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Promoting Effective Teacher-TA Partnerships through Collaboration and Mutual Professional Development

by

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ABSTRACT

FACULTY OF SOCIAL AND HUMAN SCIENCES

<u>Doctor of Philosophy</u>

Promoting Effective Teacher-TA Partnerships through Collaboration and Mutual Professional Development

This research study focuses on the partnership between teachers and teaching assistants working in the secondary mathematics classroom. The impact teaching assistants (TAs) have on student learning and progress has been a widely debated topic and the focus of previous research studies. The publication of results from the deployment and impact of support staff (DISS) project (Blatchford et al. 2009) has renewed the focus on the impact and management of TAs. The DISS study concluded that TAs have a negative impact on the progress of students, but also highlighted that this outcome was inconsistent with the perception of teachers who felt that TAs have a positive impact on student behaviour and engagement. Blatchford et al concluded that the negative impact of TAs could be caused by a lack of training of TAs and a lack of understanding by teachers about the most effective way to utilise TAs in the classroom. They recommended that further research into the work of TAs and an increased focus on the training and professional development of both teachers and TAs was needed.

A questionnaire was employed to provide information about existing working practices of teachers and TAs and a multiple embedded case study methodology was subsequently utilised to analyse three teacher-TA partnerships which are considered effective, in order to identify which characteristics of the way they work collaboratively encourage effective partnerships and practices. One of the main outcomes from this research is the identification of 40 factors which contribute towards the development of effective teacher-TA partnerships. The importance of each of these factors in the development of effective partnerships was assessed using aspects of multi-attribute utility theory. A self-evaluation tool for teachers and TAs was then developed based on these outcomes. The self-evaluation tool gives teachers and TAs the opportunity to quickly and easily assess their current practice and identify a focus for their future professional development, encouraging the development of an effective partnership.

TAs are ideally positioned to have a significant positive impact on the progress and learning of students but, at present, the positive perceptions by teachers of TA support are not evidenced in students' progress or learning. It is imperative for the future of the TA role that partnerships between teachers and TAs become more effective, as the improved partnerships will likely impact upon student progress and learning. The self-evaluation tool, developed in this research study, is designed to impact on the effectiveness of these teacher-TA partnerships through mutual professional development.

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DECLARATION OF AUTHORSHIP

I, Paul Charles Spencer,

declare that the thesis entitled

Promoting Effective Teacher-TA Partnerships through Collaboration and Mutual Professional Development

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;

- 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;

- where I have consulted the published work of others, this is always clearly attributed;

- 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;

- I have acknowledged all main sources of help;

- 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;

- none of this work has been published before submission.

Signed: ……………………………………………………………………..

Date:……………………………………………………………………

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Abbreviations

BBC	British Broadcasting Corporation
CPD	Continual Professional Development
CRB	Criminal Records Bureau
DCSF	Department for Children, Schools and Families
DISS	Deployment and Impact of Support Staff
DfE	Department for Education
DfEE	Department for Education and Employment
DfES	Department for Education and Schools
EAL	English as an Additional Language
EPPI	Evidence for Policy and Practice Information
ESRC	Economic and Social Research Council
ETH	Eidgenossische Technische Hochschule (Swiss Federal Institute of Teachnology)
GCSE	General Certificate of Secondary Education
GTC	General Teaching Council for England
HLTA	Higher Level Teaching Assistant
HOD	Head of Department
IEP	Individual Education Programme
INSET	In Service Educational Training
ITT	Initial Teacher Training
KS1	Key Stage 1
LEA	Local Education Authority
LGA	Local Government Association
LSA	Learning Support Assistant
MAUT	Multi Attribute Utility Theory
MLD	Moderate Learning Difficulties
MLM	Multi-Level Modelling
NCETM	National Centre for Excellence in the Teaching of Mathematics
NFER	National Foundation for Educational Research
NJC	National Joint Council
NQT	Newly Qualified Teacher

Abbreviations - Continued

NSA	Numeracy Support Assistant
PGCE	Postgraduate Certificate in Education
PPA	Planning, Preparation and Assessment
QTS	Qualified Teacher Status
SAT	Standardised Assessment Test
SEN	Special Educational Needs
SENCO	Special Educational Needs Co-Ordinator
SMT	Senior Management Team
STAR	Student/Teacher Achievement Ratio
TA	Teaching Assistant
TDA	Training and Development Agency for schools
TTA	Teacher Training Agency
UK	United Kingdom
UNS	Umweltnatur und Umweltsozialwissenschaften (National and Social Science Interface)
US	United States of America

Chapter 1 Introduction

1.1 Overview

The nature of the impact teaching assistants (TAs) have on students' progress has been and still is a highly debated topic. Whilst, in the past, it has been generally acknowledged that teaching assistants have a positive effect on students' progress and achievement, there is little evidence to support this conjecture. Conversely recent findings published as part of the Deployment and Impact of Support Staff (DISS) project (Blatchford, Bassett, Brown, Martin, Russell and Webster, 2009) highlight the negative impact that TAs have on the progress of students, claiming that the more time students spend working with TAs, the less progress they make in mathematics.

The full time equivalent number of teaching assistants employed in secondary schools in the UK, as of November 2010, was 45,400 (Department for Education (DfE), 2011), a number that has been increasing since 1997 (Department for Education and Schools (DfES), 2005), despite suggestions by Richard Handover (Telegraph, 2009) that the number of TAs employed in schools should be reduced and despite the lack of definitive evidence that TAs have a positive impact on student learning and attainment. Establishing what impact TAs have on student achievement and identifying how TAs can be deployed and utilised effectively is of the utmost importance to the future of the TA role.

This study employs multiple research methods to identify the factors which contribute towards the development of effective teacher-TA partnerships. A questionnaire distributed to mathematics departments throughout the south of England provides an insight into the current ways teachers and TAs work together in the mathematics classroom and teachers' views as to what changes to current practice would improve the effectiveness of the teacher-TA partnership. The questionnaire also provides potential participants for three embedded case studies which focus on three different teacher-TA partnerships who are self-defined as effective. These embedded case studies provide an opportunity to evaluate the intricacies of each teacher-TA relationship to gain a deeper understanding of how these teachers and TAs work together, in order to identify the factors within each case which contribute towards an effective working partnership. Analysis of the questionnaire responses and data collected from the embedded case

studies are used to develop recommendations regarding the deployment of TAs and the focus for professional development of both teachers and TAs which encourages the cultivation of effective teacher-TA partnerships, resulting in focused positive support of student learning and development.

Recommendations regarding the deployment of TAs and identification of how the development of effective teacher-TA partnerships can be encouraged and supported will have implications for both school and government policy, which will, in turn affect the way teachers and TAs work together in secondary school mathematics departments. Successful development of positive collaborative partnerships will encourage teachers and TAs to share their knowledge and experience, enabling them to improve the current provision for student support.

1.2 The research context

Although there is a significant number of TAs employed in secondary schools in England, limited research has been conducted concerning their deployment, impact and effectiveness. Smith, Whitby and Sharp (2004) conducted one of the few studies that has considered TAs employed in secondary schools. The report, conducted on behalf of the Local Government Association (LGA), utilises questionnaire data obtained from teachers, TAs and head-teachers to provide an insight into how teaching assistants are deployed in schools, what impact they have on teaching and learning and what attributes, training and qualifications they have. The results of the questionnaires highlight the perceived positive impact that TAs have on student learning and behaviour, but any direct or indirect impact of TA support on student attainment is not considered.

A study, which has a similar focus to that conducted by Smith et al. (2004) but focuses on TAs' impact on student attainment as well as the perceived benefits of TA presence in the classroom, is the Deployment and Impact of Support Staff (DISS, Blatchford et al., 2009) project. Conducted over a 5-year period the project involved multiple strands of research to gather data relating to the deployment and impact of support staff. A significant finding of the study, which received high profile media coverage at the time (BBC, 2009; Guardian, 2009), was that the more support students received, the less

progress they made in mathematics. Blatchford et al. (2009) conclude that the negative impact of TAs on student achievement could be the result of a number of factors, including: teachers not having appropriate training regarding the management of TAs in the classroom, TAs not having the pedagogical knowledge to meet the demands of their increasingly pedagogical role and a lack of understanding regarding the most effective ways for TAs to be deployed.

The effectiveness of the partnership between teachers and TAs provided the focus for a research study conducted by Walsh (2005). Through the analysis of questionnaire data obtained from teachers, teaching assistants and Special Educational Needs Co-ordinators (SENCOs), Walsh discusses participants' feelings about the effectiveness of their teacher-TA partnership, and what factors could improve the effectiveness of their partnership. Devecchi and Rouse (2010) also focused on the effectiveness of the teacher-TA partnership but utilised an alternative approach. An ethnographic study was employed to gather data illustrating what attributes and what aspects of the school environment encourage an effective working relationship.

This brief overview of previous research establishes the research context in which my own study is situated. The development of a self-evaluation tool which enables teachers and TAs to reflect on their current practice and identify an appropriate focus for their professional development should encourage and support the development of effective partnerships. This process of self-evaluation, reflection and development is intended to address some of the issues and recommendations highlighted in the DISS project as the cause of discrepancies between the perceived positive benefits of TAs and the measured negative impact TAs appear to have on student attainment.

1.3 The policy context in the UK

As part of the 1988 Education Reform Act (DfES, 1988) compulsory national tests (SATs) were introduced at ages 7, 11 and 14, providing a national framework for assessing students' performance. Whilst these tests provided some level of assessment of student progress, there was little consideration of the involvement of children who have Special Educational Needs (SEN). Although a change of government occurred in 1997, the policy of testing students continued. However, in an attempt to address the

issues relating to school performance and equal educational opportunities, the government presented a green paper which pledged funding to increase the number of teaching assistants in schools and develop initiatives and guidance to improve teaching assistants' skills and practice. Following this green paper, the number of teaching assistants employed in schools has continued to grow year on year. This continual rise has resulted in a 480% (percentage calculated using data from DfES, 2005 and DfE, 2011) increase in the number of teaching assistants working in secondary schools in the local authority maintained sector in England since 1997.

The most significant change to the roles and responsibilities that TAs have in schools was affected by the signing of the national agreement on raising standards and tackling workloads in 2003 (Workforce agreement and monitoring group, 2003). The agreement was formed to acknowledge the pressure on schools to raise academic standards and address the issues regarding the workload of teachers. The main change introduced as part of the agreement related to the responsibility for administrative tasks being allocated to support staff, enabling teachers to focus on teaching and learning. Following the implementation of the workforce reform, the post of Higher Level Teaching Assistant (HLTA) was introduced in schools. To attain HLTA status, support staff are required to meet appropriate standards that are linked to the QTS standards for pre-service teachers. The HLTA role was introduced to provide an additional level of support for teachers and enable support staff to make an even greater contribution to improving standards in schools.

The increasing number of teaching assistants in schools and the signing of the national agreement prompted the development of guidance relating to the use of support staff in schools. The National Joint Council (NJC, 2003) provides a good practice guide for teaching assistants and information regarding support staff training and development. To ensure that teaching assistants are deployed effectively, the DfES (2000) published a guide to assist those responsible for the employment of TAs in schools. Although relevant at the time, the changes to the school support staff workforce arising from the reforms discussed previously are not reflected in the guide. This prompted the General Teaching Council for England (2003) to recommend that the DfES update their guidance for teachers based on the advice of the GTC and the original guidance

produced by the DfES; however the guidance has yet to be updated at the time of writing.

Although the DfES has provided advice on the support and deployment of teaching assistants in schools, there are no specific practical recommendations regarding how teachers and teaching assistants should work together. Teachers in schools establish their own way of working with teaching assistants and it is the lack of guidance in this area that will be addressed in this research.

1.4 Definition of an effective teacher-TA partnership

The focus of this research study on promoting effective teacher-TA partnerships requires an understanding of what constitutes an effective partnership. At present no definition of effective partnerships exists in the literature and this lack of a definition is problematic as it will be difficult to identify how effective partnerships can be encouraged without the clarity of definition. I address this issue by using my own definition of what constitutes an effective teacher-TA partnership:

An effective partnership is one in which the knowledge and experience of both the teacher and TA are utilised in a mutually respectful collaborative environment in order to provide focused support which meets the needs of students and enables and encourages their active participation and learning.

While this definition may not incorporate all the characteristics that define effective practice and may include characteristics that are not essential for effective practice, it provides a working definition for the purposes of this study.

To overcome the issues associated with not having a definition, I have chosen to focus on partnerships that are self-defined as effective. As the teachers and TAs who make up these partnerships may have very different concepts of an effective partnership, I use two self-assessments (DfEE, 2000 and TDA, 2010) to provide support for their own self-definition.

1.5 Rationale for the study

The standards framework for teachers (Training and Development Agency for schools (TDA), 2007) places an increasing emphasis on the effective working relationships between teachers and teaching assistants in the classroom. As mentioned previously, there is little research evidence in the UK on how to create and sustain an effective teacher-TA partnership in secondary school mathematics classrooms. The DISS study (Blatchford et al., 2009) highlights the need for further research into the work of TAs and an increased focus on the training and professional development of both teachers and TAs.

Research conducted by Ma (1999) found that Chinese teachers' deeper understanding of mathematics is linked to the time and support they are given to work collaboratively on the content of their lessons. The necessary sharing of the content of a lesson between a teacher and a TA, in the UK, offers an opportunity for developing deep subject knowledge similar to that which is achieved in China through collaborative planning, thus mirroring the successes in China, using established patterns of working in the UK. The importance of having a deep understanding of mathematics and its interrelation with pedagogical knowledge has been previously recognised by Ball (1989) following a large-scale study of teachers in the US.

The study reported here examines how teachers and TAs work together in order to determine the characteristics of effective teacher-TA partnerships. Identification of the factors which contribute towards effective partnerships enable the development of recommendations for schools regarding the deployment of TAs and a self-evaluation tool to assist teachers and TAs in evaluating their partnership in order to identify a focus for their future professional development. Recommendations, arising from the self-evaluations, regarding TA deployment and teacher and TA professional development, which help to develop effective teacher-TA partnerships and encourage the cultivation of a deeper understanding of mathematics, will have an impact on school and government policy and should improve student learning and attainment.

1.6 Research design

Previous studies focusing on the work of teaching assistants have used a variety of methods to consider the impact, deployment, experience and training of TAs. A method that offers great potential, but has not yet been utilised in this field of research is an embedded case study methodology. This study employs multiple research methods to examine how TAs are currently deployed in the secondary mathematics classroom and to identify the characteristics of effective teacher-TA partnerships. Questionnaires are used to gain an initial insight into the current ways in which teachers and TAs work together and to gather data regarding what changes to current practice teachers believe would improve teacher-TA partnerships. Embedded case study research methods are then employed to examine, in depth, three self-proclaimed effective teacher-TA partnerships, in order to identify the factors which contribute towards effective practice.

The embedded case study method has been selected for this research as it provides an in-depth focus on the individual units of analysis (the teacher and TA) and considers how these impact upon the case (the teacher-TA partnership). The initial conceptualisation for embedded case studies views the case as a whole within its real world context before considering the individual units of analysis and the impact they have on the case, before finally returning to a consideration of the case as a whole, with a thorough understanding of the component parts.

The data gathered from the embedded case studies are used to identify the factors which contribute towards the development of effective teacher-TA partnerships. These factors are then developed in to a self-evaluation tool, which can be utilised by teachers and TAs to assess current practice. This study is interpretive (Denzin and Lincoln, 2003) in aiming to understand the interaction between teachers and TAs and the development of effective teacher-TA partnerships.

1.7 Research questions

There are three research questions which are addressed in this study:

1) What are the current models of teachers and TAs working together in mathematics classrooms?

Teachers are offered very little guidance on a national level as to how they should work with teaching assistants in the classroom; therefore, it is usually the responsibility of teachers to establish how they will utilise TAs on a day-to-day basis. Identification of how teachers and TAs work together and how TAs are deployed is the initial stage in establishing what is considered to be good practice.

2) Which characteristics of the ways in which teachers and TAs work together promote effective teacher-TA partnerships?

Identification of characteristics of effective working partnerships provides an opportunity to share good practice and improve teacher-TA partnerships in secondary mathematics classrooms. The ways in which teachers and TAs work together in the UK may provide similar opportunities for mutual professional development to that attained through mathematics teachers' collaborative planning in China (Ma, 1999).

3) How can effective teacher-TA partnerships be encouraged and supported?

The development of effective teacher-TA partnerships is of paramount importance in order to address the issues threatening the future of the TA role and to maintain the high standard of education in the UK. Therefore identifying how effective teacher-TA partnerships can be encouraged and supported will likely have significant implications for policy and practice.

1.8 Structure of the thesis

The focus of this research study bifurcates between research that considers the employment, deployment and impact of TAs and research that considers the effectiveness of the teacher-TA partnership. In the following chapter I offer a review of the literature, which focuses on these areas and situate my own research within the field. Following this review I discuss the context in which my research is based and outline the methodological framework for this study, I describe my consideration of established methodologies and question how appropriate they are for use in my research, before identifying the case study methodology as the most appropriate and examining it in greater detail.

I have employed multiple phases in this research study, including both a questionnaire and multiple embedded case studies, the chapters which immediately follow the outline of the methodological framework focus on the questionnaire phase. The design and distribution of the questionnaire is discussed in detail and the results of the questionnaire are analysed with a particular focus on the responses provided by participants who initially agreed to be involved with the embedded case study phase of the research.

In subsequent chapters the embedded case study phase of the research itself is discussed. The research design for the embedded case studies is examined as are the results and conclusions of the pilot study. An analysis and discussion of the results obtained from the three embedded case studies is then presented along with a list of factors which have been identified as contributory to the development of effective teacher-TA partnerships. The development of this list of factors in to a form of self-evaluation for use by mathematics teachers and their TAs and the potential use and impact of the self-evaluation tool is then outlined.

The penultimate chapter contains a review of the entire research study, which includes a reflection on whether the research questions have been addressed, an outline of the key contributions of the study and a consideration of the limitations of the research. The thesis concludes with a discussion of the implications of the findings with regard to the use of the self-evaluation tool and recommendations for future studies.

Chapter 2 Situating the research using the literature

2.1 Overview

This study aims to characterise the ways that mathematics teachers and their teaching assistants (TAs) currently work together in secondary mathematics classrooms. This process will aid the development of recommendations regarding how TAs are deployed in schools and how the professional development of teachers and TAs can contribute towards effective working partnerships. The main focus of this study, therefore, is the relationship between mathematics teachers and their teaching assistants. It utilises an embedded case study methodology to gain a thorough understanding of the way that teachers and teaching assistants work together, in order to identify the characteristics of teacher-TA partnerships which contribute towards effective working practices and collaborative working.

The purpose of this chapter is to examine previous research studies which have focused on teachers and TAs and their partnership. This discussion of previous research comprises of two parts, the first part focuses on research relating to the impact and deployment of teaching assistants in the classroom and the effect on student's progress, whilst the second part focuses on the relationship between TAs and teachers, the effectiveness of the teacher-TA partnership and the factors which encourage an effective partnership. Prior to presenting a discussion of previous research I first clarify my own background and position in order to be open and honest regarding my current opinions.

2.2 Background and initial standpoint

In the past I have been employed as a teaching assistant in a mixed comprehensive secondary school and I have also trained and worked as a mathematics teacher in secondary schools. My experience of working as both a teacher and TA has encouraged me to develop a particular view regarding the impact and deployment of TAs which I now share so that my discussion of previous research can be contextualised.
My own experience leads me to believe that TAs are most effective when they are deployed to work in departments in which they have subject specific pedagogical

knowledge. However, having worked as a teacher, I understand that having a TA deployed in a specific subject area is often impractical as schools are required to provide support for individual students with specific educational needs. In the classroom, TAs can be deployed to work with a number of individual students whilst moving round the room, a group of students or a single individual student. I believe my own TA role was most effective when I worked with a number of individual students as this ensured that students did not become overly reliant on my support and avoided students being labelled as 'weak' by their peers. However, teachers who are working with TAs who are providing whole class support must ensure that certain students are not 'overlooked'; both the teacher and TA should be assisting all students.

Regarding the impact of TAs, I believe that TAs can have a positive impact on student learning and progress and are ideally situated to influence the behaviour of students if they can utilise the relationships they have developed with students to best effect. TAs also have the potential to actively improve behaviour in the classroom and help to maintain students' motivation and engagement. However, my experience of working as and with TAs has led me to the conclusion that, whilst TAs have the potential to positively benefit students' progress and learning, they do not always fulfil this potential and can occasionally have a negative impact.

TAs can focus too greatly on the completion of tasks rather than learning, leading to at best a procedural knowledge of mathematics rather than an understanding of the mathematics. Similarly, TAs can lead students too greatly via questioning. TAs can also negatively influence students' opinions as, if TAS express a dislike of a subject, students may agree. Whilst TAs can ensure students are well focused and motivated, they can also distract students from their learning by having 'off topic' conversations. On occasion I have also known TAs to give incorrect guidance to students, explaining a procedural method which only gives the correct answer in certain circumstances or providing an entirely incorrect method.

In conclusion I currently feel that the majority of TAs can and do have a positive impact on the progress and learning of students. However, a lack of guidance for teachers on how best to deploy TAs and how to work effectively in partnership with TAs has led to a wide variation in how TAs are utilised, which has in turn had an effect on the impact of TAs.

2.3 Teachers and teaching assistants

Research involving teachers and teaching assistants generally focuses on identifying what impact teaching assistants have on students' attainment and progress or identifying whether the teacher-teaching assistant partnership is effective and which attributes of the partnership encourage an effective working relationship. I first evaluate research that has examined the effect of teaching assistants on student progress and behaviour. I then consider research that has focused on the teacher-teaching assistant partnership itself.

Although the focus of my research is the partnership between teachers and teaching assistants in the secondary mathematics classroom, I have chosen to include, in my literature review, research which has focused on the impact and deployment of teaching assistants in both primary and secondary schools. The main reason for this choice is the limited amount of work which has focused on the teacher-teaching assistant partnership in secondary school classrooms, both in the UK and internationally. Although differences exist between primary and secondary mathematics classrooms, the factors which would encourage an effective relationship between the teachers and teaching assistants are likely to be similar in both contexts, as is the effect of teaching assistants on student progress.

2.3.1 The Deployment and impact of teaching assistants

The intention of this review is to gain an insight into the issues associated with the deployment of TAs and the current impact that teaching assistants have in the classroom, in order to consider whether there is potential for TAs to have a positive effect on student progress. The question of whether teaching assistants have a positive impact on student's outcomes is an important issue to address. Whilst there has been little substantial evidence, until recently, to support or refute the claims that TAs have a positive effect on student attainment and behaviour in secondary schools, the deployment and impact of teaching assistants in the equivalent of primary schools has been the focus of studies conducted throughout the UK, as well as in Finland, the US and Australia.

Due to the increasing number of support staff employed in primary schools in Scotland, Wilson, Schlapp and Davidson (2003) conducted a 2-year evaluation focusing on the deployment and management of teaching assistants. This evaluation highlighted the benefits of TAs' presence in the classroom with regards to the positive impact TAs have on student motivation, confidence and self-esteem. The report also highlights that the presence of a TA in lessons enables the teacher to provide a wider range of learning activities and experiences. Whilst providing support for the presence of TAs in primary schools, the report also acknowledges that a number of issues exist with the current system of TA deployment. The main issues identified were a lack of time for teachers and TAs to liaise with each other and inconsistencies related to the lack of TA presence in lessons in which they were timetabled to attend. Wilson et al. conclude that "the provision of designated planning time is clearly an issue that many schools have not yet satisfactorily resolved" (2003: 204). Although the role of the TA was deemed to be clear, Wilson et al. comment that "many teachers would appreciate advice about what constitutes 'good practice' in the use of classroom assistants" (2003: 203). This need for good practice to be identified is one of the main motivations for my own research.

The focus on TA deployment and the roles and responsibilities of support staff working with students with additional needs in Northern Ireland led Moran and Abbot (2002) to conduct a study focusing on the role of TA's. These authors relied upon qualitative data collected via one-to-one interviews with six headteachers of special schools and five headteachers working in primary/post-primary schools with special units for students with moderate learning difficulties (MLD). All 11 staff interviewed, as part of the study, perceived the partnership between teachers and TAs as very positive and highlighted the benefits of TAs with respect to both students with special needs and teachers.

However, Moran and Abbot also raise a number of concerns regarding current support provision, as there was some concern amongst the staff interviewed regarding the extent to which TAs remove the challenge of a task from the students they are supporting. Other issues highlighted in the study include a need for the roles and responsibilities of TAs to be clarified and agreed jointly by teachers and TAs and a need for teachers to improve their competence in managing support staff. Similar issues were identified regarding the availability of professional development for TAs and the appropriateness

of qualifications intended to improve TAs' current support practice. The majority of the issues which were recognised by Moran and Abbot revolve around the professional development of teachers and TAs, the focus of the teachers' professional development being how to manage support staff effectively and the focus of the TAs' professional development being the development of pedagogical knowledge and specialist knowledge focusing on student support. As the study conducted by Moran and Abbot was limited to interviews and was conducted on a small scale, generalisability of the findings is not necessarily possible. Nonetheless, the research provides a valuable insight into the current state of practice in schools in Northern Ireland.

The increasing importance of the work of TAs in Finland, coupled with the lack of commonality between TAs' support practices in different schools led Takala (2007) to conduct a research study focusing on the role of the TA and the co-operation between teachers and TAs. Takala utilised two different methods to collect data focusing on the working practices of TAs, observation through shadowing and interviews. The study involved 14 TA participants, only one of which was employed in the upper stage of the education system, working with students in the 13-15 age range. The interviews and observations focus on the role of the TA in the classroom, identifying the tasks the TAs complete during lessons, specifically on how effectively the TAs fulfil their support role. The main issues which Takala identifies with current practice in Finland relate to the lack of teacher preparation for the developing managerial role teachers now have in schools and the lack of time for teachers and TAs to plan lessons together and clarify their own roles and responsibilities.

Whilst there are stark similarities between the issues which are identified by Takala (2007) and those highlighted by Moran and Abbot (2002), the clear difference is the lack of concern regarding TAs' preparation in being able to effectively support students in Finland. This difference may be the result of the extensive 40-week training program which TAs in Finland must complete to become qualified (Takala, 2007). The potential impact of introducing professional programmes which must be completed in order to qualify as a TA may provide a route to improving current support as, presently, no specific qualification is required to work as a TA in the UK.

The employment and deployment of TAs provided the focus for a research study conducted by Smith et al. (2004) in primary and secondary schools in the UK. The study involved the collection of data through the distribution of questionnaires to teachers, head-teachers and TAs employed in these phases. The majority of the responses to the questionnaires are quantitative, providing a detailed account of the characteristics of teaching assistants and how they are deployed in schools. The data obtained from the questionnaires can be used to begin to collate a picture of the ways that teachers and teaching assistants currently work together in secondary schools. The responses highlight that, in the majority of secondary school classrooms, there is only one teaching assistant and never more than three in a single class at any one time. The participants were also asked a question regarding the number of year groups in which teaching assistants are deployed (see table 2.1). The results illustrate the main difference between primary and secondary schools. Whilst the majority of TAs in primary schools work with one or two year groups, the majority of TAs in secondary schools work in three plus different year groups.

Number of year groups	Teaching assistant responses %	
	Primary	Secondary
1	28	8
2	35	8
3	5	21
4	12	16
5	2	42
6	5	3
No specific year group	13	1
No Response	-	1

Table 2.1: Number of year groups with whom teaching assistants work (adapted from Smith et al., 2004: 15).

Smith et al. (2004) also collected data regarding the way that TAs are deployed to work with students. This information provides a valuable insight into the way that teachers and TAs work together in lessons (see table 2.2).

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Task	Teaching assistant responses %	
	Primary	Secondary
Work with groups of specified students	97	89
Work with individual specified student(s)	91	95
Work with groups of students outside the classroom	88	71
Work with student(s) outside the classroom	81	87
SEN support	76	83

Table 2.2: Tasks undertaken by teaching assistants (adapted from Smith et al., 2004: 20)

Mistry, Burton and Brundrett (2004) conducted a research study with a similar focus to that of Smith et al (2004), namely, the management and deployment of TAs, but chose to employ a case study methodology, gathering data via documentary analysis, questionnaires and semi-structured interviews. The main findings of this study focus on the lack of clear and effective communication between teachers and TAs and the inaccuracy of job descriptions and ambiguity relating to management structures. The findings prompt Mistry et al. to claim that the changing and developing demands which are being made of TAs constitute a greater need for appropriate training and time allocation. Similarly, training is a necessity for teachers to enable them to effectively delegate and manage the TAs with whom they work. Whilst the study conducted by Mistry et al. is focused on an individual case, the researchers refer to similar conclusions being made in other research studies giving support to their findings.

The results of this research, and others discussed previously, have highlighted discrepancies related to the TA role and associated responsibilities. This confusion surrounding the role of the TA is not only apparent in the UK and Finland but is also evident in primary schools in Australia. Research conducted by Butt and Lowe (2011), in a primary school in Canberra, concludes that it is "apparent that the role and responsibilities of TAs is unclear from the perceptions of both TAs and class teachers" (2011: 8). The detrimental effect that this role confusion can have on the inclusion of students has been highlighted by Bourke (2008). The system of support provision in Australia has seen similar significant changes as the system in the UK and it is these changes that Butt and Lowe (2011) claim has caused this role confusion amongst teachers and TAs.

Butt and Lowe (2011) focus on the roles and responsibilities of TAs to identify what teachers and TAs perceive to be an appropriate focus for TA training. Focus group interviews are employed during the first stage of the research to identify the training needs of TAs, which are then used to aid the development of skills based training modules which are implemented during stage two of the research. Following the completion of these training modules the third and final stage of the research involved establishing the TAs' views on the benefits of the training. Butt and Lowe comment that:

> *Information provided by the TAs during stage 3 interviews confirmed that they benefited from the skills-based training. The knowledge they acquired and the skills they developed increased their confidence and self-esteem. They indicated that they were better able to assist the students whom they supported in the classroom, which they believed resulted in improved learning outcomes for the students.* (2011: 8).

The value of focused training for improving support is highlighted in this research; however, the reasonably small scale of the study suggests that further research needs to be completed to substantiate any claims relating to the benefits of the training modules.

Whilst the majority of research has focused on the deployment of TAs in primary and secondary schools, in general, the only research study to discuss the deployment of TAs in mathematics departments in secondary schools, in particular, was conducted by Moor, Jones, Johnson, Martin, Cowell and Bojke (2006) which focused on the deployment of teachers and support staff to deliver the mathematics and science curriculum. The study employed a range of methods to gather relevant data including: results from questionnaires distributed to mathematics and science teachers and heads of departments, a survey of support staff working with mathematics and science departments, and 12 case studies conducted in departments highlighted by Local Education Authorities (LEAs) for having good practice. The analysis of data collected from this study highlighted the positive contribution that mathematics teachers and department heads felt TAs made to teaching and learning. The majority of respondents were satisfied with the support they received from TAs; however, in the 30% of departments which had mathematics-dedicated support, the level of satisfaction amongst department heads and teachers was significantly higher. A similar effect was

seen in departments in which TAs were considered to be subject specialists in the classroom.

Moor et al. (2006) not only highlighted the benefits of department-based support for teachers and department heads but also for TAs. The support staff based in subject departments were identified as having better access to professional development and were significantly more satisfied in their role than those TAs working in a range of school departments. The benefits of having subject-based support has clearly been recognised by mathematics department heads, who identified support staff being subject-based as the most ideal way they would like the TA role to develop. Moor et al.'s research identified four main themes within head of department responses regarding how they would like the role of support staff to develop; these were:

-       a need for support staff to be dedicated solely to the maths departments or at least to be closely involved with the department (identified by nearly a quarter of the heads of maths, this was the most frequently cited area of development)
-       a greater quantity of support staff time (20% response)
-       a need for more administrative assistance (15% response)
-       a need for a higher calibre of support staff in terms of their skills, and
-       knowledge, including subject, curriculum and teaching knowledge (14% response)
        (adapted from Moor et al., 2006: 64-65)

In addition to these four main themes, it was also acknowledged that "just over one-tenth of respondents suggested that they would like to see support staff with greater skills in the area of behaviour management" (2006: 65). The research conducted by Moor et al. provides considerable support for having specifically trained TAs working solely in mathematics departments and the prospect of having department-based support in all schools may hold potential for the development of the TA role.

Subject-based support, however, is not a new concept. The role of the Higher Level Teaching Assistant (HLTA) was introduced by the Training and Development Agency in 2003 and specific mathematics and science HLTAs followed soon after. The number of HLTAs employed in schools, as of January 2010, was 3700 (DfE, 2011) and the provisional data for November 2010 suggested a reduction in this number to 2800

(2011), which equates to less than 1 HLTA for each secondary school in England. With an apparent decrease in the number of HLTAs employed in secondary schools and the lack of data regarding the subjects in which these HLTAs work, perhaps the focus should be on the professional development of all TAs and ensuring the deployment of TAs is designed to maximise the benefits to teachers and students.

The research which has been discussed thus far has mainly focused on the deployment of TAs and has offered only a brief insight into the perceived benefits of having a TA presence in the classroom. Consideration will now be made to those research studies which have focused on the impact of TAs on student progress, attainment and inclusion. Until recently, there have been only two large scale studies focusing on the impact of TA support on student progress, research conducted by Blatchford et al. (2002) in the UK and research conducted by Gerber et al. (2001) in the US. Blatchford et al. (2002) utilised multi-level modelling (MLM), questionnaires and case studies to analyse the impact of paid adult support on the progress of students in reception and key stage 1 (4-7 year olds). The results of the MLM analysis suggest that there are "no clear effects of additional support staff and adults on children's educational progress in any of the three years of KS1" (2002: 5). Conversely, the data obtained from questionnaires distributed to teachers highlighted the positive impact TAs have in a number of areas including:

- increased attention and support for learning
- increased teacher effectiveness
- effective classroom management
- effects on children's learning outcomes
  (adapted from Blatchford et al., 2002: 62)

Blatchford et al. conclude that the discrepancies between the quantitative and qualitative data can be explained via the results of the case studies, which identified that "the use and effectiveness of adult help in classes varied between classes" (2002: 7). The main recommendations emerging from the study focus on improving the effectiveness of classroom based support by considering four main themes:

-       the importance of reliability and consistency in classroom support
-       the need for careful planning
-       the implications for training
-       as classroom support staff will inevitably be involved in direct teaching interactions, there is a need to consider what kind of contribution from TAs is appropriate

      (adapted from 2002: 7)

Blatchford et al seem to accept that some TAs have little impact on student progress but the effective adult support practices observed in the case studies highlight that TAs have a potential role to play in aiding students' educational progress. However, without changes to the ways that TAs are trained and deployed, the reality remains that those TAs who are not working effectively are having no significant impact on students' progress. The lack of impact of TAs on student progress, in key stage 1 in the UK, identified by Blatchford et al. is mirrored by the findings of Gerber et al. (2001) in the US who focused on the impact of TAs on students' academic achievement in kindergarten and grades 1 to 3.

As part of the debate regarding the impact of class size on students' academic achievement, Gerber et al. (2001) utilises results obtained from Tennessee's Student/Teacher Achievement Ratio (STAR) project (Word, Johnston, Bain, Fulton, Boyd-Zaharias, Achilles, Lintz, Folger and Breda, 1990) to compare the attainment of students in grades K-3 to establish whether TAs have an impact on student attainment. The results of this analysis highlight that, in the majority of comparisons, there were no significant differences between classes with TAs and classes without TAs, of similar sizes. However, an interesting finding from the analysis was that there was strong evidence to support the claim that the achievement of students in smaller classes was significantly higher than the achievement of students in regular-sized classes with TAs. One issue with the findings of this study is that the research does not consider the impact of TAs on individual student's performance. Therefore the possibility exists that TAs may provide important support for specific students, which may impact upon individual, but not class scores.

In the light of results obtained from the analysis of STAR project data, Gerber et al. (2001) conclude that there are three possible courses of action:

> *(1) Prescribe and monitor limited roles and responsibilities for teaching assistants, or (2) reallocate the funds spent on teaching assistants to programs that have documented effects on student performance, or (3) revise and upgrade the teaching assistants role to one that itself has demonstrable benefits.* (2001: 138)

Of the three possible courses of action, Gerber et al. claim that the third option "may have the greatest payoff" (2001: 139), but may also be the most challenging to achieve. Both Blatchford et al. (2002) and Gerber et al. (2001) conclude that there are significant issues relating to the lack of impact of TA presence on both students' attainment and students' progress which need to be addressed. The recommendations of both studies agree that the future of the TA role relies upon improving the training of teachers and TAs to better equip them to be able to effectively support students' learning.

