learning. Taking into account that they have been introduced to learning strategies, learners tended to be more active in taking control of their learning by deeply looking into the processing of their vocabulary learning cognitively and meta-cognitively. This was reinforced in previous research focusing on artefacts of learning in e-portfolios such as those of Wade et al. (2005). The second aspect of e-portfolio characteristics that had an impact on the participants is the ease of editing and maintaining the content of the e-portfolio. It is argued here that such ease made the participants actively revise the content of their e-portfolios. This research argues that because the process of editing is found to be easy, participants might become more willing to have a second, third, or more, look at their e-portfolio content and thus their learning. Such a practice might encourage them to constantly revise and edit when necessary which could offer them different starting points. This is thought to be vital in engaging learners with the processing of vocabulary

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learning with the assistance of both the e-portfolio platform and the knowledge they gain from VLS instruction. Constant revision seemed to be facilitated by the ease of editing in the e-portfolio in Heath's (2005) study. The third aspect is about accessibility of the content of the e-portfolio where learners can specify who can look at their e-portfolio, especially when they seek feedback. It is worth noting that this was one of the lowest levels of interaction witnessed in the current study. The participants tended not to invite other outsiders to look at their e-portfolios. It was not clear why learners were very restrictive regarding sharing their e-portfolios with, for example, other teachers or classmates outside the participants in the study and their main teacher. This is contradictory with previous research that suggests that learners tended to share their e-portfolios with all parties for feedback because it is accessible by a number of people (Ahn, 2004) sometimes with the choice of the participants or without their choice and permission. This leads to discussion of the privacy and security of participants which will be presented in the next chapter. The final aspect of e-portfolio to discuss is the organization of the content of the e-portfolio. As discussed, e-portfolios were found to be easy to use, easy to edit and maintain and to have easy access, they were also easy to organise. The e-portfolio platform used in this study is a web folio and thus is easy to organise and simple to use. This research argues that because it is electronic and online with easy to use graphical content, it enabled participants to organise their e-portfolio in a more meaningful and complex way. It is also argued that because of this meaningful and complex way of organising the e-portfolio content, it became possible to show links and relationships between the different learning artefacts included in the e-portfolio. Hartnell-Young et al. (2007) claimed similar conclusions where the ease of e-portfolio organisation is emphasized.

After discussing the different aspects of e-portfolios that were found to be relevant to the current study findings, general conclusions with specific reference to technology will be introduced. Generally speaking, the creation of the e-portfolio affiliates to the content learning process. Furthermore, the use of e-portfolio could develop general literacy skills but interestingly digital literacy skills. This has also been reinforced in previous research (e.g. Barrett, 2000). Likewise, the e-portfolio platform used in the current study presumably promotes multimedia skills which corresponds positively with Heath (2002). Further, Abrami and Barrett (2005) claimed the e-portfolios could encourage more communication and problem solving skills. This might also be true in the current study, but there is very limited evidence to capture any communication and problem solving skills. However, it is evident that the participants in the current study solved problems and used complex skills when dealing with vocabulary learning by the use of e-portfolio and the use of the strategic learning knowledge in which they were trained.

While the literature of portfolios highlights many advantages of e-portfolios and there is almost a consensus that e-portfolios are more effective than paper-based ones, there is always an

opposite view. It is worth mentioning that some researchers are not in favour of e-portfolios over their traditional paper-based counterparts. For example, Wessel and Prop (2008) did not find any difference in students' perceptions about the support that e-portfolios and paper-based portfolios provide for self-regulation and the usefulness of compiling a portfolio.

Chapter 9:   CONCLUSION

9.1   Overview

This overview is dedicated to explaining how the conclusion chapter is organised. In
section 9.2, after presenting and discussing the findings in the previous chapters conclusions of
the study will be summarised. Section 9.3 will present and discuss the implications of the study
at three levels, namely: learners and learning context, teachers and practitioners, and institutions
and administrations. The limitations of the study will be addressed in section 9.4. Finally,
recommendations for further research in this area will be suggested in the light of the empirical
and theoretical aspects, discussed in this research, in section 9.5.

9.2   Conclusions of the study

Taking into account the challenges that face many language learners at the university level, this
research was proposed to investigate the role of e-portfolio and VLS instruction in learners'
vocabulary strategic learning and academic vocabulary learning at the university level (see
chapters 5, 6, 7 & 8 for findings and discussion). Such research would enrich the understanding
of vocabulary strategic learning and e-portfolio use. As discussed earlier in this thesis, in the
rationale of this study in chapter 1, students who are studying in programmes where English is
used as the medium of instruction, according to Roberts and Cimasko (2008), often experience
difficulty in the use of academic vocabulary. This has always been one of the motives for
carrying out this research study. While this research focuses on subjects that study English as
their own speciality, its findings and recommendations might be applicable to other language
learning contexts. The main objective of this research is to evaluate the possible impacts of
using e-portfolio in the context of VLS instruction on learners' strategic learning and academic
vocabulary learning. The purpose of such investigation is to understand how the e-portfolio in
the context of VLS instruction impacts the learners use and learning of strategies and whether
this influence has any effect on academic vocabulary learning. To investigate this, several
research questions were proposed in section1.4. These research questions were answered in
chapter 8 in sections 8.2, 8.3 and 8.4.

The process of building a strategic repertoire in the context of strategy instruction is neglected
in the literature or remains poorly understood. Noticeably, the emphasis was on the final product
of the instruction which marginalised the process that should deepen the understanding of
strategies learning and use. Therefore, this research found that e-portfolio would facilitate the
use of the strategies but equally offered opportunities to look at the process of building a

strategic repertoire from the first day of instruction until the end. It, in fact, enabled the researcher to explore the patterns in learners' strategic use that was documented in the comprehensive records of their e-portfolios. After carrying out the study, it was found that the e-portfolio and study design applied in this research offered chances to look deeply into the process. This has greatly contributed to the understanding of the undergraduate TEFL learners' strategic learning. The current study showed that participants benefited from the e-portfolio as a learning tool, but at the same time e-portfolio was found to be very insightful and reflective of the processes of strategies learning and use.

Utilising e-portfolio in the context of VLS instruction led to more systematic, regulated and self-direct strategic learning of vocabulary among the participants when they were compared with their counterparts in the natural control group. This was in conjunction with significant improvements in the learners' academic vocabulary size as presented in section 5.2. Likewise, there was a noticeable improvement in the strategic vocabulary learning as shown in section 5.3. Such improvements would make changes in learners' understanding and awareness towards strategic learning. This could play an important role in accelerating and facilitating the learning process in general.

Generally speaking, the findings of the current research are in line with previous studies that confirm the usefulness of e-portfolio as a learning tool (Lorenzo & Ittelson, 2005; Carmen & Christie 2006; Ascota & Liu 2006; Hartnell-Young et al., 2007; Cepik and Yastibas, 2013). E-portfolio has been found effective for TEFL undergraduates who will be teachers in the future as it integrates technology needed for systematic and regulated learning which corresponds with the vast majority of studies in e-portfolio (King, 2002; Baker & Christie 2005; Peters et al., 2006; Bartlett, 2006; Ring & Foti, 2006; McNair & Marshall, 2006). Participants in the present study adopted a systematic and consistent method of using and learning VLS (see section 7.2.1 and 8.4.2 for more details). The use of e-portfolio raised participants' awareness of the importance of vocabulary strategic learning (see section 7.2.2). Similarly, participants' interest in VLS was increased as they expressed in their e-portfolio reflections and interviews (see section 7.2.3). Self-reflection and thinking criticality were found to be promoted by e-portfolio use (see section 7.2.47.2.4). Technical and functional features of e-portfolio were found to encourage effective learning practices. These practices include learning management skills; lifelong learning and maintaining positive motivation (see section 7.2.5).

The findings at the strategy level revealed that there was significant increase of the frequency of using the VLS. This is seen as significant improvement in participants' strategic learning, however, increased frequency does not always lead to effective learning. Thus, the current research sought to find evidence of sophisticated orchestration of strategies that usually leads to

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more effective learning (O'Malley & Chamot, 1990; Vandergrift, 2003; Graham & Macaro, 2007; Blanco et al., 2010). The findings of the current research indicated that there was clustering of strategies which is considered a higher level of strategy use and orchestration. Evidence about transferring clusters of strategies from one learning situation to another was relatively little. Justifications for lack of evidence at this level of strategy orchestration have been discussed in section 8.4.1.

9.3   Implications of the study

This section will address the possible implications of the current research at the learning and teaching levels and at the institution and administration levels as well. It will start with implications for learning which includes learners and learning settings in general in section 9.3.1. Implications for teachers and practitioners will be introduced in section 9.3.2. Finally, section 9.3.3 will discuss the possible implications for institutions and administrations.

9.3.1   Implications for learners and learning contexts

In this section, implications of using e-portfolio for learners and learning context will be introduced. In addition, the implications of VLS findings and VLS instruction will be discussed after the e-portfolio discussion. Therefore, this section will cover the implications based on the main findings of two aspects, namely e-portfolios and VLS.

Recording learners' academic development is a prominent aspect of implementing e-portfolio (Sherman, 2006). It often engages learners in an active process of monitoring their own learning by identifying their weaknesses and strengths. This encourages learners to think critically about their strengths and weakness which promotes monitoring skills. This also promotes meta-cognitive skills that assist in organising and managing any academic and linguistic progress. The findings of the current research suggest that learners were systematic in recording their use and learning of the taught VLS. Thus, this research argues that the process of documenting and recording learning promotes more improvements in cognitive and meta-cognitive skills. Therefore, the current research found the e-portfolio an effective learning tool that would encourage them to develop their skills of selecting, recording, organising and managing their learning. In the same vein, e-portfolio puts the learners in the centre of the learning. That is achieved by involving them in the self-assessment process (Sherman, 2006), because they need to selectively add pieces of evidence and artefacts that demonstrate their ability. Thus, they are expected to be active self-assessors of their own portfolio content to create a learning record that will showcase their skills and competences. If they become more aware of their work by

revisiting, monitoring and revising it, they become more active learners who can judge their own learning.

E-portfolios are incorporated in the current research context to facilitate learning of specific activities and content, namely VLS. The use of the e-portfolio is expected to assist in achieving deep learning (Barrett, 2004a; Zubizaretta, 2004) that involves creativity and reflectivity. The current research findings suggest that e-portfolio has facilitated the learning and use of strategies in general which might suggest that this level of deep learning is being reached by some learners. The deep learning which is creative and reflective is contrary to traditional surface learning that does not engage learners actively with the learning process. It is worth noting that deep learning, that e-portfolio could promote, is complex. Therefore, the e-portfolio integration in language learning should involve a considerable amount of effort and planning.

This research argues that while some participants might not reach higher levels of deep learning, a number of participants showed signs of creativity, insightfulness and reflectiveness. This could qualify them to enter the deep learning level which was found to be difficult to capture in the current research for practical and theoretical reasons. For example, the time limit of this study might prevent noticing such higher levels of learning. Such levels of learning are usually cumulative and take time. Furthermore, learners in deep learning are usually more creative and reflective and thus know more about their abilities, cognitive and meta-cognitive, and their motivational traits (Khoo, 2012). Learners tended to know more as time passed because the e-portfolio serves as a constructive record that can be consulted by learners from time to time. This offers learners the chance of different starting points in different learning stages and levels. Furthermore, this deep learning engages learners in critical thinking about the challenges and experiences they have during the course of the VLS instruction. Such thinking and discussions might promote more understanding of the learning process that learners are involved in. Hence, this research calls for adoption of e-portfolios in different language learning areas. This might promote such levels of deep learning among students which would facilitate their language learning in general.

It was found that e-portfolio and reflections promoted more interest in the strategic learning of vocabulary which was found to be applicable to other areas of learning. Since this study is interested in language learning, it was thought that reflection in e-portfolios might encourage learners to actively engage with linguistic and non-linguistic materials. In the current study, the e-portfolio seemed to be promoting more awareness of the importance of the strategies. Hence, e-portfolio can be used as a motivating factor that can trigger less motivated learners in any skill of language or area of learning. This has been found true in previous research, e.g. Hartnell-Young et al. (2007). Specific functional and technical features of e-portfolio increased interest

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in using the e-portfolio and in learning and using the taught VLS. Therefore, the current research calls for a careful selection of the e-portfolio platform. This should include learners' needs and interests analysis, so it can be taken into account in selecting the e-portfolio platform. This research argues that if the e-portfolio platform is chosen based on the learners' needs and interests, it might enhance learners' motivation and attitudes towards using the e-portfolio and learning the subject.

The e-portfolio seemed to endorse practices of lifelong learning as found in the present study. Therefore, it is thought that learners might benefit from the e-portfolio in establishing lifelong learning practices and concepts. This is because learners might tend to keep e-portfolios for personal development after the end of the course as some participants indicated. It is not only the findings of the current research that suggest e-portfolio for life-long learning, but others in the literature reached the same conclusions (e.g. Foote & Vermette, 2001). It might also be kept for employability purposes after graduation as it seems to be a creative and comprehensive record that shows learners' knowledge growth and skills, often over a long period of time.

This research concluded that if strategies instruction were combined with a systematic and regulated use of strategies, it would accelerate and facilitate the strategic learning which would lead to improvement of learners' linguistic competence. Therefore, learners are encouraged to use strategies in a consistent and regulated way. This could be achieved by integrating e-portfolio or any tool that maintains and enhances systematic, regulated and self-directed learning. It is vital to claim that this research has found e-portfolio to ba an effective and functional tool that enabled learners to systematically and consistently use VLS. Thus, it would encourage learners to use e-portfolio as a learning tool with its recommended practices as discussed in this section.

With regard to the implications at the strategy level, this research calls for a systematic and consistent use of taught strategies. This is because such regular use of the VLS led to an increase in the frequency of strategy use. More importantly, it is found that the regular and systematic use of the taught strategies in the e-portfolio helped learners to reach higher levels of strategy orchestration. The level was reached of clustering strategies in this research and thus it argued that the sophisticated use of strategies has led to significant improvement in academic vocabulary size. The findings of this research suggest that the use of e-portfolio has facilitated this consistent and systematic use. Therefore, this suggests that e-portfolio can be used as an effective developmental tool in the context of learning and using VLS.

9.3.2 Implications for teachers and practitioners

Similar to the implications for learners section, this section will include suggested implications of e-portfolio and of VLS for teachers. The current research situates itself within the general area of e-learning and then discusses in the literature chapters the general aspects of e-portfolios in education and in language learning. The use of the e-portfolio in the current research was based on the literature recommendations and findings. This ranges from selecting the e-portfolio platform to the implementation process and the provision of technical and functional support in the study. Therefore, part of the suggested implications for teachers comes from the current research experience of integrating the e-portfolio into the context of VLS instruction. The current research argues that it is essential that the e-portfolio is introduced to learners in a way that explains and emphasises the concept before the technology. This is to highlight the pedagogical benefits of portfolios in both their traditional and electronic versions. Focusing on technology might depreciate the potential and effective practices of portfolios which include documentation of learning and reflection and critical thinking about learning (Sherman, 2006). If a portfolio is a new term and tool to learners, practitioners should pay a considerable amount of time and effort to explain the concept, objectives and possible outcomes of the e-portfolio. This was applied in the current research in the first two weeks of instruction. This was positively received by participants as they kept asking all sort of questions and raised their concerns about the use of the e-portfolio. Such explanations and clarifications would make learners more aware of the general objectives of portfolios which could lead to better practices and use of portfolios. This research also accepts that e-portfolio might be more appropriate to 21st century learners as technology is becoming an integral part of their learning. Therefore, necessary technical and professional support should always be available for learners to make this process more effective (Jafari, 2004). Technical support was available to learners throughout the study. This support was provided by the e-portfolio platform official website and by the training provider who was available to learners during the whole first two weeks and once a week during the study. It is worth noting that this research does not underestimate the effectiveness of traditional portfolios. However, technical features that do not exist in traditional portfolios were emphasised by a number of participants in the current research. The potentials of technology in the e-portfolio in this study have been discussed in sections 7.2.5 and 8.4.38.4.3. These features encouraged learning management skills, lifelong learning conceptualisations and maintaining positive motivation.