The impact of TAs is not only restricted to student attainment and progress but also can affect students' inclusion and school experience. Giangreco, Edelman, Luiselli and MacFarland (1997) conducted research concerned with identifying whether the proximity of TAs to students has an impact on students' educational experience. This research study relied mainly on classroom observations and semi-structured interviews to identify the effects of TA proximity on students with disabilities. Giangreco et al. (1997) describe a number of possible issues which can arise as a result of TA proximity:

- interference with ownership and responsibility by general educators
- separation from classmates
- dependence on adults
- impact of peer interactions
- limitations on receiving competent instruction
- loss of personal control
- loss of gender identity
- interference with instruction of other students

(adapted from Giangreco et al., 1997: 11)

Whilst some of the issues are specifically related to TAs working with students with disabilities, the majority can be reasonably translated to TAs working with any student. In order to ensure that these problems do not arise, Giangreco et al. highlight the importance of training to ensure teachers and TAs are aware of the potential harm that TAs' extended proximity to students can cause. In conclusion, Giangreco et al. recommend that TAs should focus on supporting the whole class rather than individual students, the role of the teacher and TA should be clear and TAs should have opportunities to input into planning so that their knowledge of students can be utilised to improve teaching and learning. Similar issues are identified and recommendations made by Marks, Schrader and Levine (1999), who focused on paraeducators supporting students in schools.

Additional issues with TA support are identified by Moyles and Suschitzky (1997), who considered the roles and relationships of teachers and TAs in KS1 classes in the UK. The main finding of this study concerns the differences between teachers' and TAs' approaches to student learning. Whilst teachers focused on engaging students in learning, TAs focused on the completion of activities, encouraging students to develop procedural knowledge, rather than a thorough understanding of the subject.

Moyles and Suschitzky (1997) suggest that the different approaches to learning may be the result of a miscommunication between teachers and TAs, caused by teachers not being aware of their TAs' experiences of learning. To overcome these issues, Moyles and Suschitzky suggest that the communication between teachers and TAs needs to be improved, highlighting the need, also, for opportunities to jointly plan lessons. It seems apparent that the lack of clear communication may be a result of TAs not having pedagogical knowledge, an issue which is becoming increasingly prominent with regard to the effective deployment of TAs.

In 2003, the increasing number of TAs and the range of publications questioning the impact of TAs on student learning and participation prompted a systematic review of the literature by Howes, Farrell, Kaplan and Moss (2003). The purpose of the research review was to answer two questions: "what is the impact of paid adult support on the participation and learning of students in mainstream schools?", and "how does impact vary according to the type of support?" (2003: 2). The systematic review process was

thorough in aiming to identify appropriate studies which met the selection criteria and ensuring each study was reviewed in depth. Howes et al. use a broad consideration of what impact TAs may have in schools, explaining that the

> *focus on attainment represents a limited notion of impact, and that the impact of different ways of working, or on working with particular groups, or on the characteristics of learners which cannot be interpreted from general attainment scores, may be just as significant.* (2003: 5).

The findings of the review suggest that, by acting as mediation between teachers and students and by having an understanding of the students themselves, support staff are able to promote participation and learning. The review also suggests that support staff can influence students' on-task behaviour by their relative proximity; however, Howes et al. (2003) highlight research which has identified possible issues with sustained TA proximity to students. The recommendations made by Howes et al. comment on the need for "more, larger-scale 'rigorous' systematic studies" (2003: 9). This recommendation was addressed by Blatchford et al. (2009) who conducted a large-scale research project focusing on the Deployment and Impact of Support Staff (DISS).

The DISS project (2009) was funded by the Department for Children, Schools and Families (DCSF) and took place over a 5-year period. The research project involved two strands of investigation, covering primary, secondary and special education in England and Wales. The first strand of the project involved a large-scale survey and the second strand involved multiple methods, including interviews, observations and case studies. The project had two main aims:

1. *To provide an accurate, systematic and representative description of the types of support staff in schools; their characteristics and deployment in schools, and how these have changed over time.*
2. *To analyse the impact or effect of support staff on teachers and teaching, student learning and behaviour, and on how impact is affected by school management and communications, and how this has changed over time.*
    (2009: 3)

The DISS study found that the majority of teaching staff who participated in the project had not received any training on how to work with teaching assistants in the classroom, "At each wave of the strand 1 surveys, about three quarters of teachers reported never having had any training or development to help them work with support staff" (Blatchford et al., 2009: 5). Blatchford et al. also identified that "the majority of teachers did not have allocated planning, feedback or other allocated time with support staff they worked with in the classroom" (2009: 5). Additionally, they say that, "Teachers in secondary schools were particularly unlikely (around 1 in 20) to have such time" (2009: 5).

The finding that the majority of teachers do not have allocated time to collaborate with teaching assistants contrasts with regulations made under section 133 of the Education Act, UK, 2002, which state that:

> *Supervision arrangements for all support staff undertaking activities to support teaching and learning should include time for teachers and support staff to discuss planning and student progress within the contracted hours of the support staff.* (2002: section 133)

The lack of time for joint planning, preparation, teacher-TA discussions and reflection is the likely cause of TAs having to act in a reactive rather than proactive way. Analysis of the findings from the case studies illustrate this, but also highlight how the interactions between TAs and students have the potential to positively impact upon student learning.

> *The case studies showed that interactions between TAs and students could be informal and personalised, aiding engagement, but they could also be reactive and unplanned on the part of the TA and encourage student dependency and separation from their teachers, the curriculum and their peers.* (2009: 7)

Through the analysis of transcripts documenting teacher-student and TA-student interactions, Blatchford et al. (2009) identify that TAs tend to focus on the "completion of tasks rather than learning and understanding" (2009: 7). This lack of focus on

student understanding is likely to make a significant contribution to the main finding of the study, which was that:

> *At both wave 1 and 2 there was a consistent negative relationship between the amount of support a student received and the progress they made in English and Mathematics, and also at wave 2 in science, even after controlling for student characteristics like prior attainment and SEN status. The more support students received, the less progress they made.* (2009: 9)

The findings clearly highlight an issue with the ways that TAs are utilised in the classroom. Analysis of data collected from observations displays how TAs provide an alternative to the teacher rather than support for the teacher. This contrasts with other findings from observations which "showed a positive effect of classroom based support staff on the overall amount of individual attention and on classroom control" (2009: 2). These contrasting findings could be explained by another finding from the systematic observations which focused on the way that students interacted with teachers and TAs.

> *Students were more likely to passively 'attend' to teachers, whilst they engaged in far more active, sustained interaction with support staff.* (2009: 7)

These interactions highlight the potential role TAs can play in students' education. If TAs are able to utilise these active and sustained interactions effectively, they are in a prime position to encourage student learning and development. In an attempt to better understand the apparent negative impact of TAs on student learning, Blatchford et al. (2009) consider previous studies that have focused on

> *the effect of support staff when they are prepared and trained for specific curricular interventions (most studies have been in the area of literacy), with support and guidance from the teacher and school about practice.* (2009: 8)

The main finding from these studies is that support staff have a positive effect on student progress. Based on the findings of these studies and the results of the DISS project, Blatchford et al. state that "with appropriate training and guidance support staff can have a positive role to play in students' academic progress" (2009: 8). The Recommendations of the DISS study include:

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- improving the current provision of training for teachers to ensure they have the necessary skills required to manage teaching assistants

- developing teaching assistants to enable them not only to instruct students but adopt a more pedagogical role in schools

- ensuring that time is available for teachers and TAs joint planning and feedback

- more being done to highlight the most effective way for teaching assistants to be deployed

- ensuring that teachers are taking responsibility for planning how the curriculum is taught to all students in the classroom, including those which receive TA support.

The research study described here utilises the results of previous research, along with data collected from questionnaires and embedded case studies, to establish what factors contribute towards an effective teacher-teaching assistant partnership, in order to develop a way of working that encourages the professional development of teachers and teaching assistants, thus addressing the recommendations of the DISS project.

The Deployment and Impact of Support Staff (DISS, Blatchford et al. 2009) highlights the positive impact that TAs can have when they have received appropriate training, Muijs and Reynolds (2003) consider such a situation in their research focusing on the use of trained numeracy support assistants. These authors examined the effect of using numeracy support assistants (NSAs as learning support assistants specifically trained to support students in mathematics) in the mathematics classroom in primary schools by employing a quasi-experimental research design in which the progress of students receiving support was compared to the progress of students not receiving support. From the original sample of students, 180 students who received support were matched to 180 students who did not, based on a range of factors including their scores on a standardised mathematics test and their special educational needs status.

From this research, Muijs and Reynolds conclude that "students who had received NSA support did not make more progress in mathematics than those who had not" (2003: 227). As training and support was provided as part of the research project, the findings cannot be claimed to be the result of a lack of training on the part of the learning support

assistants. However, a question which must be considered is whether the training and support given was sufficient enough to address the needs of the learning support assistants. Muijs and Reynolds, themselves, identify a number of issues with the research method and suggest that any "generalisation of these findings should be made with caution" (2003: 228). Therefore, although the results presented by Muijs and Reynolds initially present a contradiction to previous research studies which have claimed that focused, trained TAs can positively impact upon students attainment, further research is needed before any substantial conclusions are made. This recommendation is reflected in the final comments of Muijs and Reynolds who conclude that:

> *Any firm conclusions have to remain tentative, however, until further (especially qualitative) research is done on how learning assistants can assist teacher and students effectively.* (2003: 229)

This final statement suggests that, rather than focusing on the current impact of learning assistants, researchers should focus on how to improve the effectiveness of the learning assistants. This implication links with the focus of my research, which intends to improve the effectiveness of both teaching assistants and teachers through the improvement of their working partnership.

In an attempt to address the issues surrounding the effective use of teaching assistants in the classroom, Cremin, Thomas and Vincett (2005) evaluated the use of three models of working to determine the effect on student engagement. Each of the three models: room management, zoning and reflective teamwork were instigated in two classrooms in primary schools and were evaluated via classroom observations, documentary evidence and feedback from participants. In order to assess the change in student engagement, the students were videotaped during lessons both before and after the 6-week intervention process. Reasonable steps were taken by the researchers to maintain the validity of the video recordings; the video cameras were introduced into the classroom so as to have a minimal impact on student behaviour and an independent research assistant, not directly involved with the implementation of the model of working, was employed to analyse the video data.

The main finding from the observational analysis was that "in all classes there were significant improvements in children's engagement between the baseline and experimental conditions" (2005: 419). Although a few concerns are raised regarding the internal validity of the results, they are deemed as unlikely to be the cause of the observed changes in student engagement. Both the observation and interview data collected by Cremin et al. acknowledge the positive impact of the three models. Whilst the room management model produced the most significant change in student engagement, the interview and documentary evidence suggested that this model required the most planning time to implement. In the light of this, and the fact that adaptations were made by the participants to each of the models (implying that no model was ideal) and that each model exhibited a positive impact on student engagement, the recommendation which Cremin et al. suggest for future developments is a "possible conflation of these models" (2005: 427).

The positive impact which each of these models has on student engagement suggests that there are aspects of each model which encourages teachers and teaching assistants to work together in a more effective way. If it were possible to identify the positive attributes of each model then a more effective way of working could be developed. The fact remains, however, that teachers and teaching assistants working in schools are currently offered very little guidance on how to work effectively together. As there is no standard way of working, it is left to the teacher and teaching assistant to develop their own 'model' which may not be as effective as those presented by Cremin et al. but may also be more effective. The results of this study concur with the findings of the DISS project (Blatchford et al. 2009), as they both suggest that TAs still have a significant role to play in the mathematics classroom.

The most recent review of literature focusing on the impact of adult support was conducted by Alborz, Pearson, Farrell and Howes (2009), following a number of changes to the current support system in the UK and the substantial increases in support staff numbers between 2003 and 2009. The reviewers considered 232 research studies which focused on the impact of paid adult support with reference to students' participation and learning as well as wider impact within the school. Of these studies, 35 were reviewed in depth. The findings of the review highlighted that TA support can be beneficial in encouraging student engagement and participation in lessons. The

presence of TAs can also support the inclusion of students, whilst providing mediation between teachers and students. Alborz et al. claim that TAs not only provide support for students but they also provide support for teachers, enabling teachers to develop teaching activities which engage students in practical, innovative learning experiences. The presence of a TA in the classroom also gives teachers the feeling of being supported. A number of implications arise from the review relating to maximising the benefits of TA support. The recommendations made include a need for the teacher and TA to work collaboratively and a need for teachers to be appropriately trained to be able to work in this way with TAs. Alborz et al. also comment on "the importance of allocated time for teachers and TAs to plan programmes of work" (2009: 2).

A distinct difference between the recommendations of this review and previous research is the focus on team work, rather than support staff management. Whilst a number of studies have suggested a need for teacher professional development to focus on the management of TAs, Alborz et al. (2009) comment that:

> *Within teacher training policy, it is important to communicate the nature of the collaborative working required if TA support is to be employed to its best effect. Teachers need to be appropriately trained in team working approaches during initial or post-graduate training programmes.* (2009: 20)

The research which has been presented in this section illustrates that issues with TA deployment are of both national and international concern. The roles and responsibilities of TAs are not always clear and this can contribute towards discrepancies between teachers' and TAs' views of what is 'good practice'. In order to develop effective teacher-TA partnerships it will be necessary to clarify the roles and responsibilities of TAs. Previous research has suggested that this is best achieved through teacher-TA discussions. The impact of TAs on student achievement, progress and participation is disputable. The research based in secondary education and the wealth of research in primary education has identified a clear contradiction between quantitative data focused on TAs' impact on student achievement and qualitative data focusing on TAs' impact on student progress, inclusion and participation. Whilst the debate continues as to what impact TAs have, the majority of researchers agree that the TA role has great potential. TAs are able to provide support to both teachers and students and with appropriate guidance and training it is hoped that the positive

perceptions that teachers, head-teachers and SENCOs have of TAs will be reflected in improvements to students' quantitatively measured achievement.

The research studies considered have provided me with a basis for my own research, focused on the partnership between teachers and TAs.

2.3.2 The Effectiveness of the teacher-TA partnership

As I have considered previous research which examined the deployment and impact of TAs, I now present a discussion of previous research papers which have not only considered how effective the teacher-TA partnership is, but also how the effectiveness of the partnership can be improved. Through the analysis of these papers, in combination with the questionnaire and case studies conducted as part of this research project, I develop a number of success criteria to help identify the effectiveness of teacher-TA partnerships, using my working definition of an effective partnership.

The research study conducted by Smith et al. (2004), discussed previously, was not only designed to establish a picture of the current deployment of TAs in schools but also intended to identify which skills are considered to be important requirements for TAs to have and the factors which would make TAs more effective. The three personal and professional skills considered to be the most important for teaching assistants and their corresponding number of responses are shown in table 2.3 below.

Personal Skill	% of teachers who identified skill	% of TAs who identified skill
Patience	49	57
Skills in working with children	52	55
Communication skills	41	48
Professional Skill		
Subject specific knowledge	51	48
Pedagogic knowledge	47	45
Communication skills	32	33

Table 2.3 Personal and professional skills required by teaching assistants (adapted from Smith et al., 2004: 21)

The other personal skills identified by respondents were "flexibility, organisational skills, enthusiasm and confidence" (2004: 21). Additional professional skills were also identified, including "flexibility, enthusiasm and understanding child development" (2004: 21). Smith et al. also invited participants to comment on what changes could be made to make TAs more effective.

> *Teaching assistants felt that clarification of both their role and a career structure for teaching assistants (19 per cent) were the most important ways in which their role could be made more effective. In addition, improved communication between teachers and teaching assistants (14 per cent) and improved pay structures (13 per cent) were also identified.* (2004: 33).

Whilst headteachers tended to agree with the comments of the TAs regarding the clarification of the TAs role and improvements to TAs pay, the most common response from teachers agreed with TAs' statements regarding the improvement of communication between teachers and TAs being a necessary requirement to improve the partnerships' effectiveness. In order to improve the effectiveness of a teacher-TA partnership, it is not only important to identify the factors which have a positive impact on the partnership, but it is also important to recognise the factors which have a negative impact. Smith et al. attempted to clarify these factors by asking participants to identify the main challenges associated with working with TAs. The responses of the participants are shown in table 2.4.

Main difficulties	Teaching Assistant Responses %	
	Primary	Secondary
Lack of time for teaching assistants and teachers to prepare	73	89
Salaries too low	71	83
No proper pay structure/opportunities for promotion	53	61
Different attitudes teachers may hold in working effectively with teaching assistants	34	71
Heavy workload	31	34
Lack of training and CPD opportunities	26	31
Emotional stress from working with students with difficulties	25	48
Lack of information about school/year group issues	24	38
Unclear status and extent of responsibilities	22	43
Teachers' reluctance to delegate	8	27
Other	8	13

Table 2.4 Main difficulties associated with teachers' effective working with teaching assistants (adapted from Smith et al., 2004: 32)

Smith et al. gathered a range of factors which are deemed to be important for an effective teacher-TA partnership. Bedford, Jackson and Wilson (2008) adopted an alternative approach, focusing directly on improving the teacher-TA partnership by developing teachers' skills to support teaching assistants. Both quantitative and qualitative methods were employed to gather data from a range of participants from various teaching backgrounds. The results of the questionnaires and subsequent interviews and focus groups raise a number of suggestions for factors and attributes which contribute towards an effective partnership between teachers and teaching assistants. As part of the questionnaire, teachers "were asked to identify the key recommendations they would make to their headteacher or chair of governors to enhance the way teachers and teaching assistants work together" (2008: 16-17). The responses are shown in table 2.5.

Recommendation	% of Respondents
Paid time in school hours for planning and liaison	45%
Shared training opportunities	12%
Cultural change in the school to value the role of TAs	12%
Funded enhanced pay scale for TAs	8%
More clearly defined roles for TAs	8%
Take time to review and develop what's going on	6%
Performance management for TAs	4%
Risk assessment for TAs in classrooms	4%
TAs should not be allowed to take classes on their own	1%

Table 2.5 Respondents' recommendations of factors which could improve the teacher-TA partnership. (adapted from Bedford et al., 2008: 17)

From analysis of the interview responses, four main themes emerged from the teachers' comments, relating to the conditions within the school system which would aid an effective partnership; these were:

1) Communication, general and specific regarding role of the TA (50%)
2) School culture regarding social inclusion and team working (56%)
3) Professional training and development (61%)
4) Resources, need for time for liaison and planning, time set aside and protected (83%)

Through the critical analysis of both the questionnaire and interview data, Bedford et al. developed a model for effective practice (see figure 2.1) in which there are four elements: "a supportive organisational culture, effectual systems in place, an appropriate skills set for the teachers and good personal relationships" (2008: 22).
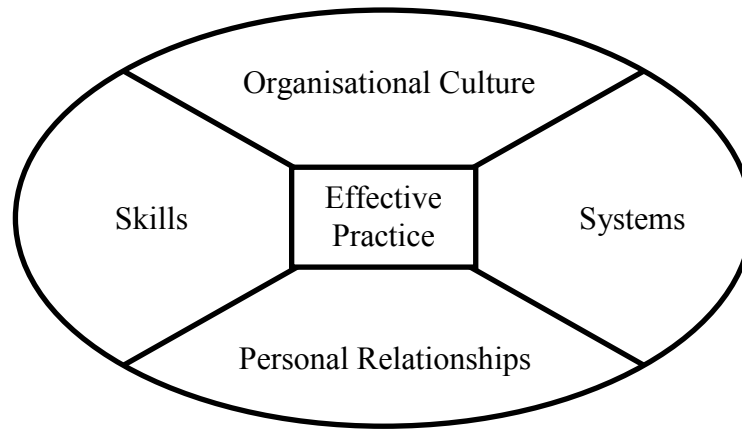
Figure 2.1: Model of effective practice, adapted from Bedford et al. (2008: 22)

This model of effective practice provides the basis for a framework that could be used to evaluate how well teachers and schools meet the requirements to encourage an effective working partnership.

Whilst Bedford et al. examined the results of questionnaires and interviews to give a general overview of what encourages effectiveness and develop their own model of effective practice, Devecchi and Rouse (2010) focused more specifically on what makes four teacher-TA partnerships effective. By exploring the relationship between teachers and teaching assistants in two secondary schools in England, Devecchi and Rouse were able to present an examination of the features that encourage effective collaboration. In order to gain a thorough understanding of the teacher-TA partnership in each of the schools, a variety of data collection methods were employed including: observations of teachers and TAs, interviews with teachers, TAs and special needs professionals, questionnaires distributed to both teachers and TAs and analysis of policy documents.

Initially, Devecchi and Rouse focus on identifying how teachers feel they support and are supported by TAs and how TAs feel they support and are supported by teachers. The views of both teachers and TAs provide an interesting insight into the conceptions of what both parties view as supportive practice. The case study participants were also asked to identify the factors that their successful partnership were founded upon; the range of responses are displayed below.

- *sharing knowledge, skills, resources and ideas useful to support individual children and the whole class;*
- *knowing each other's teaching strategies and classroom behaviour management;*
- *having clear but also flexible roles and responsibilities;*
- *being professional and competent;*
- *being knowledgeable of the subject;*
- *being approachable*
- *being respectful of each other; and*
- *being and enabling others to be autonomous, independent and self-determined.*
  (2010: 97)

One of the main factors, highlighted in the majority of research papers focusing on identifying what would improve the effectiveness of the teacher-TA partnership, is time for planning. Introducing protected planning time for teachers and teaching assistants would have a significant impact on schools; therefore, a study evaluating the effect of formal planning on the teacher-TA partnership is highly pertinent to this research. Perks (2000) conducted such a study, focusing on three teacher-teaching partnerships in an attempt to identify the importance of formal planning prior to and during lessons. Data was collected from classroom observations, student group interviews, teacher and TA interviews and the diary notes of teaching assistants to gain an insight into each partnership. The impractical nature of organising teacher-TA joint planning time is an issue identified by both teachers and TAs. The main conclusion of the study was that formal planning was difficult to organise and seen as a secondary concern by both teachers and teaching assistants, though "the communication of learning targets from teacher to teaching assistant prior to or at the start of each lesson was an essential working practice" (2000: 1). The data collected from the study highlighted four main attributes which contributed towards an effective teacher-TA relationship:

- *roles and responsibilities of both the teacher and teaching assistant were established and understood by both teacher and teaching assistant at an initial meeting before they started working together;*
- *both partners were proactive rather than reactive;*
- *the teaching assistants observed, understood and responded to the teacher's management practices; and*

- *there was ongoing dialogue, discussion and direction between teacher and teaching assistant.* (Perks, 2000: 1)

The findings of this study make a significant contribution to the knowledge base attempting to identify the factors that encourage an effective working partnership. However, the conclusions regarding the value of joint planning time may be questionable when the research methodology is considered in detail. The participants in the three case studies were not given any guidance regarding how to work together during the planning sessions; instead, they were encouraged to develop their own ways of working and adapt to the situation, a considerable change for teachers who usually plan lessons independently. An additional issue was that only the initial teacher-TA meeting was formally arranged by the researchers; following this, teachers and TAs were encouraged to "be creative about their communication" (2000: 3).

Perks (2000) identified issues with arranging the initial planning sessions and, if schools are not willing to set aside planning time, the partnerships will have little choice but to find an alternative to joint planning or collaborate during time for which the TA is not paid. Given this choice, there is little incentive for TAs to find value in joint planning time if they have to sacrifice their own unpaid time, particularly when many TAs already feel underappreciated and underpaid. Further research is needed to fully consider the value of joint planning time, particularly in cases where the teachers and TAs are given training on how to plan together effectively and are allocated dedicated non-contact time for joint planning, preparation and reflection.

In an attempt to gain an insight into what teachers and TAs felt about the effectiveness of their partnership, Walsh (2005) conducted a questionnaire with teachers and TAs to establish their views and identify whether they had received any specific training regarding how to work with other adults in the classroom. The report not only provides a snapshot of practice at the time but also provides guidance on the factors that encourage an effective teacher-TA partnership. The scale of the study was reasonably small and Walsh acknowledges this fact, stating that "the results were designed to give a general impression rather than statistical significance" (Walsh, 2005: 5).

One of the questions that both teachers and teaching assistants were asked was to rate how effective they felt the teacher-TA partnership was. Interestingly, in all cases, the teachers felt that the partnership was more effective than teaching assistants, with teaching assistants in secondary schools being the least positive group of respondents. The questionnaire responses also revealed that the majority of teachers had no specific training on managing a partnership with other adults in the classroom, either as part of their initial teacher training, or as continuing professional development. The responses of both teachers and teaching assistants exhibit a positive view of the effectiveness of the teacher-TA partnership and the level of communication between the teacher and TA. There exists, however, an opportunity for improvement, accentuated by the fact that both teachers and teaching assistants commented on the factors which would improve the partnership. The responses of both teachers and teaching assistants regarding the factors that encourage an effective partnership are summarised in table 2.6 below.

Factors that encourage an effective partnership	
View of Teachers	View of Teaching Assistants
Joint planning	More training for teachers on working with TAs
Joint training	Good communication
Good communication and time to liaise	Feeling valued
Clarification of the TA role	Equal partnership/mutual respect
More shared planning	Clear responsibilities
Better trained TAs	Joint courses
	Non-contact for TAs
	Joint planning time
	Lesson plans

Table 2.6 Factors that encourage an effective partnership (adapted from Walsh, 2005: 10)

The three main factors stated by both teachers and teaching assistants that were seen to be key to significantly improving the teacher-TA partnership were: specified time to liase, better communication and joint training opportunities. One of the main issues highlighted by Walsh is the lack of training during pre-service teacher training and continuing professional development programmes received by teachers regarding the deployment and management of additional adults in the classroom. The Institute of Education, London (Brant and Burgess, 2009) appears to be addressing this lack of

teacher training by making it a requirement for pre-service teachers to act as TAs for one lesson a week for 10-12 weeks. Brant and Burgess conducted a comprehensive literature review and collected questionnaire and focus group data over a two-year cycle of pre-service teacher cohorts, in order to examine the effect of this initiative on pre-service teachers' development. The responses to the questionnaire illustrated that, by acting as TAs, the teacher trainees had gained an increased understanding and respect for the work of the TA in the classroom. A number of respondents commented on the need for greater collaboration between the TA and the teacher and began to consider the issues that teachers face regarding the management of TAs in the classroom.

Brant and Burgess employed focus groups to clarify the views of pre-service teachers regarding the experience of acting as a TA. One of the main comments arising from the focus groups was that acting as TAs was a "powerful learning experience" (2009: 39), encouraging the pre-service teachers to consider how they will adapt their own teaching practice to encourage an effective relationship with their TAs. The main two factors that arose from the focus group discussions relating to improving the teacher-TA partnership were a need for good communication and collaborative planning. The trainees also discussed providing lesson plans for TAs to ensure they are able to arrive prepared for lessons and having a discussion with the TA about what role they and the TA should have in the classroom.

> *This project encouraged pre-service teachers to move beyond their consideration of subject knowledge and understanding, to move outside their comfort zone and perceive the classroom through a different lens-that of the teaching assistant.*
> (Brant and Burgess, 2009: 42)

By acting as teaching assistants, pre-service teachers are not only encouraged to develop their understanding of what improves student learning, but are also developing skills and concepts which should aid the development of an effective working partnership with teaching assistants in the future.

The research papers that have been considered present a range of factors which should encourage an effective teacher-TA partnership. Although there is some discrepancy regarding whether joint planning time would be beneficial as well as concerns regarding how easily this could be practically implemented, the majority of the recommended

factors are commonly agreed upon amongst the researchers. The factors that have been recommended within the papers considered are collated and analysed in conjunction with the results of my own questionnaires and embedded case studies. The results of this conflation will be a selection of success criteria, which will be employed to assess the effectiveness of teacher-TA partnerships. The embedded case studies will then provide a valuable insight into how a partnership, that has been identified as effective, functions in practice. This data will then be used to aid the development of recommendations relating to the deployment of TAs and the professional development of teachers and TAs, focused on improving the effectiveness of teacher-TA partnerships.

Chapter 3 Methodological framework

3.1 Overview

The following chapter examines the range of different methodological approaches which could be employed to investigate the ways in which teachers and TAs work together in the secondary mathematics classroom. In the past, studies have analysed the impact of teaching assistants on student learning (Blatchford et al., 2009; Muijs and Reynolds, 2003) and, in the process, have made recommendations that a more qualitative approach should be adopted to address the current perception of a negative impact of TAs (Blatchford et al., 2009). To this end, this chapter focuses on mainly qualitative methodological approaches, which could be used to identify the characteristics of effective teacher-TA partnerships.

The first section of this chapter discusses the context for the research and outlines the requirements of the methodology to be employed. The second section describes my consideration of established methodologies, exploring what each of the methodologies entail and how appropriate they are to addressing the needs of the study. Finally, the third section examines the case study methodology, in detail, with a particular focus on embedded case studies, as this is deemed the most appropriate to the needs of the study and is the methodology employed.

3.2 The context for this research

One of the main requirements of the study, which the research methodology needs to address, is the need for an in-depth focus on the teacher-TA partnership. To be able to gain an understanding of how effective the partnership is, and how this is practically achieved, a thorough understanding of the functions of the partnership and the relationship between the teacher and TA is of paramount importance. The methodology must also allow for appropriate steps to be taken to ensure the validity of quantitative data and trustworthiness of qualitative data. The main foci, however, are: understanding what makes the teacher-TA partnership effective and identifying what recommendations can be made to improve current practice in all schools.

The relationship between teachers and TAs is a complex and constantly changing phenomenon, affected by a number of external factors related to the secondary school environment, including for example: differences in class sizes, availability of time for teacher and TA joint planning and discussions outside lessons, provision of support and whether support staff are dedicated to specific departments or allocated across the whole school. These factors are likely to be different in every school and any attempt to control these factors will not only be impractical but will also detract from the applicability of the model of teachers and TAs working effectively together in everyday school life. The methodology employed should, therefore, embrace these external factors and examine how they impact upon the teacher-TA partnership.

As I have experience of working as both a teacher and a TA in the secondary mathematics classroom, I can appreciate the different perspectives of both the teacher and TA. However, my experience has also potentially encouraged a bias regarding the impact of TAs, as I harbour the belief that TAs can, and do in some cases, have a positive impact on student progress and attainment. Whilst I acknowledge this bias, I contend that, if I am presented with reasonable substantiated evidence that my view was not correct, I would re-evaluate my beliefs. I am also aware that I have developed a number of preconceptions regarding the factors that promote effective teacher-TA partnerships and that I need to be open and honest regarding this and any other bias. This being the case, a methodology, which addresses the possibility of any unintentional bias impacting upon the trustworthiness of the results of the research, is essential.

The context for this research outlines four main requirements that the chosen methodology should address. The methodology should:

- utilise a range of data collection methods to gather in-depth data regarding how teachers and TAs work collaboratively together
- not aim to control the external factors which affect how the teacher-TA partnership functions but should gather data on the impact that these factors have
- provide appropriate scope to consider how effective teacher-TA partnerships can be encouraged and supported.

- address any issues relating to bias to ensure the findings of the research study are trustworthy.

3.3 Possible methodologies

Identifying a methodology that fulfils the requirements outlined previously is a challenge. Methodologies, which utilise only quantitative data, will not provide the depth of knowledge needed to fully appreciate the intricacies of a successful teacher-TA partnership. Therefore, a methodology is needed which employs qualitative or both qualitative and quantitative data. As this study is exploratory, in aiming to identify how teachers and TAs work together, the methodology should also exhibit this exploratory nature. The particular requirements of this study preclude the use of a number of methodologies including action research, experiments and the use of surveys alone, since they do not meet the objectives of the study and do not offer the opportunity to develop deep understanding of the teacher-TA partnership in context.

In particular, an experiment would not be appropriate for this study as the number of variables which impact upon teacher-TA partnerships would be difficult to control and repetition of the experiment would not be possible. In addition, controlling the variables would impact upon the practicality of the resulting findings. Experiments would also focus on partnerships who are working in a way which is defined by the researcher and, as such, it would be more likely that not all the characteristics which encourage effective partnerships would be identified.

The use of action research is also not appropriate for this study as this methodology focuses on effecting change in one teacher-TA partnership and generalising from the findings is difficult. Action research would also require specific active participation and collaboration by research participants in lead roles and this may discourage teachers and TAs from becoming involved with the research due to the high demands on their time. There may be a lack of representativeness firstly because the factors which may improve the partnership may not be evident to the researcher and participants and, secondly, non-existent factors in the single partnership may be present in other partnerships.

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Finally, the use of surveys alone relies upon a reasonable response rate without which surveys would have limited reliability and statistical significance. Additionally, surveys do not offer opportunities to probe participants' responses. Surveys would however provide an opportunity to gather data from a number of teachers with relative ease. This being the case, I opted to use surveys in the initial phase of my research, but employ an additional methodology in the second phase, which allows me to gain an in-depth understanding of the teacher-TA partnership and identify the characteristics of effective partnerships.

There are two methodologies that meet a number of the requirements of this study: grounded theory and case study. Each of these methodologies are now discussed briefly and the most appropriate methodology identified and discussed further. The first methodology I discuss is grounded theory. Glaser and Strauss (1999) describe grounded theory as "the discovery of theory from data" (1999: 1) and Strauss and Corbin (1997) observe when grounded theory methodology is usually employed, commenting that:

> *Grounded theory methodology and methods (procedures) are now among the*
> *most influential and widely used modes of carrying out qualitative research when*
> *generating theory is the researchers principal aim.* (1997: vii)

The main issue with grounded theory methodology is substantial and it relates to the concept of not having any pre-conceived notions and generating a theory purely from data alone. Any person considering a phenomenon and attempting to generate a theory is going to have an opinion or idea related to the phenomenon for which they are attempting to generate a theory; therefore, the purest form of grounded theory methodology is not possible. However, aspects of grounded theory methodology that aid the generation of a theory from data have potential for use in research.

Grounded theory methodology uses a range of data collection techniques and multiple sources to establish an in-depth understanding of a phenomenon and improve the trustworthiness of research studies. The methodology therefore meets some of the requirements of this study, but the focus of this study is not solely the development of theory. Whilst grounded theory methodology may not be the most appropriate

methodology to meet the main objective of this research, grounded theory methods, such as coding, are required in the analysis of qualitative data.

Case study methodology is similar to grounded theory in that it can employ a variety of data collection methods and utilise multiple sources to improve the trustworthiness of the research. The methodology also provides the opportunity to develop in-depth understanding of the case within its context, through the use of multiple methods, including: conducting interviews, writing field notes and collecting documentary evidence. The significant advantage that the case study methodology has over grounded theory methodology is the focus on understanding the specific case. As the main aim of this study is to gain an insight and deep understanding of the teacher-TA partnership, the more appropriate methodology is case study methodology. The questions of what is a case and what is a case study and what types of case study exist are now discussed to ensure the complexities of the specific methodology are well-defined.

3.4 Case study

As I am using embedded case study methodology in my research, it is important to clarify the nature of embedded case studies and the data collection methods involved. I now provide a background to case studies, including a focus on types of case studies, before discussing embedded case studies specifically.

3.4.1. What is case study?

In order to effectively employ any type of case study methodology, it is important to first have an understanding of what constitutes a case study, and how a case is defined. Two definitions of case study have been identified from Yin (2003) and Stake (1995). Yin describes a case study as:

> *an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.* (2003: 13)

Similar to Yin's definition, Stake states that:

Case study is the study of the particularity and complexity of a single case,
coming to understand its activity within important circumstances. (1995: xi)

Both Yin and Stake highlight the importance of the context in which the case is situated, and both offer guidance on the design and structure of case study research. However, whilst Stake focuses on an individual case, Yin (2003) comments that "case study research includes both single- and multiple-case studies" (2003: 14). Merriam (2009) and Eisenhardt (1989) also offer definitions of case study which differ from those of Yin and of Stake, giving rise to the view that case study is not well-defined as a methodology. Merriam (2009: x) describes a qualitative case study as an "intensive, holistic description and analysis of a bounded phenomenon such as a program, an institution, a person, a process or a social unit", whilst Eisenhardt (1989: 534) describes case study as "a research strategy which focuses on understanding the dynamics present within single settings".

Bassey (1999) reviews numerous concepts of case study defined by other authors, concluding that "the generic term 'case study' has a range of meanings" (1999: 27). In an attempt to gain a more thorough understanding of these authors' understandings of case study, Bassey considers the types of case studies that have been described. In conclusion, however, he cannot offer a singular agreed framework of the types of case study, stating that

> *I cannot be sure that I have correctly elicited what these writers have meant by*
> *the terms they have used and, dare I say it, neither can we be sure that the writers*
> *themselves had clear, unambiguous concepts in their minds and managed to*
> *express them coherently.* (Bassey 1999: 35)

Although various definitions of case study exist, Grünbaum (2007) used a selection of references to develop a list of seven general characteristics associated with case study methodology. These are:

- *the study object is always in some way related to people* and *individuals are studied in their natural environment*
- *the researcher is interested in a contemporary phenomenon; historical studies are thus excluded*

- *one's perspective is holistic when trying to understand and explain what happens and why it happens. It thus becomes important to understand and identify contextual factors that surround the unit of analysis*
- *case studies are primarily qualitative and the objective can be descriptive, exploratory and/or explanatory*
- *the researcher has no control of crucial events evolving in the studied context*
- *the researcher applies numerous data sources in the search of understanding*
- *'rich' and contextual accounts are produced based on the case study.*

(2007: 82)

One of the issues which researchers using case study methodology must address is the issue of defining the case itself. Yin (2003) comments that defining the case is a "problem that has plagued many investigators at the outset of case studies" (2003: 22) whilst Punch (2005) states that "almost anything can serve as a case" (2005: 144). Stake (1995) claims that "custom has it that not everything is a case" and that "the case is a specific, a complex functioning thing" (1995: 2). The issues related to defining the case require an examination of what will provide the case for this study. As the teacher-TA partnership is the main focus of this research study and, as each partnership will be bounded within their own context, the most appropriate definition of the case is the teacher-TA partnership itself. In discussing the definition of the case, Yin (2003) introduces the concept of 'units of analysis', with the case being the primary 'unit of analysis'.

> *As a general guide, your tentative definition of the unit of analysis (and therefore of the case) is related to the way you have defined your initial research questions.*
> (Yin, 2003: 23)

Definition of the 'unit of analysis' and thus the case, in research, is an important process which "can be revisited as a result of discoveries during your data collection" (Yin, 2003: 24). To aid the selection of the unit(s) of analysis, Patton (2002) offers some valuable advice:

The key issue in selecting and making decisions about the appropriate unit of analysis is to decide what it is you want to be able to say something about at the end of the study. (2002: 229)

The term 'unit of analysis' is used by other researchers in the field (Berg, 2007; Miles and Huberman, 1994; Patton, 2002), most of whom have a definition which mirrors Yin's view, that the 'unit of analysis' and the case are indistinguishable. It seems, however, that, as with the question of the definition of a case study, the definition of the 'unit of analysis' is deemed, by some, to be ambiguous (Grünbaum, 2007). Grünbaum argues that the 'unit of analysis' is, in some instances, defined as being identical to the case and, in other instances, different from the case. However, Grünbaum offers no example that displays a clear difference between the 'unit of analysis' and the case. Whilst he does discuss the fact that some confusion exists regarding Merriam's definition of the case and how it relates to the phenomenon, no mention is made, within this discussion, of how this confusion relates to the unit of analysis. It appears that, rather than supporting the claim of ambiguity surrounding the term, Grünbaum has gathered a selection of quotations which describe the 'unit of analysis' in a similar way to Yin (2003) (as the case).

My own interpretation of the 'unit of analysis' is that, in a situation where there is only one unit of analysis, this will be the same as the case and, where there exist multiple units of analysis, the primary unit of analysis is the case. One assertion which Grünbaum makes, to highlight the ambiguity surrounding the term 'unit of analysis', relates to a conceptual issue with Yin's proposed case study designs (see figure 3.1 later). Grünbaum (2007: 85-87) argues that Yin's definitions of case study designs require the case and the unit of analysis to be separate, thus conflicting with Yin's own view that the case and unit of analysis are the same. Interestingly, Stake (1995) avoids using the term 'unit of analysis' in his discussion of case study, though he does describe the case as "the object to study" (1995: 3), or 'study object' which could be considered as an alternative term to 'unit of analysis'. Grünbaum also acknowledges the avoidance of the term and claims that it is "apparent that Stake perceives the case and the study object as indistinguishable" (2007: 84). If this interpretation is correct, then Stake supports the view of others that the 'unit of analysis' and the case are the same.

In order to conduct case study methodology successfully, a clear and well-formulated research design is of paramount importance. Bassey (1999) recommends seven stages which can be used to simplify the complex process of conducting a case study; these seven stages are:

> *Stage 1: identifying the research as an issue, problem or hypothesis*
> *Stage 2: asking research questions and drawing up ethical guidelines*
> *Stage 3: collecting and storing data*
> *Stage 4: generating and testing analytical statements*
> *Stage 5: interpreting or explaining the analytical statements*
> *Stage 6: deciding on the outcome and writing the case report*
> *Stage 7: finishing and publishing* (1999: 66)

Alternatively, Yin (2003) offers a list of five particularly important components of case study design:

> 1. *a study's questions*
> 2. *its propositions, if any*
> 3. *its unit(s) of analysis*
> 4. *the logic linking the data to the propositions and*
> 5. *the criteria for interpreting the findings.* (2003: 21)

A variety of data collection methods are usually employed in case study methodology, with the inclusion of both quantitative and qualitative data. Cohen, Manion and Morrison (2007) highlight the importance of one particular method, claiming that "whatever the problem or the approach, at the heart of every case study lies a method of observation" (2007: 258). To form a successful study, the researcher must draw upon various areas of information, including "the nature of the case" and "its physical setting" (Stake, 2005: 447). Bassey (1999), Patton (2002) and Stake (1995) agree on three major methods employed in case study research. These are: "asking questions (and listening intently to the answers), observing events (and noting carefully what happens) and reading documents" (Bassey, 1999: 81). These three methods link to the six sources of evidence that Yin (2003) identified as being the most common in case studies: "documentation, archival records, interviews, direct observations, participant-observation, and physical artefacts" (2003: 65). Each source of data is discussed in

detail by Yin (2003: 85-97) and the strengths and weaknesses of each are summarised in a table (Yin, 2003: 86).

The selection of appropriate data collection methods is highly important, as these contribute towards the trustworthiness of the case study. As mentioned previously, case study methodology is often criticised as being an unreliable form of research. To be able to counter this criticism, researchers must ensure that they have taken all measures to increase the validity of quantitative data and trustworthiness of qualitative data. To this end, Yin (2003: 97-106) presents three principles related to data collection: use multiple sources of evidence, create a case study database and maintain a chain of evidence. Patton (2002) also addresses similar issues by discussing "rigorous techniques for increasing the quality of data collected during fieldwork" (2002: 553). Bassey (1999) offers an alternative to that of Patton and of Yin, which is based on his perspective that "the concepts of reliability and validity are vital concepts in surveys and experiments – but not in case study" (1999: 74). In place of these concepts, Bassey considers the trustworthiness of the research and draws on the work of Lincoln and Guba (1985) to develop eight questions, which aid improving the 'trustworthiness' of a case study. These eight questions will be asked of the case studies conducted as part of this research, to ensure the 'trustworthiness' of the outcomes. Whether referring to the reliability, validity or 'trustworthiness' of the research, Bassey, Patton and Yin have all presented methods which assist researchers in developing a case study which can be strongly defended against the criticisms aimed at the case study methodology.

The decision to use case study methodology requires careful consideration of the advantages and disadvantages associated with the methodology. There are a number of advantages which I now consider. Case studies are "strong in reality" (Adelman, Kemmis and Jenkins as cited in Bassey 1999: 23) and they "present research or evaluation data in a more publicly accessible form than other kinds of research report" (1999: 23). Case studies also acknowledge the complexity of individual units and use observations and other methods of data collection to

probe deeply and to analyse intensively the multifarious phenomena that
constitute the life cycle of the unit with a view to establishing generalisations
about the wider population to which that unit belongs. (Cohen et al., 2007:
258)

One of the main disadvantages is the criticism aimed at case study methodology; for example, Walker (1983) claims that a case study approach can provide a distorted picture of the world and Atkinson and Delamont (1985) comment on the lack of basis for generalisation in case studies. Flyvbjerg (2006) discusses a number of criticisms, (one of which is the same as Atkinson and Delamont mentioned previously), whilst presenting a positive view of a case study approach. I believe that the majority of criticisms of case study research appear unfounded when the substantial amount of rich and detailed data gathered in a well-designed case study is considered. The case study methodology, if employed objectively, provides a depth of understanding which should give a clear insight into the case and the context in which it is based. The over-generalisation from a single case designed to describe results in a distorted picture of the world and it is the researcher who must ensure that the results are not overly generalised.

The criticism of Atkinson and Delamont regarding the lack of basis for generalisation is a criticism that can be made of the use of other methodologies also, for example generalising from a single experiment. I agree that it would be inappropriate to claim scientific or statistical generalisation from case studies and that an alternative type of generalisation needs to be employed. Bassey (2001) proposes the concept of fuzzy prediction or generalisation commenting that

when supported by a research account which makes clear the context of the
statement and the evidence justifying it, the fuzzy prediction provides a
powerful and user-friendly summary which can serve as a guide to
professional action. (Bassey, 2001: 5)

Fuzzy prediction or generalisation refers to the generalisation of a theory; it is the equivalent of an intermediate step towards generalisation which allows for the theory to be amended based on future tests of the theory. Bassey claims that

> *Fuzzy prediction invites replication and this, by leading either to support of the statement or its amendment, contributes to the edifice of educational theory.* (Bassey, 2001: 5)

Yin (2003) suggests that "investigators must exercise great care in designing and doing case studies to overcome the traditional criticisms of the method" (2003: 1). The use of case studies in research has been frequently discussed and debated throughout the years, with questions being raised about the reliability and generalisability of research findings. Yin (2003) highlights the issues about using case studies, stating:

> *The case study has long been (and continues to be) stereotyped as a weak sibling among social science methods. Investigators who do case studies are regarded as having downgraded their academic disciplines. Case studies have similarly been denigrated as having insufficient precision (i.e., quantification), objectivity, or rigor.* (Yin 2003: xiii)

By highlighting the issues surrounding the use of case study, Yin ensures that researchers who adopt case study methodology understand the criticism that their work might receive. Although case study methodology is subject to a large amount of criticism, there are numerous supporters (Flyvbjerg, 2006; Stake, 1995; Yin 2003) of the use of case study in research and the guidance offered by these advocates should aid researchers in designing theoretically and methodologically sound research.

The issues surrounding case study methodology and the confusion around what constitutes a case led Tight (2009) to review the literature on case studies. Whilst Tight offers some interesting insights into the amount of research described as case study, his claims that "the surrounding terminology of 'case study' not only adds little value, but actually gets in the way" (2009: 9) seem inappropriate. The issues and criticisms surrounding case study methodology are not going to dissipate if we refer to a case study as a "small-sample, in-depth study" (2009: 10). I argue that the terminology surrounding the methodology gives rigour to the case study design and accentuates the importance of context in the research, an aspect associated with case study research which is not immediately associated with other methods.

3.4.2 Types of case study

The types of case study described by Stake (1995: 3-4) are related to the reason for conducting the study. An 'intrinsic case study' is a study that focuses on a case that is of particular interest. An 'instrumental case study' is a study that focuses on a case that will help to understand something else, related to the case. Finally, a 'collective case study' is similar to an instrumental case study, but employs multiple cases rather than a single case to understand something else. Yin (2003) takes an alternative approach to the types of case study, discussing the design of the study, which he claims is determined by the number of cases considered and the number of units of analysis required. The four case study designs are best represented as a 2 x 2 matrix (see figure 3.1).
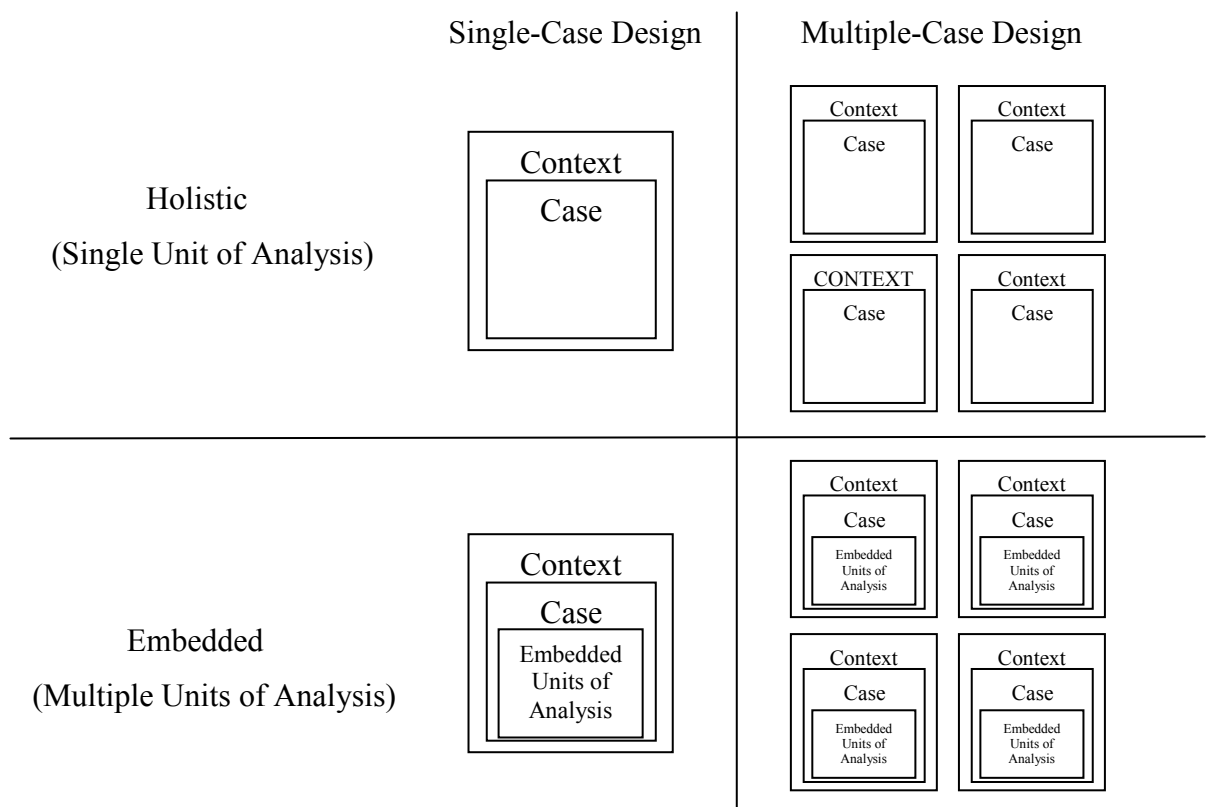
Figure 3.1 Types of case study, adapted from Yin (2003: 40)

As demonstrated, Yin asserts that the case study can either represent a single-case or multiple-case and will be holistic or embedded, depending on whether the case has single or multiple units of analysis. There are two main issues which Grünbaum (2007) raises with this typology. The first issue with the matrix design is related to the fact that

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Yin has used two different variables to label the vertical axis of the table, namely, the types of study (holistic or embedded) and the number of units of analysis (single or multiple). Whilst Grünbaum accepts the use of the number of units of analysis as a label for the vertical axis, he takes issue with the use of the terms holistic and embedded because they are not antonyms. This use of both the labels should not cause concern, however, as the terms holistic and embedded echo the differences in the number of units of analysis, as the multiple units of analysis affect the way the case is considered.

The second issue which Grünbaum raises is much more complex. He argues that Yin's descriptions of case study designs are contradictory to his own definition of the 'unit of analysis'. If the case and the 'unit of analysis' are indistinguishable (Yin 2003: 22), then how can there be multiple 'units of analysis' in a single case (i.e. an embedded design)? This leads Grünbaum to propose an alternative (2007: 87-90), which consists of four case study designs that treat the 'unit of analysis' as an object, contained within, but separated from the case. Grünbaum suggests that "the case can be divided into layers that surround the unit of analysis or the heart of the case" (2007: 88). Whilst Grünbaum argues logically and coherently, I disagree with his conclusion, as I feel that the descriptions of case study and the unit of analysis offered by Yin have been misinterpreted. Yin describes a number of situations where an individual is acting as the case and states that the individual is the "primary unit of analysis" (Yin, 2003: 22). The implications of this statement are that, if there are multiple units of analysis, the 'primary' unit of analysis is the case, and the additional units of analysis are contained within the case. Therefore, the contradictions that Grünbaum has identified within Yin's design do not exist.

Grünbaum is arguing that the case and the unit of analysis should be considered as separate entities. As part of the construction of this argument, Grünbaum uses his conception of the four case study designs to describe a multiple case study, which relates to buyer-to-buyer satisfaction in manufacturing companies. It is not clear what is considered to be the case, but Grünbaum states that there is "one unit of analysis (namely the buying center) in each of the three companies" (2007: 90). Although the focus appears to be on understanding buyer-to-buyer satisfaction, I argue that the three cases are the three buying centres, and the context is the individual company within which each is working, a situation which Stake describes as a collective case study

(Stake, 1995). This being the situation, Grünbaum has actually described a case where the 'unit of analysis' and the case are the same, supporting the view of Yin (2003), rather than providing an example which supports his own view.

There is significant support for the argument that the 'unit of analysis' and the case are indistinguishable (Berg, 2007; Miles and Huberman, 1994; Patton, 2002; Yin, 2003). Yin's (2003) description, employing the term 'primary unit of analysis' appears to be logical and ensures that the four case study designs he describes are valid. The case study design that is appropriate for my research is an embedded case study, as each of my cases will have multiple 'units of analysis'. As I have selected an embedded case study methodology, I discuss this particular type in greater detail.

3.4.3 Embedded case study

There is very little literature which extends beyond the basic descriptions of embedded case study provided by Yin (2003); Scholz and Tietje (2002) are amongst the few and it is these authors who expand on the notion of embedded case studies being simply case studies with multiple units of analysis stating that:

> *In an embedded case study, the starting points and ending points are the comprehension of the case as a whole in its real-world context. However, in the course of analysis, the case will be faceted either by different perspectives of inquiry or by several sub units.* (2002: 2)

From this description, the nature of an embedded case study becomes clearer; not only do they require consideration of multiple units of analysis, they also require a particular approach. At the beginning of the case study, there is a case which exists within a specific context. This case can then be separated into individual 'units of analysis' which are embedded within the case. These units can then be analysed and contribute towards the understanding of the case. However, analysis of the case is not complete without returning to the consideration of the case as a whole in its real world context.

Whilst an embedded case study is a methodology in itself, it is important to be aware that, at its core, it remains a case study. The methods of data collection and analysis

usually utilised in case studies in general are similar; it is the approach to analysis and the focus of the research which varies between the different types of case study.

The use of embedded case studies in education is not common. However, I have identified a few examples of such research, which claim to use an embedded case study methodology (Richards, 2010; Schuster and Carlsen, 2009; Scribner, 1999). The debate regarding what constitutes a unit of analysis discussed previously causes confusion as to what the difference is between a study of multiple cases and an embedded case study involving multiple units of analysis. To illustrate the difference I will briefly discuss Scribner's (1999) research design. Scribner states:

> *The primary objective of the study was to understand teachers' perspectives of their own professional development, the primary unit of analysis was high school teachers. Teachers were 'embedded' in two obvious cases – high schools and school district – secondary and tertiary units of analysis.* (1999: 243)

In this description, the 'primary unit of analysis' and therefore the case (Yin, 2003: 22), is the high school teachers themselves. The issue with this description (for the purposes of embedded case study design) revolves around the definition of the secondary and tertiary units of analysis. The additional units of analysis in an embedded case study should be 'embedded' within the case, not vice versa, as in this situation. The secondary and tertiary units of analysis proposed by Scribner represent the context of the case. All case studies are set within a particular context; therefore, Scribner has not utilised an embedded case study design, but has instead conducted a multiple case study. The individual cases considered by Scribner are holistic as they only consider the high school teachers themselves. If Scribner considered the perspectives of teachers working within a particular school and had changed his approach to the research accordingly, he could have claimed that the teachers were individual units of analysis within the case, and would have been conducting an embedded case study. Similarly, if the research considering all teachers within a school had been repeated at other case study sites, an embedded multiple case design would have been used.

The embedded case study methodology seems ideal for my own research which considers the partnership between mathematics teacher and teaching assistants. The case, and thus the 'primary unit of analysis' in my research, will be the teacher-teaching

assistant partnership, and the individual teachers and teaching assistants will provide the secondary and tertiary units of analysis. I will be utilising an embedded multiple case design (see figure 3.1) as my investigation involves three teacher-teaching assistant combinations, each of which will act as a case and will be based in its own context and boundaries.

The main advantage of an embedded case study is the focus on the individual units of analysis. The in-depth consideration of the factors which influence a case provide a more thorough understanding of the case as a whole, which contributes towards the development of more trustworthy and rich descriptions of cases. Another advantage of utilising an embedded multiple case design is that the sub levels of analysis which are a product of the focus on individual units of analysis provide an opportunity for cross case comparison whilst contributing towards the development of a holistic picture of each case as a whole. An additional advantage of the embedded case study design which is not relevant to this research, but is relevant to the wider application of embedded case studies in educational research is that the multiple units of analysis provide a convenient way to separate a research study amongst multiple researchers.

The most significant step, which researchers employing an embedded case study need to be aware of in order to avoid pitfalls, is that the research must return to a consideration of the case as a whole. It should not focus on the individual units of analysis to the extent that the overall case is neglected.

The case study methodology is subject to a significant amount of criticism regarding the value and trustworthiness of results. To assist researchers in addressing these criticisms, Scholz and Tietje recommend four main stages for researchers to complete in order to ensure a "scientifically sound, effective, and efficient study of cases" (2002: 2). These four stages include:

1) *Case representation and modelling*
2) *Case evaluation*
3) *Case development and transition*
4) *Case study team (Scholz and Tietje, 2002: 2)*

With these stages in mind, Scholz and Tietje present various methods which are specifically for use within an embedded case study methodology (for a brief description of each method see Scholz and Tietje, 2002: 65-69). Each method is intended for use at a specific stage (2002: 72). Selection of an appropriate method is dependent on the researcher, though it is clear from the descriptions of the methods that a case should imply a specific, suitable approach. Whilst the methods presented by Scholz and Tietje can be employed in educational research, the main example given to illustrate the embedded case study approach is situated in the Department of Environmental Sciences at the Swiss Federal Institute of Technology (ETH Zurich).

Scholz and Tietje also comment that they believe "case study scepticism arises when knowledge integration in case studies is arranged in a nontransparent manner" (2002: 3). To address this issue, they present eleven methods of knowledge integration.

3.5 Methods of knowledge integration

Of the eleven methods of knowledge integration proposed by Scholz and Tietje, two methods are related to case study teams which do not exist in this research project, and three of the methods are specifically designed for use with environmental science studies. The six methods which remain are discussed, in turn, and the appropriateness of each method is considered in relation to this research study. The methods themselves can be classified by the stage of the case study they are contributing towards; these stages are: case representation and modelling, case evaluation and case development and transition. Ideally, a method from each stage is selected; however, the methods are not always appropriate, as they depend on the context in which the case is based. These methods are not a requirement of embedded case study methodology but a tool to aid the research.

3.5.1 Case representation and modelling methods

Scholz and Tietje (2002) present two methods of knowledge integration which are related to case representation and modelling; these are formative scenario analysis and system dynamics. Each of these methods is discussed, in turn, to consider their potential for use in this research study.

3.5.1.1 Formative scenario analysis

The underpinning role of a formative scenario analysis is to identify the possible future states of a system in order to analyse which of the states is the most ideal. The initial stage of the analysis involves identifying the current state of the case and the goal towards which the case is striving. The properties of the case are then identified to aid the development of impact factors or system variables. It is these impact factors which provide the means for developing the possible future states of the case. The possible scenarios that exist are then interpreted to determine the preferred scenario.

In relation to this study, formative scenario analysis could be considered for use as the partnership between teachers and teaching assistants acts as the case and is bounded by the context of the secondary school. The data collected from participants in the embedded case studies aid the identification of the current state of the case and contribute towards the development of impact variables. Identification of the impact variables highlights the factors which contribute toward an effective teacher-TA partnership.

3.5.1.2 System dynamics

System dynamics is similar to a formative scenario analysis in that it focuses on the future development of the case. The significant difference between the two methods is that system dynamics employs mathematical models to ascertain how the system functions. Once the system variables have been identified, the interactions between them can be analysed, using computer software, which supports the development of a computer model of the case or test theories related to the case. Providing the model generated is valid, it is then utilised to predict the future state of the case.

The systems dynamic method is complex and Scholz and Tietje highlight the need for previous experience of working with the method or the need for expert assistance. As the method utilises mathematical modelling, "quantitative variables, which vary over time" (2002: 131) are one of the main requirements to formulate the models and it is not clear, at this stage, whether sufficient quantitative variables will be present within the case examined here to justify this method. Therefore, due to the complexities

associated with the method and the focus on quantitative variables, this method may not be so well suited to this research study.

3.5.2 Case evaluation methods

The two methods of case representation and modelling discussed previously provide an insight into the state of the case and allow the beginning of consideration of the possible future states of the case but do not allow for evaluation of the case or these future states. Scholz and Tietje (2002) present two methods which focus on case evaluation: multi-attribute utility theory and integrated risk management. These two methods of case evaluation are discussed below, both in general and in relation to this research study.

3.5.2.1 Multi-attribute utility theory

Multi-attribute utility theory (MAUT) describes a group of methods which can be used to analyse and evaluate various situations. The purpose of these methods is to establish the 'attractiveness' (utility) of each possible outcome. The first stage of this method involves identifying the attributes which are relevant to the evaluation of the state of the case. These attributes are assigned values on the 'attractiveness' scale which, when appropriately weighted, can be used to identify the best case scenario. Scholz and Tietje (2002) comment on how the objectives of some research studies can be achieved through a combination of MAUT and formative scenario analysis.

The use of MAUT in this research could provide a method to evaluate the current state of each case. The attributes of the teacher-TA partnership could be assigned values which illustrate the importance of that attribute with regard to encouraging an effective partnership. The outcomes obtained from the case studies would then not only highlight what characteristics of teacher-TA partnerships encourage effective collaboration, but also the relative importance of each factor. The main issue with this method is that the value assigned to each attribute is a subjective value determined by the nominated evaluator which, in the case of this research, is myself. A possible method to minimise this subjectivity is to utilise the teachers and TAs involved with the case studies, allowing them to assign the values. A conflation of the values assigned by the teacher

and TAs could offer the best method for avoiding my own bias and obtaining the most reliable insights into which factors encourage effective teacher-TA partnerships.

3.5.2.2 Integrated risk management

This framework is designed to illustrate the risk associated with decisions which have an effect on the case. The decisions made result in different alternatives and the purpose of integrated risk management is to identify the alternative which has the least risk associated with it. Following the definition of the current situation, the method involves the analysis of action alternatives which have associated probabilities and risk functions. The outcome of this analysis is the identification of the action alternative that harbours the least risk. The practical employment of the integrated risk management method has a similar issue to MAUT in that it can introduce subjectivity into the evaluation method. Scholz and Tietje comment that "in many cases, there will be no appropriate data available to assess the probability by objective means" (2002: 190). This is certainly true in the case of analysing how teachers and TAs work together.

Whilst the integrated risk management method could be employed to analyse the risks associated with decisions regarding the teacher-TA partnership, the intention of the research is not to identify the outcome which has the least risk but to identify the scenario which is the most ideal. This being the situation, the method may be more appropriate to business rather than education models.

3.5.3 Case development and transition methods

Scholz and Tietje (2002) present two methods of case development and transition: area development negotiations and future workshops. Both of these methods are now discussed in general and in relation to this study.

3.5.3.1 Mediation: area development negotiations

This method was specifically developed for the ETH-UNS case study (as discussed by Scholz and Tietje) to analyse the interests of the different groups which are connected to the case, in order to develop the current state of the case with the objective of satisfying

the range of interested parties. The initial stage of the method involves establishing the current state of the case and identifying the groups which have an interest or stake in the case. The interests of the parties who have a stake in the case are then identified, explored and evaluated through a process of synthesis. Following this, the new dynamics of the case are developed through the negotiation of the values of the interested parties.

The employment of this method in this research study could develop the current state of the case whilst respecting the values of the interested parties. However, the objective of this study is not to develop the case that is the focus of the embedded case study but develop other cases in other schools through the analysis of the embedded case study case. Therefore, this method is not appropriate for this study.

3.5.3.2 Future workshops

The future workshops method provides an alternative to formative scenario analysis and system dynamics with the aim of developing innovative solutions to effect positive change to the current state of the case. The method first requires the development of goals which the workshop is striving to achieve. The workshop employs multiple participants who then critique the current situation and develop a concept of what the ideal state of the case would be. The ideas developed in the workshop are then summarised and the case study researcher is then responsible for reflecting on the progress that has been made and how the changes to the case could be implemented.

This study aims to develop a way of teachers and TAs working collaboratively, that encourages mutual professional development, by focusing on how effective partnerships work. The situation, at present, does not seem to warrant such a radical change, as would usually be the aim of future workshops. However, if a way of working that encourages effective practice and promotes mutual professional development cannot be identified through this study, this method could provide the potential for change.

3.5.4 Conclusion

After careful consideration of the methods of knowledge integration presented by Scholz and Tietje (2002) for case development and transition, I have concluded that neither mediation or future workshops is appropriate for this study. Mediation is considered inappropriate as it focuses on the development of the case which is the focus of the embedded case study, rather than developing recommendations for improving other cases. Future workshops are considered inappropriate as the method seems to be a more radical approach leading to significant changes, which at present do not seem necessary to effect positive change, but in the future may be an approach to consider. The methods of case representation and modelling and case evaluation were also considered but I have concluded that the most appropriate method for my research is multi-attribute utility theory because this best fits the evaluative design of my research. Aspects of the method of case evaluation allow me to assess how important the factors are to the development of effective teacher-TA partnerships.

Whilst some of the methods of knowledge integration have been discounted from use in this research study, they may still be of use within the wider remit of educational research. However, the specific cases being considered in other educational research studies will decide whether the methods of knowledge integration are suitable.

Chapter 4 Questionnaire research design

4.1 Introduction

In order to gain an initial insight into the current ways that teaching assistants are utilised in secondary mathematics classrooms, a questionnaire is developed and distributed to the heads of mathematics departments in secondary schools across the central south of England. Questionnaires are a specific type of survey research and are often employed when a significant amount of data are required from a range of participants. Muijs (2011) claims that survey research is "probably the most popular (quantitative) research design in the social sciences" (2011: 30) and, perhaps due to this popularity, there is a wide range of guidance on how to successfully design and conduct questionnaires.

In this chapter, I outline the design of the questionnaire phase of this research project, considering a range of sources of guidance in the process. I begin by discussing the purpose of the questionnaire, defining the objectives of this phase of the research, before identifying the sample population for the study. I then evaluate the ethical issues associated with questionnaires and explain how these are met during the questionnaire research. Finally, I describe the development of the questionnaire itself and the steps taken to maximise the potential response rate.

4.2 The purpose of the questionnaire and the objectives of the research

It is generally recognised, in the literature, that the initial step in conducting questionnaire research is to identify the purpose and objectives of the questionnaire (Cohen et al., 2007; Gall, Borg and Gall, 1996; Muijs, 2011; Oppenheim, 1992). These factors focus the design of the questionnaire and determine decision-making about the type of research required (Muijs, 2011). The purpose of the questionnaire employed in this research study is multifaceted, as it is designed to not only gather a range of data regarding TA deployment and teacher-TA partnerships, but also to identify potential participants for the embedded case study phase of the research.

The three main objectives of the questionnaire research are:

- to provide an insight into how teachers and TAs currently work together in secondary school mathematics classrooms
- to gather data relating to the deployment and role of the TA
- to gain an understanding of how well the teacher-TA partnership works and how it can be improved.

Arising from these research objectives are four key areas for consideration:

- teachers' backgrounds
- time teacher spends working with TAs and consistency of TA presence
- deployment of TAs in the classroom
- effectiveness of the teacher-TA partnership

The guidance regarding the process of questionnaire design diverges at this point. Whilst Gall et al. (1996) and Muijs (2011) discuss the identification of the sample population as the first step, Anderson (1998), Bell (2010) and Oppenheim (1992) develop the key areas for consideration into questions in a questionnaire format, before considering what an appropriate sample population might be. I followed the guidance of Gall et al. (1996) and Muijs (2011) and considered the sample population for the questionnaire prior to developing specific questionnaire items.

4.3 The sample population

The first question to address with regard to the sample population is whether the questionnaire should be distributed to both teachers and TAs or solely to teachers. Initially, the intention was to sample both teachers and TA; however, it became apparent that the majority of the questions relating to the key areas for inclusion in the questionnaires (as discussed previously) could be addressed by the teacher. It was also recognised that, due to the focus on teacher-TA partnerships based in mathematics classrooms, contacting the appropriate TA populations in schools might be very difficult and the response rate of TAs would likely be affected by this.

One implication of not having TA responses is that the knowledge and views of TAs will not be represented in the questionnaire results. However, given the factual nature of the majority of the questionnaire questions and given the fact that direct comparison of teacher and TA responses would not be possible due to ethical considerations; the lack of TA responses is not of significant impact. One other possible implication of not employing a TA questionnaire is that fewer potential participants for the embedded case studies could be identified. However, the power relationships which exist between teachers and TAs suggest that the teacher is likely to be the initial gatekeeper to the partnership rather than the TA, so the impact of the lack of TA responses in this respect is also likely to be minimal.

The sample identified, therefore, is teachers working in mathematics departments in secondary schools across the central South of England. This sample is chosen as it is anticipated that established links between the University of Southampton and secondary school mathematics departments may encourage responses to the questionnaire. The location of the sample is restricted to the central south of England, so that any potential embedded case study participants identified via the research are in a reasonably accessible location. This method of sampling could be considered as a variation of convenience sampling, due to the geographical location of participants and possible links with the University of Southampton.

4.4 Ethical issues

There are many ethical issues to consider when using questionnaires to collect data in a research study and the majority of these issues have implications for the design and distribution of the questionnaire, as well as for the storage of collected data.

Cohen et al. (2007) highlight a number of these ethical issues:

- respondents right to withdraw from the study at any time
- informed consent
- guarantees of confidentiality, anonymity and non-traceability
- beneficence and non-maleficence

- respondent's reactions to questions if questions are offensive, intrusive, misleading etc.
- degree of threat and sensitivity of questions

(adapted from Cohen et al., 2007: 318)

In order to address these various ethical requirements of questionnaires, a participant information sheet is developed (see appendix 2) which provided potential respondents with a range of information about the research and informed them of their right to withdraw from the study at any time without their legal rights being affected. This participant information sheet also informed participants that their responses to the questionnaire are kept confidential and that any data collected from the questionnaires are stored in accordance with the data protection act and the relevant University of Southampton policies.

Potential participants are informed from the outset that, by completing and submitting the questionnaire, they are agreeing that they had read and understood the participant information sheet and give their informed consent for their responses to be used for the purpose of the research. Participants are given the opportunity to complete the questionnaire anonymously, if they so wish, provided they are not interested in participating further in the research study. Those participants who are interested in participating in the embedded case study phase of the research are asked to provide a name and contact e-mail address and are assured that this information would only be known by myself and my lead supervisor. The anonymity of participants means that each questionnaire is required to have a reference point, so that anonymous participants have a reference should they wish to withdraw from the study in the future. Whilst the paper based questionnaires have individual reference numbers, the online questionnaires do not have this facility available so, in this case, participants are asked to note the date and time of submission of their response. This information could then be used to withdraw the response at a later date, if so wished.

Issues related to non-maleficence are not expected, as the responses of all participants are kept confidential and the questions developed are not considered to be offensive, intrusive or threatening. The possible future benefits of the research to participants relate to encouraging effective teacher-TA partnerships and improving teaching and

support provision for all students. These potential benefits are seen to outweigh the minimal risk to participants.

4.5 Developing the questionnaire items

Having identified the four key areas for consideration, questions relating to each area are formulated:

Teachers' backgrounds

- How many years have you worked as a teacher?
- Have you received any specific training on how to work effectively with TAs in the classroom?

Time spent working with TAs and consistency of TA presence

- How many lessons take place in your working week?
- How many lessons each week do you have a TA in the classroom?
- How many different TAs do you usually have supporting in the classroom in an average school week?

Deployment of TAs in the classroom

- How are TAs usually deployed in the classroom?
- What tasks do TAs usually carry out when supporting in lessons?

Effectiveness of the partnership

- How well do you think the teacher-TA partnership works in the classroom?
- How do you rate the communication between teachers and TAs?
- What do you think would improve the effectiveness of the partnership between teachers and TAs?

Anderson comments that "once you have written your research questions and subquestions, questionnaire items will become immediately apparent" (1998: 171) and this was certainly the case with the questions identified in this study. The questions regarding how long the teacher has been working as a teacher, how many lessons take place in the teachers usual working week and how many lessons each week the teacher has a TA present in the classroom are all 'ratio data questions' (Cohen et al., 2007: 329) requiring a factual numerical response. The question regarding how many different TAs usually support in the classroom in an average school week could be considered a ratio data question but, to provide variation in the questionnaire items, this was a multiple choice question with options ranging from 1 to 10+.

TAs are usually deployed in the classroom to work in one of three ways: working with one student for the whole lesson, working with a group of students seated together or working with a number of individual students, with the TA moving around the classroom. Due to this, the question which addressed how TAs are usually deployed is presented as a multiple choice item, with the three options above. The nature of the question regarding how well the partnership works prompted the use of a rating scale. The use of rating scales in questionnaires raises the issue of the specific nature of the point scale, and guidance on this issue varies, as Anderson highlights: "the issue of whether or not to have a neutral mid-point is often debated" (1998: 174).