This leads to an important issue of understanding the e-portfolio. It is central in any use of e-portfolio to clearly define the purposes of the e-portfolio. This needs to be well-communicated to the learners as it assists in understanding how the portfolio can improve their learning. This should include theoretical and practical steps that learners should take to effectively use the e-

portfolio such as highlighting the content that should be included in the e-portfolio. In the first session of e-portfolio training, the training provider defined the purpose of using the e-portfolio as a learning tool that should assist learners to learn and use VLS that will be taught in normal language class. All of the students' questions about the objective of using e-portfolio were answered and elaborated with practical examples. Therefore, the current research argues that the integration of the e-portfolio was successful because of the training sessions provided to learners at the beginning of the course of training. At the same time, this research accepts that there was some confusion about the e-portfolio at the beginning of the training which was reduced by follow-up and individual support sessions.

The role of the teacher in the e-portfolio context should also be predetermined and planned as traditional roles of teachers may not be suitable for such learning settings. Learner-centeredness is emphasized in e-portfolios, so the role of the teacher should also correspond with this learning context (Yengin et al., 2010). This research recommends that the teacher should act as a facilitator who provides the required support to enable learners in constructing their e-portfolio. This is because the participants in the current study showed a noticeable demand for the teacher's guidance and feedback, especially at the beginning of the e-portfolio use. Depending on the nature of the subject matter, the teacher should provide the kind of support that will not affect the choice of the learners and the final product. In the present study, the support was mainly of technical and strategies-related content. However, there was not any kind of imposition or pressure on learners to go in a certain direction of strategies use. This is because this research accepts that freedom of choice in strategies use is vital. To conclude, it is recommended that the role of teacher should be limited to facilitation of the construction of the e-portfolio and feedback based on the learning activities and objectives (Brown, 2002; Nevio, 2002). The justification for this recommendation lies in the fact that teachers' traditional roles might influence the content of the e-portfolio. Such influence might reduce the authenticity of the artefacts and evidences included in the e-portfolio. It also could marginalise the learners' voices by imposing or directing learners to certain learning paths. Thus, unauthentic and less valid interpretations might be drawn based on such influenced performances.

The e-portfolio in the present study was constructed totally by learners as the findings suggest. This corresponds with the learning models that put extra emphasis on learner-centeredness (Vonderwell & Turner, 2005). This engaged learners with active learning of the VLS in the current study case that involved discovery, discussion and construction of knowledge. Penrod (2007) has found similar findings and conclusions in his study on blogs. Learners in traditional ways of learning become passive receivers of information (Jonassen et al., 2003) which does not engage them actively with the different learning situations and activities unlike the learners who use the e-portfolio as a learning tool. Hence, the recommendation is for teachers and

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practitioners to observe their learners' activities in their e-portfolios ensuring that they are actively engaged with the materials of learning. This research acknowledges that this might be difficult to achieve especially with large numbers of students using e-portfolio. However, it at the same time argues that the use of technology might facilitate this process by providing online feedback inside each individual e-portfolio that can be seen by other participants who also can benefit from such feedback. In this way more personalised feedback can be given to learners but equally can be found useful by other learners especially if they are learning the same subject in their e-portfolio.

Reflection in the e-portfolio was not explicitly emphasized in the instructions given to the participants in the current study. It was implicitly addressed in the instructions. Reflection is naturally induced by the use of the e-portfolio as it is inextricably linked with the e-portfolio. Reflection is an important practice of employing e-portfolio (Sherman, 2006; Thanaraj, 2012; Parkes et al., 2013). The participants have demonstrated the ability to reflect in various ways which was insightful and informative in understanding their strategic learning. However, this study recommends that teachers encourage learners explicitly to reflect based on a reflection model that teachers can develop. This reflection model should be built on the objectives of the course and the teachers' goals. Applying such a model would encourage learners to systematically reflect on their learning which increases the chances of reaching deep and active learning (Venezky & Oney, 2004, as cited in Khoo, 2012, p. 72). Following such reflection models might increase the consistency of reflection and thus the critical thinking about learning. However, imposing reflection models and systems on learners might lead to artificial reflections that do not necessarily reflect their authentic learning. Therefore, this research calls for a reflection model that will take the learners' needs into account by making the reflection systematic but not extensive. Adopting an extensive model of reflection might lead to adverse results.

Another important aspect of reflection in e-portfolios is the self-reporting tools available to learners. It is important that self-reflection and reporting features are available to learners and simple to use. Complicated platforms and restricted formats might make learners frustrated and less willing to reflect. Therefore, teachers should pay attention to these features when selecting e-portfolio platform. At the theoretical level, facilitating self-reflection by choosing suitable tools is crucial as it encourages critical thinking about the learning process (Marilyn et al., 2005).

Depending on the purpose and learning objectives, it might be helpful to have a sustainable method of feedback from teachers to learners. Learners tend to appreciate forms of feedback about the content of their e-portfolio even if it is not used as assessed work (Lorenzo & Ittleson,

2005). Learners expressed their interests in feedback about their reflections in the e-portfolio on different occasions in the current study. Therefore, this research encourages teachers to provide learners with feedback during the course of e-portfolio use. Special attention should be given to the learners' reflection as it is significant to their learning and motivation. This makes the ongoing support offered by teachers and instructors even more important as it should correspond with the feedback and ongoing assessment.

E-portfolio, ideally, should offer teachers authentic content that enables them to track the learners' progress as it provides them with detailed insights about the learning process. It also reflects the learners' experiences, challenges and ups and downs. The current study does not use the e-portfolio as an assessment tool. However, it was found that the VLS instruction provider was able to identify some general difficulties and challenges learners reported in their e-portfolios. This enables teachers to view learners' learning developments holistically. Having such a holistic view about learners would inform instruction and evaluation decisions. Teachers should then take the insights and reflections in the e-portfolio into account when they plan their lessons. Likewise, understanding these reflections and insights would allow teachers to be selective in their e-portfolio assignments and feedback. The e-portfolio enables teachers to look deeply at their students' progress which could make any remedial plans more appropriate to the students' needs. A final thought about the implications for teachers and practitioners is about using the e-portfolio as an assessment tool. If teachers decide to use the e-portfolio as part of a module or course formal assessment, they should inform the learners of it. The e-portfolio assessment criteria should also be clearly defined and explained to the learners before the beginning of the e-portfolio course (Gülbahar & Tinmaz, 2006). Teachers should familiarise themselves with the available e-portfolio evaluation models that will help them to make a fair assessment of their students' e-portfolios. It is worth mentioning that the literature on portfolios does not encourage the use of e-portfolios for assessment of learning. In fact, it encourages the use of them for assessment for learning. Teitel et al. (1998) claimed that best way to kill the usefulness of portfolios is to use them for "evaluation purposes". Therefore, if teachers do not see the necessity of including the e-portfolio in the formal assessment of the module it is used in, it is recommended not to mark them or assign grades or scores. This research avoided including any formal assessment components of the e-portfolio project to benefit from its usefulness and to reduce any chance of having unauthentic evidences (Barrett & Carney, 2005).

At the strategy level, the current research claims that strategy training providers should include chances for practice and modelling strategies. During the course of VLS training, there was a need for more time to practise the taught strategies in class. Due to the fact that the training runs for only 55 minutes, there was not enough time to give students chances to apply all the taught strategies. There was a chance to practise some but not all of them. Therefore, this research

provided all the materials needed for strategy practice in a teaching portfolio that was part of the same e-portfolio platform used by students. Therefore, this research recommends all strategy training teachers to include enough time for practice and feedback whenever it is possible. This research acknowledges that this is not always possible like the case of its own strategy training. Therefore, this research calls for more adoption of the available technology to overcome this challenge. In particular, Glogster e-portfolio platform was found to be useful in creating a teaching tool that offer learners easy access to rich resources created by the strategy training teacher.

With regard to the actual use of the discovery, note-taking and memorisation strategies, this research encourages strategy instruction providers to consider the findings of the current study in designing strategy training. For example, when including guessing in the training, the teaching materials should cover the cases where learners face more than one key word to guess and when there is lack of enough context to guess. The typical examples of guessing materials and activities are often very simple. This is not true in real life when learners, such as those who are studying English as their speciality, are reading sophisticated and philosophical texts. Therefore, this research accepts that the examples used in its strategy instruction for guessing are simple and did not train learners on complicated situations. Another example is concerned with asking teachers as a social discovery strategy. The findings of the current research indicate that students heavily used this strategy, probably for cultural reasons. As discussed in chapter 8, Oxford (2011) emphasised that these culturally-promoted strategies should not be disregarded but instead should be dealt with in a careful way. This might include emphasis on strategies that do not exist in the students' strategic repertoire. Such emphasis might raise learners' awareness of the existence of other new strategies which might lead to more use of new strategies and reduction on the dependency on culturally-promoted strategies. In the particular example of the findings of this research, the overuse of the asking the teacher strategy might be brought into the discussion with learners. This can be achieved by introducing the new role of the teacher as a facilitator of the learning process as opposed to his/her traditional roles, such as being the source of knowledge (Richards & Rodgers, 2014).

9.3.3 Implications for institutions and university management

E-portfolio is found to be effective in instructing, learning and using VLS in the current study. The e-portfolio was also proved to be helpful in different contexts and areas of study in the literature (Hartnell-Young et al., 2007; Barrett, 2011; Khoo, 2012). Hence, it is legitimate for institutions to study and evaluate the suitability of e-portfolios for their goals. The current research findings suggest that the use of the e-portfolio was effective in achieving a specific objective which is promoting better strategy use. Therefore, institutions might be able, with

careful planning and study, to incorporate e-portfolios to support learning. In case an institution decides to implement the e-portfolio, there are number of aspects and practices to be taken into consideration. This study employed the e-portfolio because it evaluates the e-portfolio as a tool that can serve its objectives (i.e. instructing, using and learning VLS). This is in light of the current study findings and experience. Therefore, e-portfolio suitability for institutional aims and objectives is crucial. For example, e-portfolio is suitable in achieving long term goals. Therefore, if there are short term goals of institutions, it is likely that e-portfolio may not serve well to achieve these short term aims.

One of the misconceptions about e-portfolios is to think that they should include almost everything related to the content of subject matter. This is not always true, as a well-designed e-portfolio should be focused. Therefore, specific types of learning artefacts and reflections need to be relevant to the goals and objectives of the study. As a starting point when implementing the e-portfolio, specific learning activities, skills and areas should be defined and then requested (including evidence of vocabulary strategies in the present study case). These activities, skills and areas should be relevant to the target learning objectives (reflecting about strategies learning and use in this study case). Therefore, the current research suggests to start with a more structured e-portfolio as it might be more practical. Structured e-portfolio should include artefacts of learning and reflections that adhere to institutional objectives. This does not mean that learners should be left with no choice. Learners should always be offered freedom of choice of the type of evidence, artefacts and reflections they want to include in their e-portfolio. However, this needs to be relevant to the learning objectives as predetermined and explained by the institution.

Another important issue, which institutions and administrations should take into account when implementing e-portfolio, is the platform. Based on the feedback this study received from the participants, the e-portfolio platform used in the study (Glogster) is described to be easy to use and functional at the same time. These features include ease of use of the tools for reflection and self-reporting. While the use of these tools was perceived easy, this does not affect the functionality of the e-portfolio as learners show significant growth in their strategy use and orchestration. Glogster e-portfolio allows learners to upload any evidence of learning as it supports a variety of file formats. Therefore, it is vital to thoroughly study and evaluate the e-portfolio platform to be used in the institution as it will affect the use of it. It is always recommended that user-friendly platform should be selected as it will ease the use of the e-portfolio among staff and learners. Simplicity does not mean that an institution selects a less efficient platform. It should not lack important technical features that offer better practice of e-portfolios. For example, the self-reflection and reporting features should always be available and easy to use. This research calls for the adoption of e-portfolio selection criteria developed

based on the individual institution's goals and objectives. Institutions might consult the current research criteria for selecting the e-portfolio platform and others available in the literature. However, this research argues that its criteria are suitable for its objective of training learners in the strategies which should be different from an institution's objectives.

9.4   Limitations of the study

The concept, functions and technical features of e-portfolios may need a considerable amount of time to be fully comprehended by learners. This could mean that learners need training before they master the knowledge and skills that the e-portfolio requires. In the present study, the time limit restricted any training prior to the beginning of the study. Therefore, some participants experienced some frustration at the beginning of the study. However, this was eliminated by providing continuous e-portfolio support during the first two weeks where the training provider was available to learners in a computer lab equipped with the required technologies. This support continued to be offered once a week after the first two weeks until the end of the study. This was found to be helpful by learners as they started building their first e-portfolio. Although this seemed to be useful, it would be more effective if training is provided before the study starts to minimize any effects of lack of knowledge or understanding of the e-portfolio general concepts, practices and technologies.

In regards to the quantitative data, the number of participants in the present research study was quite modest. A larger number of participants would have been more representative. Such representative number would enhance the chances to generalise the findings of the study. It is also important to note that the quantitative data in this research were mainly used as indications of performances. The key research arguments were based mainly on qualitative data that has been found rich and insightful. Generally, this research accepts that the findings of this research, both quantitative and qualitative, deliver interesting preliminary results that would encourage more research in the area of strategic learning of vocabulary and e-portfolio. It would also encourage more research in the various areas of applied linguistics. Further research recommendations have been discussed in the last section of this chapter.

The language course in which participants in this study enrolled is intensive as they study in English language TEFL programme. This put extra challenge on the participants as they need to spend times working on their e-portfolio. Towards the final examination start, participants decided to stop working on their e-portfolio which affected the planned schedule. The last VLS instruction and e-portfolio sessions were cancelled to give participants enough time to prepare for their finals. This decision was made based on ethical grounds as this might affect the participants' performance in their assessed language modules. As they study in programme that

qualifies them to be language teachers in the future, more effort and time were spent in preparation for final examinations. The final VLS instruction session included 14 strategies which is considered quite a large number to be learned and used. Such a large number of strategies, instructed in a short period of time because of the emergent change of the plan, would affect learners' performance and reflection. Therefore, this emergent change of plan might be considered as a limitation of the study.

There was a risk of having unauthentic or false performances and behaviours by learners because they were aware of the general objectives of the study from the beginning. While this study accepts this risk, efforts were made to ensure that the data collected comes from different sources. Incorporating more than one research instrument would increase the reliability of the data collection procedures. Therefore, the data came from different quantitative and qualitative instruments. Furthermore, the data collected from the e-portfolio is believed to be less affected by this risk as it encourages more authentic and realistic evidence that are explained and supported by learners' authentic voices from their reflections.

The fact that the participants in this research study were trained to become teachers might affect the validity of the result. However, these participants are not very advanced in terms of proficiency as they are in the middle of their 4-year programme. Therefore, they are not very advanced nor are they beginners. My estimation of their proficiency level is equivalent to something between 4.5-5.5 in IELTS. This makes them truly intermediate learners somewhere between high B1 and low B2 according to the Common European Framework. Therefore, the fact that they are language specialist may play a smaller role in affecting the validity of the results. Nevertheless, this research argues that the findings are equally relevant to the EFL language learners and also to the TEFL undergraduates who study in similar programmes, especially in similar contexts such as other EFL countries.

A final limitation about this research study is that it did not include the teachers' views about their students' performances and e-portfolio. It should be noted that the researcher made efforts to interview some teachers who expressed their inability to participate due to their high teaching load. Taking teachers' opinions and observations might have enriched the understanding of the participants' learning experience with the e-portfolio and VLS instruction. This has been addressed in the recommendations for further research in section 9.5.

9.5   Further research recommendations

In the light of the findings, conclusions and limitations of this research, there are number of recommendations that can be taken into the consideration in further research investigating this area and relevant aspects.

Longitudinal study that investigates the e-portfolio use among learners, who are pursuing undergraduate degrees during their study and after the graduation, is needed. This kind of long-term study would provide insights into learners' perceptions and practices. Taking into account that e-portfolio is becoming an employability requirement (Migl & Powell, 2016), it is essential to understand whether learners will consider them after they finish their studies. It seems that participants in the current study have established solid knowledge, background, practice and skills in the e-portfolio that would promote academic, personal and career development. Thus, it will be interesting to know whether they decide to keep the e-portfolio for employability purposes after their graduation, or not.

As this research acknowledges the modest number of participants it has, encourages further research to take larger numbers of participants. Such large sample might be more representative of a wider range of EFL undergraduates. Taking a large number of participants would make generalisation of results more legitimate which could inform practice and enrich theory.

It is recommended that further research also investigates the impact of e-portfolio use on learners' and teachers' perceptions of their roles in the learning process. It is worth the time and effort to investigate the role of culture that could interact with the role of e-portfolio in shaping the learners' and teachers' perceptions of their responsibility for learning. Cultural differences are one of the greatest challenges learners face (Constantine et al., 2004). As the participants in the current study come from an educational culture (Saudi Arabia) that puts extra focus and responsibilities on teachers rather than learners (Alrashidi & Phan, 2015), the culture might be playing a role in the learning experience. It is a very common perception in some eastern cultures that the teacher is the first and highest authority in the classroom (Hassan & Jamaludin, 2010). This specific area of culture was beyond the scope of the present study but it is worth researching in relation to e-portfolios.

The present research focuses on undergraduates doing a degree in TEFL. A study that pays attention to postgraduate use of e-portfolios is needed. Such study might enrich the understanding of e-portfolios in two different levels of study, namely undergraduate and postgraduate. Likewise, it is worth researching to explore e-portfolio use in the ESL context as the current study focuses on EFL. Therefore, a study that investigates the use of e-portfolio and VLS instruction in the ESL context would make the comparison between the findings of the

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EFL and the ESL learners possible. It will be interesting to find out how the context could make a difference in performance and perceptions.

Using e-portfolio as an assessment tool is thought to be one of the areas that further research should consider. Although this specific aspect was not in the focus of this research, participants have shown growing interest in using the e-portfolio as an assessment component in their normal language modules. Assessment is a research field that could generate interesting discussions as the e-portfolio actively engages participants in the evaluation process. Participants become informed self-assessors of their progress in e-portfolios as they revisit and reform the content of their e-portfolios at the artefacts and evidence level and at the reflection level. Thus, e-portfolios could afford the facilities that allow more authentic and accurate methods of assessment by combining summative and formative tools that assist in capturing the complex phenomenon of learning.

The e-portfolio in the current study is a web folio that is available and accessible anytime and anywhere. This type of e-portfolios is easy to build, maintain, transport and share which makes them exist for a longer time. It is, therefore, interesting to check if learners continue to use them beyond their university goals. This would suggest that a study could investigate this through delayed checks or a longitudinal study that continues after students' graduation.

Participants in the present study did not share their e-portfolios with an audience outside their classmates and teacher. Therefore, it will possible for further research to focus on the audience that is beyond the formal learning settings because e-portfolio can be viewed by a larger audience if learners wish it. This would enable learners to receive feedback from different sources that could enrich their learning experience. However, issues such as privacy and online safety especially when dealing with young learners need to be taken into account. Although this was not part of the focus of the current research, most e-portfolio online platforms have a privacy feature where access to the e-portfolio can be limited and restricted by users. According to Hartnell-Young et al. (2007) e-portfolios always offer choices of privacy features.

Another research recommendation is to carry out a study that includes more than one level of proficiency and year of study. Such research can be conducted as a comparative study where comparisons between higher and lower levels of proficiency and years of study, use of e-portfolio and language learning can be highlighted. It could also be an exploratory study where more experienced learners with higher levels of proficiency and years of study could interact with less experienced learners in a constructed and systematic way to scaffold their learning. For example, final year students who completed their e-portfolio could systematically share their ideas and learning experience with foundation students as they start using e-portfolio.

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A final further research recommendation is about the target population. The present research focused on students who are pursuing a bachelor degree in the language itself. It would be interesting to investigate the use of e-portfolio in content-based modules where English is used as a medium of instruction. Such research might focus on perceptions and practices and whether they differ from those in language modules.

The current study carried out VLS instruction that is not integrated in any language module. A study that investigates the use of e-portfolio in the different language modules of language skills; reading, writing, listening and speaking could be carried out. It could pay attention to specific aspects of e-portfolio such as reflection. Reflections about language skills would enrich the teacher's understanding of their learners' learning difficulties, strengths and weaknesses. Furthermore, the participants in the current study improved in their use of strategies and academic vocabulary size regardless of the instruction they received. Part of the explanation for this is that all of them are studying English as their major and thus are expected to improve as they are studying other language materials. Therefore, this research suggests that a study including participants from different disciplines other than the English department is needed. This is to compare the performance of the students from different disciplines with those of the current study. Such comparison would provide interesting findings that can be explained in the light of the findings of the current research as some might argue that the successful use of the e-portfolio is attributed to the participants' expertise. Finally, this research revealed some interesting findings, however, much is still to be researched such as the recommendations made earlier.

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Appendices

Appendix A: Marin's VLS taxonomy

Marin's specific Strategies in his taxonomy (2005: 349)

Dealing with unknown words	Note-taking	Memorising/retaining words
Guessing: 1. I check if the word looks similar to Spanish. 2. I analyse the structure of the word (i.e. prefixes: mishear and suffixes: homeless) or parts of the word (i.e. compounds: penknife). 3. I analyse the grammatical category of the word by looking at the sentence. 4. I guess the meaning of the word by its sound, i.e. I say it aloud and guess. 5. I guess the meaning by looking at the pictures accompanying the text. 6. I guess the meaning with the help of the words I know in the sentence or paragraph. 7. I guess the meaning by the topic or the situation in which the word appears. 8. I keep on reading and try to guess later on from the context. 9. I skip the word if I do not manage to guess the meaning.	Places where notes are kept about new words 1. I write down information about new word in the margins of the textbook or where the word occurs. 2. I write down new words on my English notebook (i.e. the one I use for my English course or other courses). 3. I write down new words in a specific vocabulary section at the end or top of my English notebook. 4. I write down new words on my vocabulary notebook. 5. I write down new words on cards or small pieces of paper, which I carry with me. 6. I write down new words on wall charts, posters and small pieces of paper, which I stick somewhere at home. 7. I record new words on audio-cassettes. 8. I keep vocabulary notes in a computer or other electronic devices.	Vocabulary repetition to help retain the words A. Modes of repetition 1. I say the word aloud several times. 2. I repeat the word silently in my mind. 3. I write the word several times. 4. I listen to the words recorded on tape. B. What is repeated. 1. I just repeat the English word alone. 2. I repeat the word and its Spanish translation and vice versa. 3. I repeat example sentences several times. 4. I repeat the word and its English definition. 5. I repeat the spelling of the word several times. (i.e. saying the word and spelling it aloud).
Using dictionaries and other sources 1. 1 look up the word in an English-Spanish-English dictionary. 2. 1 look up the word in my electronic translator. 3. I look up the word in an English-English dictionary. 4. I look up the word on the interne if possible, (i.e. on-line dictionaries). 5. I look up the word in the dictionary and check its meaning(s). 6. I look up the word in the dictionary and check its pronunciation. 7. I look up the word in the dictionary and check its spelling.	Kind of information recorded about new words 1. I write down new words and their Spanish translation. 2. I write down new words and their definitions in English. 3. I write down antonyms or synonyms beside new words. 4. I write down the new word along with my own drawings or pictures. 5. I write down example sentences using the new word. 6. I write down the pronunciation of new words. 7. I write down the grammatical category of new words. 8. I write down the grammatical behaviour/pattern of the word, (i.e. depend on and not depend of). 9. I write down information about	Association to help retain words. 1. I relate new words to other English words with similar sounds or spelling (e.g. link & wink, row & raw). 2. I relate the new words to antonyms or synonyms in English (e.g. wide & narrow, view & opinion). 3. I associate new words with similar words in another foreign language I have studied. 4. I associate new words with a similar word in Spanish (i.e. cognate, relation & relacion). 5. I use the Keyword Method. (e.g. if I want to memorise the word 'trigger,' I think of a word in Spanish that sounds similar like `trigo;' then I create an image of a

8. I look up the word in the dictionary and check its grammatical category (i.e. if the word is a verb, noun, adjective or both a verb and noun) 9. I look up the word in the dictionary and check example sentences and/or fixed expressions.	the appropriate context or situation in which the word can be used. 10. I write down the contextual reference for the new (e.g. page number, unit or lesson, film, song, etc). 11.	gun covered with wheat. 6. I relate new words to words which usually go together in speech or writing (e.g. words with do and words with make). 7. I associate new words with semantically related words or group of words. (e.g. flood & water, sink & parts of the kitchen). 8. I visualise the form (spelling) of new words. 9. I associate new words with my personal experience. (e.g. fall in love). 10. I associate new words with the place I see or hear them (e.g. books, movies, songs, magazines, situations). 11. I associate new words with physical action that I do or imagine. 12. I think of prefixes and suffixes that can be attached to the new word (e.g. soft — soften -softener)
Asking others 1. I ask classmates, friends or relatives for a Spanish translation. 2. I ask classmates, friends or relatives for a definition in English. 3. I ask classmates, friends or relatives the spelling or pronunciation of the word. 4. I ask native speakers for a definition in English. 5. I ask native speakers for the spelling or pronunciation of the word. 6. I ask the teacher for a Spanish translation. 7. I ask the teacher for a definition in English. 8. I ask the teacher for an example sentence. 9. I ask the teacher for the spelling or pronunciation of the word. 10. I ask the teacher for the word's use (i.e. how and when it can be used appropriately). 11. I ask the teacher for the grammar of the word, (i.e. if the verb is followed by an —ing form or to-infinitive: consider going or consider to go. 12.	Organisation of notes about new words. 1. I organise new words by unit or lesson of the textbook. 2. I classify new words into their grammatical category, (e.g. verbs in one section, nouns in another). 3. I classify new words by meaning groups, (e.g. animals, verbs involving motion). 4. I organise new words by alphabetical order or sections, (i.e. words beginning with A in one section, with B etc). 5. I write down new words in the order they appear. 6. I use different devices to highlight the words you consider important. (.e.g. capital letters, coloured pens or markers, asterisks, lines, etc). 7.	Further practice/consolidation of new words. 1. I quiz myself or have other quiz me on new words (e.g. practising giving meanings in all possible manners, playing memory games). 2. I use as many new words as possible my everyday conversation or when writing in English, (e.g. talking to classmates, native speakers, writing letters, diaries, etc). 3. I make up imagined conversations and stories in which I use new words. 4. I look for opportunities to encounter new words or reviewing words in English (e.g. reading magazines, watching movies, using internet, listening to the radio, etc). 5.

Appendix B: Consent form and information sheet

UNIVERSITY OF
Southampton

CONSENT FORM *(FACE TO FACE: 1.0)*

Study title: Evaluating the Impact of Vocabulary Strategy Instruction and E-Portfolios on Vocabulary Strategy Use and the Acquisition of Academic Vocabulary by EFL Undergraduates

Researcher name: Mohammad Aldawsari
Staff/Student number: (Mohammad) 25202863
ERGO reference number: 6822

Please initial the box(es) if you agree with the statement(s):

I have read and understood the information sheet (insert date /version no. of participant information sheet) and have had the opportunity to ask questions about the study.

I agree to take part in this research project and agree for my data to be used for the purpose of this study

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected

Data Protection
I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name)...

Signature of participant...

Date...

Participant Information Sheet (Face to Face)

Study Title: Evaluating the Impact of Vocabulary Strategy Instruction and E-Portfolios on Vocabulary Strategy Use and the Acquisition of Academic Vocabulary by EFL Undergraduates

Researcher: Mohammed Aldawsari

Ethics number: 6822

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

The researcher of this study is a postgraduate student at modern languages department, Humanities, University of Southampton. The general aim of this study is to investigate some issues related to vocabulary learning strategies through the incorporation of electronic portfolio. Findings from this study are expected to help in understanding strategic learning of vocabulary and use of e-portfolios in details.

. The study, hopefully, might reach some conclusions and then suggest implications for pedagogy and research.

Why have I been chosen?

The participants in this study must be Undergraduate students who are studying English as foreign language as their major at the university. Thus, you are chosen because you meet the specified criteria.

What will happen to me if I take part?

This study is using different methods to collect data; questionnaires, interviews, academic vocabulary size test. It also includes instruction course of vocabulary learning strategies. Participants might be chosen to participate in a group that will use and electronic portfolio, which is an online platform that helps learner to document and reflect upon their learning.

First, if you are invited to respond to the questionnaire, you are expected to spend between 20-50 minutes. Second, if you are invited to participate in the test then it is expected that you will spend between 20-45 minutes. Third, if you are invited to participate in the interview, you are expected to spend around 40 minutes. Fourth, if you are invited to participate in the course of vocabulary learning strategies instruction, you will receive training on the strategies in bi-weekly time. Finally, if you are invited to participate in the e-portfolio use, you will be asked to submit an e-portfolio that shows your learning and using of the taught strategies. The instruction course will last between 8-12 weeks during the academic semester.

Are there any benefits in my taking part?

Participants who take part of this study might find it beneficial to their language learning in general, strategic learning, and digital literacy. However, it should be noted that there may be no benefits to students, but benefits to research objectives is expected which would add to current knowledge.

Are there any risks involved?

There is no obvious risk in participating in this research. However, the participants who will take the test, may feel that their language ability as well as their level of competence may be judged which may not be comfortable to some students. Those who will be participating in the instruction might find it unrelated to their official modules which might be annoying to some students. Students who will participate in the e-portfolio will be asked to submit e-portfolio assignments which may not be comfortable to some students.

Will my participation be confidential?

Your participation will be treated confidentially at all times and anonymity will be assured when your participation is used.

What happens if I change my mind?

It is your decision to withdraw at any time and you have the right to withdraw without giving any reason.

What happens if something goes wrong?

If you have any concerns or complaints, you can contact Dr Martina Prude, Head of Research Governance (02380 595058, mad4@soton.ac.uk).

Where can I get more information?

If you need more information, have questions or would like to reach the researcher, you can contact the supervisor of this study Vicky Wright (02380592281, v.m.wright@soton.ac.uk) or the researcher Mohammed Aldawsari (mha1e11@soton.ac.uk).