Cohen et al. (2007) discuss the use of both odd and even number rating scales, noting the advantages and disadvantages of each, without specifying a preference. Similarly Muijs (2011) appears to remain neutral, discussing how a scale with a neutral position can cause a central tendency problem but not having a neutral option means that the responses of participants who are truly neutral are misrepresented. Whereas Cohen et al. and Muijs remain neutral on this issue, Anderson (1998) expresses a preference for using rating scales with a neutral position, as he claims not having a neutral position can impact on the number of responses to the question. For this reason, and after considering whether to use an odd or even numbered rating scale, I opted to use a 4-point scale with the following options:

Doesn't work well

Works well occasionally

Works well usually

Works well all the time

The question regarding the quality of communication between the teacher and TA is presented as a rating out of 10 item which Cohen et al. (2007) describe as an "alternative form of ratio scaling" (2007: 329). The question asking whether teachers received any specific training on how to work effectively with TAs in the classroom is presented as a contingency question as, if the teacher responded in the affirmative, details of the training could be sought.

Finally, the two remaining questions regarding what tasks TAs usually carry out in lessons and what would improve the effectiveness of the teacher-TA partnership are both presented as open-ended questions. Both of these questions could have been presented as multiple choice questions or rank ordering questions, with options based on previous research and my own previous experience. However, if options are presented to participants, possible original recommendations made by respondents, not previously identified in research, could have been eliminated.

4.6 Sequence of questionnaire items

Recommendations regarding the sequence of items within questionnaires are consistent in suggesting that questionnaires begin with non-threatening factual items, encouraging participants to respond, before more detailed responses are sought (Anderson, 1998: 177; Cohen et al., 2007: 337; Gall et al., 1996: 294). The sequence of items in the questionnaire developed as part of this research study followed the guidance offered by Cohen et al. (2007: 337) by beginning with non-threatening factual questions before moving to closed questions and concluding with open ended questions.

4.7 Design and layout of questionnaire

The questionnaire was originally designed to be an online survey, which mathematics teachers would be invited to complete. However, due to technical issues and a poor

response rate, the online questionnaire created using the University of Southampton's iSurvey website was integrated with a postal questionnaire. The importance of the questionnaire design is highlighted by Anderson (1998) who states that "the format of a questionnaire is extremely important because it is a major factor in determining whether the questionnaire will be completed" (1998: 177).

Anderson (1998), Bell (2010), Cohen et al. (2007) and Gall et al. (1996) all offer similar advice regarding the appearance and layout of questionnaires. After careful consideration of their recommendations and guidance, the online questionnaire was developed (see appendix 3). Following the technical issues with the online questionnaire, mentioned previously, this online version of the questionnaire was translated into a hard copy version (see appendix 4). The layout and design of the questionnaire and questionnaire items are very similar in both formats, the only difference being that the online survey is presented in four sections.

4.8 Questionnaire preparation for distribution

Once the format and layout of the questionnaire was chosen, it was necessary to refine the design of the questionnaire and associated documents, so that the data collection could begin. The preparation for questionnaire distribution was viewed as a three-step process. The first step is to create a cover letter that accompanies the questionnaires, the second step is to conduct a pilot study to ensure the questionnaire is fit for purpose and the third and final step is to consider factors which may help to maximise the questionnaire response rate.

4.9 The cover letter

Two cover letters were developed during the questionnaire phase of this research study. The first was a letter which was sent to the heads of mathematics in schools in central south England, explaining the purpose of the research and inviting them and the teachers in their department to complete the online questionnaire. The second was also sent to the heads of mathematics departments in schools, following the technical issues with the online questionnaire. The purpose of this cover letter was to explain the issues which were experienced and politely request whether the mathematics teachers at each

school could be kind enough to complete the questionnaires enclosed with the letter and return them in the stamped addressed envelope provided. The purpose of the cover letters was to invite teachers working in mathematics departments to complete the questionnaire and to encourage participation in the study. Guidance regarding the design and content of cover letters is less prominent in the literature than guidance on questionnaire design; however, both Cohen et al. (2007) and Gall et al. (1996) offer guidance on the design of cover letters.

Gall et al. (1996) provide an example of a cover letter and a range of guidance on the design and content of cover letters, whilst highlighting the importance of the cover letter by stating that "because the cover letter accompanying the questionnaire strongly influences the return rate, it should be designed carefully" (1996: 299). Similarly, Cohen et al. (2007) describe what a cover letter should do and provide two examples of cover letters, highlighting the important aspects and attributes of effective cover letters (2007: 339-340). The guidance and examples offered by both Cohen et al. (2007) and Gall et al. (1996) were carefully considered prior to designing the cover letters for the questionnaire phase of this research study.

4.10 The pilot study

The importance of conducting a pilot study of any questionnaire is recognised widely in research literature (Anderson, 1998; Cohen et al., 2007; Gall et al., 1996; Oppenheim, 1992) and there is a general consensus that the purpose of the pilot study is to "increase the reliability, validity and practicability of the questionnaire" (Cohen et al., 2007: 341). Identifying which aspects of the questionnaire to pilot is therefore important for the success of the research. It is perhaps because of this that Oppenheim comments that "almost anything about a social survey can and should be piloted" (1992: 48).

With regard to this research, the completion of a pilot study is viewed as a necessity to ensure the questionnaire items are clear, the layout and design of the questionnaire is appropriate, the participant information sheet is sufficiently informative and the cover letter encourages participation and response. The results obtained, during the pilot study, could also clarify whether the questionnaires could gather worthwhile data and

whether the responses could provide the anticipated insights into the teacher-TA partnerships and TA deployment.

The pilot study involved five secondary school mathematics teachers, all of whom were provided with the cover letter to be sent to the heads of mathematics in schools and access to the online participant information sheet and questionnaire. Once the participants read the cover letter and participant information sheet, they were asked whether they felt the cover letter encouraged the participation of teachers in the research and whether they felt the participant information sheet provided sufficient information about the research study. The participants were then asked to complete the questionnaire and comment on any issues relating to the clarity, content, layout or design of the questionnaire itself. Responses from the pilot study were all very positive and no significant issues were identified with any aspect of the questionnaire or accompanying documents. The next step in the pilot study was to examine the results obtained from the pilot participants, to identify whether the data collected from the distribution of questionnaires would provide the expected insights into current practice. Once the responses of the five participants were collated in an Excel spreadsheet, it was clear that the data obtained from the questionnaire research could address the question of how teachers and TAs currently work together in the secondary mathematics classroom, whilst also highlighting how the partnership between teachers and TAs could be improved.

Upon reflection, the pilot study was invaluable, as it offered an opportunity to assess the design and content of the questionnaire, participant information sheet and cover letter. Although no changes were necessary to the design of these documents, the comments of the teachers were very encouraging and the analysis of their responses provided some assurance that the data which could be collected via the questionnaires could begin to address the research questions, as expected. Although the questionnaire was later converted to a paper format, a second pilot study was not deemed to be necessary, as the layout, content and design of the questionnaire did not change. Similarly, the content and design of the second cover letter was not significantly different, so a pilot study was not considered necessary.

4.11 Maximising the potential response rate

One of the key factors which contributes towards the success of any questionnaire is the response rate. It is therefore imperative that every effort is made to maximise the response rate to the questionnaire employed in this research study. To this end, I considered the guidance offered by Oppenheim (1992), who highlights a range of factors that have been found to increase questionnaire response rates. I now discuss how a number of these factors are employed in the questionnaire phase of this research study.

Sponsorship

This research is jointly funded by the Economic and Social Research Council (ESRC) and the NCETM, so this was communicated to the head of the mathematics department in both the cover letters sent to schools and to potential respondents via the participant information sheet. Whilst it is hoped that the sponsorship of the research has a positive impact on the response rate, Oppenheim observes that this is not always the case (1992: 104).

Appearance of the envelopes sent to the potential participants

Oppenheim (1992) suggests that the envelope "has a better chance of being opened and read if it is addressed to the respondent personally, if it has a stamp on it (that is, not commercially franked) and if it 'looks professional' rather than like junk mail" (1992: 104). This guidance was only followed, in part, during the initial distribution of the questionnaires, as the first batch of envelopes were, in this case, addressed by printed label to the 'head of mathematics', commercially franked and produced with a general professional appearance. Following the technical issues with the online questionnaires and the resulting poor response rate, an opportunity arose to attempt to contact potential participants again. In this case, all of the guidance offered by Oppenheim (1992) and additional advice offered by Professor Anthony Kelly (personal communication) regarding hand-writing the addresses on envelopes was employed. The second batch of envelopes sent to participants were therefore personally addressed, by name, to each head of mathematics, hand-written, stamped rather than commercially franked, with a

general overall professional appearance. The only exceptions were those schools which refused to provide the name of the head of mathematics or did not currently have one. This was approximately 5% of those schools contacted.

Incentives

Oppenheim's (1992) discussion regarding offering incentives mainly focuses on giving respondents a reward for completing the questionnaire. This is thought to be unnecessary in this research, as it is felt that teachers would return their questionnaires if they are aware of the potential benefits that this specific research could offer in the future. With this in mind, the potential benefits of the research were highlighted briefly in the cover letters and in the participant information sheet.

Anonymity and confidentiality

As discussed previously, the questionnaire is designed so that respondents remain anonymous, provided they do not wish to participate in the embedded case study phase of the research. The participant information sheet informs respondents that the data collected from the questionnaires is stored in accordance with the data protection act and University of Southampton policies and, as such, remains confidential. Those participants not wishing to be involved in the embedded case studies are assured that the contact details they provide are only known to myself and my supervisor.

Reminders

Following the second distribution of questionnaires, reminders were sent to all schools requesting that any non-returned questionnaires be sent as soon as possible. Due to the complications with the initial distribution of the questionnaires, the second distribution took place in mid-July, as this was nearing the end of the academic year; reminders could not be sent until the schools returned in September. Oppenheim (1992) suggests that, if the questionnaire respondents are anonymous, it is "impossible to send out reminders to the non-respondents (unless we sent out reminders to the entire sample which might be too costly and will annoy those who *have* responded)" (1992: 105). For this reason, the reminders which were sent to all schools were not only used to prompt

the return of the questionnaires, but also to thank all respondents for their participation. To avoid any potential annoyance, no other reminders were sent.

Appearance

The appearance and layout of the questionnaire were considered as factors during the pilot study and both were found to be sufficient, with no major issues being identified with font type and size or general appearance of the questionnaire items.

Length

The length of the questionnaire and the time required to complete it were also considered as factors during the pilot study. The length of the questionnaire, participant information sheet and cover letters employed in this research study were all kept to a minimum, but no compromises were made with regard to content. The aim was to convey the information and ask questions in a focused and concise manner to prevent disinterest. Whilst the length of all these documents is likely to affect the response rate, the length of the questionnaire, in particular, can be detrimental to the number of responses received. The ideal length for a questionnaire is not clearly defined; however, as Oppenheim (1992) argues, it depends on the topic and its degree of interest to the participants.

Topic and degree of interest to participants

The topic for this research study is anticipated to be of great interest to participants; therefore, the length of the questionnaire (one side of A4) is thought to be acceptable. The focus of this research study, and its potential interest for teachers, is communicated in both the cover letters and the participant information sheet.

Rapport

Oppenheim (1992) claims that rapport "does not really apply to postal questionnaires" (1992: 105); however, I felt that the response rate may be improved if potential participants were aware of my teaching background and knew that I understood the

roles and responsibilities of teachers. To this end, I included a few brief sentences alluding to my teaching background in the second cover letter, in the hope that this encouraged participation.

Return envelopes

Oppenheim (1992) identifies how "it has often been alleged that non-respondents will steam the stamps off return envelopes, thus reducing response rates, while others have suggested that a 'real' stamp (rather than a business reply envelope) indicates trust and will increase response rates. The evidence seems to favour the latter" (1992:105). For this reason, the return envelopes were stamped with a 'real' stamp, in the hope that participants were more inclined to return their questionnaires. The factors highlighted by Oppenheim all relate to either the design of the questionnaire itself or aspects of the questionnaire research process. It is not possible to identify whether consideration of these factors improved the response rate of participants in this study, but it is seen as important that every reasonable step was taken to maximise the response to the questionnaire.

4.12 Analysis of data obtained from questionnaires

Analysis of the data collected during the questionnaire phase of this research study varied, depending on the type of data obtained and the questionnaire item itself. Prior to beginning the analysis, however, it was first necessary to collate the questionnaire responses. To this end, all of the data collected from the questionnaires was imported into a Microsoft Excel spreadsheet. Data collected from the first three questions of the questionnaire are quantitative and, as such, can begin to be analysed through the calculation of the mean and standard deviation. The second and third questions of the three are used to calculate the percentage of time the teacher is supported by the TA. This statistic is then comparable across participants, to identify the variation in the allocation of TA support. The fourth question in the questionnaire asked how many different TAs usually support in the teacher's lesson each week. Similar to the previous three questions, the response to this question is also quantitative and, once again, the mean and standard deviation is calculated. However, the purpose of this question focused on identifying whether the teacher usually worked with the same TAs

consistently. A comparison of the number of TAs the teacher usually works with in their working week to the number of lessons in which the teacher has TA support provides a good indication of whether the presence of the TA is consistent throughout the week or whether the teacher tends to work with a different TA every lesson. Data collected from the fifth question concerns how TAs are usually deployed in the classroom. Once all the responses to this question were collated, it was possible to identify the modal response, which highlighted the most common way that TAs are deployed to work in classrooms. The sixth question in the questionnaire required participants to rate how well they think the partnership between teachers and TAs works, on a 4-point Likert scale. The temptation with Likert scales is to translate the points on the scale to numerical values, so that statistical measures can be calculated. However, it cannot be assumed that the intervals between the four points of the scale are equal, as is required for the calculated measures to have some significance. This being the case, the most common response to the question is identified and this gives some indication of how well the teacher-TA partnerships currently work.

Similar to question six, question seven also employs a scale, in this case to gain an insight into the quality of communication between the teacher and TA. However, conversely to the options in question six, the scale used in question seven is a rating scale of ten equal intervals. This allows the calculation of the mean and standard deviation and provides an overall summation of responses which highlights a generally positive evaluation of the quality of communication. Question eight and question ten are both open-ended questions, offering participants a degree of freedom in their responses. Data obtained from question eight focuses on the tasks TAs usually complete in the classroom, whereas the responses to question ten focus on what would improve the effectiveness of the teacher-TA partnership. Due to the nature of these questionnaire items, a different approach is required to analyse the data collected.

The first step in the analysis of the data obtained from these two questions is to conduct some coding which involves identifying the similar responses of participants and developing appropriate codes. This coding process requires very little deductive reasoning, but does rely on the interpretation of teachers' responses. As the coding method is only employed briefly in the analysis of questionnaire data, I do not discuss the process itself any further at this time. However, the coding process is discussed in

detail in chapter 7, as it is also employed in the analysis of data obtained from the embedded case studies. Once the coding is complete, the responses to question eight give an indication of the range of tasks completed by TAs in the secondary mathematics classroom , whilst the responses to question ten, once collated, highlight the most common factors identified by respondents which they believe will improve the effectiveness of the teacher-TA partnership. Finally, the data obtained from question nine is used to identify whether teachers received any specific training on working with TAs and, if so, find out details about the training itself. Analysis of the data involves calculating the percentage of teachers who received training and examining the frequencies of occurrence for each training type.

Analysis of the questionnaire data provides an insight into how TAs are currently deployed and utilised in schools and how well the teacher-TA partnership works. Analysis of the responses also aids the identification of potential embedded case study participants. The responses of the participants, who identified their interest in being involved further with the study, are not only analysed with the rest of the questionnaire data, but are also analysed independently, in order to identify the teachers who should be approached at the next stage of the embedded case study.

Chapter 5 Questionnaire distribution, response and results

5.1 Introduction and overview

As discussed in chapter 4, the main purpose of the questionnaire is to gather data regarding the deployment of teaching assistants which could be used as a basis for the embedded case studies focusing on how teachers and TAs work together, whilst also providing an opportunity to invite participants to be involved further in the study, producing potential participants for the embedded case study phase of this research.

The initial intention was to conduct an online questionnaire via the University of Southampton's iSurvey website. However, the poor response rate and technical issues, which included access problems due to the use of a password, which was required to ensure anonymity, and an issue which resulted in a number of incomplete questionnaires being submitted as complete, prompted a change to the use of a hard copy version. The result of this change was a significant increase in the number of responses received. The data presented here is the culmination of both the online and paper-based responses.

The questionnaires offered valuable data which can be used to produce basic statistics regarding the number of lessons the teacher worked with a TA and the number of different TAs with whom the teachers worked. The questionnaires also produced more in-depth data regarding the teachers' views of the effectiveness of the teacher-TA partnership, the factors that might improve the effectiveness of the partnership, whether the teachers received any specific training on working with TAs and how they rated the level of communication between teachers and TAs.

In the following section, I discuss the distribution of questionnaires and the response rates of the various phases, before assessing the possible reasons for the reasonably low response received. I then present the results obtained from the questionnaires which begin to establish a snapshot of the current situation in secondary school mathematics classrooms in the central south of England.

5.2 Questionnaire distribution and response

The questionnaires were distributed to 196 secondary schools across the central south of England, selected due to their geographical proximity to the University of Southampton. The online version of the questionnaire attracted 19 responses and the postal questionnaire attracted 107 responses providing a total of 126 respondents. As there is no record of the total number of teachers working in secondary school mathematics departments in the central south of England area accessed, it is not easily possible to calculate a response rate. However, a reasonable estimate can be calculated using an approximation that there are 5 teachers employed in an average secondary school mathematics department in this area. Using this estimate, the response rate for the questionnaire is approximately 13%. This reasonably poor response rate may be the result of a number of factors:

- the questionnaire was distributed in June/July, a very busy time of the academic year in one sense. However this timing was chosen as it fell after the examination period but before the end of the academic year. Whilst reminders were sent in September of the following academic year, few responses were received after this time

- as the questionnaires were distributed at the end of the academic year, there is the possibility of staffing changes. This could cause the request for participants to be lost in transition between heads of department or, as some responses illustrated, departments not being in an ideal position to participate due to an increasingly busy schedules as a result of the loss of the head of department

- the correspondence was addressed to the head of department; therefore, the responses of each school relied upon the head of department distributing and returning the questionnaires

- a number of responses were received from departments, who stated that they could not participate because the research did not fit with the 'school ethos'

As the aim of the questionnaire is not necessarily to generate statistically significant results but is instead designed to give an insight into the current practice of teachers and TAs working in secondary school mathematics classrooms whilst identifying potential participants for the embedded case studies, the poor response rate is, perhaps, not a significant issue. However the low response rate does impact upon how generalisable the findings are and brings in to question how representative the sample population is of the whole population. Despite this, the questionnaires do provide a basis for the embedded case studies and identify a number of potential participants.

5.3 Questionnaire results

The questionnaire responses came from a wide range of teachers with varying degrees of experience of working with teaching assistants in mathematics classrooms. The number of years each respondent worked as a teacher ranged from 1 to 40 years, with a mean average of 13.7 years and a standard deviation of 10.2 years. The amount of time teachers spent working with teaching assistants each week varied from not at all to all the time. The mean average amount of time spent working with TAs in the classroom was 22.7% of a teacher's usual class-based teaching time. However, the standard deviation was 18.1%, due to the wide variation in the responses and the inclusion within the calculation of 14 respondents who did not have any TA support. The views and data from teachers who do not work with teaching assistants during the week are included to provide an overview of how TAs are deployed in the whole of the mathematics department, rather than providing a biased view by only including those teachers who always work with TAs.

The number of different TAs with whom each teacher works is likely to affect the effectiveness of the teacher-TA partnership, as the teacher and TA may not work together on a regular basis. Participants were asked about how many different TAs they usually worked with in a week; the responses of teachers ranged from none to eight different TAs, with the majority of teachers working with two different TAs; the actual spread of data is displayed in figure 5.1.
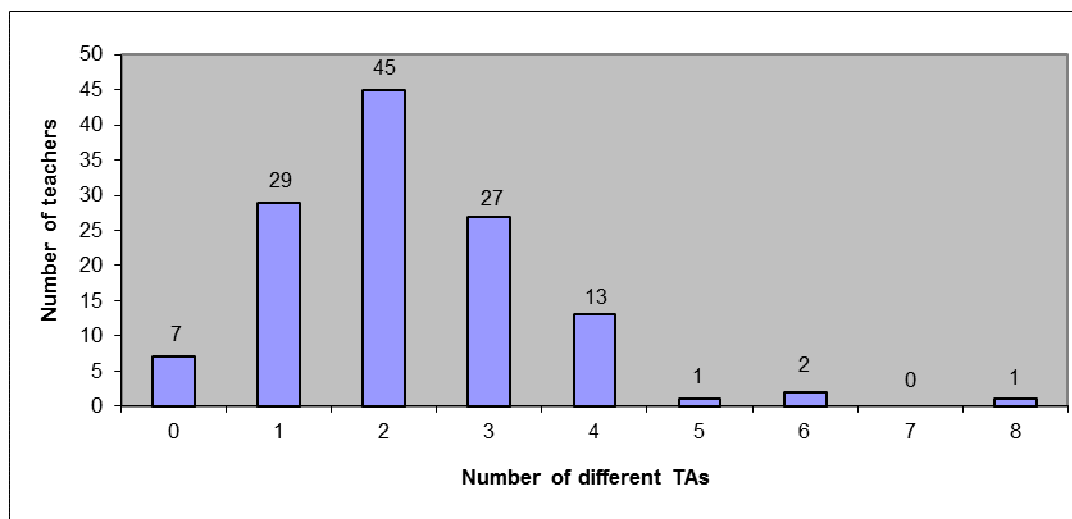
Figure 5.1 Graph showing the number of different TAs with whom teachers worked

A number of the respondents indicated that they work with TAs who are based in mathematics; generally, these teachers worked with fewer different TAs than teachers from other schools. To gain an insight into the level of effectiveness of the teacher-TA partnership in schools, teachers were asked whether their partnership with TAs worked well: all the time, usually, occasionally or not at all. The results of this question are displayed below (see figure 5.2).
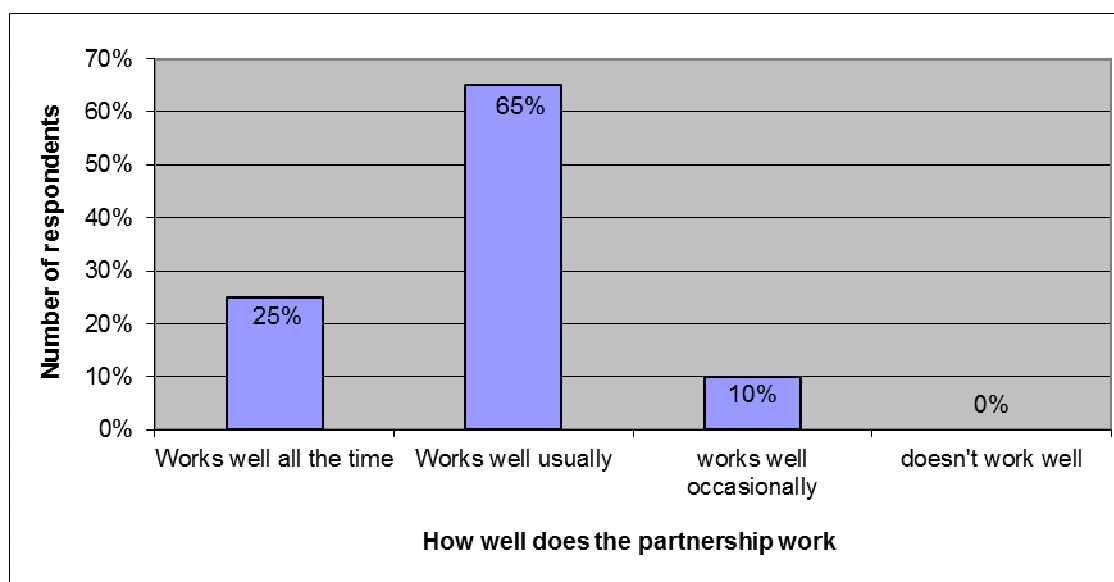
Figure 5.2 Graph showing how teachers feel the teacher-TA partnership works

Whilst the majority of teachers felt that the teacher-TA partnership worked well usually (72 respondents), there were a number of respondents who felt the partnership worked well all the time (28 respondents), some who felt that the partnership only worked well occasionally (11 respondents) and there were no respondents who felt that the

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partnership did not work well. The view of teachers seems to be generally positive, suggesting that, most of the time, the partnership with TAs works well. However, their responses to additional questions suggest that they feel there are ways that the partnership could be improved. Teachers were also asked to rate the level of communication between themselves and their teaching assistants on a scale from 1-10. The modal response was 8, but the range of responses was quite significant as the ratings varied from 3-10, suggesting that whilst the majority of the teacher-TA partnerships have a good level of communication some do not. The actual range of responses and the number of respondents who gave each response are shown in figure 5.3.
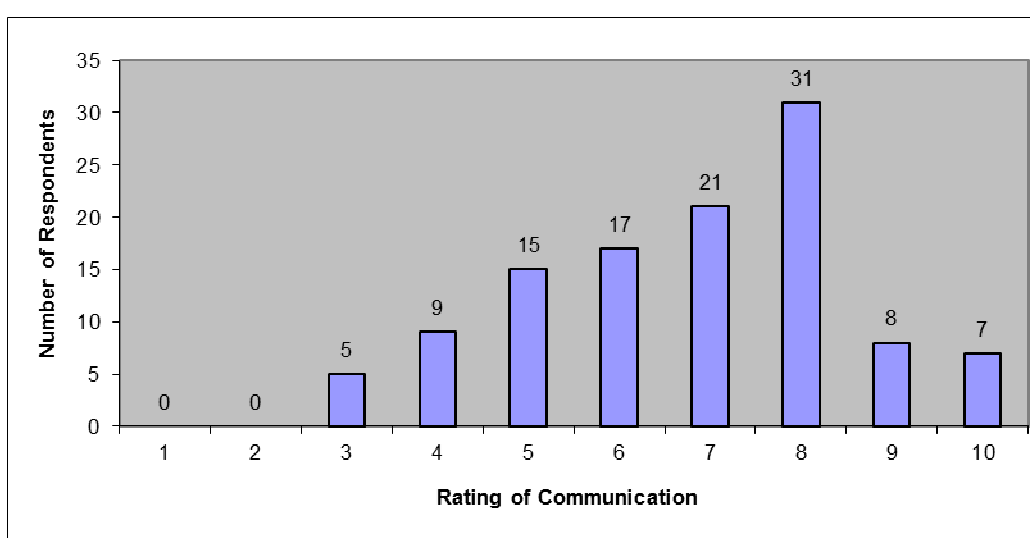
Figure 5.3 Graph showing the teachers' rating of communication between teachers and TAs.

The level of communication is likely to have an impact on how well the teacher-TA partnership works. Therefore, the positive view of how often the partnership works well is likely to be linked to the generally good level of communication. As one of the main aims of this research is to identify how teachers and TAs work together in secondary school mathematics classrooms, the teachers were asked how they usually deployed TAs in lessons. The respondents were given three options and asked to identify the most appropriate description of how they usually deploy TAs. The results are shown in figure 5.4.
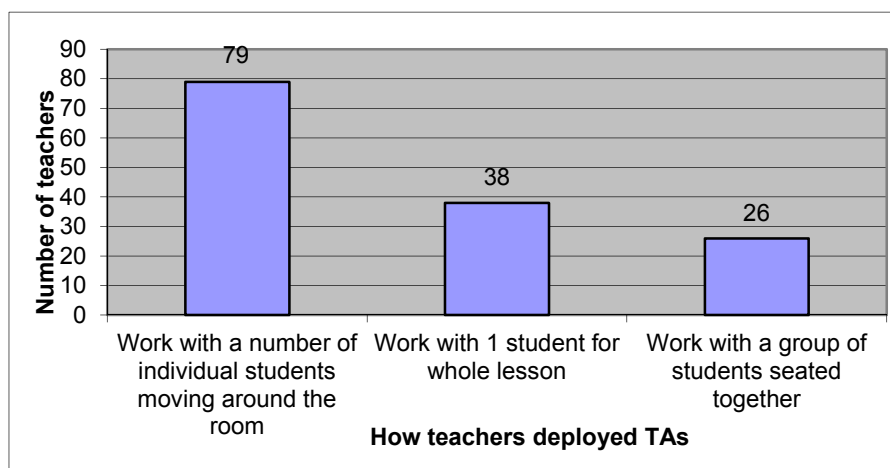
Figure 5.4 Graph showing how TAs are usually deployed in the secondary mathematics classroom

It is evident that the most common way that teachers deployed TAs is to work with a number of individual students, while moving around the room. An important point to note regarding the response to this question is that 17 of the respondents selected two of the options. In these cases, both of the responses are included in the final results.

The tasks which TAs carry out during lessons vary from school to school as does the expectations of teachers and schools. To gain an insight into the tasks TAs complete during lessons, teachers were asked to comment on the tasks that TAs carry out whilst supporting. A wide range of responses were received and the 10 most frequently mentioned are displayed in table 5.1 (see appendix 5 for table of all responses)

Task completed by TA during lesson	Frequency of response	% of Respondents
Working with individual students	39	31.0
Reading support	36	28.6
Scribing	29	23.0
Explaining	29	23.0
Keeping students on task	20	15.9
General support	19	15.1
Encouraging students	11	8.7
Working with students who have SEN	10	7.9
Working with small groups	10	7.9
Distributing or collecting work/equipment	10	7.9

Table 5.1 Teachers perceptions of the tasks which TAs carry out during lessons

As the intention of this research is to identify the characteristics of effective teacher-TA partnerships in order to determine how effective partnerships can be encouraged and supported, an understanding of the training that teachers received related to working with TAs is deemed highly important. To this end, teachers who participated in the questionnaire were asked whether they had received any specific training on how to work effectively with TAs and, if so, what form that training took. The majority of teachers (83%) did not receive any specific training on how to work with TAs. The responses of the 21 teachers who stated they had received training are summarised in table 5.2 below:

Type of training	No. of occurrences in participant responses
INSET	9
PGCE	5
Department meeting with TAs	2
Course	2
Part of learning support degree	1
In-house training course	1
Experience of working as a TA co-ordinator	1
Organising an inset for teachers and TAs	1
Via national strategies	1
Experience of working as a TA	1

Table 5.2 Teachers' training on working with TAs

This table indicates that some of the participants included experience as a type of training. Although the question specifically asked about training, these responses have been included in the results, as experience contributes to teachers' knowledge and practice in a similar way.

Two of the teachers who responded to this question stated they had not received training, but cited a type of training. One of them referred to the pre-service (PGCE) course they completed to become a teacher and the other referred to their experience of working as a TA. The fact that some teachers felt that their experience and/or completion of the pre-service PGCE course comprised training is interesting and raises questions as to what people understand by the term 'training'. Finally, in an attempt to gain insight into the factors which improve the effectiveness of the teacher-TA

partnership, teachers were asked for their opinion as an additional open question. The responses of the teachers are coded and the most common responses are displayed in table 5.3 below (see appendix 6 for table of all responses).

Factors that could improve the effectiveness of the partnership	No. of Responses
Time for teacher/TA discussions	39
Joint planning time	34
TA consistency	17
Subject specialist TAs/training	11
Better communication	11
TA attached to department	8
Clarification of job role	4
Time in general	3
Sharing lesson plans before lesson	3
Training for TAs	3

Table 5.3 Teachers' views of the factors that improve the teacher-TA partnership

The range of responses varied greatly and provided an interesting insight into the factors which teachers felt contribute towards an effective partnership. Clearly, the most important factor for teachers is time; whether it is used for general discussions or planning, in particular, teachers would like to have more time to work collaboratively with TAs.

5.4 Summary of results

The data collected from the questionnaires provides a brief overview of the current practices of teachers and TAs working in secondary school mathematics classrooms and, whilst the estimated level of response is reasonably poor, the questionnaire is deemed fit for purpose as far as the objectives of this study are concerned.

The responses of participant teachers regarding the number of different TAs with whom they work on a weekly basis and how they are deployed in the classroom begins to illustrate the way in which teachers and TAs currently work together. The ratings of how consistently the partnership works well and the ratings for levels of communication give an indication of the current levels of effectiveness of the teacher-TA partnerships.

The results relating to the factors which contribute towards an effective partnership are utilised in a later chapter, in combination with the factors that are highlighted in previous research literature and the results from the embedded case studies, to inform a list of factors which appear to encourage effective teacher-TA partnerships.

5.5 Results from potential embedded case study participants

The embedded case study stage of this research project intends to gather in-depth data focusing on how teachers and TAs work together in the secondary mathematics classroom. The distribution of questionnaires to secondary schools across the central south of England identified 13 respondents who agreed to be involved further with this study. I will now focus on the data obtained from these 13 participants.

5.5.1 Analysis of questionnaire data from potential case study participants

The potential embedded case study participants, arising from the questionnaire, have a wide range of experience of teaching mathematics ranging from 6 to 38 years, with a mean average of 18.8 years experience and a standard deviation of 10.2 years. The potential participants also spend varying degrees of time working with teaching assistants, ranging from 14% to 100% of their teaching timetable. The number of different TAs with whom teachers work varies amongst the group of respondents from one to four different TAs. The way in which the teachers deploy these TAs in the classroom also varies; the table below illustrates this comparison.

| | | Who TAs are deployed to work with in the mathematics classroom | | |
		Number of individual students	Group of students seated together	One student for whole lesson
Number of TAs teachers work with	1 TA	3	0	1
	2 TA's	3	1	1
	3 TA's	3	1	2
	4 TA's	1	0	0

Table 5.4: Comparing the number of TAs with whom teachers work and the way teachers deploy TAs in the mathematics classroom. This table illustrates the results from 13 respondents, some of which selected more than one response.

Whilst the number of different TAs with whom teachers work does not immediately appear to impact on the way that teachers utilise TAs in the classroom, this may have an impact on the effectiveness of the teacher-TA partnership, if teachers and TAs spend limited time working together. The group of potential participants also vary in their views of how well the teacher-TA partnership works. Of the 13 respondents who agreed to participate further in this research project, 12 responded to the question regarding how often the partnership worked well. Comparison of how well the partnership works to the number of different TAs with whom the teachers work provides an interesting insight into how working with multiple TAs may impact upon how often the partnership works well.

| | | Rating of how consistently the teacher-TA partnership works well | | |
		Works well occasionally	Works well usually	Works well all the time
Number of TAs teachers work with	1 TA	0	2	2
	2 TA's	1	3	0
	3 TA's	1	2	0
	4 TA's	0	1	0

Table 5.5: Comparing the number of TAs with whom teachers work to the teachers' rating of how consistently the partnership works well

The table suggests that the teachers who stated that their partnership works well all the time usually worked with only 1 TA each week. This contributes to the theory that TA consistency has an impact on the effectiveness of the partnership. The participants also vary in their ratings of the level of communication between teachers and TAs. The level of communication is rated on a scale from 1-10 and the actual responses which were given by 12 of the 13 teachers ranged from 4 to 10 with a median rating of 7. The responses to the questionnaires identified that three of the teachers who agreed to participate further in the research received specific training on how to work effectively with teaching assistants. Two of these three respondents stated the form this training took; one attended an in-house training course in London and the other indicated that the training was part of the pre-service PGCE course they completed to become a teacher.

The lack of guidance provided for schools regarding how teachers should work with teaching assistants in mathematics classrooms suggests that different partnerships are likely to have different ways of working together. However, the differences between partnerships are likely to be more apparent when considering partnerships which are employed at different schools. It is advantageous, then, that, of the 13 potential embedded case study partnerships, nine work in different schools.

5.5.2 Summary

The potential embedded case study participants have varying levels of teaching experience and are employed in nine different secondary schools across the central south of England. Of the 13 potential embedded case study participants, only three have specific training on how to work collaboratively with TAs. The teachers utilise their TAs in different ways during lessons and have varying views about how consistently the teacher-TA partnership works well. The majority of teachers feel there is good communication within the teacher-TA partnerships but there is the potential for improvement. The 13 respondents work collaboratively with a number of different TAs, so there are a number of potential teacher-TA partnerships which could provide the focus for the embedded case studies.

Chapter 6 Research design for embedded case studies

6.1 Overview

In this chapter, I outline the design of the embedded case study phase of this research, beginning with a discussion of how the participants became involved with the embedded case studies. I then describe the ethical issues relevant to this phase of the study, before discussing the methods of data collection and analysis. The chapter concludes with a description of how the results obtained from the embedded case studies are employed in the development of teacher-TA partnership evaluation forms.

6.2 Embedded case study participants

The original intention with regard to seeking participants for the embedded case studies was to identify three teacher-TA partnerships from the 13 questionnaire respondents who expressed an interest in being involved further with the research. Following the analysis of the data collected from the questionnaires, seven potential partnerships emerged, all of which had reasonably high ratings for communication and collaborations which worked well usually or all the time. In order to identify which three potential partnerships to approach initially, the geographical location of the school in which they were employed was considered with respect to the University of Southampton. Each of the three potential partnerships, identified through this process, was contacted via e-mail and provided with a detailed explanation of what the embedded case study would involve. One of the partnerships approached agreed to be involved with the embedded case studies and, following an initial meeting with the teacher and TA at the school, these participants became the focus of embedded case study C. One of the teacher participants replied that they were no longer allocated support, but were keen for their department to be involved, so would discuss the possibility of involvement with other teachers. Following this discussion, another teacher volunteered their involvement and, initially, this teacher and their TA became the focus for case study B. The third potential teacher participant responded, expressing their apologies, as they were no longer able to participate in the study. Therefore, after initial contact with three of the potential partnerships for the embedded case studies, two teacher-TA partnerships had agreed to be involved with the study.