Appendix C: Sample of lesson plan

Figure 81 VLS Instruction Lesson Plan Sample

	procedures	Strategies	Time
1	Introduction: "there is no sense in assuming that students are a blank slate when it comes to strategy use" Cohen & Weaver (2006: 6). It is expected that learners already developed some strategies throughout their language learning experience, short or long. However, Cohen and Weaver questioned whether they are aware of them and are able to use them effectively. Based on that a strategy training session can start with a Strategy Awareness-Raising. This could start with a discussion about the strategies they are currently using and how they use them. Then it could move to alerting learners to the presence of strategies that they might never think about or never used before. You may also increase their awareness of responsibility of learning taking into account the culture of education of your students. Strategies then can be seen by the students as a means of raising their responsibility of learning. It can also be seen by students as an effective tool of improving their language learning significantly. Training provider may encourage students to use the strategies in a more complex way that involve using clusters of strategies against one learning situation and to transfer these cluster of strategies from one learning situation to another learning situation when suitable.	DET Dictionary Use Guess from textual context	5
2	The training provider start naming, describing and explaining the new set of strategies		5
3	The training provider models the strategy or strategies to the students, so they can connect the theoretical explanation of them with the practice and to avoid the gap between explanation and practice. During this phase, the modelling, students will have the chance to ask questions about any unclear aspect of the strategy employment.	MET Testing oneself with word tests	15
4	Training provider can follow the modelling phase by small group discussions of examples of strategies based on students' experience. Students can discuss with training provider and their classmates, the rationale of strategies use and choice, evaluating the effectiveness of chosen strategies and ways of employing them.	MEM Use semantic feature grids DET Analyse Parts of Speech	10
5	The last phase of training session should be the practice where students will have the opportunity to use practically the strategies being taught to them after the introducing, describing, modelling and discussing the strategies. The practice of strategies should be left to the students' choice and the role of the training provider should be facilitator and counsellor of the strategy learning and use. This way will let the students authentically choose the strategies they learn and use based on their needs and preferences. It will allow them also to build up on their prior knowledge of strategies. The objective of the practice phase is to reinforce the learning and use of the strategies being taught to the learners.		10
6	The training provider distribute list of academic words to be learnt by students. The training provider should encourage the students to learn these words because they are the most frequent used words in the academic context. The training provider should encourage the students to use the strategies on learning all kind of vocabulary. The training provider encourages the students to use the strategies not only in their language modules in classrooms but also in their outside classroom learning situations.		5

Appendix D: Sample of teaching materials

Dictionary Use Strategy Guide
(Maximising your study abroad, Paige et al., 2006: 215)

Choose a dictionary that's best for you to aid in learning vocabulary.

Bilingual dictionaries (English to/from another language) can be misleading because there may not be direct equivalence between the English word and the word in the target language.

Monolingual dictionaries (single language) can be more helpful in truly understanding the meaning of words, but then you need to be versed enough in the language to understand the definition!

Monolingual and bilingual dictionaries. There are some dictionaries that are both monolingual and bilingual in the same book, which solves the problem of either/or.

Electronic dictionaries make word retrieval quicker. Many electronic dictionaries allow you to store vocabulary you come across when you are out and about. You can review this vocabulary at your leisure, with the dictionary taking the role of flash cards.

Learner dictionaries. Such dictionaries may be more helpful to low-intermediate learners because they make some effort to use simplified language. Nonetheless, be prepared for them not to be simplified enough at times. A classic case is a learner dictionary of English that defined "to moor" as "to secure or fasten to the dock." The learner didn't know what "secure," "fasten," or "dock" meant, so the definition was useless! In this case, the learner needed also to look up the unknown words in the definition until she finally could understand the word "moor."

DET Guess from textual context

*It had been raining hard through the night so the ground was **saturated**.*

What does 'saturated' mean?

You may already know, but if you do not, you should be able to have a good **guess from the rest of the sentence**.

It had been raining which means the ground must be wet. It was raining 'hard' so this means the ground is probably very wet.

saturated = completely wet

By doing this you are **guessing meaning from context** and you should try and use this technique for words you do not know.

It may not always be clear from the actual sentence and you may have to look at other sentences around the word.

However, only do this for **words that seem important for an understanding of the text.** If it looks like they are not, then leave it and move on with the reading. You probably won't have time to do it with every word, especially if you are at a lower reading level.

It may not always be clear from the actual sentence and you may have to look at other sentences around the word.

However, only do this for **words that seem important for an understanding of the text.** If it looks like they are not, then leave it and move on with the reading. You probably won't have time to do it with every word, especially if you are at a lower reading level.

Guessing meaning from context - Practice

Look at the reading below. Some of the words are in italics and bold. They are quite difficult words so you may not know them.

Try to guess their meaning from the sentence it is in, or sentences around it, and from the topic of the paragraph.

When you think you have guessed, choose from the words below the reading.

Thai Museum Catalogues Opium Dreams and Nightmares

CHIANG SAEN, Thailand, Wednesday December 04 (Reuters).

1) First reactions to Thailand's giant new opium museum in the Golden Triangle are confused: pleasant surprise at cool air after the intense tropical heat, but then disorientation, shock, even fear. Visitors enter the 100-acre complex through a long, dark, mist-filled tunnel, which winds into the base of a hill past bas-reliefs of distorted human figures

MET Testing oneself with word tests
(Adopted from
http://testyourvocab.com/)

Check the box for each word you know at least one definition for.

(Don't check boxes for words you know you've seen before, but whose meaning you aren't exactly sure of.)

Tip: on Windows computers, you can navigate and select checkboxes with your keyboard using TAB and SPACE.

Step 1/3 (measure broad vocab level)

☐ like	☐ enough	☐ flow	☐ throttle
☐ think	☐ hope	☐ clever	☐ stubble
☐ go	☐ close	☐ moon	☐ shrivel
☐ look	☐ tomorrow	☐ bury	☐ midget
☐ him	☐ box	☐ hint	☐ discomfit
☐ here	☐ hair	☐ ferry	☐ prig
☐ after	☐ clean	☐ bat	☐ soothsayer
☐ call	☐ corner	☐ dairy	☐ sedulous
☐ next	☐ skill	☐ grumble	☐ legerdemain
☐ pay	☐ twice	☐ wag	☐ uxoricide

continue >>

Test your vocab

How many words do you know?

Did you know?

English has the most words of any language on Earth.

Check the box for each word you know at least one definition for.

(Don't check boxes for words you know you've seen before, but whose meaning you aren't exactly sure of.)

Tip: on Windows computers, you can navigate and select checkboxes with your keyboard using TAB and SPACE.

Step 1/3 (measure broad vocab level)

☐ like ☐ enough ☐ flow ☐ streamline
☐ think ☐ hope ☐ clever ☐ stubble
☐ go ☐ close ☐ beach ☐ shrivel
☐ look ☐ tomorrow ☐ bury ☐ midget

Semantic Feature Analysis

Adopted from

Background

The Semantic Feature Analysis strategy engages students in reading assignments by asking them to relate selected vocabulary to key features of the text. This technique uses a matrix to help students discover how one set of things is related to one another. Use this strategy to help students:

Understand the meaning of selected vocabulary words

Group vocabulary words into logical categories

Analyse the completed matrix

Benefits

A Semantic Feature Analysis improves students' comprehension, vocabulary, and content retention. This strategy helps students to examine related features or concepts and make distinctions among them. By analysing the completed matrix, students are able to visualize connections, make predictions, and better understand important concepts.

Teachers can use this strategy with the whole class, small groups, or individually. Monitoring each student's matrix provides teachers with information about how much the students know about the topic. This allows teachers to tailor instruction accordingly.

Create and use the strategy

Select a passage of text for students. Model the procedure for using the matrix as a tool for recording reading observations. Provide students with key vocabulary words and important features related to the topic. Assist students as they prepare their matrix. Vocabulary words should be listed down the left hand column and the features of the topic across the top row of the chart. Once the matrix outline is complete, review all the words and features with the students and have them carefully read the text selection.

Follow the steps below for using the Semantic Feature Analysis strategy:

Have students read the assigned text.

As they read, have students place a "+" sign in the matrix when a vocabulary word aligns with a particular feature of the topic. If the word does not align students may put a "-" in the grid. If students are unable to determine a relationship they may leave it blank.

After reading and completing the matrix, have students analyse their completed graphics by:

sharing their observations;

discussing differing results; and/or

writing a summary of what they learned

all about
Adolescent**Literacy**

WETA

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multimedia project offering
information and resources to
the parents and educators of

Classroom Strategies
Semantic Feature Analysis

Background

The Semantic Feature Analysis strategy engages students in reading assignments by asking them to relate selected vocabulary to key features of the text. This technique uses a matrix to help students discover how one set of things is related to one another. Use this strategy to help students:

- understand the meaning of selected vocabulary words
- group vocabulary words into logical categories
- analyze the completed matrix

Benefits

A Semantic Feature Analysis improves students' comprehension, vocabulary, and content retention. This strategy helps students to examine related features or concepts and make distinctions among them. By analyzing the completed matrix, students are able to visualize connections, make predictions, and better understand important concepts.

Teachers can use this strategy with the whole class, small groups, or individually. Monitoring each student's matrix provides teachers with information about how much the students know about the topic. This allows teachers to tailor instruction accordingly.

BBC Learning English Exam Skills Preparing – Right from the start

_____

Complete the sentences by using the word in bold at the top of each box in the correct form. The part of speech you should use is written at the beginning of each sentence.

The first one is done for you. stress (noun) adjective: Exams can be very (1) ____stressful_____ adjective: Sometimes I feel really (2) _____ when I think about my exam. phrasal verb: Don't (3) _____ her _____ even more – she's already very nervous about the exam!

_____

exam (noun) noun: I wonder what the (4) _____ will be like – I hope he or she is nice. verb: It's important that you (5) _____ the types of questions you will need to do on the exam and practise them.

_____

advice (noun) noun: Can you recommend an (6) _____ to help me decide which exam to take? verb: Usually your teacher is the best person to (7) _____ you. adjective: It isn't (8) _____ to leave studying until the last minute.

_____

KEY

1. stressful 2. stressed or stressed out 3. stress her out – this means to make her feel stressed, or under pressure. 4. examiner 5. examine 6. advisor or adviser 7. advise 8. advisable or advised

BBC Learning English

Exam Skills

Preparing – Right from the start

BBC WORLD SERVICE

bbclearningenglish.com

_____

Vocabulary

Complete the sentences by using the word in bold at the top of each box in the correct form. The part of speech you should use is written at the beginning of each sentence. The first one is done for you.

---

stress (noun)

adjective: Exams can be very (1) _____*stressful*_____

adjective: Sometimes I feel really (2) _____ when I think about my exam.

phrasal verb: Don't (3) _____ her _____ even more – she's
            already very nervous about the exam!

---

exam (noun)

noun: I wonder what the (4) _____ will be like – I hope he or she is nice.

verb: It's important that you (5) _____ the types of questions you will
         need to do on the exam and practise them.

---

advice (noun)

noun: Can you recommend an (6) _____ to help me decide which exam to
         take?

verb: Usually your teacher is the best person to (7) _____ you.

adjective: It isn't (8) _____ to leave studying until the last minute.

Appendix E: Sample of teacher's e-portfolio

Figure 82 sample of teacher's e-portfolio (used as a teaching tool)
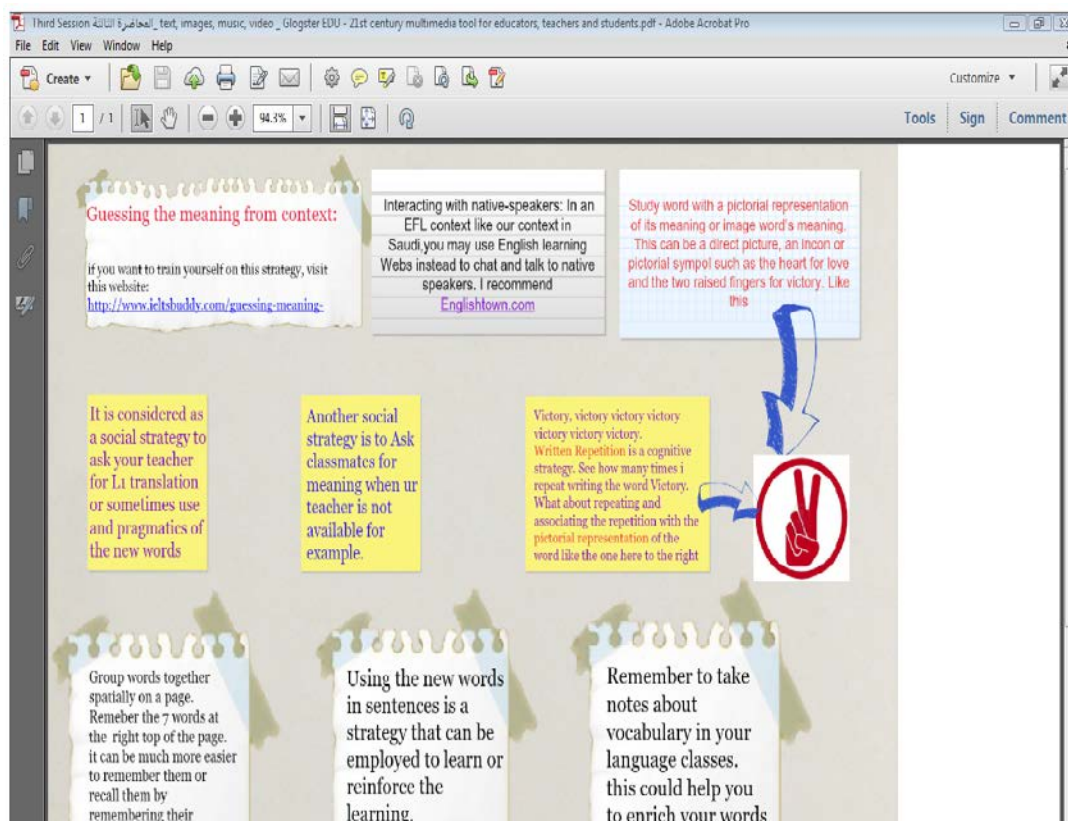
Appendix F: Sample of academic vocabulary list

Sublist 1 of the Academic Word List - Most Frequent Words in Families
(Adopted from http://www.nottingham.ac.uk/alzsh3/acvocab/wordlists.htm)

1. *analysis*
2. *approach*
3. *area*
4. *assessment*
5. *assume*
6. *authority*
7. *available*
8. *benefit*
9. *concept*
10. *consistent*
11. *constitutional*
12. *context*
13. *contract*
14. *create*
15. *data*
16. *definition*
17. *derived*
18. *distribution*
19. *economic*
20. *environment*
21. *established*
22. *estimate*
23. *evidence*
24. *export*
25. *factors*
26. *financial*
27. *formula*
28. *function*
29. *identified*
30. *income*
31. *indicate*
32. *individual*
33. *interpretation*
34. *involved*
35. *issues*
36. *labour*
37. *legal*
38. *legislation*
39. *major*
40. *method*
41. *occur*
42. *percent*
43. *period*
44. *policy*
45. *principle*
46. *procedure*
47. *process*
48. *required*
49. *research*
50. *response*
51. *role*
52. *section*
53. *sector*
54. *significant*
55. *similar*
56. *source*
57. *specific*
58. *structure*
59. *theory*
60. *variable*

Appendix G: Sample of academic vocabulary size test

Version 2: Academic Vocabulary

1 area
2 contract_____ written agreement
3 definition   _____ way of doing something
4 evidence   _____ reason for believing
5 method   something is or is not true
6 role

1 debate
2 exposure   _____ plan
3 integration   _____ choice
4 option   _____ joining something into a
5 scheme   whole
6 stability

1 access
2 gender   _____ male or female
3 implementation _____ study of the mind
4 license   _____ entrance or way in
5 orientation
6 psychology

1 accumulation
2 edition   _____ collecting things over time
3 guarantee   _____ promise to repair a broken
4 media   product
5 motivation   _____ feeling a strong reason or
6 phenomenon   need to do something

1 adult
2 exploitation   _____ end
3 infrastructure   _____ machine used to move
4 schedule   people or goods
5 termination   _____ list of things to do at
6 vehicle   certain times

1 correspond
2 diminish   _____ keep
3 emerge _____ match or be in agreement
4 highlight   with
5 invoke   _____ give special attention
6 retain   to something

1 bond
2 channel _____ make smaller
3 estimate   _____ guess the number or
size
4 identify   of something
5 mediate_____ recognizing and naming
6 minimize   a person or thing

1 explicit
2 final   _____ last
3 negative   _____ stiff
4 professional   _____ meaning `no' or `not'
5 rigid
6 sole

1 abstract
2 adjacent   _____ next to
3 controversial   _____ added to
4 global   _____ concerning the whole world
5 neutral
6 supplementary

1 alter
2 coincide   _____ change
3 deny   _____ say something is not
true
4 devote _____ describe clearly and exactly
5 release
6 specify

Appendix H: Arabic Version of VLS Questionnaire

Arabic Version of Vocabulary Learning Strategy Questionnaire

<u>*استبانة استراتيجيات تعلم المفردات*</u>

مقدمة: هذه الاستبانة تبحث في موضوع استراتيجيات تعلم المفردات التي تستخدمها في الفصل الدراسي و خارجة.عزيزي الطالب اود ان الفت انتباهك الى ان هذه الاستبانة <u>*ليست تقييما او اختبارا*</u>, هي في الواقع مجرد طريقة لمعرفتك كمتعلم لاغراض البحث العلمي البحت.

<u>*التعليمات:*</u> يوجد في هذه الاستبانة ثلاثة اقسام رئيسية و داخل كل قسم يوجد ثلاثة اقسام فرعية. كل قسم يحتوي على جملة افتتاحية تليها امثلة على الاستراتيجيات المختلفة التي تكمل معنى الجملة. قم باختيار الاستراتيجية التي تصف تعلمك للمفردات من خلال اختيار درجة موافقتك على النص من عدمها كما في المثال التالي:

1. اقوم بتحليل تركيب الكلمة من خلال اللواصق التي يمكن اضافتها لها:

دائماً ○	غالباً ○	احياناً ✔○	نادراً ○	اطلاقا ○

القسم الأول: التعامل مع الكلمات الجديدة:
اولاً: التخمين

O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	1.اقوم بتحليل تركيب المفردة من خلال لواصق الكلمة و اجزائها, مثال: (prefixes: mishear and suffixes: homeless) or parts of the word (compounds: penknife).
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	2.اقوم بتحليل التصنيف الاعرابي (grammatical category) للكلمة من خلال النظر للجملة التي تقع فيها الكلمة (verb, noun, adjective or both a verb and noun)
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	3.اخمن معنى الكلمة من خلال صوتها
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	4.اخمن معنى الكلمة من خلال النظر للصورة التي تظهر برفقة النص
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	5.اخمن معنى الكلمة بمساعدة الكلمات التي اعرفها في نفس الجملة او الفقرة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	6.اخمن معنى الكلمة من خلال معرفة العنوان او الموقف الذي تظهر فيه الكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	7.اخمن معنى الكلمة من خلال مواصلة القراءة حتى يتضح المعنى من سياق النص
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	8.اتوقف عن محاولة معرفة معنى الكلمة اذا لم استطع التخمين

الرجاء كتابة أي استراتيجيات اخرى تستخدمها لتخمين معنى الكلمة الجديدة ولم نشر اليها:

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ثانياً: استخدام القواميس و المصادر الاخرى:

O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	1.ابحث عن معنى الكلمة باستخدام قاموس عربي-انجليزي
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	2.ابحث عن معنى الكلمة باستخدام قاموس انجليزي-انجليزي
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	3.ابحث عن معنى الكلمة باستخدام قاموس انجليزي-انجليزي-عربي

دائماً	غالباً	احياناً	نادراً	اطلاقا	
○	○	○	○	○	4.ابحث عن معنى الكلمة باستخدام قاموس الكتروني
○	○	○	○	○	5.ابحث عن معنى الكلمة باستخدام قاموس على الانترنت
○	○	○	○	○	6.ابحث عن معنى الكلمة في القاموس و احاول معرفة معانيها
○	○	○	○	○	7.ابحث عن معنى الكلمة في القاموس و احاول معرفة نطقها
○	○	○	○	○	8.ابحث عن معنى الكلمة في القاموس و احاول معرفة تهجئتها و املائها
○	○	○	○	○	9.ابحث عن معنى الكلمة في القاموس و احاول معرفة التصنيف الاعرابي لها
○	○	○	○	○	10.ابحث عن معنى الكلمة في القاموس و احاول معرفة الامثلة المستخدمة لتوضيح معناها

الرجاء كتابة أي معلومات او استراتيجيات اخرى تستخدمها ولم نشر اليها:

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ثالثا: سؤال الاخرين:

O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	1.اسأل زملائي واصدقائي او اقربائي عن ترجمة الكلمة للعربية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	2.اسأل زملائي واصدقائي او اقربائي عن تعريف الكلمة باللغة الانجليزية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	3.اسأل زملائي واصدقائي او اقربائي عن املاء و تهجئة او نطق الكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	4.اسأل من لغته الاولى الانجليزية عن تعريف الكلمة بالانجليزية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	5.اسأل من لغته الاولى الانجليزية عن املاء او تهجئة او نطق الكلمة بالانجليزية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	6.اسأل المعلم عن الترجمة للعربية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	7.اسأل المعلم عن التعريف بالانجليزية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	8.اسأل المعلم عن جملة تستخدم كمثال للكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	9.اسأل المعلم عن املاء او تهجئة او نطق الكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	10.اسأل المعلم عن كيفية و متى تستخدم الكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	11.اسأل المعلم عن قواعد الكلمة (i.e. if the verb is followed by an (ing) form or to-infinitive: consider going or consider to go.)

الرجاء كتابة أي استراتيجيات اخرى تستخدمها ولم نشر اليها:

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القسم الثاني: تدوين ملاحظات عن الكلمات:

اولا: الاماكن التي تدون فيه الملاحظات عن الكلمات الجديدة

⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	1.اكتب معلومات عن الكلمة في هوامش الكتاب الذي وجدت فيه الكلمة
⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	2.اكتب الكلمة الجديدة في دفتر اللغة الانجليزية
⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	3.اكتب الكلمات الجديدة في قسم مخصص للكلمات في دفتر اللغة الانجليزية
⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	4.اكتب الكلمات الجديدة في دفتر مستقل مخصص للكلمات
⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	5.اكتب الكلمات الجديدة في بطاقات او قصاصات صغيرة احملها معي
⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	6.اكتب الكلمات الجديدة في ملصقات جدارية او لوحات او اوراق صغيرة ثم اقوم بلصقها في مكان ما في البيت
⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	7.اقوم بتسجيل الكلمات الجديدة صوتيا
⭘ دائماً	⭘ غالباً	⭘ احياناً	⭘ نادراً	⭘ اطلاقا	8.اقوم بحفظ ملاحظاتي عن الكلمات في جهازي الحاسوبي الخاص او اي جهاز الكتروني اخر

الرجاء كتابة أي استراتيجيات اخرى تستخدمها ولم نشر اليها:

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ثانيا: نوع المعلومات المسجلة عن الكلمات

O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	1.اكتب الكلمات الجديدة و ترجمتها العربية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	2.اكتب الكلمات الجديدة و تعريفها الانجليزي
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	3.اكتب الكلمات الجديدة و مرادفاتها و عكوسها
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	4.اكتب الكلمات الجديدة بجانب الرسومات والصور
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	5.اكتب امثلة ممكن ان تستخدم فيها الكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	6.اكتب نطق الكلمة الجديدة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	7.اكتب التصنيف الاعرابي للكلمة الجديدة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	8.اكتب النمط او السلوك الاعرابي للكلمة الجديدة (i.e. depend on and not depend of)
					9.اكتب معلومات عن السياق و الموقف المناسب الذي ممكن ان تستخدم فيه الكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	10.اكتب المرجع الذهني الذي وجدت فيه الكلمة كرقم الصفحة او الدرس الذي ووجدت فيه

الرجاء كتابة أي استراتيجيات اخرى تستخدمها ولم نشر اليها:

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ثالثا: ترتيب الملاحظات المدونة عن الكلمات الجديدة

دائماً O	غالباً O	احياناً O	نادراً O	اطلاقا O	1.ارتب الكلمات الجديدة بناءا على ترتيب الوحدات و الدروس في الكتاب الدراسي
دائماً O	غالباً O	احياناً O	نادراً O	اطلاقا O	2.اصنف الكلمات الجديدة بناءا على التصنيف الاعرابي لها
دائماً O	غالباً O	احياناً O	نادراً O	اطلاقا O	3.اصنف الكلمات بناء على فكرة مجموعات المعنى, مثال (الالوان, الحيوانات)
دائماً O	غالباً O	احياناً O	نادراً O	اطلاقا O	4.ارتب الكلمات الجديدة ابجديا
دائماً O	غالباً O	احياناً O	نادراً O	اطلاقا O	5.اكتب الكلمات بناء على اولوية ظهورها
دائماً O	غالباً O	احياناً O	نادراً O	اطلاقا O	6.استخدم اجهزة مختلفة لابراز الكلمات المهمة (e.g. capital letters, coloured pens or markers, asterisks, lines, electronic highlighters etc).

الرجاء كتابة أي استراتيجيات اخرى تستخدمها ولم نشر اليها:

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القسم الثالث: حفظ وتذكر الكلمات

اولا: الترديد

أ)   انماط الترديد:

⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	1.اقوم بترديد الكلمات بصوت مرتفع عدة مرات
⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	2.اقوم بترديد الكلمات بشكل صامت عدة مرات
⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	3.اقوم بترديد الكلمات كتابة عدة مرات
⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	4.اقوم بترديد الكلمات استماعا عدة مرات

ب) ماذا يردد؟

⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	1.اقوم بترديد الكلمة الانجليزية بمفردها
⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	2.اقوم بترديد الكلمةالانجليزية وترجمتها العربية
⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	3.اقوم بترديد الامثلة التي ترد فيها الكلمة
⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	4.اقوم بترديد تعريف الكلمة الانجليزي
⃝ دائماً	⃝ غالباً	⃝ احياناً	⃝ نادراً	⃝ اطلاقا	5.اقوم بترديد كتابة املاء الكلمة و تهجئتها

الرجاء كتابة أي استراتيجيات اخرى ولم نشر اليها:

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ثانيا: ربط الكلمات الذهني لتذكرها (تداعي المعاني)

O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	1.اربط الكلمة الجديدة بكلمة انجليزية اخرى ذات صوت او املاء مشابه (e.g. link & wink, row & raw).
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	2.اربط الكلمة بمرادفاتها و عكوسها بالانجليزية (e.g. wide & narrow, view & opinion).
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	3.اربط الكلمة الجديدة بكلمات اخرى مشابهه لها في لغات اخرى سبق لي تعلمها
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	4.اربط الكلمة الجديدة بكلمة مشابهة لها في النطق في اللغة العربية(i.e. Hat& هات & tap ,تاب)
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	5.استخدم طريقة الكلمة المفتاح لتذكر الكلمات و التي اقوم فيها بتدوين الكلمة المراد معرفتها مع كلمة مشابهة لها في العربية و اقوم برسم صورة معبرة عنها مثلا
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	6.اربط الكلمات الجديدة بالكلمات التي تاتي دائما معها في الكلام و الكتابة (e.g. words with do and words with make).
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	7.اربط الكلمة بكلمات لها علاقة بها في المعنى (e.g. flood & water, sink & parts of the kitchen).
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	8.اقوم بتخيل املاء الكلمة
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	9.اربط الكلمات الجديدة بتجاربي الشخصية
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	10.اربط الكلمات الجديدة بالاماكن التي رأيتها فيها
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	11.اربط الكلمات الجديدة بفعل فيزيائي حركي اقوم به او اتخيله
O دائماً	O غالباً	O احياناً	O نادراً	O اطلاقا	12.اقوم بالتفكير في اللواصق التي يمكن اضافتها للكلمة الجديدة (e.g. soft — soften -softener)

الرجاء كتابة أي استراتيجيات اخرى تستخدمها ولم نشر اليها:

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ثالثا: ممارسة الكلمات و تقوية فهم معانيها

○ دائماً	○ غالباً	○ احياناً	○ نادراً	○ اطلاقا	1.اختبر نفسي او اطلب من شخص اخر اختباري في الكلمات الجديدة (e.g. practising giving meanings in all possible manners, playing memory games)
○ دائماً	○ غالباً	○ احياناً	○ نادراً	○ اطلاقا	2.احاول ان استخدم اكبر عدد ممكن من الكلمات الجديدة في محادثاتي او كتابتي اليومية
○ دائماً	○ غالباً	○ احياناً	○ نادراً	○ اطلاقا	3.اقوم بتخيل قصص و محادثات استطيع ان استخدم الكلمات الجديدة فيها
○ دائماً	○ غالباً	○ احياناً	○ نادراً	○ اطلاقا	4.احاول ان ازيد من فرص استخدام و مراجعة الكلمات الجديدة في اللغة الانجليزية (e.g. reading magazines, watching movies, using internet, listening to the radio, etc).