As one more partnership was needed, another potential participant identified from the questionnaires was contacted. Unfortunately, this potential teacher participant was no longer employed at the school and so was unable to participate. As a third participant was still required, another of the potential participants was contacted, but no response was received. Data collection with case study C had begun, by this point, and the initial stages of arranging case study B were in progress. It was therefore imperative that the third and final case study site was identified as soon as possible. Following a discussion with my supervisor, she contacted a headteacher at a local school and arranged for us all to meet to discuss the possibility of conducting an embedded case study within the mathematics department. With her agreement, and the agreement of a teacher and TA working within the mathematics department, the partnership for the focus of case study A was identified. By this time, the data collection for embedded case study C was complete and the data collection for case study B was about to begin. After the initial observation at site B, a suitable time was arranged to return to the school to complete the data collection for the embedded case study. Unfortunately, the teacher became ill and, when it became clear that the teacher was going to be absent for a significant period of time, it was necessary to attempt to find another site. In the meantime, the data collection for case study A began.

The prospect of finding another teacher-TA partnership at this point was very unlikely, as the constraints on time available to collect data were beginning to be a concern and, thus far, embedded case study participants had been difficult to find. With this in mind, I discussed with my supervisors the potential of using the pilot study as the third embedded case study, given that collection of this pilot data did not generate changes in data collection methods for the main phase of the study. During the pilot study, I collected sufficient data for a full scale embedded case study and, as the interview schedule and observation schedule remained unchanged following the pilot observation, there were no apparent issues preventing the pilot study from being used as the third embedded case study. Once the agreement of the teacher and TA who had been involved with the pilot study was received, the pilot study became embedded case study B.

Having identified seven potential embedded case study partnerships from the questionnaire data, it was not anticipated that securing three embedded case study sites

would be so difficult. One significant factor in the poor conversion rate may have been the timing of the research. The questionnaires were distributed at the end of the academic year, so the data collection for the embedded case studies could not begin until the start of the following academic year and, during this time, the potential participants' circumstances could have changed. During a discussion with a mathematics teacher at one of the potential case study sites, she commented that the embedded case studies might provide a "mirror that schools don't want to look into". Such focussed reflection on internal school structures and processes at a qualitative level may, thus, have been an additional cause for a lack of participation.

6.3 Ethical considerations

There were a number of ethical issues to consider prior to the collection of data for the embedded case studies, some of which were general issues and some which related specifically to the methods of data collection. Cohen et al. (2007) comment how "much social research necessitates obtaining the consent and cooperation of subjects who are to assist in investigations" (2007: 52) and this was certainly true for the embedded case studies. Prior to beginning data collection, it was necessary for the embedded case study participants to give their informed consent to be involved with the research. The question of what constitutes informed consent is debated by Cohen et al. (2007) in detail and a, perhaps more appropriate alternative of "reasonably informed consent" (2007: 52), is highlighted. To ensure reasonably informed consent was obtained, all participants were asked to read a participant information sheet and sign a consent form acknowledging that they were aware of what the embedded case study would involve. Participants were also given the opportunity to discuss any concerns or issues with myself or my supervisor.

To prevent any issues of maleficence, participants were guaranteed anonymity and, as such, were asked if they wanted to choose a specific pseudonym for the purpose of data collection and analysis. As none of the participants specified a preferred pseudonym, a pseudonym was chosen for them at random. To further preserve the anonymity of the case study participants, the three schools in which the case studies took place were referred to as A, B and C. The embedded case study method requires an understanding and discussion of the wider context in which cases are based. In this research study,

this meant describing the school; however, describing the school context presented an ethical issue, as the description of the schools could compromise their anonymity and make the partnerships traceable. To avoid making the school identifiable, the descriptions proffered in this research are not overly specific but are sufficiently detailed for the purpose of this study. Preserving the anonymity of the teachers, TAs and schools involved with the embedded case studies also had implications for the record of observations and interview transcripts. Any references to staff or students within the interview transcripts and observation notes have been replaced with pseudonyms. In one instance, a brief discussion was omitted from one of the interview transcripts as it specifically detailed the names of members of staff within the school and its removal did not affect the flow or continuity of the interview.

As the teacher and TA partnerships were observed working together in secondary school mathematics classrooms, an awareness of child protection policies was necessary. Throughout the data collection phase of each study, it was important that a member of staff was always present, as the researcher did not have a current (defined by the schools as within three years of disclosure) CRB disclosure. Although the observations took place in the classroom, the focus of the observations was the practice of the teacher and TA, so it was not necessary to obtain written consent from parents of students.

An ethical issue often discussed when observations are employed in research relates to whether the observations are completed covertly or overtly, as covert observations introduce complex ethical dilemmas, particularly with regards to obtaining informed consent. As the observations in this research study were completed with the knowledge of the teacher and TA, the ethical issues associated with covert research were not a concern. Ethics relating to observations extend beyond issues of reasonably informed consent, non-maleficence and anonymity. The question of what impact the presence of the researcher has on the events and behaviours in the classroom are also an important ethical and procedural consideration. To overcome this issue in this research study, multiple observations were completed at each case study site to highlight inconsistencies in teacher and TA practice and multiple sources of evidence were used so that data could be triangulated in order to aid the trustworthiness of findings. Another ethical issue to consider when conducting observations in classrooms is how to

deal with situations where non-intervention is considered morally reprehensible (Cohen et al, 2007: 410). Prior to beginning the observations, it was decided that the researcher would inform the teacher of any severely inappropriate behaviour observed in the classroom. This proved to be a non-issue during the observations, but was still a necessary ethical question to consider prior to the data collection taking place.

Various ethical considerations were also necessary with regard to conducting the interviews. The interviews which were completed during the embedded case studies were all conducted in relative privacy. The participants were informed of the interview topics immediately prior to the interview and were aware that they could suspend the interview at any time. Regarding the question of what would count as data, it was decided that any comments made before or after the recording began would only be included in the data collected if the participant agreed at the time for this to occur. Due to the nature of the research, issues of beneficence and non-maleficence were not expected; however, an awareness of the possible impact of the research was always present in my considerations. Participants were informed of their right to withdraw from the study at any time without reason or justification and without their rights being affected. Many of the ethical issues which have been discussed were a necessary consideration in order to gain ethical approval from the University of Southampton's research governance office, so that the data collection could begin.

6.4 Data collection

6.4.1 Observations

At each case study site, the teacher and TA participating in the study were observed teaching and supporting the same group of students as, in all but one of the cases, the teacher and TA only worked together with one teaching group. The topics covered during the lesson observations remained the responsibility of the teacher to choose and plan and, as such, varied from site to site. The students within the teaching groups involved with the study were told that the researcher was present to observe the teacher and TA and that the students did not have to be concerned about the researcher's presence in lessons.

Prior to conducting the observations there were two main questions to consider: how structured should the observations be? and what role should the researcher take within the classroom? The role that the observer can take is often described as a continuum ranging from the observer as solely observer to the observer as complete participant with the observer as participant and participant as observer being the intermediate steps (Gold 1958). The most common point of contention with this typology is that, if the presence of the observer is known, then they cannot possibly be an observer solely because their presence will have an impact on the event/persons being observed. During the observations, every effort was made to be as close to a solely observer role as possible by not participating in classroom activities or discussions; however, my mere presence within the class may have had some impact initially on the actions and behaviours of the teacher, TA and students.

There are advantages and disadvantages to employing structured observations and, equally, there are also advantages and disadvantages to employing unstructured observations. Structured observations provide data which is easily comparable between research sites and, whilst the development of an effective observation schedule can be difficult and time consuming, the quantitative nature of the data obtained from the observation schedule can be quickly analysed. However, possible issues with structured observations have been highlighted by Scott and Usher (2011) who comment that structured observations "lack flexibility and cannot be responsive to unexpected events" (2011: 110). On the other hand unstructured observations are more flexible and can gather a wider selection of data and "details about events and processes that might be omitted from pre-coded records or schedules are more likely to be included" (2011: 111). The main issues with unstructured observation are the lack of a main focus and the difficulties associated with analysing and comparing the qualitative data generated. Scott and Usher (2011) also comment that, within unstructured observations, "the record is open to the charge of subjectivity; it cannot possibly be comprehensive, and little systematic attempt is made to eliminate researcher bias" (2011: 112). The choice between employing structured observations or unstructured observations is not a necessary choice, as is contested by Punch (2009) who claims that "combinations of the two approaches are possible, depending on the research purposes and context" (2009: 155).

The original intention was to use a mixed approach, combining aspects of structured and unstructured observations, by utilising an observation schedule to record the interactions and deployment of the teacher and TA at regular intervals and an observation form to record more general observations focusing on other events within the classroom. However, following the pilot observation (see Chapter 8 for details), the observation schedule was found to be time consuming, offering few opportunities to record more general notes. This issue could be addressed in one of two ways; video-recording could be used, so that the observation schedule could be completed post-observation, or an alternative method of recording the interactions between the teacher, TA and students was required. Whilst video-recording the lesson observations provided an opportunity to complete the observation schedule after the fact, I was reluctant to video-record the lessons. Although proficient with the use of video-recording equipment, my concern was the significance of the impact of this data collection method on the behaviours of the teacher, TA and students. This concern is mirrored by Merriam (1998) who comments that:

> *Although mechanical devices such as videotapes, film, or tape recorders can be used to record observations, the cost and obtrusiveness of these methods often preclude their use.* (1998: 104)

Alongside the possible impact that video-recording could have on the actions and interactions of the teacher, TA and students, are significant ethical implications as, whilst the video-recorder would be focused on the teacher and TA, it would undoubtedly also record students. Due to my reluctance to use video-recording, I considered possible alternatives to the observation schedule. Creswell (2007) comments that he "encourage(s) individuals designing qualitative projects to include new and creative data collection methods that will encourage the readers and editors to examine their studies" (2007: 129) and this was what I decided to do. I developed a method of recording and tracking the movements of the teacher and TA throughout the lesson (for a discussion of the development of the software, see chapter 8). By developing a software programme to generate the images, the process was less time-consuming than recording events on the observation schedule but provided similar data. The time made available, due to the efficiency of the programme, could then be redeployed to record field notes. Following each observation, the field notes made during the lessons were written up, with additional details being added where necessary.

Due to the organisation of the lessons, and the way in which the teacher and TA at school A worked together in the classroom, use of the tracking software was impractical; therefore it was not employed during case study A.

6.4.2 Interviews

Following the first lesson observation at each site, an interview was conducted with the teacher and TA. At school B and C separate interviews were conducted with the teacher and TA, whereas at school A the teacher and TA preferred to have a joint interview. The interviews took place, within each school, in a room which offered the opportunity for participants to talk openly and honestly without being overheard. The location and timing of the interviews were designed to be convenient for the case study participants. Prior to conducting the interview, the main issue to be considered was how structured the interview should be. Similar to the degrees of structure in observations, the structure of interviews can also be viewed as a continuum from structured to unstructured with semi-structured as the intermediary between the two extremes. Discussions in literature focusing on the structure of interviews vary in terminology, with Fielding (1996) referring to the degree of standardisation of interviews, Fontana and Frey (1994) referring to the structure of interviews and Patton (2002) describing three specific interview types: the standardised open-ended interview (structured), the general interview guide approach (semi-structured) and the formal conversational interview (unstructured). As Punch (2009) highlights, "Different types of interview have different strengths and weaknesses, and different purposes in research. The type of interview selected should therefore be aligned with the strategy, purposes and research questions" (2009: 146).

The interview type employed within the three embedded case studies is a general interview guide approach. The semi-structured nature of the interview guide provides the flexibility to probe participants' views on the effectiveness and function of their partnership, whilst maintaining the focus on specific topics. In preparation for the interviews, the key topics for discussion were identified and it was these topics that served as the interview protocol, providing the focus for the semi-structured interviews. Each interview began with a series of structured questions regarding the participant's role, previous experience and employment. These questions were designed to provide

background information and context for the case, whilst allowing the participants to settle into the interview. The questions then became more general and appropriate probes were employed when necessary to encourage the participant to elaborate on their responses. The question of how to record the interviews required some deliberation, particularly as the interviews were likely to be 20 minutes long. Taking notes during this time would have been a difficult exercise and significant data may have been neglected. This being the case, a digital voice recorder was employed so that a verbatim transcript of the interview could be produced. Notes were also taken in conjunction with the audio-recorder, enabling the researcher to comment on participants' reactions and note any key topics/questions which should be followed up within the interview. The advantages of using a combination of notes and recordings is acknowledged by Lankshear and Knobel (2007) who comment that:

> *A combination of using a recording device and note-taking is often a useful approach to collecting spoken data. Notes act as a backup should the recording fail, and as useful data management information for summarising tape content in readily accessible form. Recording enables interviewers to maintain good eye contact with speakers, to concentrate more on what is being said rather than on copying it down, and to obtain a verbatim record of what was said that can be revisited time and again.* (2007: 200)

The use of recording equipment did raise some concerns in relation to the time-consuming nature of the transcription process and the warning of Bogdan and Biklen (2007) that "accumulating tapes of interviews without an adequate system to transcribe them can spell the project's failure" (2007: 129) was well received. To avoid any issues of raw data overload, the digital recordings produced from the interviews were immediately transcribed. All of the interviews were recorded successfully and clearly, so no technical issues of that nature were prevalent within the study. The opportunity was available to have the interviews transcribed externally; however the issues with employing someone to transcribe data have been noted by Merriam (1998), who comments that:

> *This can be expensive and there are trade-offs in doing it. You do not get the intimate familiarity with your data that doing you own transcribing affords. Also, a transcribe is likely to be unfamiliar with terminology and, not having*

conducted the interview, will not be able to fill in places where the tape is of poor quality. (1998: 88)

As time was available and familiarity with the data was seen as a key component of conducting case studies, I transcribed the data from the interviews personally. On reflection, this was a valuable experience and, although it was a time-consuming process, it gave me a thorough understanding of the participants and their views.

6.4.3 Documents

There are two main types of documents collected during the embedded case studies: documents which provided general contextual information about the schools in which the teacher-TA partnerships were based and documents which aided the assessment of whether the partnerships could be considered effective.

6.4.3.1 Documents which provide general contextual information

Cohen et al. (2007) highlight that "most (documents) have been written for a purpose, agenda, an audience other than researchers, and this raises questions about their reliability and validity" (2007: 201). Therefore, in order to assess the reliability and validity of documents, it is important to be aware of who created the document, the audience for whom it was created and when it was created. Within this study two main sources of data, which provided general information about the wider context in which the teacher-TA partnership is based, were collected from each case study site: the schools' most recent Ofsted report and the prospectus from each school.

Ofsted reports are produced by the Office for standards in education, children's services and skills (Ofsted). The role of this independent and impartial body is to "inspect and regulate services which care for children and young people, and those providing education and skills for learners of all ages" (Ofsted, 2013). The report itself is compiled by a group of inspectors who follow a specific framework to assess the school and give an overall judgement as to its effectiveness. In the past, the value and appropriateness of these inspections has been questioned and criticised (Brookes, 2008,

TES, 2006, Cullingford, 1998 and Gilroy and Wilcox, 1997); however it is not within the scope of this study to assess Ofsted and its frameworks.

The Ofsted reports for all three of the schools involved with the case studies were not very recent; however, the judgement regarding the schools overall effectiveness still provides a base line from which the school may have improved or deteriorated. As the source of the Ofsted report is external to the schools, the contents of the document are less likely to be affected by internal bias.

The school prospectus is a very different source of data. In all cases, this document was very recent and provided a range of general information about the school. The majority of the information contained within each prospectus is factual, so is unlikely to be biased in itself. However, if we consider the audience and purpose for which these documents are created, it can be reasonably assumed that they will highlight the positive aspects of the schools, providing a biased perception of each of the schools as a whole. The importance of these documents and the data contained within them should not be underestimated. Bogdan and Biklen (2007) suggest that documents:

> *have been viewed by many researchers as extremely subjective, representing*
> *the biases of the promoters and, when written for external consumption,*
> *presenting an unrealistically glowing picture of how the organisation*
> *functions. For this reason, many researchers consider them unimportant,*
> *excluding them as data. It is precisely for these properties (and others) that*
> *qualitative researchers look upon them favourably*. (2007: 137)

6.4.3.2 Documents which aid the assessment of whether partnerships are effective

All of the partnerships involved with the case study stage of this research project were chosen because they identified themselves as being effective. The issue with identifying effective partnerships is that, at present, there is no definition of what is an effective partnership or what it does. The implication of this is that each of the partnerships could have a very different concept of what constitutes an effective partnership.

I was reluctant to overly rely on my own definition of what makes an effective partnership as it is based solely on my own experience of working as a TA and teacher and is therefore highly subjective. Within the literature, a clear definition is not evident; however, there are multiple self-assessments which are designed to establish whether teacher-TA partnerships exhibit characteristics and behaviours that could be expected in an effective partnership and which lead to my working definition. Therefore, in an attempt to provide support for each of the partnerships involved with the case studies being deemed effective, I asked the teachers and TAs to complete two self-assessment forms, one taken from "supporting the teaching assistant – a good practice guide" (DfES, 2000) and the other taken from "effective deployment of classroom staff support kit" (TDA, 2010).

The DfES (2000) present a list of indicators and questions which relate to effective practice regarding the management and support of TAs. The purpose of the framework is to "help school managers consider their current practice and identify appropriate starting points for development" (2000: 41). However, as the framework is based on effective practice, it also provides a method of identifying whether the teacher and TA partnerships meet with the indicators which "state what would be expected where such practices are followed". (2000: 41). As the focus of this research is the partnerships between the teachers and TAs specifically, participants were asked to complete only indicators 2.1-3.2 as the other indicators relate to wider school practice and external relationships.

The TDA (2010) developed a resource kit for schools to enable them to review how effective their current practice is regarding TA deployment and classroom practice in order to identify areas for improvement. This self-assessment tool is less comprehensive than that provided by the DfES (2000), but still offers a valuable insight into whether teachers and TAs meet the criteria for effective practice. Users of this self-assessment tool are presented with two statements and asked where they think their current practice fits on a sliding scale between the statements, along with where they would like to be. Users are also asked to provide evidence and comments to support their thinking. As the self-assessment tool considers classroom practice and wider school practice, the case study participants were asked to complete all parts of question 1 and 2. The teachers and TAs were also told they would not need to provide evidence

and comments, as the focus is on how well they felt they met each statement and any evidence is likely to be apparent from the embedded case study data. Participants were also told they did not have to include the sliding scale indication for where they wanted to be, as the focus is on their current practice.

The documentary data collected from these two sources is very different to the data obtained from the contextual documents discussed previously. These documents are created for the purpose of research and, as such, there is the risk that the responses of the teacher and TA may be reactive to the aims of the study. To improve the reliability of the data obtained from these documents, the teacher and TA in each case (other than case study B, as the TA was unavailable) completed the self-assessments independently, so that their views could be compared and contrasted. The results of the self-assessments were then considered with regard to the data collected during the embedded case studies to identify any significant discrepancies in the data. In all three cases, the self-assessments agreed with the behaviours and characteristics observed during the data collection for the embedded case studies, providing triangulating evidence which contributes towards the reliability of the documentary data.

6.5 Data analysis

6.5.1 Analysis of data obtained from interviews and observations

The analysis of data obtained from interviews and observations required the use of coding to identify the factors and characteristics which contribute to each teacher-TA partnership being effective. In order to code the data, it was first necessary to transcribe the interview recordings and supplement the observation notes with additional details. Following the transcription process, these documents were then imported into an NVivo file ready for coding. The act of coding data is described by Ezzy (2002) as:

> *the process of disassembling and reassembling the data. Data are disassembled when they are broken apart into lines, paragraphs or sections. These fragments are then rearranged to produce a new understanding that explores similarities, differences, across a number of different cases.* (2002: 94)

The initial process in coding data is commonly referred to as open coding. Open coding involves analysing the data and identifying similarities in the text which can be represented by a code. Punch (2009) describes the process of opening coding as:

> *two main activities - making comparisons and asking questions. The first means that different pieces of data, as indicators, are constantly compared with each other to help generate abstract categories. For the second, one type of question is constantly asked which is distinctive of grounded theory analysis. It has three forms:*
> *What is this piece of data an example of? Or,*
> *What does this piece of data stand for, or represent? Or,*
> *What category or property of a category does this piece of data indicate?*
> (2009: 184)

The interview transcripts and observation notes from case study B were the first to be coded. In order to code the data it was necessary to first consider how the actual codes themselves are created. Punch (2009) discusses how the method of developing codes can vary:

> *There is the usual range of possibilities, when it comes to bringing codes to the data or finding them in the data. At one end of the continuum we can have prespecified codes or more general coding frameworks. At the other end, we can start coding with no prespecified codes, and let the data suggest initial codes. This decision is not independent of other such decisions concerning research questions, conceptual framework and the structuring of data generally. Nor, as before, does it need to be an either or decision.* (2009: 176)

The codes used for the purpose of this research study were mostly developed from the data. Having developed the codes for case study B, it was possible to use the same coding structure to code the data obtained from the other embedded case studies. However, this may have encouraged the use of codes which did not accurately represent the meaning of the data; therefore, codes were developed from the data in each instance. Once the process of open coding was complete for all the embedded case studies, axial coding could begin. The process of axial coding involves refining the codes and categories developed through open coding. Flick (2009) comments that "in axial

coding, the categories that are most relevant to the research question are selected from the developed codes and related code notes" (2009: 312). The process of axial coding involved the comparison of codes developed from the three embedded case studies to ensure that the factors and characteristics were consistently present in different effective teacher-TA partnerships. Flick explains how, in axial coding, "the developed relations and the categories that are treated as essential are repeatedly verified against the text and the data" (2009: 311).

The main issue with coding data is that the codes are developed by myself, as researcher. They are my interpretation of what the data represents and this will be based on my own subjective views of what factors I expect to be present in effective teacher-TA partnerships. In order to provide support for the developed codes, I consider the substantive significance of the codes used. To identify the substantive significance, Patton (2002) comments how researchers must consider:

- *How solid, coherent and consistent is the evidence in support of the findings? (Triangulation, for example, can be used in determining the strength of evidence in support of a finding.)*
- *To what extent and in what ways are the findings consistent with other knowledge? (A finding supported by and supportive of other work has confirmatory significance. A finding that breaks new ground has discovery or innovative significance.)*
- *To what extent are the findings useful for some intended purpose (e.g. contributing to theory, informing policy, summative or formative evaluation, or problem solving in action research)?* (2002: 467)

These three factors relating to the substantive significance of the codes developed are considered in the analysis and discussion of data obtained from the three embedded case studies.

6.5.2 Analysis of data obtained from self-assessment forms

The first step in analysing the data obtained from the self-assessment forms is to compare the responses of the teacher and TA at each school, to identify any significant discrepancies. This comparison is not possible for case study B, as responses are only available from the teacher, but the comparisons for case study A and C are completed.

The next step in analysing the data is to identify any areas where the teacher or TA felt they did not meet the indicators for effective practice. These areas are discussed in detail with reference to the specific relevant cases. The final step in analysing the results of the self-assessments is to conclude whether each partnership meets the criteria for an effective partnership.

6.5.3 Analysis of data obtained from teacher-TA tracking software

During each lesson observation at school B and C, a series of 40-60 images were generated, logging the locations of the teacher and TA at one-minute intervals. Following these observations, these images were collated into a series of images which illustrated the movements of the teacher and TA during lessons. In order to analyse this data and to gain an insight into the support practices of the teacher and TA, the students were separated into area groups on the images, so that the time the teacher and TA spent working with a particular group of students or individual within a group of students could be calculated. The tracking of movements did not provide the level of detail to identify how long teachers and TAs spent working with specific individuals, as it was recognised during the lessons that the teacher and TA often supported all students in an area, rather than specific individuals.

Once the separate areas within each classroom had been defined, the images tracking the movements of the teacher and TA could be used to calculate the percentage of time the teacher and TA spent working with each group. This information was then summarised on a larger version of the classroom map to provide an overview of the lesson and for ease of comparison between lessons. The combination of individual images and summary images was then used to identify teacher and TA support practices and provide an opportunity to triangulate findings from interviews and observations.

6.6 Development of the teacher-TA partnership self-evaluation forms

Analysis of the data obtained from the embedded case studies resulted in the identification of factors which appeared to encourage the development of effective teacher-TA partnerships. These factors provided the basis for a self-evaluation tool which would enable teachers and TAs to reflect on their current practice and identify

areas for professional development. A discussion of the factors with the teachers and TAs who participated in the embedded case studies highlighted that the factors were not considered to be equally important to the development of effective partnerships and I felt it was important to reflect this fact in the design of the self-evaluation forms.

The first step in designing the self-evaluation forms therefore required the importance of each factor to be assessed. To this end I employed aspects of Multi-Attribute Utility Theory (MAUT) to assess the importance of each factor and used the results to design an assessment scale which represented the factors importance.

MAUT is usually employed to identify the attributes of a case and assess the possible outcomes that would result from changes in these attributes, in order to do this effectively each of the attributes within the case are assigned an 'attractiveness value' which is used to assess the attractiveness of each possible outcome. The aspect of MAUT that I employ to aid the development of the self-evaluation tool is the method used to assess the 'attractiveness' of each attribute.

Whilst it would have been possible to assess the importance of the factors myself, the ratings of importance would be solely based on my own subjective views. To avoid imparting my own subjectivity on the results, I utilised the views of the teachers and TAs who participated in the embedded case studies as they were considered 'experts in the field'. I then compared the ratings of importance that they assigned to the factors to calculate the average degree of importance of each factor to the development of effective partnerships. The view of the teachers and TAs is likely to be based on their own practice, but as with my own views, the views of the teachers and TAs are also open to be influenced by subjectivity. To reduce the possible effects of subjectivity, the results obtained from the teachers and TAs were collated and the median value of importance identified. The range of results was also calculated to provide a measure which could be used to identify whether the assessment of each factors importance is reasonably consistent.

Once the importance of each factor had been assessed, the values were converted into an equivalent scale which provides the means for teachers and TAs to assess their own practice.

Chapter 7 The pilot study

7.1 Overview

In this chapter, I present a discussion of the pilot study process, first discussing the development of the observation schedule and interview protocol before reflecting on the pilot study itself and its implications for the methods of data collection used in the main embedded case studies. The purpose of the pilot study is to assess whether the interview and observation schedule are fit for purpose and to highlight any possible issues which may arise in the main data collection stage of the research. The pilot study also provides an opportunity to refine my interview and observation technique.

7.2 Preparation for the pilot study

As discussed previously in chapter 6, I chose to use a general interview guide approach for the interviews and a mixed methods approach incorporating both structured and unstructured observation for the observations. Prior to conducting the pilot interview, it was necessary to identify a selection of topics on which the interview discussion could focus and, prior to the pilot observations, it was necessary to develop an observation schedule and general observation form.

7.2.1 Development of the observation schedule

The purpose of the observation schedule is to focus on the interactions between the teacher, TA and students. The first observation schedule developed (see appendix 7) had a separate recording chart for the interactions and deployment of the teacher and the interactions and deployment of the TA, as well as space available to write supplementary notes. The schedule was designed so that a recording could be made every minute, offering a thorough account of the interactions during the lesson. The interactions were classified as:

I – Individual student
G – Group of students
SP – Same individual student

SG – Same group of students

T – Teacher

TA – Teaching assistant

N – None

WC – Whole class

O – Other

The purpose of recording those with whom the teacher and TA were interacting is to establish whether students who worked with the TA had less interaction with the teacher than those who did not work with the TA, an issue which has been highlighted in previous research (Blatchford et al., 2009). The deployment of the teacher and TA referred to the reason for the interaction, the types of deployment were classified as:

PR – Student request

A – Approached by teacher/TA

T – Teacher request

TA – TA request

NA – Not applicable

The purpose of recording the reason for the interactions is to establish whether the teacher is directing the actions of the TA, whether the TA is working independently or whether the students are asking for help and whichever of the teacher or TA is available at the time provides support. The issue with recording the interactions of the teacher and TA every minute is that little time is available to record any additional notes on other significant events occurring during the lesson. The multiple pages required, due to the teacher and TA having individual record sheets, is also a concern, as managing multiple records in the classroom would be difficult. Therefore, prior to the first observation, the observation schedule was redesigned.

The second version of the observation schedule (see appendix 8) is simplified so that the interactions of both the teacher and TA, and the reason for their deployment, can be recorded on a single record. This did, however, require a reduction in the number of interaction options and loss of the space for additional notes. The loss of space for additional notes prompted the design of a general observation form (see appendix 9),

which could be used for recording significant events and any additional details regarding classroom practice. The observation form is also designed to record specific details regarding the observation number, lesson time, teacher being observed, year group and number of students present. To allow time to record these supplementary notes, the frequency of the structured observation recordings is reduced to once every two minutes.

7.2.2 Development of the interview protocol

The purpose of the interview protocol is to provide a focus for the interview rather than to provide a complete list of pre-determined questions. The questioning during the interview focused on four main topic areas:

Background & Context
- Current general employment details
- Relevant previous experience
- Subject and pedagogical knowledge
- Type and appropriateness of training
- TA deployment within the school

During Lessons
- Preferences relating to TA deployment
- Usual support practice
- Communication and interactions in lessons
- Management of TA
- Focus on behaviour, learning or both

Outside Lessons
- Communication
- Planning and reflection
- Time availability

Effective Partnerships
- Characteristics of effective partnerships
- Possible improvements to current practice
- Factors which contribute towards effective partnerships

These areas are based on the research questions developed for this study and previous research considering the teacher-TA partnership and the impact and deployment of TAs.

7.3 Conducting the pilot study

7.3.1 Initial trial of the observation schedule

The first lesson of the pilot study was used as a pre-pilot test of the observation schedule, to establish whether the intervals at which observations are recorded is sufficient, whether the categorisation of interaction types and deployment types are appropriate and whether there are opportunities to record general notes. During the lesson observation, it became apparent that recording only the type of interaction occurring at the two minute interval, rather than the number of interactions within those two minutes did not accurately represent the teachers' and TAs' interactions, as the teacher and TA have a number of brief interactions in that time. Therefore, after the first 20 minutes of the lesson, a record was kept of the number of interactions within those two minutes, rather than just the type of interaction. Whilst this provided a more accurate representation of the number of interactions between the teacher, TA and students, it was very time-consuming and left little time available to record supplementary notes. The reduced observation schedule was also found to cause issues, as the loss of the 'Same Group' and 'Same Student' options meant that, following the lesson, it was not clear whether the teacher and TA were interacting with the same students throughout or whether they were supporting all the students in the class.

7.3.2 Reflection on initial trial of observation schedule

Following the initial pre-pilot test of the observation schedule, it was clear that it was insufficient. There were two possible options available as to what action could be taken; I could reconsider the use of video-recording, so that the observation schedule could be completed using the video data or I could develop an alternative method for recording the interactions of the teacher and teaching assistant. I was reluctant to reconsider the use of video-recording for the reasons given previously, so instead considered whether there was an alternative to the observation schedule which would allow me to efficiently record the interactions between the teacher, TA and students.

This led to the development of a computer programme designed to track the movements of the teacher and TA in the classroom.

7.3.3 Development of the teacher-TA tracking software

During the pre-pilot observation, I sketched a diagram of the classroom so that I could record the location of the students in the class and it is this sketch that inspired the development of the teacher-TA tracking software. Initially, the use of computer software was not a consideration and, instead, I considered producing a number of copies of the outline of the classroom on which the location of the teacher and TA could be recorded every minute. However, after drawing the outline of the classroom on the computer, it became apparent that recording the location of the teacher and TA on the diagram on the computer could be much more efficient.

An outline design of the software was developed and a software programmer produced an initial version of the programme. The development of the software, from this point, was an iterative process through which the original version of the programme was refined so that it required minimal time in the classroom to plot the locations of the teacher and TA. The final version of the software required three mouse clicks every minute to record the location of the teacher and TA. The images produced at the end of each lesson then provided a record of who the teacher and TA had interacted with and for approximately how long. This data collection tool is described more fully in Spencer and Edwards (2011)

7.3.4 Pilot study lesson observations

Following the development of the tracking software, three lesson observations were conducted at the pilot school. During these lesson observations, the location of the teacher and TA was recorded every minute and additional general notes and notes relating to significant classroom events were recorded on the observation form. Following the third observation, it became apparent that a saturation point had been reached. The actions of the teacher and teaching assistant were similar in each lesson and proceeding with any additional observations was unlikely to have provided any new data; therefore, at this point, the observations ceased.

7.3.5 Pilot study interviews with teacher and teaching assistant

The pilot interviews with the teacher and TA took place after the first classroom observation (following the pre-pilot observation). The interviews were recorded using a digital audio recorder, with the consent and knowledge of the participants, and additional written notes were taken to provide a back-up should the audio-recording fail. Immediately prior to the recording of each interview, the participants were informed about the topics to be covered, so that they were not entirely unprepared for the questions. The initial questioning, focusing on the participants' backgrounds and experiences provided an opportunity to get to know the teacher and TA and generate a rapport with them. The questioning then became less specific and both the teacher and TA offered detailed responses to the questions asked, explaining their current practice and discussing and justifying their own views and opinions, where necessary.

The data collected from the pilot interviews provided a valuable insight into the views of the teacher and TA. By conducting the interviews after the first classroom observation, I was able to discuss classroom practice with the teacher and TA and ask questions which arose during the observation. Being able to observe the pair working together in lessons after the interviews was also beneficial, as it provided an opportunity to triangulate the comments made during the interview regarding their current classroom practice.

7.4 Reflections on the pilot study

The pilot study provided a valuable opportunity to trial the data collection tools developed for the embedded case studies, whilst also giving me experience of conducting interviews and observations. Although the observation schedule was found to be inefficient and time consuming following the pre-pilot observation, the teacher-TA tracking software developed to replace the schedule provides similar data, without occupying so much time during the lesson observations. There were no adaptations or changes necessary following the initial use of the teacher-TA tracking software, as the programme effectively gathered the data as expected. Similarly, the design of the observation form used to record general notes was found to be appropriate and no changes were made during or following the pilot study. Again, the topics included

within the interview protocol seemed to focus the discussion during the interviews and no additions to the list of topics was necessary. The data gathered from the interview with the teacher and TA appear to sufficiently describe their partnership and the factors which may contribute towards the partnership being effective. The digital audio recorder sufficiently recorded the interview and the clarity of the recording was adequate for the transcription process.

In conclusion, the pilot study was a necessity for ensuring the data collection methods effectively collect appropriate data relating to each case. Although there were no changes to the interview schedule, the process of trialling the observation schedule highlighted an issue with its design and use, which could have later caused a significant issue with the data collection for the embedded case studies.

Chapter 8 Analysis and discussion of the three embedded case studies

8.1 Introduction

In this chapter, I present a discussion of the three embedded case studies. Each of the embedded case studies is examined individually, before the results of the studies are compared and contrasted in order to identify the factors and characteristics which contribute towards positive teacher-TA partnerships. The discussion of each of the embedded case studies begins with a summary of the data collected and an analysis of the results of the self-assessments, developed by the DfEE (2000) and the TDA (2010), which have been used to assess whether the partnerships in this study are effective. This is followed by a general overview of the case, which provides a picture of the wider context in which the teacher-TA partnership is based. The school prospectus obtained from each case study site provided general factual information about the school, whilst the overall judgement of effectiveness taken from each schools most recent Ofsted report gave an impartial assessment by which the schools can be compared. In accordance with the embedded case study methodology, the focus then shifts to the individuals who form the partnership, considering their individual attributes and characteristics in an attempt to highlight the factors which contribute towards the teacher and TA having a positive partnership. The final stage of the analysis is to return to a consideration of the partnership as a whole, once again focusing on the factors which contribute towards a positive partnership.

Once the three embedded case studies are discussed, the factors identified in each study are compared. This aids the development of a complete set of factors which appear to contribute towards the development of effective partnerships.

8.2 Case study A

8.2.1 Summary of data collected from school A

Data were collected in the following six ways:

Joint interview with teacher and TA

The teacher and TA expressed the preference for being interviewed together and, as this was not considered to be an issue with regards to the data collection, a joint interview was conducted. In hindsight, the joint interview highlighted the teacher's and TA's positive relationship and encouraged them to be forthcoming with their responses. The interview took place in the learning support unit, which was available at the time, and lasted approximately 45 minutes. The partnership at school A was the only pair to have allocated joint planning time, so it was deemed necessary to see what use was made of this time. The teacher and TA were only observed for one planning session, as the intricacies of each individual planning session was not the main focus of the research. During the joint interview, all of the topics which were included in the interview guide were discussed and both the teacher and TA offered responses equally throughout the interview.

Four (50 minute) lesson observations

During the lesson observations, the teacher and TA worked together in various ways. Two of the lessons consisted of half the teaching group being taken to the learning support unit. During the first of these lessons, I spent the first half of the lesson observing the teacher and the second half observing the TA and reversed the observations in the second of the observed lessons. By the fourth lesson, it was clear that similar observations were being made and a saturation point had been reached, thus the observations ceased.

Evaluation forms from teacher and TA

The purpose of the evaluation forms was to gather evidence to support the claim of the teacher and TA that they have an effective partnership. The teacher and TA completed the forms independently so that any discrepancies in their opinions were apparent.

Teacher-TA tracking results

The teacher-TA tracking software was not used in school A because it was impractical and the results would be affected by the way that the teacher and TA organised the classroom in which they worked. As the teacher and TA often split the group, the tracking software would highlight this split and little else would be gained from the results which was not already apparent from the general observation notes. Also, as the teacher and TA were teaching in separate rooms for two of the four observations, it would be obvious that the teacher was working with certain students and the TA was working with certain other students.

8.2.2 Case study A results from self-assessment

The self-assessment forms completed by the teacher and TA based at school A have been included in the appendix (see appendix 10)

Results from self-assessment 1

The results of self-assessment one suggest that the teacher and TA meet the majority of criteria relating to effective practice. All of the questions relating to the indicators were answered positively by the teacher and TA and, for the most part, the responses of the teacher and TA were consistent with each other, with only the occasional discrepancy between the 'mainly' and 'to some extent' response.

Results from self-assessment 2

The results from self-assessment two suggest that the teacher's and TA's classroom practice is very effective. The responses given by the teacher and TA were consistently at the positive end of the continuous scale, with very little room for improvement. Having observed the teacher and TA in the classroom and discussed their classroom practice with them both individually, I fully support their own assessment and concur that their partnership is very effective.

8.2.3 Introduction and wider context

The partnership which forms the focus of case study A exists within an inner city secondary school judged to be satisfactory by Ofsted. The school is a mixed comprehensive with approximately 1000 students, aged between 11-16, on roll. During year 7, students have a slightly different timetable to the rest of the school, as they have a number of key skills lessons, but their timetable still includes nine mathematics lessons, across two weeks, taught by a subject specialist. Lessons take place in typical school classrooms, but additional space is available in the form of a large learning resource unit. The support staff, employed by the school, are deployed in various ways, not only to support students in lessons, but also to extract students for focused literacy and numeracy interventions. In recent years, the school has focused on improving students' literacy and the positive benefits of literacy interventions have been recognised, inspiring a focus on numeracy interventions.

8.2.4 Teacher profile and characteristics

8.2.4.1 Introduction

Karen has been employed in the field of education for the past 35 years and has worked in various roles at her current school for the last 16 years. After initially qualifying and working as a primary teacher, Karen spent some time working with children with a range of special educational needs (SEN) before completing training related to working specifically with children with dyslexia. Karen initially began working part time at school A in the resourced dyslexic unit, which was present in the school at the time; when this unit was disbanded Karen returned to working with students with SEN before eventually moving into the mathematics department and working as a teacher. Karen's current role within the school involves working full time, partly as a mathematics teacher planning and teaching eight lessons a week, with her remaining time spent working with students with specific learning difficulties.

8.2.4.2 Knowledge of students and relationship with students

It is apparent from lesson observations and classroom interactions that Karen has a very good relationship with students. Generally, students appear focused on their work and, while there is often low level chatter during lessons, it is usually about mathematics. As students are encouraged to talk to each other if they encounter a problem prior to asking the teacher or TA, a certain amount of student talk is expected. At times, the discussions between students will diverge into personal matters but, at these times, the teacher will bring the lesson to a pause to remind students that they should be focusing on their work. The students appear to have a great deal of respect for Karen, as it does not usually take a significant amount of time for Karen to settle the group when necessary. Generally, the behaviour of students is very good, although there was the occasional confrontation between Karen and a student during lessons; these were rare and were efficiently resolved by the teacher with little disruption.

Karen's knowledge of the students and awareness of their mathematical understanding was highlighted during the interviews, as Karen explained how it was necessary to differentiate the work the class had been doing on co-ordinates due to the attainment range of students in the group.

> *I knew that one group would be at the bottom level for much longer that the others who are now going in to the second quadrant and probably one student will be doing the fourth quadrant by the end of maybe ... tomorrow or the next lesson. So ... if you anticipate a great spread like that, then you look at who's going to be with Amanda, or in the other group ... and they'll go at a slower pace and just focus on the one quadrant.*

Karen's attempt to differentiate the work and the organisation of the students and TA not only highlights the teacher's knowledge of the students, but also highlights her pedagogical knowledge and pedagogical subject knowledge. Karen is also aware that a number of the students in the teaching group have English as an additional language (EAL) and she comments on the difficulties that this can introduce when planning and teaching lessons:

sometimes the EAL students, especially in maths, once they've understood it they
just fly off ...

Some of them do really well with numeracy, but they have no idea of the shapes,
of the other stuff that we do. And a lot of maths these days and the questions in
the exams are all umm ... it's all wordy, and that's really hard.

Karen displays a sound understanding of the issues which are faced by the students who have English as an additional language and recognises that students' achievement in mathematics may be impacted by the difficulty in accessing the question, rather than the mathematics of the question. During lessons, Karen has a clear focus on language and literacy, which is mirrored within the school in an attempt to support students with EAL.

8.2.4.3 Experience of working with TAs

As Karen has worked in a range of roles in both primary and secondary schools, she has gained an understanding of the TA role from both the perspective of the teacher and of support staff. The views and opinions expressed by Karen during the interview were generally positive, highlighting the value of TAs and recognising the importance of their presence in lessons. Karen does, however, also recognise that issues can and do arise with TA support.

If you just get somebody coming in, who's not that interested in the subject or
teaching and they just come in and sit at the back of the class and don't do much
and I've had that in ... in some places, then, yes, they're just sort of a waste of
space really. The calibre of TAs I've discovered over the years ... and everybody
here that I work with is interested in the students and the lesson and their
progress ... as involved as the teacher is.

Having worked with both TAs who have offered substantial support and very little support, Karen appears to greatly appreciate and value the support that she is given at present. Karen's experience of working with TAs also seems to influence her planning and teaching of lessons; she displays a clear awareness of the TAs' roles and responsibilities as well as her own and acknowledges the TAs' knowledge and

experience both during joint planning sessions and during lessons. Karen's experience of working with TAs has encouraged her to develop clear opinions as to what good practice looks like and what factors encourage positive teacher-TA partnerships. During the interview Karen shared some of these opinions.

> *I think it's consistency of people working together regularly, and narrowing the field where you [the TA] work, like working in a department or a particular year group or something and I think time for planning and time for training. Not just coming in, walking in to a classroom, you know, 'mind that child' and off you go, 'cos that's ... that isn't really very productive.*

8.2.4.4 Pedagogical knowledge and subject knowledge

Karen has a varied and extensive background working in educational settings but, having originally qualified as a primary teacher, describes herself as "not a mathematician". Although Karen does not consider herself to be a "mathematician", she believes that, due to her previous experience, she has appropriate pedagogical subject knowledge and pedagogical knowledge to fulfil the teaching requirements of her current role. During lessons, Karen appears enthusiastic and clearly enjoys teaching; activities are varied in an attempt to cater for the varying learning styles of students. Karen's knowledge of the subject and pedagogical knowledge was apparent in both the observation of a teacher-TA joint planning session and observations of lessons. Karen employs her previous experience and knowledge to plan lessons which reflect the requirements of both the National Curriculum and the needs of the students.

Karen's knowledge and experience of teaching also enable her to effectively reflect on lessons and assess the outcomes. One instance of Karen reflecting on a specific activity was highlighted during the interview with the teacher and TA.

> *We planned it and it looked fine on paper but when we came to do it, I think we were hoping the students would write a co-ordinate on their whiteboards ... in the planners ... and then pass it round to the next one, and then they would plot it on their grid, and then pass it round so, in the end, the whole table would have done each other's co-ordinate and have the same pattern to compare. But, in practice, they just didn't get the hang of writing on their planner and then passing it to*

somebody. And then of course some had written it, planned it, plotted it, moved it
and the next persons still thinking 'what? ...'

During the lesson, Karen halted the activity and moved on to a different task, as the activity set was causing confusion. Upon reflection, Karen recognised the reasons for the activity not going according to plan and adjusted the activity ready for the following lesson. The adjusted activity seemed to work without any further issues arising. The following section (8.2.4.5) summarises the discussion in sections 8.2.4.2 to 8.2.4.4. The ellipses represent the independent precedents and the rectangles, the dependent factors.

8.2.4.5 Profile map for teacher at School A

```
┌─────────────────────────┐
│ has worked as a teacher │
│ at school A for 16 years │
└─────────────────────────┘

( previous experience of      ( has firm pedagogical
  working as a teacher )        knowledge )

┌─────────────────────────┐
│ originally qualified as a │
│ primary teacher          │
└─────────────────────────┘

┌─────────────────────────┐
│ teacher has mainly worked │
│ in various guises within  │
│ the SEN department        │
└─────────────────────────┘
```

often banters with the students but has a definite line not to be crossed

has worked with a number of different TAs

has a good relationship with the students

has a clear concept of what makes an effective TA

mainly works with lower years with a number of EAL students

has worked closely with SEN departments throughout their career

Personal profile of teacher at school A

maths knowledge is not extensive but she is confident in her ability to teach at level of students she usually works with

treats TA as an equal in the classroom and expects students to do the same

appreciative and respectful of TA

originally trained as a primary teacher and experience has helped develop teachers subject specific pedagogical knowledge

trusts the TA to work independently with students

highlights the advantages of having the TA present in the classroom

students readily approach teacher with any problems

has a good relationship with students

has a good relationship with the TA

teacher and TA have worked together for a number of years

interaction with students during lessons is friendly but firm when necessary

interactions in lessons are friendly and there appears to be a mutual respect

teacher and TA have similar characters and share a laugh outside of lessons

8.2.4.6 Summary of factors arising from teacher profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the teacher's profile and characteristics:

- teacher's roles and responsibilities are clear
- teacher's relationship with students
- teacher's knowledge of students' SEN requirements
- teacher's training or experience of working collaboratively with TA's
- teacher's pedagogical knowledge
- teacher's knowledge of students
- teacher's pedagogical subject knowledge
- experience of teacher
- teacher's job satisfaction
- teacher's knowledge, understanding or experience of TA role
- clarity of TA's roles and responsibilities
- students are respectful of teacher
- organisation of the classroom, lessons or students
- consistency of TA presence in lessons
- allocated planning and reflection time
- TA feeling valued
- TA being based in mathematics
- teacher's job satisfaction
- experience of TA
- experience of teacher
- experience of working together
- teacher's mathematical knowledge

8.2.5 Teaching assistant profile and characteristics

8.2.5.1 Introduction

Amanda has been working at school A for 18 years and, during this time, has experienced various reorganisations of the support system structure, whilst being required to fulfil a number of different roles under the support criteria. Although initially working as a general support across all subjects, Amanda is now mainly deployed in mathematics. As part of the school's focus on employing interventions to improve student learning and progress, Amanda has, more recently, become involved with mathematics interventions focused on improving students' basic numeracy skills. With regard to employment, Amanda has, in recent years, reduced her working hours from five days a week to three days during Wednesday to Friday.

8.2.5.2 Knowledge of students and relationship with students

Data collected during classroom observations suggest that Amanda has a good relationship with the majority of students. Generally, students responded to any requests made by Amanda but, on occasions, Amanda was required to ask multiple times to illicit a response from certain students. Although the teacher took responsibility for behaviour management during lessons, Amanda occasionally worked independently with a group of students outside the classroom and, as such, had the main responsibility for managing their behaviour. During these periods, no major behavioural issues emerged and, whilst the students did not seem to respond as quickly to requests made by the TA in comparison to requests made by the teacher, they did exhibit an appropriate amount of respect.

During lessons, Amanda not only worked with groups of students but also worked with individual students. The individual students Amanda worked with were identified by the TA, showing her good knowledge of which students may need assistance. Interactions between Amanda and various students within the group were generally friendly, as there was little reason for her to be strict. It was clear from the lesson observations that the TA's relationship with the students was good, although different to the teacher's relationship with students. Although the teacher and TA were given

appropriate respect, the students exhibited awareness that the teacher and TA were not equals in the classroom. The TA's knowledge of the students was also highlighted by the teacher during the teacher-TA interviews. The teacher commented that:

you [directed to TA] know the students as well as I know them and that makes a difference, whereas the other TAs that come in with me ... they're all over the place.

8.2.5.3 Pedagogical knowledge and subject knowledge

Although Amanda has no previous experience of working as a teacher, her experience of supporting students and working specifically in the mathematics department seems to have helped her develop pedagogical knowledge, subject knowledge and pedagogical subject knowledge. During the interview the teacher highlighted Amanda's mathematical knowledge, commenting that:

you've [directed to TA] got a lot of knowledge because of being in the maths department, so you know what you're doing

Observation of the TA interacting with students during lessons supported the notion that Amanda has good mathematical and pedagogical knowledge. Whilst supporting students, Amanda avoided giving students answers directly and, instead, used questioning to help students overcome their difficulties and find the solutions to the problems themselves. Amanda's pedagogical knowledge and subject knowledge was also apparent during the observation of the teacher-TA joint planning session. Whilst discussing lesson plans and the mathematics scheme of work, Amanda made a number of contributions to the discussion, exhibiting a thorough understanding of the scheme of work and identifying the mathematical content which was at the appropriate level for the group. Amanda also highlighted which areas may be challenging to some students and Karen clearly valued and gave consideration to Amanda's comments and suggestions.

8.2.5.4 TA's presence in lessons

During lessons, Amanda fulfils a range of roles dependent on the activity and the objectives for the time. Amanda was observed both while acting as general support for the whole class and while working with a group of students independently in and out of the classroom. At times, when Amanda was supporting generally within the whole class, she worked with a number of individual students, continuously moving round the class checking on students' progress and understanding. During periods when Amanda was working with a group of students she adopted a more teaching oriented approach, talking to the whole group as a collective first, discussing the task at hand. Once the students started on the written work, Amanda began to move around the group, checking on students' progress and helping them with any problems and clarifying any misconceptions. Amanda's ability to be flexible in the classroom and adapt to working in various roles was apparent in all the lesson observations. The importance of both the teacher and TA being flexible was highlighted by the teacher who commented in the interviews that:

> *we've got to be flexible as teachers and even more so I think you [directed at*
> *TA], haven't you?*

The various ways that Amanda is employed during lessons were supported by comments made by the teacher during the interview. With regard to the teacher and TA working with separate groups in the classroom, the teacher observed that:

> *we always have our own students that we're focusing on, but the groups do shift*

With regard to the TA working independently with groups outside the classroom, the teacher stated that:

> *we have found, when we use computers, if we put the whole class on computers*
> *nobody gains anything really because you need to be working with them on it and*
> *so Amanda may come up here with some of the group and then we rotate the*
> *group so she'll go through the whole class then at the different levels.*

Finally, with regard to the TA acting as general support, the teacher mentioned that:

sometimes, we both keep an eye on everybody ... depending on the activity really.

The way in which the TA was observed to support during lessons also highlighted how Amanda is both pro-active and self-motivated. The teacher never needed to request assistance with distributing equipment or checking progress, as Amanda always offered. It was also apparent that Amanda was aware of which students may need support and was not seen to be directed by the teacher during lessons. Amanda always appeared to be well prepared during lessons, being fully aware of the role she has in the lesson and having appropriate knowledge of resources when required.

The following section (8.2.5.5) summarises the discussion in sections 8.2.5.2 to 8.2.5.4. The ellipses represent the independent precedents and the rectangles, the dependent factors.

8.2.5.5 Profile map for TA at School A

started working at School A as a general TA but now specialises in mathematics

extensive experience of working as a TA in schools

has worked as a TA at school A for 18 years

students respond to TA's behaviour management but not as readily as with teacher

feels that working in maths department gives her a greater confidence with subject knowledge

has a good relationship with the students

employed as a TA working specifically in the maths department

interaction with students during lessons is friendly and focused

Personal Profile of TA at School A

feels a part of the maths department and has a sense of belonging

during joint planning sessions TA displays good knowledge of syllabus and relation to student's levels

works generally supporting the class as a whole

is confident with mathematics and has good subject specific pedagogical knowledge

works flexibly in the classroom

experience of working in maths department has helped to develop TA's maths pedagogical knowledge

works with specific groups both in and out of the classroom

dedicated to job role as a TA

trusted by the teacher

will lead tasks with small groups of students in the classroom

will often work during break, lunch and after school although this is unpaid time

works independently in class without teacher instruction or comment

teacher values the TA's view on student's progress and the work set

8.2.5.6 Summary of factors arising from TA profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the teacher's profile and characteristics:

- TA's roles and responsibilities are clear
- TA moving round the classroom
- TA's relationship with students
- TA's knowledge of students' SEN requirements
- TA being proactive
- preparedness of TA for lessons
- TA's pedagogical knowledge
- TA's knowledge of students
- TA's pedagogical subject knowledge
- experience of TA
- TA's job satisfaction
- TA's knowledge of teacher's expectations
- TA's involvement with behaviour management
- flexibility of TA
- TA's mathematical subject knowledge
- TA's knowledge, understanding or experience of teacher role
- students are respectful of TA
- teacher's trust in TA
- TA feeling valued
- TA being based in mathematics
- flexibility of teacher
- experience of working together

8.2.6 Partnership profile and characteristics

8.2.6.1 Introduction

Karen and Amanda have been working collaboratively for the past ten years and, in this time, they have developed a positive working partnership based on honesty, mutual respect and trust. The teacher and TA appear to have very similar characters and seem to share a natural rapport. Karen and Amanda work together during five lessons a week with two different teaching groups and are provided with one timetabled lesson a week dedicated to planning.

For the purpose of this study, the teacher and TA were observed working with the same group of year 7 students. Students in year 7 are usually taught in the same classroom for the majority of subjects and, as such, the classroom in which the lessons took place was not Karen's; thus the layout and orientation of the classroom was not chosen by Karen but was decided by the teacher who usually takes the group for key skills. During lessons, students were seated in groups, with three to five students per group. The organisation of the lessons varied and students were observed a) working in two groups, one led by the teacher, the other by the TA, b) a group of students taken by the TA to the learning resource unit to work on computers, whilst the rest of the group were working on a task with the teacher, and c) the teacher leading the class with the TA acting as general support.

8.2.6.2 General aspects of relationship and partnership

It became apparent very quickly during the interview with Karen and Amanda that the pair had very similar characters and shared a rapport with each other. The relationship between the two both in and out of the classroom is very positive and there appears to be a great level of mutual respect between the teacher and TA. On a number of occasions during the interview process, Amanda and Karen shared laughs with each other, highlighting the positive partnership they have with one another. An example of one of the exchanges between Karen and Amanda is shown below.

Interviewer:-   *So, do you think there's anything else which is the reason why*
                    you work so well together, other than the flexibility?

Teacher:-   *Yes, just companionship in the classroom*

All laugh

Interviewer:-   *Company?*

TA:-   *Yeah.*

Teacher:-   *Company, yeah you can share a joke and a laugh and a nod*
                    across the room ...

TA:-   *Sometimes yeah ...*

Teacher:-   *... oh, it just lightens the whole thing*

TA:-   *Yeah ...*

Teacher:-   *Yeah ...*

TA:-   *... if it's really going bad, she'll go tch [eyes look up] ...*

Interviewer:-   *Yeah ...*

TA:-   *... as if to say ...*

Teacher:-   *Yeah ...*

TA:-   *... or when she's kamikaze-ing ...*

Teacher:-   *Oh, it makes such a difference ...*

TA:-   *... she'll say is it me or what? ...*

Similar positive interactions between Amanda and Karen were observed during joint
planning sessions and lesson observations. During the interview, Karen highlights that
the rapport shared by the pair is due to the experience they have of working together and
that perhaps having consistency of support staff can help to develop positive teacher-TA
partnerships.

> *I do work with other TAs ... and we work fine, but there isn't the rapport because*
> *we haven't had the time and it isn't ... it's only sort of one lesson a fortnight or*
> *two lessons a fortnight ...*

The mutual respect that Amanda and Karen have for each other was clear to observe
during the joint planning session, as the ideas and views of both the teacher and TA
were discussed and both made significant contributions to the planning of lessons.
During the interview, Amanda commented on how occasionally she will share ideas that
have been used in other classrooms with Karen, in an effort to share good practice. The

fact that Amanda feels she can share ideas with Karen, and that the ideas will be valued, further highlight the good relationship between the teacher and TA.

Another characteristic of the teacher-TA partnership, which was prominent in the lesson observations, was the level of trust which exists between Karen and Amanda. During lessons, Amanda worked with numerous individual students and led other groups of students with no supervision and little input from Karen, showing that Karen clearly trusts Amanda's mathematical knowledge and ability to manage the behaviour and learning of students.

The relationship that exists between Karen and Amanda appears to be the product of having worked together consistently, enabling them to develop a rapport with each other in order to create a positive partnership. Both Karen and Amanda also appear to have good relationships with the students and knowledge of students they teach and support, creating a positive working environment during lessons. The level of trust and mutual respect within the partnership enables both the teacher and TA to be honest with each other. The teacher and TA seem to work well together as a team and clearly value each other both on a professional and personal level.

8.2.6.3 Roles, responsibilities and organisation within the classroom

The role and responsibilities of the teacher and TA can vary from lesson to lesson, depending on the organisation of students. In the case of Amanda and Karen, although their roles within the classroom may vary from one lesson to the next, Karen considers that the progress of students, planning of lessons and behaviour management of students is ultimately her responsibility. During the interview with the teacher and TA, Karen commented on how the organisation of lessons and students is usually discussed and decided in joint planning sessions.

> *We plan the lesson and decide what's going to happen in the lesson and then we say, which bit do you want to do of it? Obviously, it it's coming up here [student support centre], you'd [directed to TA] come up with the smaller group, 'cos I have to stay with the bulk.*

Karen's comment that she should stay with the large proportion of the class highlights her view that she is responsible for the group and, as such, should take responsibility for the majority of students in lessons. Although Karen considered that the main responsibility for the class was with her, it was seen as important that the students within the group were appropriately respectful of both the teacher and TA. This was apparent during one of the lesson observations when an interesting interaction occurred between the teacher, TA and one of the students. One of the students in the group asked the TA if they could go and get a drink; the TA replied that it was so close to break time, they could wait. The student then asked the teacher the identical question and the teacher reinforced what the TA had said, suggesting that the response from the TA should have been a sufficient response for the student.

Although at times, during lessons, the teacher and TA were observed working with small groups, the lesson had an introduction and plenary that involved the whole class. This was described by the teacher as the usual practice in lessons.

> *We like to make sure that there's some part of the lesson we're all together. So we did the starting bit together and then we split off; sometimes we may finish and then we'll finish together, it depends.*

The teacher seems to view having some part of the lesson as a whole class as important, perhaps to maintain the unity of the group. Finally, with regard to the partnership itself, Karen asserts that, although she and Amanda work collaboratively as a team, she manages the team, once again highlighting that the teacher should have the ultimate responsibility.

8.2.6.4 Joint planning, communication and reflection

To ensure that lessons are appropriately planned and both the teacher and TA are adequately prepared, they are provided with one lesson a week dedicated to joint planning. Whilst this joint planning session provides an opportunity for Karen and Amanda to reflect on and discuss lessons and students progress, there is not likely to be sufficient time to plan lessons in specific detail. Observation of one such joint planning session indicated that the teacher and TA initially develop an overview of the topics to be covered before discussing what activities can be used, with particular reference being

made to the appropriateness of the activities for the particular teaching group. Amanda claimed during the interview that the allocated joint planning time also provides an opportunity to organise whether the group will be split and, if so, how.

> *Sometimes I've had the, yeah, the higher end of the class and you've [directed to the teacher] had the lowest and it just depends what we're doing. We do that in our planning, 'cos Karen will say, you know, "which group would you rather have? Would you rather work with the higher ones? And then I'll sort myself out accordingly" ... yeah, or you know we sort of plan accordingly.*

Although Karen and Amanda clearly value the allocated time they are given to jointly plan lessons, Karen commented during the interview on how brief discussions between the teacher and TA can be equally or occasionally more important than a single dedicated planning session.

> *I guess if you're working together often it is better to have 5 or 10 minutes daily, that you snatch, than one lesson once a week, because we plan once a week, but we do chat and that's just as useful, the five minutes before and the five minutes after, it's sometimes all we need.*

Due to the nature of their individual job roles, both Karen and Amanda spend a significant proportion of their time working in the student support centre giving them incidental time where they are able to communicate which, in the majority of cases, will not be available to other teachers and TAs. These additional opportunities to discuss lessons and students allow for a continuous dialogue between the teacher and TA. The importance of allocated joint planning time was also recognised by the SEN coordinator who commented that allocated planning time was a necessity for effective support and that, for this reason, changes are planned for the next academic year which will reduce the amount of general support in lessons unless time can be arranged for the teacher and TA to plan collaboratively together.

8.2.6.5 Summary of factors arising from partnership profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, are identified from the data collected relating to the teacher's profile and characteristics:

- teacher and TA sharing knowledge and resources
- honesty within partnership
- mutual respect
- experience of working together
- teacher's and TA's positive relationship
- teacher and TA having similar characters
- students being equally respectful of teacher and TA
- TA's mathematical subject knowledge
- teacher's trust in TA
- consistency of TA presence in lessons
- teacher and TA working as a team
- organisation of the classroom, lesson and students
- allocated planning and reflection time
- teacher's knowledge of students
- teacher's relationship with students
- TA feels teacher is approachable
- teacher's role and responsibilities are clear
- TA's knowledge of students
- TA's appropriate involvement with behaviour management
- TA's relationship with students
- clarity of TA's role and responsibilities
- good communication between teacher and TA

8.2.7 Summation of factors contributing to positive partnership

Teacher having training on or experience of working collaboratively with TAs

TA's pedagogical knowledge

Teacher's pedagogical knowledge

TA's relationship with students

Experience of working together

TA's role and responsibilities are clear

Teacher's role and responsibilities are clear

Teacher and TA having similar characters

TA's knowledge of students' SEN

Teacher's trust in TA

Teacher's knowledge of students' SEN

TA's knowledge of students

Teacher and TA sharing knowledge and resources

Honesty within partnership

Teacher's knowledge of students

TA moving round the classroom

TA's pedagogical subject knowledge

Teacher's relationship with students

Students being equally respectful of teacher and TA

Allocated planning and reflection time

TA being proactive

Factors related to the teacher

Factors related to both the teacher and TA

Factors related to the TA

Experience of teacher

Organisation of the classroom, lesson and students

Preparedness of TA in lessons

Consistency of TA presence in lessons

TA being based in mathematics department

Teacher's job satisfaction

Mutual respect

TA's involvement with behaviour management

Teacher's mathematical knowledge

Teacher and TA positive relationship

TA having knowledge of teacher's expectations

TA's job satisfaction

Teacher's pedagogical subject knowledge

TA feels teacher is approachable

Teacher and TA working as a team

Experience of TA

TA's mathematical subject knowledge

Good communication

Flexibility of teacher

TA feeling valued

Flexibility of TA

Teacher having knowledge, understanding or experience of TA role

TA having knowledge, understanding or experience of teacher role

8.3 Case study B

8.3.1 Summary of data collected from School B

Data were collected in the following six ways:

Interview with the teacher

The interview with the teacher was approximately 20 minutes long and incorporated all the topics identified as being pertinent to the research. The interview was conducted in the teacher's classroom, as it was free at the time, and provided a location where the teacher was at ease.

Interview with TA

The interview with the TA was approximately 30 minutes long and was conducted in the mathematics department staff room whilst all the teachers were teaching in lessons. The interview was disturbed approximately half way through, so there was a brief interval in the recording. This interval did not seem to affect the flow of the interview or the TA's responses.

Three (70 minute) lesson observations

The teacher and TA worked in the same general way consistently throughout the observations. As such, following the third lesson, it was apparent that no new observations were being made and the saturation point had been reached. The lessons at school B were 35 minutes long, but mathematics lessons were usually double lessons, so a 'lesson' in mathematics was usually referred to as the 70 minute lesson.

Teacher-TA tracking results from three lessons

During all of the lesson observations, the teacher-TA tracking software was employed to monitor the locations of the teacher and TA at one minute intervals. The results obtained from the software (see appendix 12) illustrate the movements of the teacher

and TA and highlight which groups of students with whom the teacher and TA usually work.

Evaluation form from teacher

The purpose of the evaluation forms was to gather evidence to support the claim of the teacher and TA that they have an effective partnership. Unfortunately, the TA was unable to complete the evaluation form due to personal reasons which took her away from the school.

8.3.2 Case study B results from self-assessment

The self-assessment form completed by the teacher based at school B has been included in the appendix (see appendix 11). As mentioned previously, the TA based at school B was not able to complete the self-assessment forms, so the only responses obtained from the case study B partnership are provided by the teacher.

Results from self-assessment 1

The results of self-assessment one suggest that the teacher and TA meet the majority of criteria relating to effective practice but there are a few criteria which the teacher feels they do not meet. As discussed in section 7.4.3.2, the guidance from the DfEE (2000) seems to suggest that the indicators are signs of effective practice rather than the lack of indicators being a sign of ineffective practice. Therefore, the fact that the teacher and TA do not meet all of the criteria relating to the indicators does not suggest that their partnership is ineffective. The criteria, which the teacher highlights as being met rarely, mainly relate to the teacher and TA having time outside the classroom to liaise and plan together.

Results from self-assessment 2

The results of self-assessment two are similar to the results of self-assessment one. With regard to targeted support for students, focus of lesson support, team interactions within the lesson, and team skills, the teacher is very positive and these responses

suggest effective practice. However, the lack of time for the teacher and TA at school B to liaise outside the classroom means that, in terms of sharing lessons plans and team review of lesson plans, the teacher's responses are negative. Having observed the teacher and TA and discussed their classroom practice with them both individually, I am aware that they do not have allocated time to meet outside of lessons, but do discuss lessons and students progress during break and lunch or after lessons. The partnership seems to be effective without this allocated time, so perhaps allocated planning time is not a necessity of effective practice. This particular partnership does highlight another issue with regard to the employment conditions of TAs. As the TA is not paid during her break and lunch, it is only the TA's commitment to providing the best possible support for students which means she is willing to discuss students' progress and lessons in her own time. Overall, based on the outcomes of their two self-assessments, I suggest that this partnership is effective but having allocated planning time would be advantageous and would help to improve the partnership further.

8.3.3 Introduction and wider context

The partnership which forms the focus of case study B exists within a new mixed comprehensive secondary academy on the outskirts of a large Hampshire town. The school has approximately 1400 students on roll aged between 11 and 16 and was judged to be outstanding in its most recent Ofsted report. The organisation of teaching groups for mathematics is such that each year group is split into two halves which are then separated into 6 sets organised by students' attainment.

Lessons take place in typical secondary school classrooms and there is additional space available in the form of a study skills centre, which also has a computer suite. TAs within the school are mainly deployed to support in classrooms but some are also involved with booster literacy classes which are provided to a selection of students who are experiencing difficulties. The support staff within the school comprise of the SEN co-ordinator, two learning support co-ordinators and 15 learning support assistants (LSAs), here considered as TAs, four of whom are based in specific departments, two in mathematics, one in English and one in science.

8.3.4 Teacher profile and characteristics

8.3.4.1 Introduction

After completing a degree in mathematics and philosophy, Laura spent a year working in investment banking before applying to study on the secondary mathematics postgraduate certificate of education (PGCE). Since attaining newly qualified teacher (NQT) status, Laura successfully completed her induction year and has been employed as a full-time teacher of mathematics at school B since then. Although working full time, Laura is currently studying part-time towards a Master's qualification in mathematics education. Laura has also been a mentor to PGCE students on placements in the mathematics department at school B during the past two years. Laura's teaching role involves working across the full age and ability range within the school, teaching 17 of 20 lessons a week, with the remaining 3 lessons dedicated to planning, preparation and assessment.

8.3.4.2 Knowledge of students and relationship with students

The interactions between Laura and various students during the classroom observations highlighted the teacher's knowledge of the students, as well as the good relationship that exists between teacher and students. During lessons, students were focused and paid attention during explanations and, when provided with an activity, the class generally worked well. The atmosphere in the classroom usually felt positive and productive, although there was often low level chatter, which the TA referred to as a "working hum". There was the occasional group of students who slowly became more distracted from their work but, at these times, the teacher usually had a quiet word with them to get the students refocused.

The content of lessons appeared to be appropriate for students, as no students seemed to have any significant issues with the mathematical concepts, highlighting the teacher's awareness of students' mathematical knowledge. Rachel commented on Laura's knowledge of students during the interview, stating that:

> *she [Laura] is very switched on with the kids and she knows what they need.*

Laura appears to have a very good relationship with students and staff alike and generally during lessons, students responded well to teacher requests and behaviour management techniques. Students appear to have a great deal of respect for the teacher, as confrontations were rare, and the class of students quickly settled when asked, or when the teacher entered the classroom.

8.3.4.3 Experience of working with TAs

Having only worked as a teacher for 3 years, Laura's experience of working with TAs is thus not as extensive as that of teachers who have worked in education for a significant period of time. However, Laura clearly values the support she receives from Rachel and recognises that Rachel not only provides support for learning but also for teaching. Whilst Laura's comments in the interview were generally positive with regard to the support she receives in the classroom, she also highlighted a number of issues that can arise with TA support, one of which was a lack of time for the teacher and TA to communicate.

> *I've worked with LSAs that aren't in the [mathematics] department, and you only see them just before the lesson starts and then, quite a lot of the time, they just go as soon as the kids do, so you haven't got the time to sit and talk about specific weaknesses or problems with the kids, they just disappear.*

Although there are two TAs based in mathematics at school B, other TAs within the school also provide some additional support in mathematics lessons when required. Due to this, Laura has worked with both subject-specific support staff and general support staff and has recognised that there can be a significant difference in TAs' subject knowledge. Laura commented in the interview on her previous experience working with TAs who lacked the mathematical subject knowledge to be able to effectively support students.

> *I have in the past overheard things, where I've been like ... that is completely not right or that's given them the wrong idea of why it's right.*

This lack of TAs' having appropriate subject knowledge led to the teacher having concerns regarding the impact of the TAs, causing her to question the TAs' practice.

Are they gonna be telling them the right thing? Are they going to be introducing misconceptions?

Although reasonably limited, the varied experience that Laura has of working with a number of different TAs has led to her having a great appreciation of the support she receives at present from Rachel. Within lessons, Laura acknowledges Rachel's previous experience and subject knowledge and makes a clear distinction between the teacher's and TA's roles and responsibilities in the classroom. Laura's experience of working with TAs has also encouraged her to recognise that there are significant advantages to TAs being deployed in specific departments.

8.3.4.4 Pedagogical knowledge and subject knowledge

Having completed a degree in Mathematics and Philosophy and a PGCE in secondary mathematics, Laura's mathematical knowledge is beyond doubt. It was clear during lesson observations that Laura was able to use her pedagogical knowledge and pedagogical subject knowledge to effectively explain mathematical concepts and encourage learning in a positive working environment. Laura appears confident in the classroom and successfully manages the organisation of the lesson and students. Laura's previous training and experience enable her to reflect on lessons and the learning of students and it was common for the teacher to discuss students' progress and the content of lessons with the TA at the end of lessons. After observing a series of lessons it was clear that the reflections of the teacher and TA were used to adapt future lessons according to student progress.

Throughout all the lesson observations Laura was keen for all students to be involved with mathematics and clearly enjoys the challenge of teaching. The activities employed during lessons seemed to be appropriate for all students and for the majority of the time the students worked well. Laura's knowledge of the student's mathematical understanding and pedagogical subject knowledge enabled her to recognise concepts and tasks that students may find difficult and addressed these issues and tasks accordingly, by providing guidance, encouragement and additional support where necessary.

The following section (8.3.4.5) summarises the discussion in sections 8.3.4.2 to 8.3.4.4. The ellipses represent the independent precedents and the rectangles, the dependent factors.