الرجاء كتابة أي استراتيجيات اخرى تستخدمها ولم نشر اليها

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Appendix I: English Version of VLS Questionnaire

Final Version of Vocabulary Learning Strategy Questionnaire

(Adapted from Marin, 2005)

Name:

Student Number:

Dear Student,

This survey is about the different vocabulary learning strategies you employ when dealing with your vocabulary learning in general. Please note that this survey is ***NOT a test*** and it will not be used in assessing your work in any way. Please answer truthfully the survey items of what you actually do, ***NOT*** what you think you should do. Please be informed that your answers will be treated confidentially and will be used for scientific research purposes only. Please bear in mind that you are asked to rate how often you use the strategies when you deal with vocabulary learning as the following example shows:

1. I analyse the structure of the word (i.e. prefixes: mishear and suffixes: homeless) or parts of the word (i.e. compounds: penknife)

O	O	O✔	O	O
Never	Rarely	sometimes	Often	Always

I. Dealing with unknown vocabulary

Guessing

10. I analyse the structure of the word (i.e. prefixes: mishear and suffixes: homeless) or parts of the word (i.e. compounds: penknife).	O Always	O Often	O sometimes	O Rarely	O Never
11. I analyse the grammatical category of the word by looking at the sentence.	O Always	O Often	O sometimes	O Rarely	O Never
12. I guess the meaning of the word by its sound, i.e. I say it aloud and guess.	O Always	O Often	O sometimes	O Rarely	O Never
13. I guess the meaning by looking at the pictures accompanying the text.	O Always	O Often	O sometimes	O Rarely	O Never
14. I guess the meaning with the help of the words I know in the sentence or paragraph.	O Always	O Often	O sometimes	O Rarely	O Never
15. I guess the meaning by the topic or the situation in which the word appears.	O Always	O Often	O sometimes	O Rarely	O Never
16. I keep on reading and try to guess later on from the context.	O Always	O Often	O sometimes	O Rarely	O Never

17. I skip the word if I do not manage to guess the meaning.	O Always	O Often	O sometimes	O Rarely	O Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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Using dictionaries and other sources

1. I look up the word in an English-Arabic dictionary.	O Always	O Often	O sometimes	O Rarely	O Never
2. I look up the word in an English-English dictionary.	O Always	O Often	O sometimes	O Rarely	O Never
3. I look up the word in an English-Arabic-English	O	O	O	O	O

	Always	Often	sometimes	Rarely	Never
dictionary.	Always	Often	sometimes	Rarely	Never
4. I look up the word in my electronic translator.	O Always	O Often	O sometimes	O Rarely	O Never
5. I look up the word on the interne if possible, (i.e. on-line dictionaries).	O Always	O Often	O sometimes	O Rarely	O Never
6. I look up the word in the dictionary and check its meaning(s).	O Always	O Often	O sometimes	O Rarely	O Never
7. I look up the word in the dictionary and check its pronunciation.	O Always	O Often	O sometimes	O Rarely	O Never
8. I look up the word in the dictionary and check its spelling.	O Always	O Often	O sometimes	O Rarely	O Never
9. I look up the word in the dictionary and check its grammatical category (i.e. if the word is a verb, noun, adjective or both a verb and noun)	O Always	O Often	O sometimes	O Rarely	O Never
10. I look up the word in the dictionary and check example sentences and/or fixed expressions.	O Always	O Often	O sometimes	O Rarely	O Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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Asking others

	Always	Often	sometimes	Rarely	Never
1. I ask classmates, friends or relatives for an Arabic translation.	O	O	O	O	O
2. I ask classmates, friends or relatives for a definition in English.	O	O	O	O	O
3. I ask classmates, friends or relatives the spelling or pronunciation of the word.	O	O	O	O	O
4. I ask native speakers for a definition in English.	O	O	O	O	O

5. I ask native speakers for the spelling or pronunciation of the word.	O Always	O Often	O sometimes	O Rarely	O Never
6. I ask the teacher for a Arabic translation.	O Always	O Often	O sometimes	O Rarely	O Never
7. I ask the teacher for a definition in English.	O Always	O Often	O sometimes	O Rarely	O Never
8. I ask the teacher for an example sentence.	O Always	O Often	O sometimes	O Rarely	O Never
9. I ask the teacher for the spelling or pronunciation of the word.	O Always	O Often	O sometimes	O Rarely	O Never
10. I ask the teacher for the word's use (i.e. how and when it can be used appropriately).	O Always	O Often	O sometimes	O Rarely	O Never
11. I ask the teacher for the grammar of the word, (i.e. if the verb is followed by an (ing) form or to-infinitive: consider going or consider to go.	O Always	O Often	O sometimes	O Rarely	O Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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II. Taking Vocabulary Notes

Places where notes are kept about new words

	Always	Often	sometimes	Rarely	Never
1. I write down information about new word in the margins of the textbook or where the word occurs.	O Always	O Often	O sometimes	O Rarely	O Never
2. I write down new words on my English notebook (i.e. the one I use for my English course or other courses).	O Always	O Often	O sometimes	O Rarely	O Never
3. I write down new words in a specific vocabulary section at the end or top of my English notebook.	O Always	O Often	O sometimes	O Rarely	O Never
4. I write down new words on my vocabulary notebook.	O Always	O Often	O sometimes	O Rarely	O Never

			s		
5. I write down new words on cards or small pieces of paper, which I carry with me.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
6. I write down new words on wall charts, posters and small pieces of paper, which I stick somewhere at home.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
7. I record new words on audio.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
8. I keep vocabulary notes in a computer, ipad, mobile or other electronic devices.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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Kind of information recorded about new words

	Always	Often	sometimes	Rarely	Never
1. I write down new words and their Arabic translation.	O	O	O	O	O
2. I write down new words and their definitions in English.	O	O	O	O	O
3. I write down antonyms or synonyms beside new words.	O	O	O	O	O
4. I write down the new word along with my own drawings or pictures.	O	O	O	O	O
5. I write down example sentences using the new word.	O	O	O	O	O
6. I write down the pronunciation of new words.	O	O	O	O	O
7. I write down the grammatical category of new words.	O	O	O	O	O
8. I write down the grammatical behaviour/pattern of the	O	O	O	O	O

word, (i.e. depend on and not depend of).	Always	Often	sometimes	Rarely	Never
9. I write down information about the appropriate context or situation in which the word can be used.	O Always	O Often	O sometimes	O Rarely	O Never
10. I write down the contextual reference for the new word (e.g. page number, unit or lesson, film, song, etc).	O Always	O Often	O sometimes	O Rarely	O Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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Organisation of notes about new words

1. I organise new words by unit or lesson of the textbook.	O Always	O Often	O sometimes	O Rarely	O Never

2. I classify new words into their grammatical category, (e.g. verbs in one section, nouns in another).	O Always	O Often	O sometimes	O Rarely	O Never
3. I classify new words by meaning groups, (e.g. animals, verbs involving motion).	O Always	O Often	O sometimes	O Rarely	O Never
4. I organise new words by alphabetical order or sections, (i.e. words beginning with A in one section, with B etc).	O Always	O Often	O sometimes	O Rarely	O Never
5. I write down new words in the order they appear.	O Always	O Often	O sometimes	O Rarely	O Never
6. I use different devices to highlight the words you consider important. (.e.g. capital letters, coloured pens or markers, asterisks, lines, electronic highlighters etc).	O Always	O Often	O sometimes	O Rarely	O Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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III. Memorising/Retaining

A. Modes of repetition

	Always	Often	sometimes	Rarely	Never
1. I say the word aloud several times.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
2. I repeat the word silently in my mind.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
3. I write the word several times.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
4. I listen to the words recorded in devices.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never

B. What is repeated

1. I just repeat the English word alone.	O Always	O Often	O sometimes	O Rarely	O Never
2. I repeat the word and its Arabic translation and vice versa.	O Always	O Often	O sometimes	O Rarely	O Never
3. I repeat example sentences several times.	O Always	O Often	O sometimes	O Rarely	O Never
4. I repeat the word and its English definition.	O Always	O Often	O sometimes	O Rarely	O Never
5. I repeat the spelling of the word several times. (i.e. saying the word and spelling it aloud).	O Always	O Often	O sometimes	O Rarely	O Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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Association to help retain words

1. I relate new words to other English words with similar sounds or spelling (e.g. link & wink, row & raw).	O Always	O Often	O sometimes	O Rarely	O Never
2. I relate the new words to antonyms or synonyms in English (e.g. wide & narrow, view & opinion).	O Always	O Often	O sometimes	O Rarely	O Never
3. I associate new words with similar words in another foreign language I have studied.	O Always	O Often	O sometimes	O Rarely	O Never
4. I associate new words with a similar word in Arabic (i.e. Hat & هات, tap & تاب).	O Always	O Often	O sometimes	O Rarely	O Never
5. I use the Keyword Method. (e.g. if I want to memorise the word 'Tap,' I think of a word in Arabic that sounds similar like 'تاب` then I create an image of a tap water and a person who drinks it.	O Always	O Often	O sometimes	O Rarely	O Never
6. I relate new words to words which usually go together in speaking or writing (e.g. words with do and words with make).	O Always	O Often	O sometimes	O Rarely	O Never
7. I associate new words with semantically related words or group of words. (e.g. flood & water, sink & parts of the kitchen).	O Always	O Often	O sometimes	O Rarely	O Never

8. I visualise the form (spelling) of new words.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
9. I associate new words with my personal experience. (e.g. fall in love).	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
10. I associate new words with the place I see or hear them (e.g. books, movies, songs, magazines, situations).	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
11. I associate new words with physical action that I do or imagine.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
12. I think of prefixes and suffixes that can be attached to the new word (e.g. soft — soften -softener)	○ Always	○ Often	○ sometimes	○ Rarely	○ Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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Further practice/consolidation of new words

1. I quiz myself or have other quiz me on new words (e.g. practising giving meanings in all possible manners, playing memory games).	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
2. I use as many new words as possible in my everyday conversation or when writing in English, (e.g. talking to classmates, native speakers, writing letters, diaries, chatting on my smart phone, etc).	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
3. I make up imagined conversations and stories in which I use new words.	○ Always	○ Often	○ sometimes	○ Rarely	○ Never
4. I look for opportunities to encounter new words or reviewing words in English (e.g. reading magazines, watching movies, using internet, listening to the radio, etc).	○ Always	○ Often	○ sometimes	○ Rarely	○ Never

If there are any other strategies you use and are not listed above, please feel free to write them down:

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Thank you very much for taking the time to fill in this questionnaire

Appendix J: Sample of inconsistent e-portfolio

Figure 83 sample of participant's reflective e-portfolio
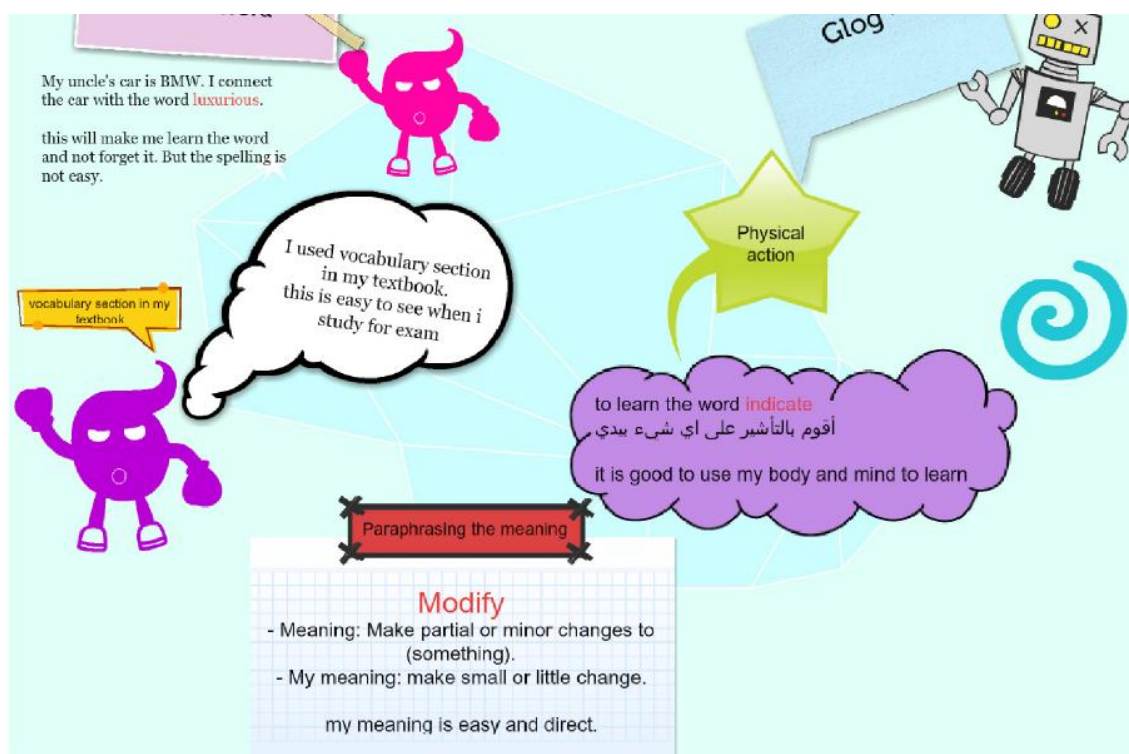
Figure 84 sample of participants poor e-portfolio
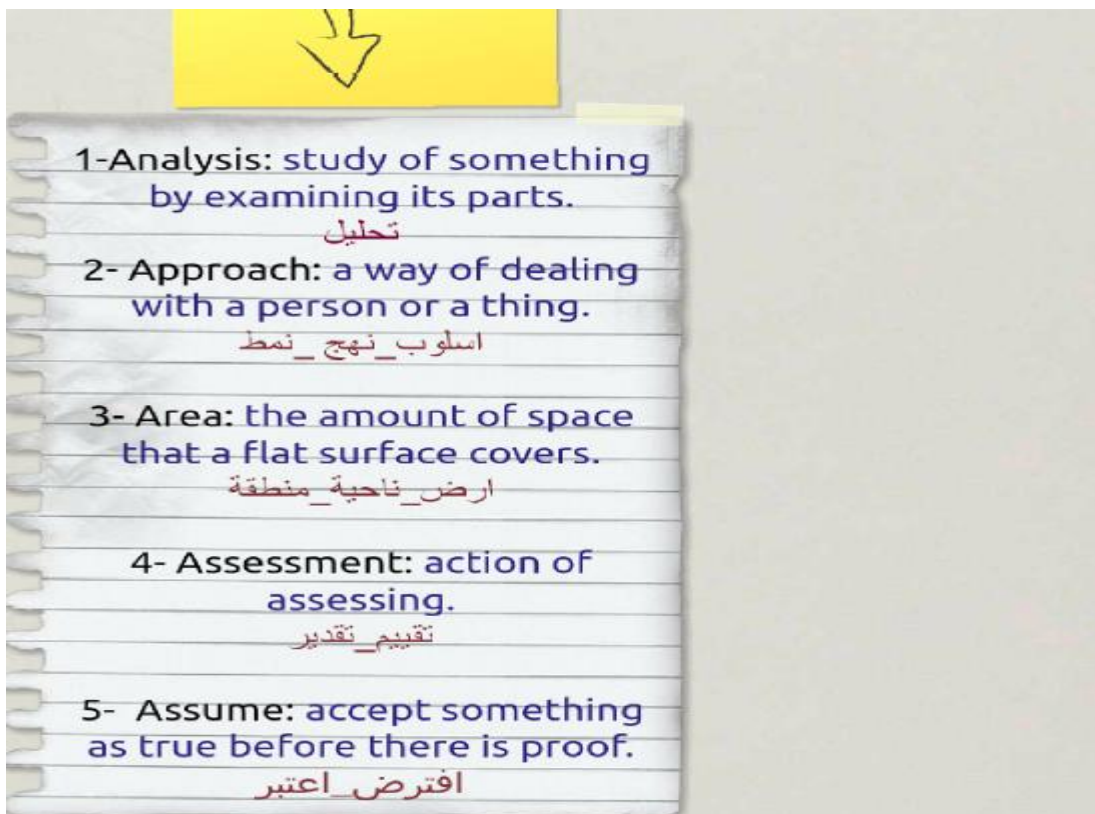
Appendix K: Participant SB e-portfolio segments

Figure 85 the original segment to the left and research translation to the right

تقريبًا 14 كلمة استخدمت معها الاستراتيجية عن طريق البحث عن شرح للكلمة بالإنجليزي بعدين أنا أشرحها على حسب معرفتي ومن ثم أضع مثالاً عليها ومعناها بالعربي	I used this strategy with about 14 words by searching the English definition of the word. Then, I explained it in my own way. After that, I added an example of the word and its Arabic meaning.
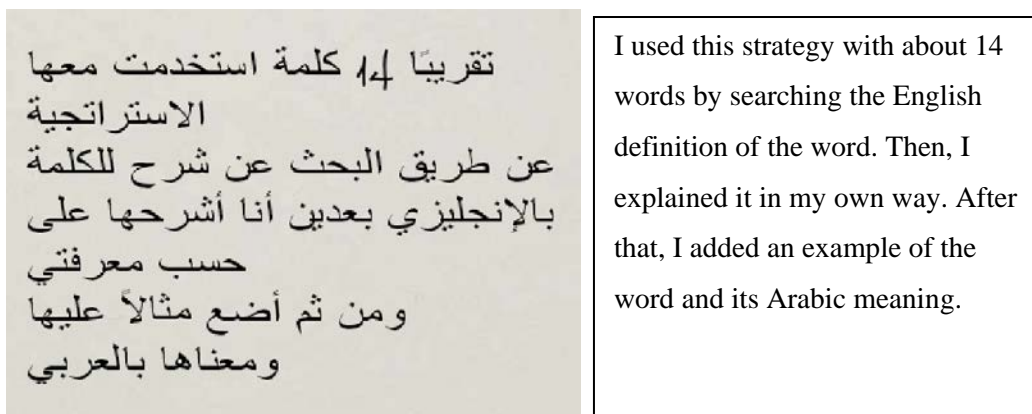
Figure 86 the original segment to the left and translation to the right

| | The video is about a person explaining the rules of suffixes. |
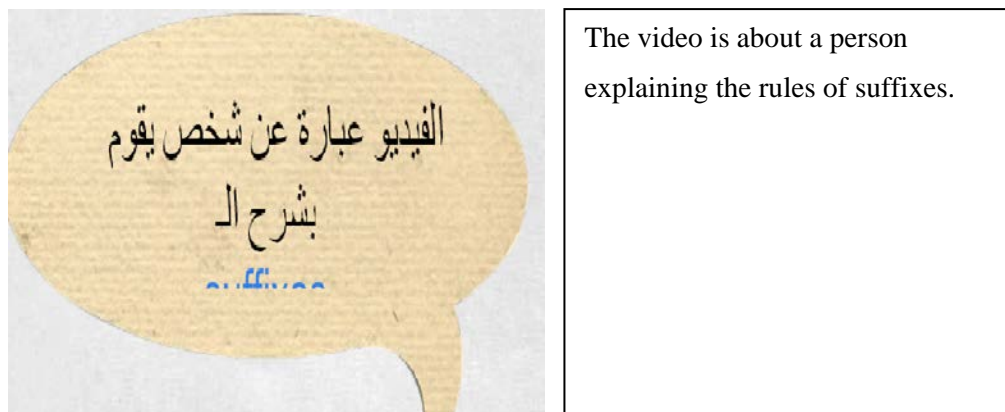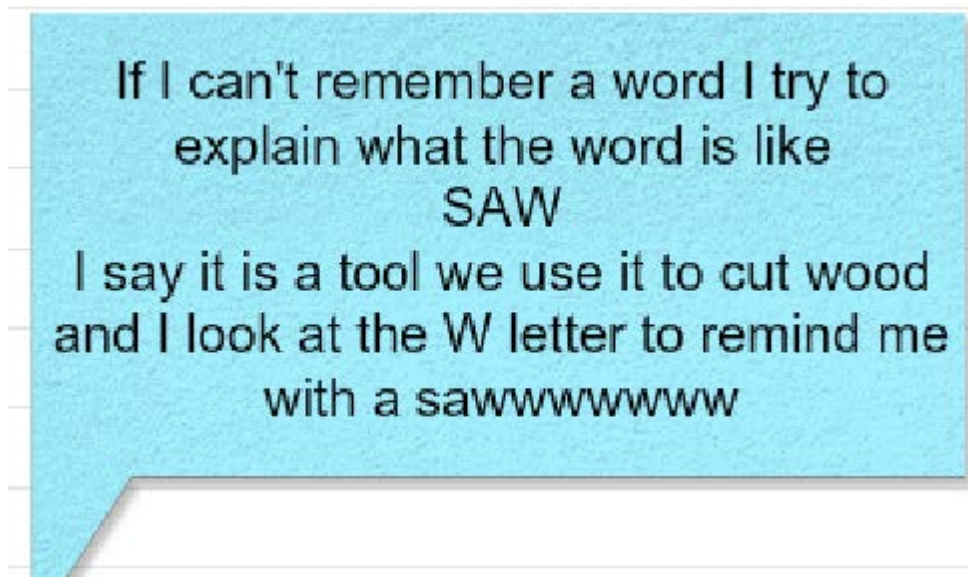
Figure 87

Figure 88

Some words help me
learn others like
able: it helps me
learn : enable, unable,
ability.

Figure 89

I practice spelling
words with similar
letters like:
except, expect, accept,
exception, expectztion.
After that I say them in
sentences and write
these sentences in my
notebook.

Figure 90
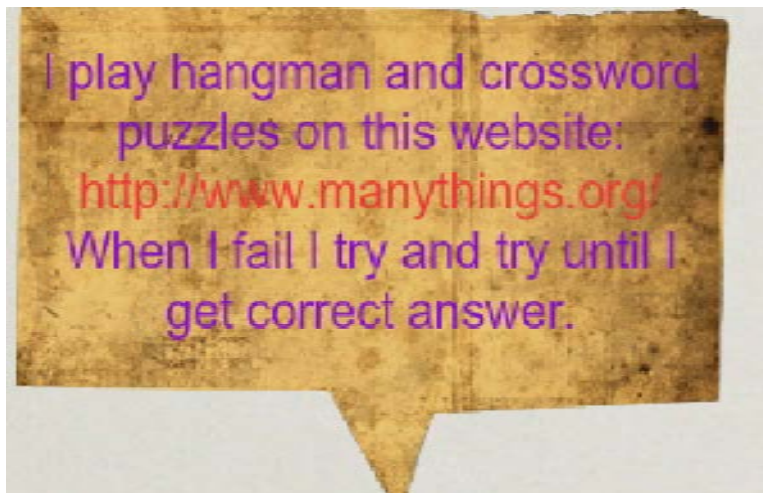
Figure 91
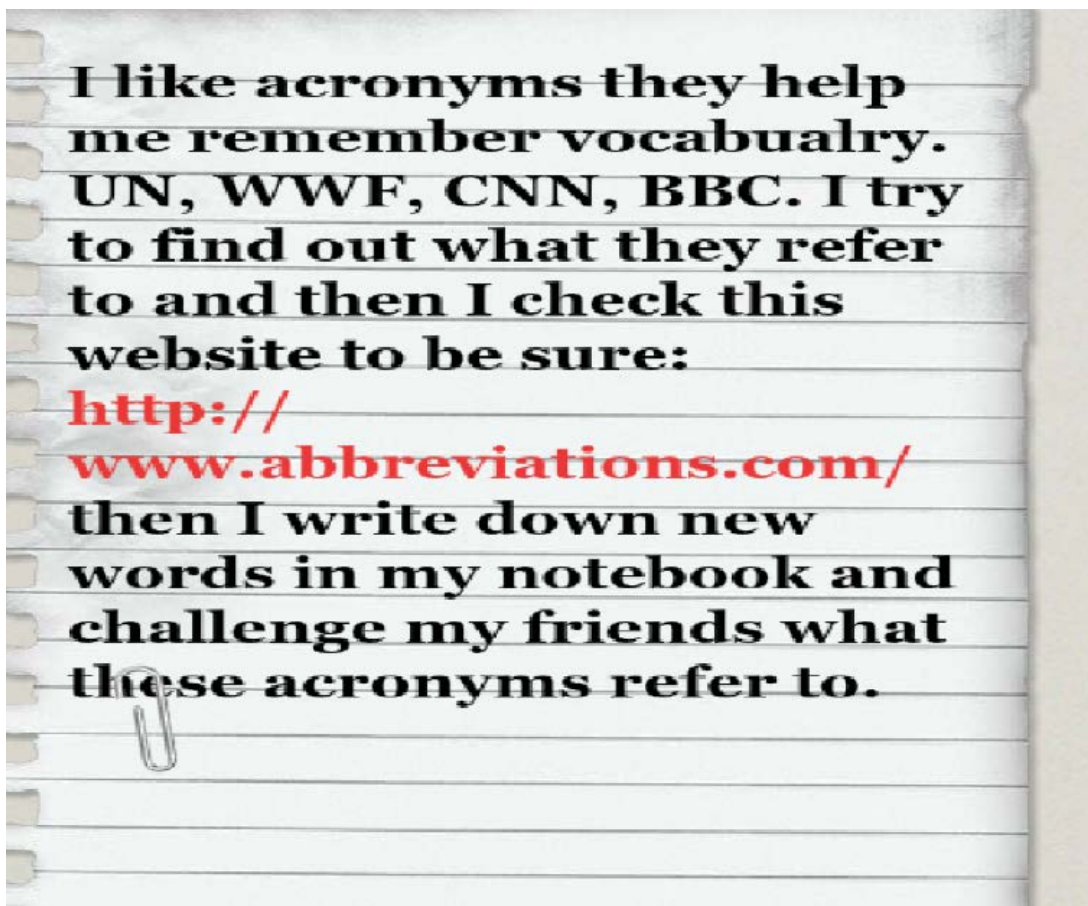
Figure 92

Some English words sound like Arabic like (minaret) منارة canal قناة
and they have the same meaning. They help me remember them
easily. But there are words in English that sound like Arabic words
but with different meaning like shore خير, rush رش, come كم these
sometimes help me remeber the meaning of the word.

Figure 93

When I find a new difficult word I
start think of a strategy to learn that
word and to memrise it. I try to say
it loudly, I read words before and
after again to guess, If I am not
sure I quickly check dictionary on
my mobile. I try to find a way to
learn and memorize that word.

Appendix L: SA e-portfolio segments

Figure 94 the original segment to the left and translation to the right

Media is one of the best strategies to learn vocabulary.

Figure 95 the original segment to the left and translation to the right
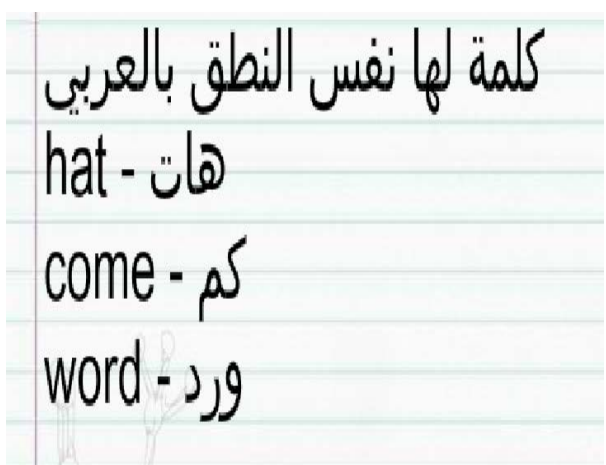
Words that have similar pronunciation in Arabic.

Figure 96

"I try to read the questions before I listen to the CD"

Figure 97
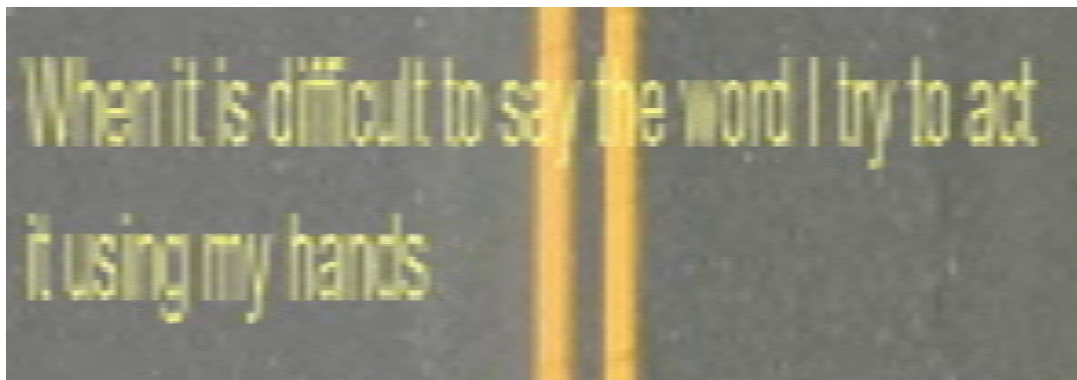
"When it is difficult to say the word I try to act it using my hands."

Figure 98
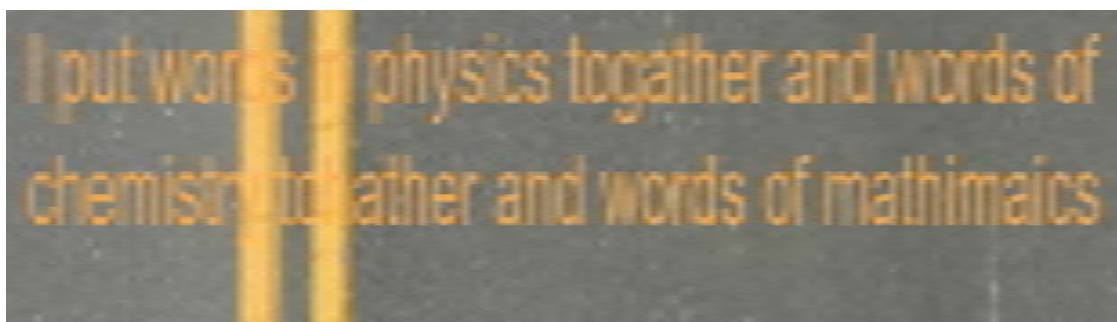
"I put words of physics together and words of chemistry together and words of mathematics"

Figure 99

there are many similar English words like four, for, form, from

I spell and put in sentences like

I filled in four forms for my sister

Figure 100

VLS NO.3

I will talk about 4 strategy I learned through them vocabularies
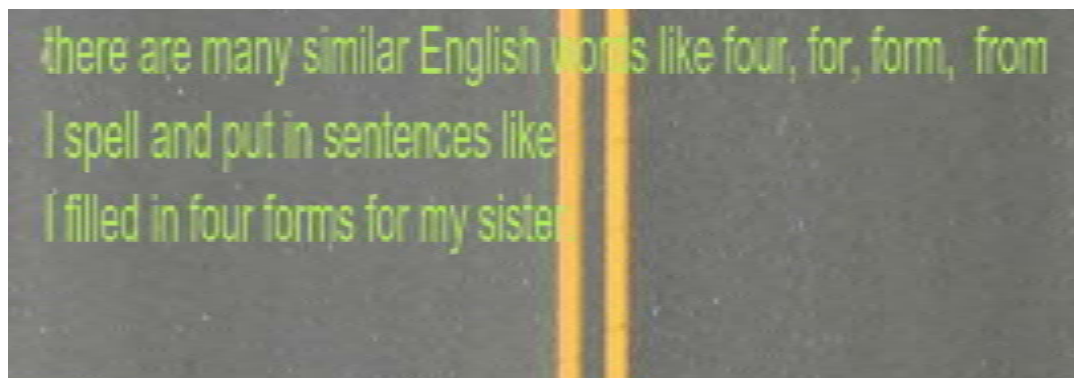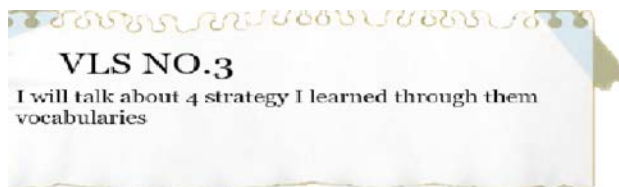
written
repetition

"challenge challenge challenge"

I write The word challenge many times until I memorize it

another strategy is to use new words in a sentence

ex: **conflict**
it was one of many **conflict** resolution studies.

another strategy I use is study word with its pictorial representation of its meaning ex:decline