8.3.4.5 Profile map for teacher at school B

teacher has worked at school B for 3 years

firm pedagogical knowledge

previous experience of working as a teacher

completed a PGCE reasonably recently

is involved with initial teacher education

occasionally chats with students but keeps off topic conversations brief

is motivated to improve teaching practice and fulfil own potential

has a good relationship with the students

is currently working towards masters level accreditation

interactions with students during lessons are generally friendly but firm when necessary

Personal profile of teacher at school B

highlights that the TA often goes above and beyond usual duties

teacher appears to be well respected by students during lessons

teacher has a clear insight into TA's role and responsibilities

completed PGCE in secondary mathematics, which included a focus on subject knowledge

treats the TA as an equal in the classroom and expects students to do same.

is confident with mathematics and has firm subject knowledge

teacher is appreciative and respectful of TA

experience of secondary teaching has helped develop teacher's subject specific pedagogical knowledge

has a good relationship with the TA

teacher values the TA's knowledge, experience and opinions regarding the subject and the students

teacher often chats with TA outside of lessons

the teacher and TA have similar characters and a natural rapport with one another

interactions both in and out of lessons are friendly

is aware of the issues that the TA has experienced in schools

8.3.4.6 Summary of factors arising from teacher profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the teachers profile and characteristics:

- teacher's roles and responsibilities are clear
- teacher's relationship with students
- teacher's training or experience of working collaboratively with TAs
- teacher's pedagogical knowledge
- teacher's knowledge of students
- teacher's pedagogical subject knowledge
- experience of teacher
- clarity of TA's roles and responsibilities
- students are respectful of teacher
- organisation of the classroom, lessons or students
- TA feeling valued
- TA being based in mathematics
- teacher's job satisfaction
- experience of TA
- TA's mathematical subject knowledge
- teacher's mathematical subject knowledge
- teacher and TA sharing knowledge and resources
- teacher's trust in TA
- good communication
- teacher's knowledge of students' SEN requirements
- teacher's knowledge, understanding or experience of TA role

8.3.5 Teaching assistant profile and characteristics

8.3.5.1 Introduction

Rachel has been employed in various educational settings during the past 20 years and so has a significant amount of general experience within the field of education. After obtaining a degree in biochemistry, Rachel spent some time working as an adult education tutor before successfully completing a primary PGCE course. Rachel then spent a number of years working as a primary teacher in London, before relocating to Hampshire where, after initially working as a primary teacher, she eventually left teaching. Rachel left the primary teaching profession due to a combination of personal reasons and the differences she found between her previous schools' environments and approaches to teaching and that of her then current school.

Rachel saw the position at School B as an opportunity to continue working with children, without the responsibilities of planning, preparing and marking. After some initial issues, Rachel eventually secured the role of subject-based teaching assistant in mathematics and has been working at School B for the past 5 years. Rachel is currently employed full-time and, alongside her support role, teaches two small year 8 groups, which are half of a class split between Rachel and one of the mathematics teachers. Due to her teaching responsibilities, Rachel has one lesson a week dedicated to planning, preparation and assessment, four lessons a week dedicated to teaching the two year 8 mathematics groups and the remaining 15 lessons allocated to providing in class support.

8.3.5.2 Knowledge of students and relationship with students

Observations of interactions between Rachel and the students during lessons suggest that, generally, the relationship between the TA and the students is very good. Rachel conversed with students in a friendly manner and there was rarely an issue with behaviour. Students within the class readily asked for assistance from the TA and, during the interview, the teacher commented on how:

Sometimes the kids almost prefer to ask her [Rachel], because I don't … I guess it's less formal and they [the students] maybe feel that they're not being judged as much …

During lessons, Rachel circulated around the room and appeared to have a few students within the class who she would return to, on occasions, to check their progress. Generally, Rachel identified students who may need support and worked independently and proactively, highlighting her knowledge of students and awareness of their SEN requirements. Although there were no significant behavioural issues within lessons, there was some very low level disruptive behaviour. Rachel often had a quiet word with students or shared a 'look' with them and the students responded well to the TA's behaviour management techniques, giving Rachel appropriate respect.

During the interview, both Rachel and Laura described how there is a certain amount of silent communication within the classroom between the students and the TA. During the interview, Laura referred to Rachel managing the students' behaviour with a look,

If I'm trying to talk and somebody's talking, she [Rachel] might look across and go, you know, listen

whereas Rachel described how this silent communication can be communicated from the students to the TA.

The kids will just give me the look as if to say "ohh help", and once they get to know you, once they trust you, they're very good at that and they will just give you the look as though to say "please come and help me" …

The TA and students communicating with a 'look' exhibits the TA's knowledge of students and gives an insight into the relationship that must exist between the students and Rachel. Both the comments made during the interview and the data collected from classroom observations suggest that the TA has a very good knowledge of the students' needs and mathematical attainment.

8.3.5.3 Pedagogical knowledge and subject knowledge

As Rachel originally trained and worked as a primary teacher, she is aware of teaching strategies and has very good pedagogical knowledge. Having completed an A-level in mathematics and a degree in biochemistry it is highly likely that her mathematical knowledge is also very good. Data collected during observations not only supported the notion that Rachel's mathematical knowledge is very good, but also highlighted her ability to apply it effectively in order to explain mathematical concepts and help students overcome obstacles to their learning. Rachel's mathematical knowledge was also highlighted during lessons by the way she would occasionally recognise that a number of students were having similar problems or had developed the same misconception. Rachel would at this point inform the teacher who would bring the lessons to a pause for a moment to clarify the issue. During the interview, Laura commented on Rachel's good subject knowledge, stating that,

> *Her [Rachel's] subject knowledge is brilliant anyway, so I don't really feel like*
> *I've got to bring her up to speed on anything, 'cos she knows what she's doing.*

During lesson observations, Rachel's pedagogical knowledge and pedagogical subject knowledge was also apparent in her interactions with students. Rachel avoided giving any direct answers to students and, instead, provided them with support and encouragement, asking them questions to develop their thinking and giving them confidence to attempt the activities independently, providing her with opportunities to assist other students. Rachel's experience of working as a teacher and her pedagogical knowledge developed whilst working in education, not only enables her to support students effectively, but also gives her a thorough understanding and great appreciation of the work of the teacher.

> *I know that it's not just in front of the children. I know that's just the tip of the*
> *iceberg and the rest of the work is done all behind the scenes.*

Rachel's experience of having TA support whilst working as a teacher helps her to recognise that there are many ways that she can support not only students, but also the teacher and it is apparent that she endeavours to do both wherever possible.

8.3.5.4 TA's presence in lessons

During lessons, Rachel usually supports all students in general, but will focus on a few particular students for longer periods. The data obtained from the teacher-TA tracking software (see appendix 12) illustrate how Rachel focused the majority of her time working with certain groups of students within the class. These groups of students requested the most assistance from the TA and teacher, whereas the groups receiving less support seemed able to work well on tasks independently and only requested help when they attempted more challenging activities. Throughout all the lessons, Rachel continuously moved around the group, checking on students' progress and understanding, providing support where necessary. Rachel highlighted during the interview how moving around the room can not only help with behaviour management, but is also important to encourage students' independence.

> *I don't tend to sit and work with one person all the time; I flit about because I think that's when the disruption starts, if somebody's sitting there and they don't ... they haven't got a clue what they're doing.*

> *I don't particularly like sitting with one person for a long time because it doesn't help their [students'] independence. As soon as I can see that they know what they are doing, then it's time to go and let them get on.*

Rachel was observed to always be well prepared to support in lessons, having a selection of equipment including a book to write notes and a whiteboard and pen to illustrate examples or help explain concepts to students. Rachel seemed to be very clear about what her role and responsibilities were during lessons and usually arrived to lessons with an idea of the content of the lesson. At times it was not necessary for Rachel to be assisting students, i.e. when Laura was introducing a topic or explaining an activity. During these times, Rachel often remained motivated and usually took notes for absent students or circulated the room quietly to check students were focused.

The way in which Rachel supported students and the teacher during lessons demonstrated that she is hard working and self-motivated, offering to assist the teacher with various tasks including handing out/collecting in books, exercise sheets and resources/equipment when necessary. During lessons, Rachel was seen to identify

students who may need support herself and was rarely seen to be directed by the teacher. However in the interview she commented that,

> *Laura would say if she wasn't happy, she would say "can you just ...", you know, "can you just do this" and she's said "I've put John [a student] ... can you make sure that John's focusing", so I'll sit with John for a while and then move off.*

8.3.5.5 TA being based in mathematics

As mentioned previously, Rachel was employed to fulfil the role of mathematics based TA and, as such, is permanently based in the mathematics department. One advantage of the school employing a subject-based TA is that they can employ a member of support staff who has a strong mathematical background, good mathematical knowledge and who enjoys mathematics, which is clearly the case with Rachel. During the interviews, Rachel highlighted the advantage of employing a subject-based TA by commenting on the varied feeling towards mathematics of the other general TAs.

> *More often than not the same LSAs tend to come over to maths, the ones that feel comfortable with the maths. So, you'll see the same faces that are quite happy to come; others don't set foot near the place, they're like "Ughhah, not doing maths"*

Having a TA who enjoys the subject, and is confident in their understanding, is likely to have a greater positive impact on students' attitudes towards mathematics than those TAs who dislike the subject. Being subject-based also seems to make a significant difference to Rachel's relationship with the teachers with whom she works. Rachel's comments in the interview also highlighted how being based in mathematics enables her to gain a more thorough knowledge of students.

> *I think being in the department is a huge positive because you get to know the kids mathematical abilities and their strengths and weaknesses.*

The TA's comments also suggested that consistency of the TA in the classroom is also important to developing a good knowledge of students

You get to go with the kids all the way through the school, so now, by the time
I've got to, like, this next year 11 that have come up, I've seen them all the way
through the school in their maths lessons, so I know them pretty well.

The advantages of the TA being based in the mathematics department extend beyond the TA building a good relationship with students and teachers. Rachel appears to have a very good knowledge of how the department is organised and how it functions and, as such, can be more involved and is able to provide additional support to teachers outside of lessons. Although Rachel is based in mathematics, she commented during the interview that the mathematics TAs are not completely included within the department.

It would be nice to be involved in the department meetings and depart ... we are
seen as part of the department, but there's very much a divide.

This issue is difficult to address, however, as it does not appear to be an unwillingness of the mathematics department that prevents the complete immersion of TAs in department practices, but more that the TAs' working hours are restricted to lesson times only. TAs should not be expected to sacrifice their own time to attend department meetings and, in the case of school B, they are not, but this clearly has an impact as the TA does not feel entirely included within the department. Having discussed the advantages and disadvantages of TAs being based in mathematics with both the teacher and TA and having observed Rachel in the classroom, I can appreciate that there are a number of advantages to having TAs based in departments.

The following section (8.3.5.6) summarises the discussion in sections 8.3.5.2 to 8.3.5.5. The ellipses represent the independent precedents and the rectangles, the dependent factors.

8.3.5.6 Profile map for TA at school B

extensive experience of working in schools and within education sector

initially worked as an adult education tutor

has firm pedagogical knowledge

has worked at school B for 5 years as a curriculum support assistant

worked as a primary teacher for many years in London

completed a PGCE in primary education to become a primary school teacher

TA is a valued part of the maths department

is paid on a higher scale due to experience

originally applied for TA position because of the working with children aspect of the job

head of department allocated TA planning time for her teaching responsibilities

employed as a curriculum support assistant and has a passion for working with children

motivated both inside and outside lessons

has a degree in biochemistry

Personal profile of TA at school B

worked as a primary teacher for a number of years

is confident with mathematics and has good subject knowledge

interaction with students is friendly but focused

good relationship with the students

has a maths A-level

students respond to TA's behaviour management in lessons

experience of primary teaching has helped to develop the TA's subject specific pedagogical knowledge

feels the teacher is approachable

works independently in the classroom without teacher instruction/comment

is dedicated to her job

good relationship with the teacher

is trusted by the teacher

often works during break and lunch regardless of the lack of pay for these times

teacher acknowledges and values TA's opinion on students' progress

usually chats with teacher during break and lunch

has a thorough understanding and respect for teacher's work

8.3.5.7 Summary of factors arising from TA profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the TA's profile and characteristics:

- TA's roles and responsibilities are clear
- TA moving round the classroom
- TA's relationship with students
- TA's knowledge of students' SEN requirements
- TA being proactive
- preparedness of TA in lessons
- TA's pedagogical knowledge
- TA's knowledge of students
- TA's pedagogical subject knowledge
- experience of TA
- TA's job satisfaction
- TA's knowledge of teacher's expectations
- TA's involvement with behaviour management
- flexibility of TA
- TA's mathematical subject knowledge
- TA's knowledge, understanding or experience of teacher role
- students are respectful of TA
- teacher's trust in TA
- TA feeling valued
- TA being based in mathematics
- mutual respect
- honesty within partnership
- consistency of TA presence in lessons

8.3.6 Partnership profile and characteristics

8.3.6.1 Introduction

Laura and Rachel have been working together only since the start of the academic year (nine months ago) but, in that time, they appear to have developed a very good relationship based on trust and mutual respect. The fact that Rachel is based in the mathematics department seems to have played a significant role in helping the partnership develop, as it provides an opportunity for Laura and Rachel to communicate with each other outside the classroom. As well as supporting in Laura's year 10 mathematics group for two lessons a week, one of the year 8 groups Rachel teaches is half a class which is split between her and Laura, giving them further reason to talk to each other in order to discuss planning and preparation, especially as they will occasionally team teach the two small groups as one class. The teacher and TA are not given any time allocated to joint planning but, as mentioned previously, both have time for planning their individual lessons.

For the purposes of this study, the teacher and TA were observed working with the same group of year 10 students. The lessons all took place in Laura's teaching room and, as such, the organisation of the classroom was her own choice. During lessons, students were seated at rows of tables all facing the front of the classroom where there was an interactive whiteboard and standard whiteboard. The students were partially spread around the room but with the majority using the tables nearer the front of the class. The organisation of the lessons in terms of teaching and support were consistent throughout all the observations with the teacher leading the lesson and the TA acting as general support, moving around the classroom as necessary.

8.3.6.2 General aspects of relationship and partnership

Having observed Laura and Rachel working together in the classroom and having had the opportunity to interview them both, I feel confident in making the assertion that they have a very good professional and personal relationship. The positive partnership which exists between this teacher and TA appears to be largely based on trust and mutual respect and the interactions between the teacher and TA both in and out of the

classroom consistently highlight this. Although Laura and Rachel have only been working together since the start of the academic year, the relationship that they have developed is both positive and mutually supportive. During the interview with the TA, Rachel highlighted why she felt they had been able to develop a very good partnership in so little time.

> *I think because Laura and I get on in the staffroom, we're pretty much on the same wave length ... as kids are. On teaching in general, I think we are on the same wave length ... then it just clicks.*

A common theme emerging with regard to the development of the positive partnership were the advantages related to the TA being based in the mathematics department and the TA having experience of working as a teacher. Laura commented during the interview how, because Rachel works in the mathematics department, it was possible to build a relationship more readily with her than with other TAs and how the combination of being based in mathematics and having experience of teaching may have encouraged her to trust Rachel more readily.

> *I know her [Rachel] quite well, 'cos I spend my time working with her all the time and even when she's not in my classroom, she's in the break room in the staffroom, whereas the LSAs, I see them in my lessons and they're lovely ladies, but you don't build the relationship.*

> *I think with Rachel, maybe because she's a teacher, maybe because she works primarily, well solely in maths, I trust her subject knowledge, I don't have any issues leaving her with a group of kids and I know that whatever she says will be accurate.*

The trust that Laura has in Rachel was not only reflected in her comments but was clear to observe during lesson observations. During lessons, Rachel worked with a number of students and on only one occasion during this time did the teacher listen to Rachel discussing a problem with a student. When asked about this event, the teacher explained that she was not concerned that Rachel was giving the student incorrect help, but was interested in how the TA approached the mathematics and the student's issues.

Perhaps equally important to the teacher's trust in the TA is the TA feeling trusted and this feeling was communicated by the TA during the interviews.

> *I think we get on very well and she trusts me to know what I'm talking about ...*
> *and she trusts me with the kids and she knows ... and she doesn't mind me piping*
> *up and piping in, I don't think.*

Laura appears to greatly appreciate the support she receives from Rachel and, during lessons, encourages students to respect and value the TA by exhibiting these behaviours herself. The message communicated during lessons by both the teacher and TA is that they work together as a team and should be equally respected by the students. Rachel commented during the interview how, whilst this was true in Laura's lessons, it is not always the case and this can be frustrating.

> *I think the kids see us working together, rather than in some situations, it's very*
> *clear they're the boss and you're just the glamorous assistant ... and certain*
> *people do say, "oh, I'm going to ask my glamorous assistant to hand things out"*
> *and you just think urrgghhh.*

The relationship that exists between Laura and Rachel has developed in a reasonably short space of time and has been largely possible due to Rachel being based in the mathematics department. Opportunities to become better acquainted during break times and lunch times have benefited the teacher's and TA's partnership and given them time to develop a rapport with one another. Rachel clearly feels valued and appreciated by Laura and this helps to create a positive atmosphere in the classroom. Laura and Rachel both appear to have a very good knowledge of the students they teach and support and, although the relationships between the students and Laura and the students and Rachel seem very different, they both contribute towards the creation of a positive working environment. Rachel and Laura appear to be very honest with each other and Rachel's comments during the interview suggested that she feels Laura is very approachable.

> *If I don't know what I'm talking about I'll ask her [Laura] ... you know, I'm not*
> *afraid to ask her.*

8.3.6.3 Roles, responsibilities and organisation within the classroom

The role of the teacher and TA remained consistent throughout the lesson observations, with the teacher leading the lessons and managing the behaviour of students, whilst the TA provided general support for all students and assisted with behaviour management when required. During all the lessons observed, the teaching was led by Laura, and Rachel moved around the classroom providing support to a range of students. At times when the teacher was addressing the whole group, the TA would take notes or monitor low level behaviour issues, allowing the teacher to focus on teaching. The importance of the TA supporting all students and being available to all students was highlighted by the teacher during the interviews.

> *It's important to both of us that she is really accessible to the kids and all of*
> *them, 'cos I think if she sits with one particular kid and the kids recognise them*
> *as like ... somebody that needs more help, they don't want the stigma of having to*
> *ask the support assistant, whereas if she asks ... if she helps everybody, they more*
> *readily ask her.*

Results obtained from the tracking software demonstrate how, during lessons, both the teacher and TA spend a significant amount of time moving round the classroom. The summary of results from the observations (see appendix 12) suggests that the TA focuses the majority of her time with certain students and groups of students, whereas the teacher tends to circulate around the entire group spending a similar amount of time with all students, including those students with whom the TA works. With regard to who has responsibility for managing the behaviour of students, both the teacher and TA agree that, although the teacher has the main responsibility for students' behaviour, the TA also has a role to play and they share a clear understanding of what this role is. The TA stated during the interview that:

> *I just deal very gently with low level issues, [major] behavioural issues are not*
> *my responsibility, I'll just always refer it over to Laura, because she's in charge*
> *... the kids have got to know ... kids are good at knowing she's in charge.*

Similarly the teacher commented during the interview that she felt behaviour management was her responsibility.

I think it is the responsibility of the teacher to deal with the behaviour.

However, the TA also commented that, although she felt behaviour issues were not her responsibility to address, the students were aware that she would refer any significant issues to the teacher. The interactions observed during lesson observations supported the comments of the teacher and TA, as the TA was observed dealing with minor issues whilst the teacher managed any significant disruptions (which were rare). During lesson observations, it became apparent that the TA considered it her responsibility to inform the teacher if she recognised that a number of students were having similar issues with an activity or exercise. The teacher seemed to appreciate these comments and acknowledged them by stopping the class and addressing the issue/confusion. Rachel highlighted during the interview that she felt it was important to address these issues and carefully considered how to inform Laura when an issue arose.

> *If they're all asking the same question, it's something that needs to be addressed,*
> *but hopefully I don't say it in a way, as if to say you know, 'you [teacher] never*
> *told them how to do it.'*

8.3.6.4 Joint planning, communication and reflection

Allocated planning time is not available to teachers and TAs at school B and joint planning is not possible because, although Laura is given planning, preparation and assessment (PPA) time, Rachel spends the large majority of her time supporting in lessons. Rachel is a special circumstance with regards to PPA time as she does have teaching responsibility for two year 8 classes and, as such, receives two lessons allocated to PPA. However, these cannot be used for joint planning as they are dedicated to planning for those specific groups and are not co-ordinated with Laura's PPA periods. The planning of lessons is therefore the responsibility of the teacher, and the TA has little involvement with the actual planning process. Although Rachel is not involved with the planning, she commented during the interview that she is usually aware of what the focus of the lesson is beforehand because she is always in the department.

I think it would be very difficult coming from ... you know, going to ... going to sit in the LSA department, having a chat and then coming in here and going "ohh, what's going on?"

Throughout the data collection period, it was clear that communication between Laura and Rachel was very good. During lesson observations, Laura and Rachel regularly discussed students' progress and understanding and any emerging issues. The comments made by Rachel during the interview supported these observations and suggested that, often, the conversations continued in break and lunch times.

We talk a lot about the kids at break time, lunch time and you'll quite often see that happens at the end of a lesson. I'll stay behind and we'll just chat about what's happened and various issues different kids have had. And you know ... she'll [Laura] ask "do we need to do that again?" and you know ... she will always ask if everybody's you know ... got it, you know ... "should we do that again?" or ... it's umm ... things are discussed ... and, during the lesson, you'll see her come up to me and ask questions and I'll go up to her and say we need to ... you know ... so and so ... or I've been asked lots of times about a certain issue.

Laura also commented on the conversations that took place during break and lunch time but felt it was important to also highlight that Rachel is not paid for this time, recognising the TA's dedication to her support role.

All of the informal chats take place at lunch time and during break time or after or before school ... and actually they're [TAs] not paid to do that, so I think it's a bit of an issue with LSAs that, though she's not going to stand there at break time and say "I don't want to talk about this, it's my break time", she is within her rights to do that.

The opportunity to have these discussions is only possible because the TA is based in the mathematics department and the teacher also suggested that, because the TA was based in the department, the communication between the two of them was on-going.

Because she works in the department, we all ... we're almost always having a running commentary about the class, throughout the week.

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As Rachel and Laura do not have time to collaboratively plan lessons, the effectiveness of the partnership relies upon the quality and consistency of their communication. Laura and Rachel reflect on students' progress and identify any issues during and following lessons and Laura clearly values and respects Rachel's opinions. This constant communication and reflection is only possible because Rachel is dedicated to her support role and is based solely in the mathematics department.
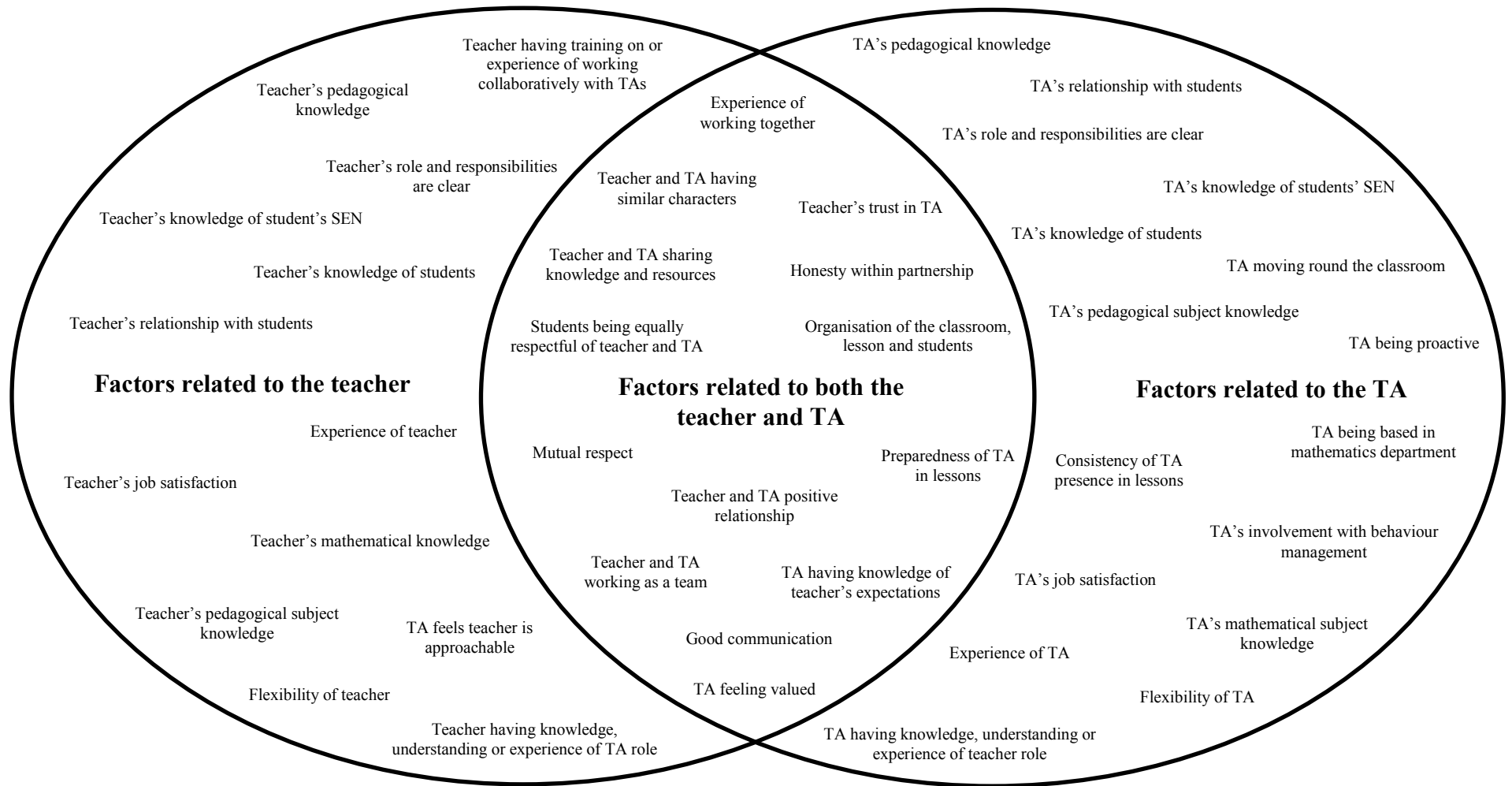
8.3.6.5 Summary of factors arising from partnership profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the characteristics of the partnership:

- teacher and TA sharing knowledge and resources
- honesty within partnership
- mutual respect
- experience of working together
- teacher and TA positive relationship
- teacher and TA having similar characters
- students being equally respectful of teacher and TA
- TA's mathematical subject knowledge
- teacher's trust in TA
- teacher and TA working as a team
- organisation of the classroom, lesson and students
- teacher's knowledge of students
- teacher's relationship with students
- TA feels teacher is approachable
- teacher's role and responsibilities are clear
- TA's knowledge of students
- TA's appropriate involvement with behaviour management
- TA's relationship with students
- clarity of TA's role and responsibilities
- good communication
- TA being based in mathematics
- TA moving round the classroom
- TA's knowledge, understanding or experience of teacher role
- TA's pedagogical subject knowledge
- TA's pedagogical knowledge
- TA's job satisfaction
- flexibility of TA

- flexibility of teacher
- TA feeling valued

8.3.7 Summation of factors contributing to positive partnerships

Teacher having training on or experience of working collaboratively with TAs

TA's pedagogical knowledge

Teacher's pedagogical knowledge

Experience of working together

TA's relationship with students

TA's role and responsibilities are clear

Teacher's role and responsibilities are clear

Teacher and TA having similar characters

Teacher's trust in TA

TA's knowledge of students' SEN

Teacher's knowledge of student's SEN

Teacher and TA sharing knowledge and resources

Honesty within partnership

TA's knowledge of students

Teacher's knowledge of students

TA moving round the classroom

Teacher's relationship with students

Students being equally respectful of teacher and TA

Organisation of the classroom, lesson and students

TA's pedagogical subject knowledge

TA being proactive

Factors related to the teacher

Factors related to both the teacher and TA

Factors related to the TA

Experience of teacher

Mutual respect

Preparedness of TA in lessons

Consistency of TA presence in lessons

TA being based in mathematics department

Teacher's job satisfaction

Teacher and TA positive relationship

Teacher's mathematical knowledge

TA's involvement with behaviour management

Teacher and TA working as a team

TA having knowledge of teacher's expectations

TA's job satisfaction

Teacher's pedagogical subject knowledge

TA feels teacher is approachable

Good communication

Experience of TA

TA's mathematical subject knowledge

Flexibility of teacher

TA feeling valued

Flexibility of TA

Teacher having knowledge, understanding or experience of TA role

TA having knowledge, understanding or experience of teacher role

8.4 Case study C

8.4.1 Summary of data collected from school C

Data were collected in the following six ways:

Interview with teacher

The interview with the teacher was approximately 20 minutes long and incorporated all the topics identified as being pertinent to the research. The interview was conducted in the teacher's classroom, as it was free at the time, and provided a location where the teacher was at ease.

Interview with TA

The interview with the TA was approximately 25 minutes long and was conducted in the school staffroom whilst all the other teachers were in lessons. The TA appeared to be relaxed and was forthcoming with answers and opinions, talking openly about the positive partnership she has with the teacher.

Four (60 minute) lesson observations

The teacher and TA worked in the same general way consistently throughout the observations. By the fourth lesson, it was clear that similar observations were being made and a saturation point had been reached; thus the observations ceased.

Teacher-TA tracking results from four lessons

During all of the lesson observations the teacher-TA tracking software was employed to monitor the locations of the teacher and TA at one minute intervals. The results obtained from the software (see appendix 14) illustrate the movements of the teacher and TA and highlight which groups of students the teacher and TA usually work with.

Evaluation form from teacher and TA

The purpose of the evaluation forms was to gather evidence to support the claim of the teacher and TA that they have an effective partnership. The teacher and TA completed the forms independently so that any discrepancies in their opinions would be apparent.

8.4.2 Case study C results from self-assessment

The self-assessment forms completed by the teacher and TA based at school C are included in the appendix (see appendix 13)

Results from self-assessment 1

The results of self-assessment one suggest that the teacher and TA meet the majority of criteria relating to effective practice, but there are a few criteria which they do not meet. As discussed previously, in the results of case study B's self-assessment, the fact that the teacher and TA do not feel they meet all the criteria relating to the indicators does not suggest the partnership is ineffective. The criteria which the teacher, TA or both teacher and TA feel they rarely meet all relate to one of two things, TAs being based in specific departments or teachers and TAs having time to meet outside of lessons. The responses from the teacher and TA were generally consistent, with only a few variations and one significant discrepancy relating to whether the particular curricular knowledge of the TA is recognised and used.

Results from self-assessment 2

The results of self-assessment two are similar to the results of self-assessment one. In terms of targeted support for students, focus of lesson support, team interactions within the lesson and team skills, the partnership between the teacher and TA appears to be highly effective. The responses of both the teacher and TA are consistently very good in relation to these criteria. However, in terms of sharing lesson plans and team review of lessons, the TA's responses are average and the teacher's responses are very negative. Similarly to self-assessment one, these factors relate to the teacher and TA having time to meet outside of lessons and, once again, the question is raised as to

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whether this is a necessity for effective practice. Having observed the teacher and TA in the classroom and discussed their current practice and partnership with them both individually, I suggest that the partnership is effective and that having time outside of lessons and subject-based TAs can be advantageous but is not a requirement for an effective partnership.

8.4.3 Introduction and wider context

The partnership which is at the focus of case study C exists within a mixed comprehensive secondary academy situated in a rural region in Hampshire. The school has approximately 1200 students on roll between the ages of 11-16 and, in its most recent Ofsted inspection, received the status of good. The organisation of teaching groups for mathematics is such that each year group is separated into 3 sub-groups which are then divided into teaching groups based on attainment. Mathematics lessons are taught in typical school classrooms equipped with interactive whiteboards and additional standard whiteboards. The school has a support unit available which is mainly used for sessions on study skills but can be used for other support activities, including interventions.

Teaching assistants are mainly deployed to support in lessons, but TAs also withdraw students from lessons for literacy interventions, run sessions on study skills and work with physically disabled students. Currently, there are no numeracy interventions being conducted at school C but the possibility of introducing a numeracy intervention programme in the 2012-13 academic year is being considered. TAs deployed to support in lessons are not based in specific departments within the school but work across all subjects. The school is also considering changing this arrangement, to have support staff based in mathematics, but there is no definite plan at the time of writing. The support staff within the school comprise of 20 TAs, four of which are senior TAs with additional responsibilities.

8.4.4 Teacher profile and characteristics

8.4.4.1 Introduction

Julie has been working as a teacher for the past 20 years and has been employed at school C for the past 10 years and, as such, has considerable experience of teaching. Prior to training as a teacher, Julie completed a degree in chemical engineering and began working in a job which was unrelated to education. However, whilst she enjoyed the job, the prospects for progression were not what she had expected, so she decided a career change was necessary and, on the advice of family, decided to train as a teacher. After completing a PGCE, Julie worked as a teacher at a school for 10 years before being employed at school C. Julie is now the head of department at school C and has been employed in this role for the past four years. Julie's teaching role involves her working across the full age and ability range within the school, teaching 18 hours a week. In addition to the 18 hours a week teaching, Julie has three hours a week dedicated to fulfilling her responsibilities as head of department and four hours a week for planning, preparation and assessment.

8.4.4.2 Knowledge of students and relationship with students

During the lesson observations, it became apparent that the teacher had a very good relationship with students but also had very clear expectations regarding students' behaviour and engagement. Interactions between the teacher and students were generally friendly and respectful and confrontations were rare. During the four lesson observations, only one serious incident occurred in which a student was sent to work outside the classroom; other than this incident, the attitudes and behaviour of students was very good. On the odd occasion, the teacher shared a joke or laugh with students, highlighting the good relationship that exists between the teacher and students.

The atmosphere in the classroom was generally positive and students appeared to work well. Occasionally, students lost motivation but the teacher's and TA's knowledge of students allowed them to recognise when this occurred, enabling them to address the issue. Throughout the observations, there was some low-level chatter amongst students but this did not cause any significant disruption during lessons and was usually kept in

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check by the teacher. The content of lessons seemed to be appropriate for students, highlighting the teacher's awareness of students' mathematical knowledge. Students did not seem to experience many issues with the mathematical concepts taught during lessons but, when confusion did occur, it was effectively addressed by the teacher or TA. Students responded well to requests made by the teacher, highlighting the respect they have for her. The group of students usually settled down at the start of the lesson reasonably well, as they did when given a task or exercise. Julie's management of behaviour in lessons, which she describes as being "firm but fair", appeared to sufficiently maintain a productive working environment.

Julie has a very good knowledge of students and has developed a relationship with students based on clear expectations. Usually, these expectations are met and the relationship between the teacher and students is cordial. However, when these expectations are not met, Julie will quickly confront students and give them the opportunity to address their behaviour before there are more serious consequences.

8.4.4.3 Experience of working with TAs

During the 20 years Julie has been employed as a teacher, she has worked with a number of TAs and, as such, has had both positive and negative experiences of working with TAs. These varied experiences have led to a great appreciation and recognition of the support she currently receives from Sally. Julie's comments, during the interview, stressed how TAs with a lack of mathematical knowledge can cause issues and hinder students learning.

> *I've had them [TAs] in the past where their mathematical ability is so low that*
> *they actually tell the children how to do things incorrectly ... and so I've asked*
> *that they're actually not in the lessons anymore.*

TAs not being able to assist students to the extent that they are not a welcome addition to the classroom is a serious cause for concern. Julie also observed, however, that there are several TAs within the school that are very good, such as Sally, and surmises that:

> *it's like with everything, isn't it, there's teachers that are more effective than*
> *others*

TAs with a lack of subject knowledge were not the only issue with support practices that Julie commented on. The issue of TAs not being proactive or independent was also recognised.

> *I've had ones [TAs] that don't actually start moving around the classroom unless I actually ask them to.*

> *They'll be sitting there trying to work out the sums for themselves; the children are all sitting there, got their hands up. I can't go round all of them, so I say "look can you help so and so ...". So I actually have to tell them what to do every lesson and these are LSAs that have got years of experience; it's not just the new ones.*

Although Julie identifies issues that she has experienced, she seems to have a good understanding of the challenges that TAs face when supporting in lessons. During the interview, Julie reflected on a previous experience she had had of acting as a TA in order to support in a lesson at a previous school and commented that:

> *They [TAs] must suffer in some classes where the discipline is not good or the organisation isn't very good.*

The varied experience that Julie has had of working with TAs and her brief experience of acting as a TA has led her to develop clear ideas of what she feels an effective TA does in order to support teaching and learning. Although Julie highlighted the mostly negative experiences she has had of working with TAs, she is generally very positive about the support provision at school C and values the support she receives from Sally in particular.

8.4.4.4 Pedagogical knowledge and subject knowledge

As Julie has completed a degree in chemical engineering which she describes as "applied mathematics with a little bit of chemistry", it can be assumed that she has a very good knowledge of the subject. The experience that Julie has gained by working in the teaching profession for 20 years has helped her to develop firm pedagogical knowledge and pedagogical subject knowledge which she effectively employs in the

classroom. During lessons, Julie explained mathematical concepts clearly and recognised potential areas in which students could develop misconceptions. The lessons observed were well organised and focused and it was apparent that Julie reflected on students' progress and learning in order to appropriately adapt future lessons. Julie clearly enjoys teaching and the associated challenges and is eager for students to be interested and involved with learning mathematics.