Figure 101

Figure 102

Figure 103

I skip new difficult words when i read
if I understand but if I dont
understand I try to look at the word
before and after and I underline thw
word and write it in my vocabulary
notebook to check the meaning in the
dictionary
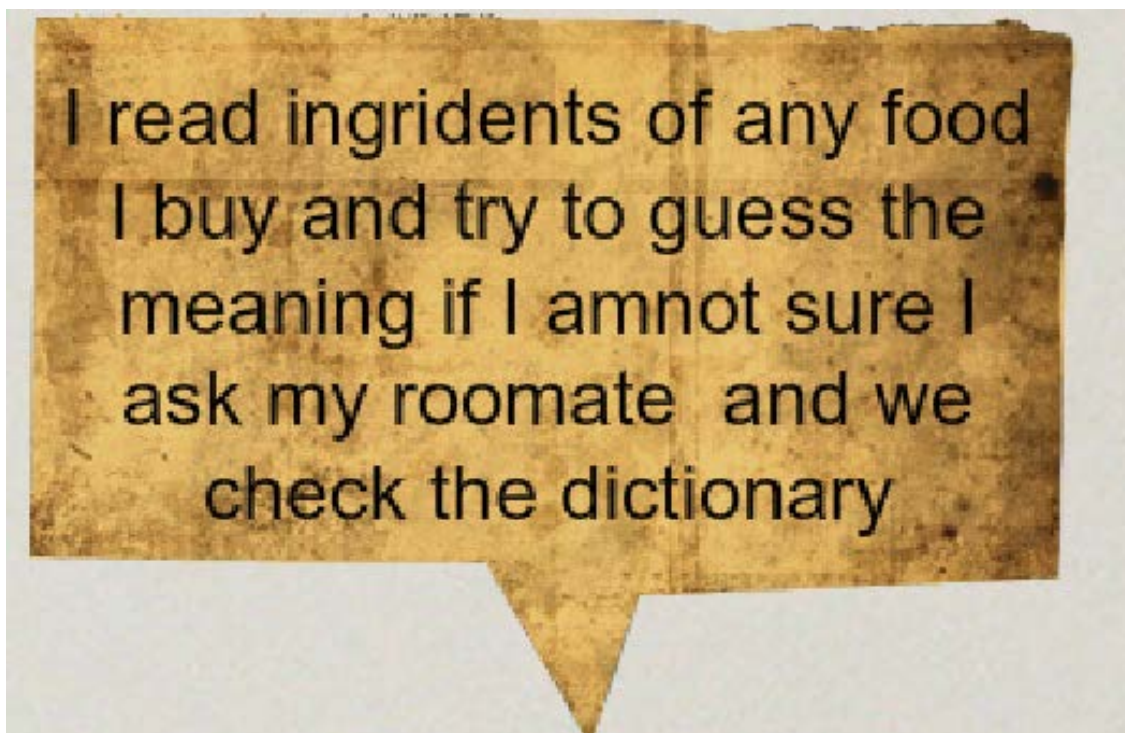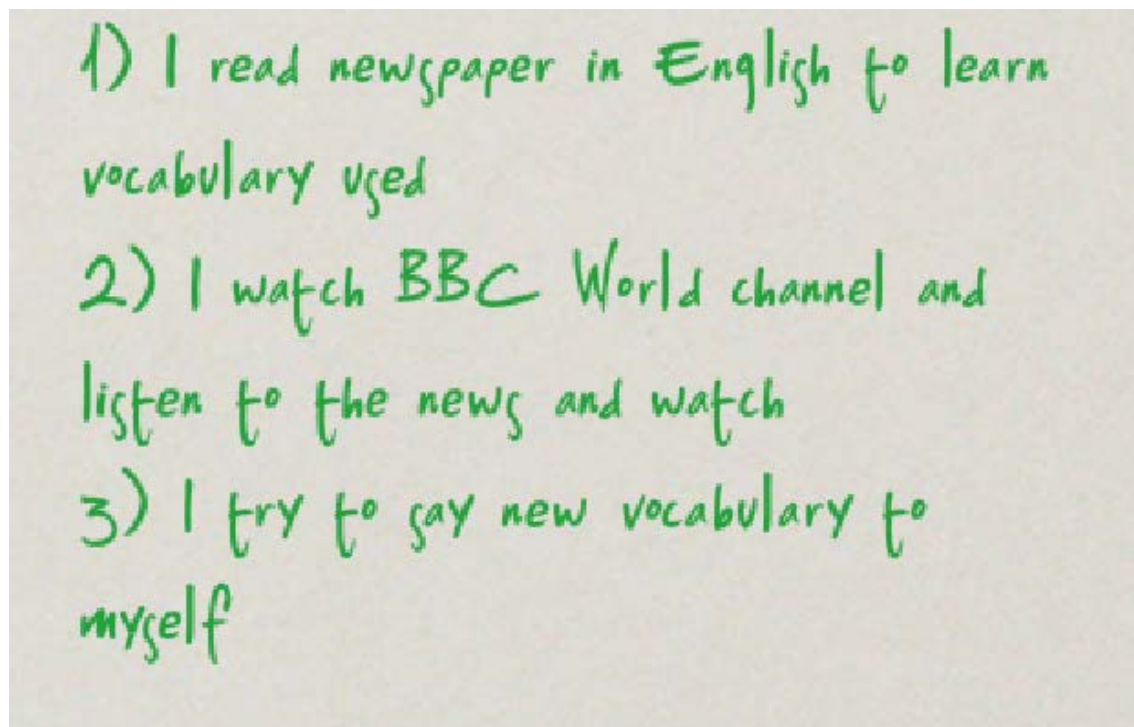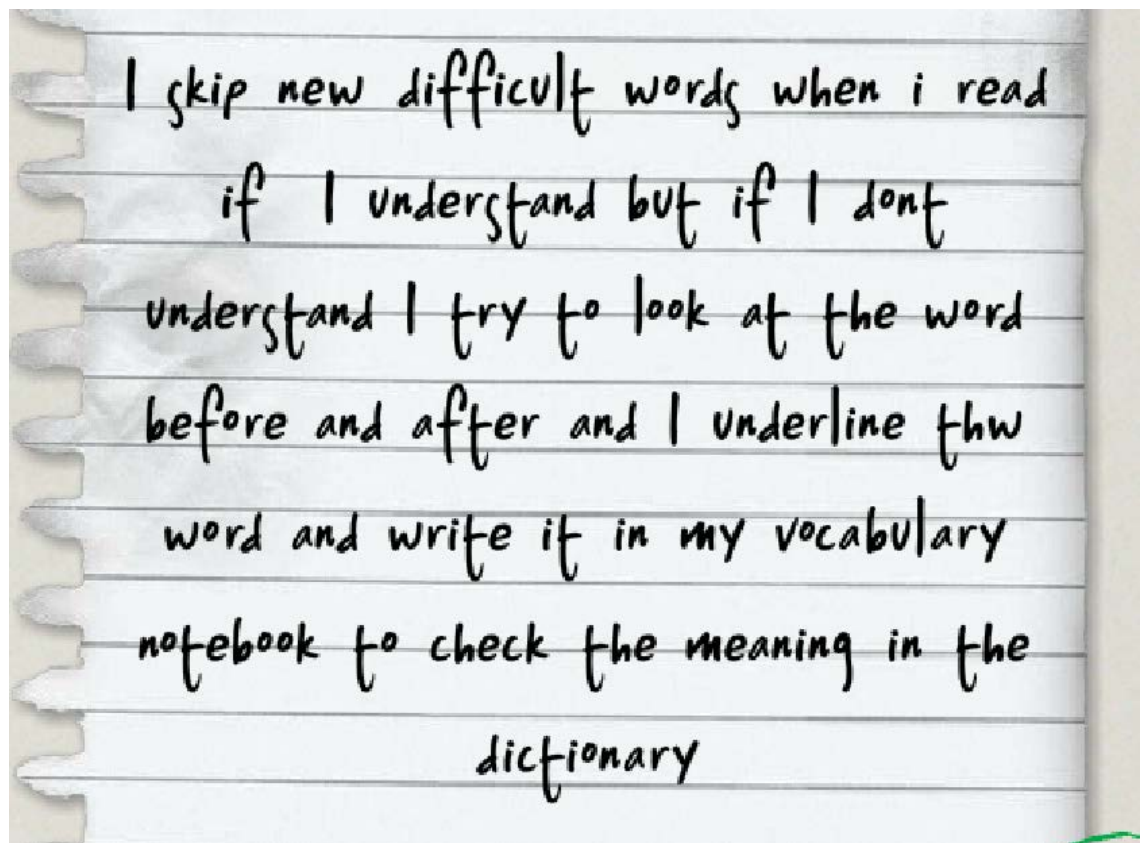
Appendix M: Media segments from participants' e-portfolios

Figure 104

Figure 105

Figure 106

Figure 107

Figure 108

افضل وسيلة لتعلم الكلمات هي عن طريق الاعلام
https://www.youtube.com/watch?
v=qVy6xcHlxtM&feature=player_detailpage
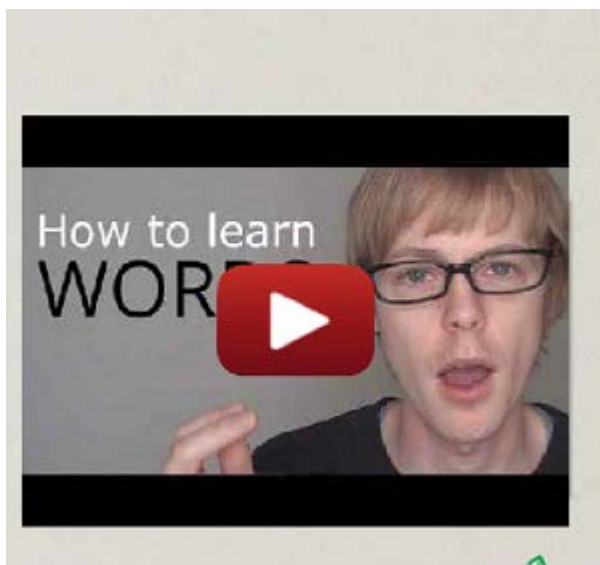
Appendix N: Other media segments from participants e-portfolios

Figure 109

Figure 110

Figure 111

Figure 112

Figure 113
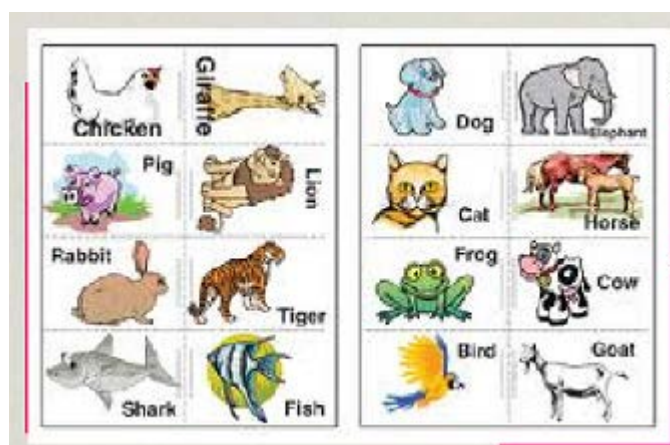
Figure 114
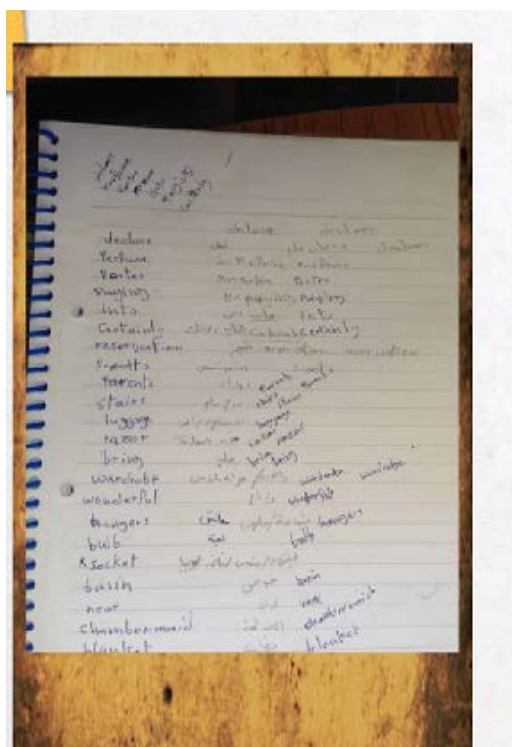
Figure 115

Appendix O: Participant HM-use of Glogster templates

Figure 116
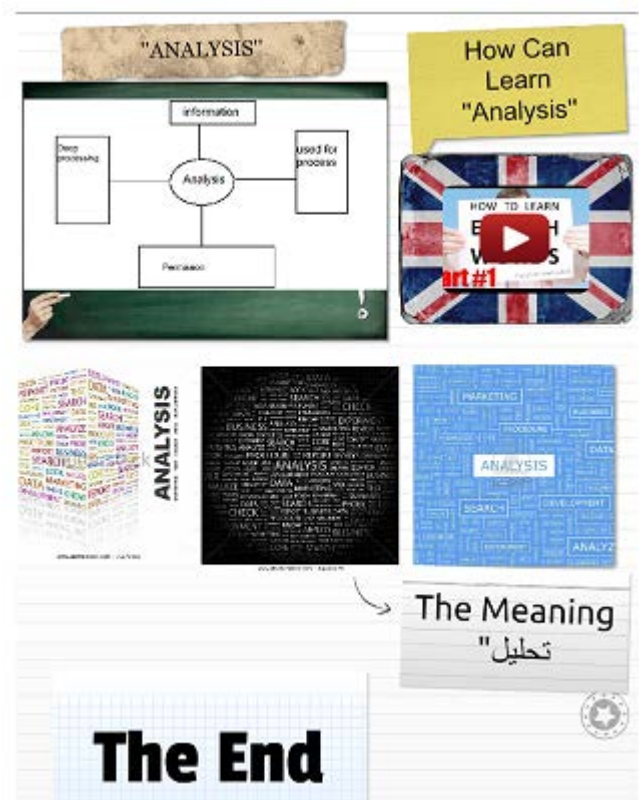
Figure 117
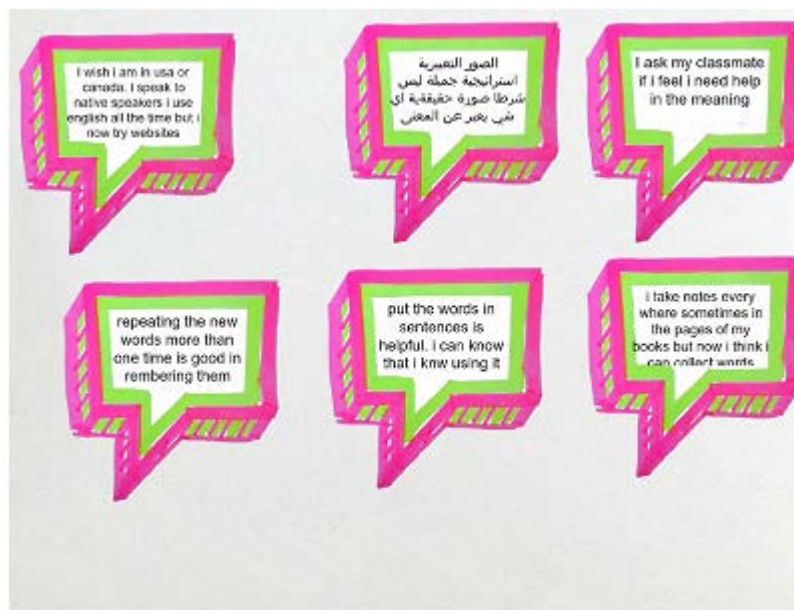
Appendix P: Sample of strategy clustering

Figure 118

Figure 119

Figure 120

Figure 121

Appendix Q: Evidence of cluster transfer

Figure 122