Throughout the lesson observations, Julie was often seen to be moving around the classroom, checking on students' progress and understanding. Occasionally, students were struggling and Julie used questioning or explained how to solve the problem (without directly telling students the answer) to encourage them to develop their own understanding. The way in which Julie supported these students highlighted not only her knowledge of students and subject knowledge, but her pedagogical knowledge also. Julie's experience of teaching and initial teacher training have provided her with the knowledge and skills necessary to reflect on her own teaching as well as the impact of this teaching on students' learning and progress. It was common throughout the observations to observe Julie and Sally reflecting on lesson content and students' progress after lessons, whilst also discussing briefly the plan and intentions for the next lesson.

The following section (8.4.4.5) summarises the discussion in sections 8.4.4.2 to 8.4.4.4. The ellipses represent the independent precedents and the rectangles, the dependent factors.

8.4.4.5 Profile map for teacher at school C

teacher has worked in schools for 20 years

originally changed profession due to the lack of prospects for career progression prospects

extensive experience of working as a Teacher

has been employed as HOD for 3 years

motivated to progress teaching career

has had various experiences working with different TAs

has previously requested certain TAs not be sent to lessons due to limited maths knowledge

interactions with students during lessons are firm but generally friendly

has a good relationship with the students

has a clear insight into what makes an effective TA

often banters with the students but has a definite line not to be crossed

has been disappointed with previous TAs who have needed constant instruction

Personal profile of teacher at school C

completed a PGCE to become qualified as a teacher

believes TAs should be proactive, but should follow the teachers lead

has firm knowledge of the subject

treats the TA as an equal in the classroom and expects students to do same.

completed a degree in chemical engineering, mainly applied mathematics

teacher is appreciative and respectful of TA

interactions between teacher and TA both in and out of lessons is friendly

good relationship with the TA

teacher feels the TA is particularly good and highlights her thorough understanding of the student's requirements

requested TA to assist with this group

is dedicated to improving teaching and behaviour

will make the effort to discuss student issues with TA outside of lessons if necessary

teacher feels that the TA shares her expectations and is on the same wavelength

highlights the importance of moving round the classroom

takes pride in the level of discipline in mathematics lessons and the level of organisation in the classroom

8.4.4.6 Summary of factors arising from teacher profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the teachers profile and characteristics:

- teacher's pedagogical knowledge
- experience of teacher
- teacher's knowledge of students
- teacher's relationship with students
- students are respectful of teacher
- organisation of the classroom, lesson and students
- teacher's mathematical knowledge
- teacher's pedagogical subject knowledge
- TA's knowledge of students
- TA's appropriate involvement with behaviour management
- TA feeling valued
- TA's mathematical knowledge
- teacher's trust in TA
- teacher's training on or experience of working collaboratively with TAs
- teacher's job satisfaction
- communication between teacher and TA
- teacher and TA sharing knowledge and resources
- teacher's knowledge of students' SEN requirements

8.4.5 Teaching assistant profile and characteristics

8.4.5.1 Introduction

Sally has worked as a TA for 12 years, during which time she has been employed in a number of schools and, as such, has considerable experience of supporting students and working with teachers. Sally has been employed at school C for seven years and for the past four years has been working as a senior TA with additional responsibilities. These responsibilities include managing the support of physically disabled students and their inclusion and safety within the school environment and managing speech and language within the school, which involves attending a speech, language and communication needs cluster group.

Sally initially began working as a TA because there was a need for a part-time TA to work in a speech and language unit at the school where her child was a student, whilst another employee completed their training. As Sally knew *Makaton* and *Derbyshire* language schemes, and the working hours of the position were ideal for her as a parent, she accepted the position. After working at the school and building up her hours, Sally moved from school to school working as a TA before arriving at school C. Sally's support role is a full-time post and she works 28 hours a week, during which she has three hours allocated to administration so that she is able to fulfil the additional responsibilities associated with her position.

8.4.5.2 Knowledge of students and relationship with students

Interactions observed between Sally and the students were, on the whole, friendly and respectful, highlighting the generally positive relationship that exists between the students and the TA. Sally appeared to have a very good knowledge of the students and their individual needs and during the interview she commented on her preparedness in this respect.

> *I have the class list of the kids and I have an IEP, so I know what the kids' needs*
> *are in the class.*

During lessons, students readily asked for assistance from the TA if they encountered a problem and, equally, they accepted help from the TA if it was offered. Sally usually communicated with students in a friendly manner and tone and, every so often, shared a laugh and a joke with students. However, there was the occasional issue with students' behaviour during the lesson observations and, when students did not respond to Sally's requests initially, her manner and tone became much firmer and stricter. Generally, students appeared to appreciate the support and assistance they received from Sally, so these behavioural issues were a rare occurrence. Throughout the lesson observations it was apparent that the teacher had the main responsibility for behaviour management. However, the TA was observed to make a significant contribution to behaviour management in the classroom, which helped to maintain a positive working environment.

The relationship between the students and the TA is very different to the relationship between the students and the teacher and, whilst students appear to respect the teacher and TA, there was an incident in one of the lessons observed which highlighted that the level of respect given to the TA and teacher differs. Towards the end of the fourth and final lesson observation, the teacher had to leave the classroom for a few moments and, during this time, she asked students to finish the question that they were working on. Once the teacher had left the classroom, there was a clear rise in the noise level of the students which the TA tried to address by asking the class to quieten down. Initially this request went unnoticed, so the TA became stricter in tone, once again asking the group to be quiet. Whilst, initially, the class got quieter, the quiet did not last, illustrating the difference between the respect given to the teacher and the respect given to the TA. At this point, the TA decided to busy herself with other tasks until the teacher returned and settled the group.

The comments made by the teacher and TA during the interviews and the data collected from classroom observations suggest that Sally has a very good relationship with the majority of students, as well as a thorough knowledge of students mathematical understanding and additional needs. During lessons Sally utilises her knowledge of students effectively to identify students who may require assistance or support.

8.4.5.3 Pedagogical knowledge and subject knowledge

Sally has been employed in various educational settings during the past 12 years and, during this time, has begun to develop her own pedagogical knowledge through working collaboratively with a number of different teachers. With regard to mathematical subject knowledge, Sally has a GCSE qualification in mathematics but, beyond this, has no other qualifications related to mathematics. During the interview, Sally explained that she felt her mathematics knowledge was sufficient for the students she supported.

> *The level we're working at is quite basic so ... it's just general maths knowledge [required].*

During the lesson observations, Sally's interactions with students highlighted how she uses her pedagogical subject knowledge to support students and encourage the development of good mathematical knowledge. Sally linked topics in mathematics together to help explain concepts and tried to give students the opportunity to work out the mathematics for themselves by using questioning to focus and develop their thinking. Sally also tried to think of different ways of explaining the mathematics if students were struggling to understand and thought of innovative ways to help students remember important facts. The various ways in which Sally supported students and discussed mathematics with them also illustrates that her own mathematical knowledge is secure and that the pedagogical knowledge she has developed enables her to effectively support students. During the interview, Sally described how she approached the teacher for help if she was unsure of any mathematical concepts.

> *If there's something I'm not sure of, because obviously I don't want to give the kids the wrong information, I will go to her "oh, I don't get this", you know, once it comes to expanding equations ...*

This comment not only highlights Sally's awareness of her own mathematical knowledge but also highlights that Sally trusts Julie and feels she is approachable and supportive.

8.4.5.4 TA's presence in lessons

During the lessons observed, Sally tended to work with a range of students but the main focus of her attention was given to students with additional needs. Once these students were settled and working, Sally usually moved around the rest of the group, checking on student progress, discussing issues/problems and offering encouragement where necessary. Results obtained from the teacher-TA tracking software agree with the notes recorded during classroom observations. Within every lesson, Sally spent some time working with each group of students. The observation notes indicate that the deployment of the TA in the classroom is the result of a combination of students asking for help and Sally being proactive, checking on student progress and understanding. There were certain groups within the class who occupied Sally's attention for greater time than others but it is clear that Sally made an effort to encourage students to work independently by going to work with other students in the group. Julie also commented during the interview on how Sally usually worked with a number of students, rather than just one and how this sets her apart from some of the other TAs.

> *Sally won't spend all her time with the one [student] that's demanding the most attention all the time, but you'll get others that maybe there's this attention-seeking child, that will be with them all the time.*

One anomaly in the data collected using the teacher-TA tracking software, during observation two, is that Sally appeared to spend a significant amount of time working at a table where no students are seated. During this time, Sally appeared to be taking notes; this was a recurring event in each lesson and the reason for this became apparent during the interview with the TA.

> *We set example folders up for them which is why you'll see me writing, sort of quite a lot at the beginning, so I get good examples for them, because I think if we can build them up a good revision book ... and I've agreed all that with the teacher.*

There is always the question during lessons as to what a TA should do while the teacher is addressing the whole group. Sally's use of this time to take notes for example folders for students seems very productive and does not distract or disrupt students. Sally was

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observed to not only support the students during lessons, but the teacher also. Throughout lessons, Sally was proactive and hardworking, offering to help with general classroom duties consistently, assisting the teacher wherever possible without the teacher being required to ask. The students with whom Sally worked during lessons were identified by her or they asked for help directly and it was clear that Julie trusted Sally to identify who to work with because Julie was not seen to direct Sally to particular students on any occasion during lessons.

Sally was always well prepared to support students during lessons and usually knew the focus of the lesson prior to the lesson. However, this was not always the case, possibly because of Julie and Sally having very little time to discuss lesson plans and objectives. Sally explained that her usual practice upon arrival in a lesson was to "first of all check what's on the board because then I know what we're doing for the day". Therefore, when the TA is not aware of the objective of the lessons, one of her main priorities is to find it out. Sally was well aware of her own role and responsibilities and also seemed clear about the teacher's role and responsibilities, understanding how the two come together.

The following section (8.4.5.5) summarises the discussion in sections 8.4.5.2 to 8.4.5.4. The ellipses represent the independent precedents and the rectangles, the dependent factors.

8.4.5.5 Profile map for TA at school C

has worked as a TA at school C for 6 years

has previously been employed in 2 other schools

extensive experience of working as a TA in schools

has worked in schools for 13 years

works 28 hours a week in current role with 3 hours to complete admin tasks

interaction with students during lessons is friendly but focused

has responsibility for students with physical disabilities

has a good relationship with the students

is not planning on beginning a teaching career

had difficulty with mathematics in the past so understands the issues students may have with the subject

is employed as a senior TA; enjoys current job and has a passion for working with children

motivated both inside and outside lessons

Personal profile of TA at School C

manages speech and language needs within the school

is confident that she is able to support students in mathematics

is trusted by the teacher

works independently in the classroom without teacher instruction/comment

has a mathematics GCSE

feels the teacher is approchable if an issue with subject knowledge is encountered

good relationship with the teacher

dedicated to improving the quality of support for students

suggested developing example folders for low attaining students

has worked with teacher previously

was involved with the development of the TA induction process

brought in fresh, new ideas from other schools through involvement with a cluster group

teacher requested TA to assist with this group

8.4.5.6 Summary of factors arising from TA profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the teacher's profile and characteristics:

- TA's knowledge of students' SEN requirements
- TA's job satisfaction
- experience of TA
- TA's knowledge of students
- TA's relationship with students
- students are respectful of TA
- TA's appropriate involvement with behaviour management
- teacher's role and responsibilities are clear
- clarity of TA's role and responsibilities
- TA's mathematical knowledge
- TA's pedagogical knowledge
- TA's pedagogical subject knowledge
- mutual respect
- honesty within partnership
- teacher is approachable
- TA is flexible
- TA moving round the classroom
- TA being proactive
- preparedness of TA in lessons
- teacher's trust in TA
- TA's knowledge, understanding or experience of teacher role

8.4.6 Partnership profile and characteristics

8.4.6.1 Introduction

Julie and Sally have been working together, on and off, for several years and, during this time, they have developed a very good professional relationship. There is a clear level of trust and mutual respect within the partnership and the teacher and TA share a good rapport with each other. It is apparent that the teacher values the TA and appreciates the support she receives and she has, in the past, requested Sally specifically for classroom support because she acknowledges how good Sally is as a TA. Julie and Sally currently work together for three lessons a week and do not have any allocated time set aside for joint planning and preparation.

For the purposes of this study, Julie and Sally were observed teaching and supporting the same group of year 9 students. The lessons all took place in Julie's classroom and, as such, the layout of the tables and organisation of the room were chosen by Julie. The tables within the classroom are arranged in rows and are split into two columns, all facing the front of the classroom. At the front of the room is an interactive whiteboard and a large standard whiteboard. Students are mostly spread around the room but, as the class size is small, the tables at the very back of the classroom are seldom used by this class. During lessons, the teacher leads the teaching and the TA acts as support as and when necessary. This arrangement was consistent throughout the observations at school C.

8.4.6.2 General aspects of relationship and partnership

Having observed Julie and Sally working together in lessons and having had the opportunity to discuss their usual working practice with them, it is clear that Julie and Sally have a very good partnership based on trust, mutual respect and a strong professional relationship. During lesson observations, Julie and Sally often banter with each other and the students and share a laugh and a joke. There was one particular instance, during the lesson observations, which highlighted the good relationship that exists between the teacher, TA and students. Julie was managing an activity in which students were measuring their heights to calculate averages and the students wanted to

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include the heights of the teacher and TA. The students wanted to include Julie and Sally because Sally is reasonably short and they found it amusing to speculate that she might be the shortest person in the classroom. Julie and Sally both took this in good spirit and included their height measurements, illustrating the very good relationship that exists between the teacher, TA and students.

Julie and Sally have worked together for a number of years with a range of different groups. During the interview, Julie commented on this, and the following comment highlighted how much Julie valued Sally's support.

> *We've worked together for, you know, on and off, for several years and I always request to have Sally because she is such ... she's a particularly good LSA.*

Sally also made a similar comment in her interview.

> *We've worked together before with a couple of classes, so she actually asked me to go in to that one with her ... which is nice, you know, yeah ... it is nice to be wanted.*

Julie clearly appreciates the support that Sally provides during lessons and Sally is aware that Julie values her support and this acknowledgement of her support is clearly appreciated. Both Julie and Sally also claimed during the interviews that they have similar characters and similar expectations.

> *I think that's the reason why we get on so well, because we're on the same wavelength.*

> *We do have a good working relationship, I think because we're quite similar characters.*

The similarities which exist between the teacher and TA were reflected in their classroom practice. They both had similar expectations regarding students' progress and behaviour and they clearly communicated these expectations to students. The teacher also highlighted during the interview how Sally is always listening during lessons and is aware of the teacher's expectations.

> *It may not seem obvious, but she's [Sally] listening and she knows what I'm expecting the children to do and she follows through that way.*

Julie clearly trusts Sally and, during lessons, allows her to provide support as she deems necessary and appropriate. Julie commented during the interview that:

> *She's [Sally] fantastic within the classroom, she's very good with the children and she doesn't have any favourites ... and I just let her get on with it.*

There is clearly a great deal of trust and honesty within this partnership and this appears to enhance the effectiveness of the teacher-TA partnership. Sally clearly appreciates the teacher's honesty and understands why Julie's comments may be important.

> *She's actually a very nice teacher to work for because you know where you are with her, as well, and that's always good, you know. If you've done something wrong, she will tell you; there's no bones about it and, you know, that's actually quite important because, if the teacher doesn't tell you, you just carry on doing the wrong thing.*

Sally also commented on how approachable Julie is and described one particular instance where she felt comfortable talking to Julie but may not have felt so able to talk to other teachers given the same situation.

> *She [Julie] had some time out the other week to do something with one of the SMT [Senior Management Team] and we have a cover supervisor who really winds that class up ... and I said to her [Julie] ... because I'm there at that point, she doesn't see that ... and I went, "can you make sure so and so's not in the classroom", and she sorted it for me.*

The relationship which exists between the teacher and students and the TA and students is very different but both make a significant contribution towards maintaining a positive working environment. Sally and Julie have a very good relationship both in and out of the classroom. This relationship has developed over several years and provides a firm basis for their positive partnership. There appears to be a great amount of trust and mutual respect within the partnership which contributes towards its effectiveness.

8.4.6.3 Roles, responsibilities and organisation within the classroom

The data collected from lesson observations and interviews suggests that Julie and Sally have very clearly defined roles and responsibilities during lessons. Julie's role is to lead the teaching and manage the behaviour of students; if the students are working on a task or activity she will circulate around the room, checking on progress and will help students where necessary. Sally's role is to support the students; at the start of lessons, her main focus is those students with SEN. However, once they are settled and focused, she will also circulate the room and check on other students. Sally not only assists with getting the students focused and helping them when they encounter a problem but she also helps manage the behaviour of students, minimising the low level disruptions in the classroom. If the teacher is addressing the whole group, Sally will usually stop, listen and possibly take notes, ensuring she is aware of what work students should be doing and what the teacher's expectations are for the lesson regarding progress/learning.

Although the role of the teacher and TA in lessons is very different and the relationships that exist between the teacher and TA and students are very different, it was still important to the teacher that students were equally respectful to both the teacher and TA. There was one incident, during the lesson observations, which illustrated that this respect is important to the teacher. A student seated in the front row was beginning to cause a disruption and Julie was working with a student on the other side of the room so, as Sally was seated behind the student working with someone else, she had a quiet word in a friendly tone and manner, asking the student to settle down. The student did not respond initially, so the TA asked two more times, becoming stricter and more assertive each time and eventually the student responded. The teacher had noticed the student causing a disruption and was aware of the exchange between Sally and the student and the student's lack of response. Once Julie had finished helping the student with whom she was working, she went to talk to the disruptive student and reprimanded them for not responding to Sally's request in the first instance.

The results of the teacher-TA tracking software (see appendix 14) show that, generally, both Julie and Sally visit each group of students at least once in each lesson. The teacher does not avoid students who have been working with Sally but makes an effort to check on the progress of all students. The distribution of Sally's time is reasonably

well spread amongst the class and is certainly not spent supporting one or two students. The organisation of the classroom and lessons is designed to encourage students' learning, ensuring they are seated where they will focus on their work. The TA also highlighted during the interview that there are a few "strategic sittings" which allow the TA to focus on multiple students who require additional support simultaneously. Julie and Sally both appear to be well aware of what their roles and responsibilities are during lessons and there does not appear to be any role confusion. Julie does not usually direct Sally during lessons, providing evidence of her trust in Sally's awareness of her role during lessons.

8.4.6.4 Joint planning, communication and reflection

Teachers and TAs working at school C are not given any allocated planning time. Therefore, in the case of Julie and Sally, there are no opportunities for joint planning to occur within working hours, so it does not take place. All the lessons are planned independently by Julie and Sally has little/no input into lesson plans. Often, at the end of lessons, Sally and Julie spent a few minutes discussing the lesson content, students' progress or the plan for the next lesson, but these discussions were very brief. Beyond this, Sally and Julie do not discuss the lessons outside the classroom, although Julie did highlight in the interview that, on the rare occasion, they may make an effort to communicate about the class outside of lessons if there was a particular need.

> *If there's something that umm ... if one of us is concerned about one of the children, we might ... because she walks past my room everyday, ... you know, she might pop in, or I might pop out and say something to her, but it's very rare, probably once a fortnight, if anything.*

The prospect of having joint planning time does not even seem possible because of the way that TAs are deployed within the school. On the whole, this does not seem to greatly impact upon Julie and Sally's partnership. However, there was one incident during the lesson observations which illustrated the issues which can arise when there is little time outside of lessons to discuss and share plans. During the lesson observations, it became apparent that Sally left the classroom occasionally to photocopy and enlarge exercises for one of the students. On one such occasion, Julie explained a task to students while Sally was not present. When Sally returned, she quickly understood the

task that had been set, but was not aware that the teacher only wanted the students to do the first step in the calculation, so when Sally started working with students she encouraged them to do the whole calculation. The teacher noticed this and had to explain to the TA what she wanted the students to do. The teacher clearly acknowledged that there was a miscommunication and explained the task to the TA in a friendly manner. This confusion could have been avoided if the TA was aware of the work prior to the lesson, so they could arrive with the activity/exercise already enlarged.

Throughout the lesson observations, Julie and Sally talked to each other to reflect on students' progress and discuss issues. The lack of time outside of lessons does not appear to cause any substantial issues and Julie and Sally both feel their partnership is effective without this time, although they recognise it would be advantageous if time was available. The teacher and TA readily share knowledge and resources, but the teacher definitely views the planning of lessons as solely her responsibility.

8.4.6.5 Summary of factors arising from partnership profile and characteristics

The following factors, which are likely to contribute towards the teacher's and TA's positive partnership, have been identified from the data collected relating to the teacher's profile and characteristics:

- teacher and TA sharing knowledge and resources
- honesty within partnership
- mutual respect
- experience of working together
- teacher and TA positive relationship
- teacher and TA having similar characters
- students being equally respectful of teacher and TA
- teacher's trust in TA
- consistency of TA presence in lessons
- organisation of classroom, lesson and students
- teacher's knowledge of students
- teacher's relationship with students
- TA feels teacher is approachable
- teacher's role and responsibilities are clear
- clarity of TA's role and responsibilities
- TA's knowledge of students
- TA's appropriate involvement with behaviour management
- TA's relationship with students
- good communication between teacher and TA
- TA moving round the classroom
- flexibility of teacher
- flexibility of TA
- TA feeling valued
- TA's pedagogical knowledge
- teacher's pedagogical knowledge
- TA's pedagogical subject knowledge
- teacher's pedagogical subject knowledge

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- TA is aware of teacher's expectations
- teacher and TA working as a team

8.4.7 Summation of factors contributing to positive partnerships

Teacher having training on or experience of working collaboratively with TAs

TA's pedagogical knowledge

Teacher's pedagogical knowledge

TA's relationship with students

Experience of working together

Teacher's role and responsibilities are clear

TA's role and responsibilities are clear

Teacher and TA having similar characters

Teacher's trust in TA

Teacher's knowledge of students' SEN

TA's knowledge of students' SEN

Teacher and TA sharing knowledge and resources

Honesty within partnership

Teacher's knowledge of students

TA's knowledge of students

TA moving round the classroom

Teacher's relationship with students

TA's pedagogical subject knowledge

Students being equally respectful of teacher and TA

Mutual respect

TA being proactive

Factors related to the teacher

Factors related to both the teacher and TA

Factors related to the TA

Experience of teacher

Organisation of the classroom, lesson and students

Preparedness of TA in lessons

Consistency of TA presence in lessons

Flexibility of TA

Teacher's job satisfaction

Teacher's mathematical knowledge

Teacher and TA positive relationship

TA having knowledge of teacher's expectations

TA's involvement with behaviour management

TA's job satisfaction

Teacher and TA working as a team

Teacher's pedagogical subject knowledge

TA feels teacher is approachable

Good communication

Experience of TA

TA's mathematical subject knowledge

Flexibility of teacher

TA feeling valued

Teacher having knowledge, understanding or experience of TA role

TA having knowledge, understanding or experience of teacher role

8.5 Critique of the results obtained from the embedded case studies

The factors that have been identified as contributory to the development of effective partnerships are based on the results of the embedded case studies. As the majority of these factors are present in all three of the partnerships it is likely that they are a requirement if teacher-TA partnerships are to be effective. However, the limitation of conducting three embedded case studies is that other teacher-TA partnerships, which may also be self-defined as effective, may not exhibit the same characteristics.

When drawing conclusions from the results, consideration also needs to be given to the participants involved in the embedded case study phase of this research. In some ways the partnerships could be considered atypical, as certain aspects and characteristics are unlikely to be representative of teacher-TA partnerships in general. Whilst this does impact upon the analytic generalisability of the findings obtained from the embedded case studies, I argue that the conclusions of this research still make a significant contribution to current knowledge. Whilst aspects of the three partnerships are similar, for example, the teacher's and TA's educational background and their personal relationships, other aspects of the partnerships differ, for example, the teachers experience of teaching, how the TAs are deployed within the school, the availability of time to meet outside the classroom, experience of working together and the differences between the school sites in which the teacher and TA work. As such, the three partnerships at the focus of the embedded case studies all differ, but still may not be representative of a 'typical' partnership.

Without considering a greater number of self-defined effective partnerships, it is not possible to claim whether the teachers and TAs involved in the embedded case studies have atypical partnerships or typical effective partnerships. The possibility exists that these partnerships are exemplars of effective practice and, if this was the case, the factors identified from the embedded case studies would be a requirement for effective teacher-TA partnerships. This research study is not sufficient, however, to make this claim.

The likely atypicality of the partnerships has two main implications for the findings from the embedded case studies and the resultant self-evaluation tool. The first

implication is that the criteria assessed in the self-evaluations should be considered as factors which contribute towards the development of effective partnerships, rather than requirements of effective practice. The second implication is that the self-evaluation tool needs to be thoroughly trialled with multiple teacher-TA partnerships who are independent from the original embedded case study participants to ensure that the tool is fit for purpose and provides accurate guidance for teachers and TAs.

8.6 Comparison of factors identified in the embedded case studies

As the embedded case studies have been discussed in detail, I now compare the factors that are present within each effective partnership to identify similarities and differences between the cases. The majority of the factors which have been identified as contributing towards effective teacher-TA partnerships are present in all three case studies. However, there is one factor which has been identified in only two of the case studies and one factor which was present in only one of the case studies. As the factors are not *necessary* for effective partnerships, but factors which may *encourage* effective partnerships, the lack of the factors being present does not suggest that the partnerships are ineffective. The factor which was identified in only two of the case studies was 'TAs being based in mathematics' and the factor which was identified in only one of the case studies was 'the teacher and TA having allocated planning and reflection time'. These two factors both relate to the deployment of the TA and are not controlled by the teacher or TA, but by a member of management within the school, in these cases the SEN co-ordinator.

The question of whether TAs should be based in subjects is an often-debated topic. There are a number of advantages to having TAs based in mathematics and, having observed a subject-based TA at school B, the advantages of having support staff dedicated to departments is clear. However, the relationship and positive partnership which was present within the teacher-TA partnership at school B was no different to the partnerships based at school A and C, suggesting that having subject-based support staff may not be as important to the development of effective partnerships as other factors.

The prospect of teachers and TAs having allocated planning time is another topic which is widely debated. As has been discussed in more detail in the literature review,

previous research conducted by Perks (2000) has identified that joint planning time may be a secondary concern to TAs who prioritise knowing the content and objectives of the lesson over being involved with the actual planning. The allocated planning time given to the teacher and TA at school A not only aided the development of a very good relationship due to the greater amount of time the teacher and TA spent working collaboratively, but also allowed the teacher and TA to be more flexible with how they worked together in the classroom. The allocated joint planning time also provided an opportunity for the teacher and TA to plan lessons and activities which were ambitious and varied, many of which may not have been possible without the teacher and TA present.

The partnership at school B was not given allocated planning time but, as the TA was based in the mathematics department, there was time between lessons for the teacher and TA to discuss lesson plans, objectives and student progress (although the TA was not paid during this time). The partnership at school C did not have any allocated planning time either but, in this case, the teacher and TA were not able to discuss the lessons outside the classroom very easily, due to the TA being deployed to all subjects and the teacher and TA having full timetables. The teacher and TA at school C felt that it was not necessary to discuss the lesson content beforehand, as the TA was able to understand the lesson objectives at the very start of lessons, although, at times, it was apparent that knowledge of the lesson content could have helped to avoid confusion, as discussed previously (see 8.4.6.4).

Allocated planning time is difficult to arrange due to the way that secondary schools are organised, particularly when TAs are deployed across all subjects. There are few teachers and TAs who are given allocated planning time (Blatchford et al., 2009) and, although this may be beneficial to aiding the effectiveness of the partnership, the results of these case studies suggest that a positive effective partnership can exist without it. These two factors may not be required for an effective partnership to exist, but they do appear to contribute towards teachers and TAs developing and maintaining effective partnerships. Therefore, although not present in all three embedded case studies, these factors will be included in the list of factors which contribute towards effective teacher-TA partnerships.

8.7 Classifying the factors

After originally classifying the factors in terms of whether they affected the teacher, TA or both teacher and TA, I recognised that the teacher and TA were not always able to enact change, i.e. 'TAs being based in mathematics departments' is not the choice of the teacher or TA. I also noticed that some of the factors could not be 'changed', but still contributed towards developing effective partnerships, i.e. 'teacher and TA having experience of working together'. With this in mind, I developed the following five categories:

- factors for teacher consideration and change
- factors for TA consideration and change
- factors for teacher and TA consideration and change
- factors for teacher and TA consideration and school change
- factors for general consideration

Each of the factors can be placed in one of these five categories depending on who should consider the factors and who can enact change or whether change cannot be enacted and general awareness of the factor's importance is needed.

Factors for teacher consideration and change

– teacher's pedagogical knowledge
– teacher's pedagogical subject knowledge
– teacher's knowledge of students
– teacher's relationship with students
– teacher's knowledge, understanding or experience of LSA role
– flexibility of teacher
– teacher's knowledge of students SEN
– TA feels teacher is approachable
– teacher's roles and responsibilities are clear
– teacher's training on or experience of working collaboratively with TAs
– teacher's mathematical knowledge

Factors for TA consideration and change

- flexibility of TA
- TA's knowledge of students
- TA's involvement with behaviour management
- TA's having knowledge of teacher's expectations
- TA's relationship with students
- clarity of TA's roles and responsibilities
- TA's mathematical subject knowledge
- TA moving round the classroom
- TA's pedagogical knowledge
- TA's pedagogical subject knowledge
- preparedness of TA for lessons
- TA being proactive (self-motivated)
- TA's knowledge of students' SEN
- TA's knowledge, understanding or experience of teacher role

Factors for teacher and TA consideration and change

- teacher and TA sharing knowledge and resources
- students being equally respectful of teacher and TA
- honesty within partnership
- mutual respect
- teacher and TA positive relationship
- teacher's trust in TA
- teacher and TA working as a team
- organisation of the classroom, lesson and students
- good communication between Teacher and TA

Factors for teacher and TA consideration and school change

- consistency of TA presence in lessons
- allocated planning and reflection time

- TA feeling valued
- TA being based in mathematics
- TA's job satisfaction
- teacher's job satisfaction

General factors for consideration

- experience of TA
- experience of teacher
- experience of working together
- teacher and TA have similar characters

Having identified and classified these factors, it is now possible to use aspects of multi-attribute utility theory to develop these factors into a form of self-evaluation for teachers and TAs. The results of the self-evaluation will then highlight the factors which need to be addressed and the classification of these factors, as detailed above, will identify who needs to address the issues.

Chapter 9 Development and potential use of the self-evaluation forms

9.1 Overview of chapter

Analysis of the data obtained from the three embedded case studies highlights a number of factors which were seen to contribute towards effective teacher-TA partnerships. These factors provide the basis for a form of self-evaluation which will enable teachers and TAs to assess their current practice and aid them in identifying areas which would encourage the development of effective partnerships. The first step in developing the self-evaluation was to discuss the factors identified from the embedded case studies with the embedded case study participants. During this discussion, it became apparent that both the teachers and TAs felt that some of the factors were more important to the development of effective partnerships than others. I felt that this variation in importance should be reflected in the design of the self-evaluation forms in order to provide the most accurate guidance for teachers, TAs and schools.

In this chapter, I explain how the importance of each factor was allocated and how this variation in importance is incorporated into the design of the partnership evaluation forms. I begin by discussing which of the factors identified in the embedded case studies are suitable for inclusion within the self-evaluation forms, before describing how the importance of the factors is defined, using methods which are usually employed in the initial stages of multi-attribute utility theory. I then explain how the importance of each factor is reflected in the self-evaluation forms and describe the self-evaluation process, before concluding the chapter with a discussion of how the self-evaluation can potentially be used in schools.

9.2 Identifying the factors for use in the self-evaluation forms

The majority of the factors identified from the embedded case studies are suitable for inclusion within a self-evaluation for teacher and TA partnerships. However, some factors, for various reasons, are not and these are now discussed in detail. The three factors which relate to experience: 'experience of teacher', 'experience of TA' and 'experience of working together' were all considered to be inappropriate for inclusion within the self-evaluation, due to their being a lack of any action that would effect

change in the near future. However, as these three factors have still been identified as important to the development of effective teacher-TA partnerships, their importance should be communicated to teachers, TAs and schools. With this in mind, there is no need to assess the importance of these factors in relation to the other factors, but there was a need to highlight their general importance within the self-evaluation procedure.

The factor relating to 'teachers and TAs having similar characters' is also considered inappropriate for inclusion within the self-evaluation, as there is little potential for change. Teachers and TAs either have similar characters, or not; they cannot change their character or personality or are unlikely to wish to do so. As there is potential for schools to deploy TAs to work with teachers who have similar characters (although often impractical and more often potentially impossible), this factor is highlighted within the self-evaluation procedure for general consideration, but is not assessed in comparison to other factors.

The final two factors that are deemed unsuitable for inclusion within the self-evaluations are 'TA's being based in mathematics' and 'teachers and TAs having allocated planning time'. The issue with the analysis of these factors is that, for individual partnerships, these questions can be answered only generally in the affirmative or negative, whereas the other factors identified as important can all be met to varying extents. As the factors are recognised as important to aiding the development of effective partnerships, they are included within the self-evaluation, but only for general consideration, rather than for comparison with other factors. However, due to the debate within previous research regarding the importance of these factors, I compare the importance of these two factors with the other factors, as the results have the potential to be informative.

9.3 Identifying the relative importance of the factors

Whilst it is possible to assess the importance of factors myself, these allocated degrees of importance would be based solely on my own subjective views. In order to provide support for the assigned importance of the factors, the views of the teachers and TAs are utilised, as they are considered 'experts in the field' because they define their teacher-TA partnerships as effective. Due to the large number of factors identified in the study,

it was considered necessary for participants to order the factors by importance, prior to defining the degree of importance of each factor. The teacher and TA based at school A were the first of the embedded case study participants to sort the factors in order of importance. As there are a significant number of factors, the teacher and TA were each given a set of sorting cards (with a factor on each card) and asked to sort the cards into order of importance. This proved to be a challenging task, as making judgements of importance with such a large number of factors was very difficult. The process was also very time-consuming and the results were inconsistent, as the method of sorting was attempting to introduce a level of accuracy that was not feasible because the teachers and TAs believed that a number of the factors interacted too greatly to separate them.

The second method of assessing the importance of the factors involved the teacher and TA sorting the factor cards in order of importance within the category groups, which were defined by who should consider the factors and who can implement change (as discussed in chapter 9). The teacher and TA were able to complete this sorting process but they were unable to define the relative importance of each factor in relation to the others. Without being able to inter-relate the importance of the factors, the results of the process could not be used to influence the design of the self-evaluation forms. This method of sorting the factors also proved impractical, as the importance of each factor within the separate groups, was independent of each other. Theoretically, it could be possible for the factor considered most important within one group to be less important than the least important factor in another group, but this method of sorting the factors did not account for this.

The main issue with the first two methods of assessing factor importance was that they attempted to be overly accurate in defining the importance of the factors, leading to time-consuming and occasionally near-impossible tasks. With this in mind, the third method of assessing the importance of factors required the teacher and TA to sort all the factor cards in five groups, in order of importance, with group one being the most important and group five being the least important, where the factors assigned to each group were equally as important as each other. This method of sorting proved to be more effective and efficient. The teacher and TA were able to sort the factors into five groups without any considerable difficulty and a comparison between all of the factors was possible. This process of sorting the factors was repeated with the teacher at school

B and the teacher and TA at school C. Unfortunately, by this time, the TA at school B was no longer able to participate further in the study due to personal reasons. The results of the sorting process are shown in table 9.1.

9.4 Analysis and discussion of results from sorting process

The first step in analysing the results from the factor sorting process is to identify the median importance value for each factor and calculate the range for each set of results. These calculations give an indication of how consistent the assigned levels of importance of each factor are between participants. The median and range values for each factor are shown in table 9.1.

The range for most of the factors is found to be between 0 and 2, suggesting that the judgements of importance of each factor are reasonably consistent. Interestingly, the two factors which have ranges greater than 2 are the factors which are not included in the self-evaluation form, other than for general consideration: 'TAs being based in mathematics' and 'teachers and TAs having allocated planning and reflection time.' The variation in the perceived importance of these two factors is not unexpected and a fuller understanding of the individual cases helps to explain these different views.

Considering the values assigned to the factor 'TAs being based in mathematics', the teacher and TA based at school A put this factor in groups 4 and 2 respectively, the teacher at school B put this factor in group 1 and the teacher and TA at school C put this factor in groups 4 and 5 respectively. The TA based at school B works within the mathematics department and, throughout the case study, the teacher and TA often highlighted the benefits of this, referring to their good relationship and positive partnership; thus the priority of this factor for this teacher could be anticipated. The TA based at school A is not solely deployed in the mathematics department, but does have a number of lessons working with the same teacher in mathematics. The teacher and TA recognise the importance of the TA being linked to mathematics, but do not consider it a necessity, so the rating of importance assigned to the factor was considered average by this partnership. Finally, the TA based at school C is not deployed in any specific subject, but instead works across the whole school. As the teacher and TA feel they

have an effective partnership without the TA being based in mathematics, the low rating of the importance of these factors is logical.

Table 9.1 Embedded case study participants' assessments of the importance of factors

Factor/Characteristic	Teacher A	TA A	Teacher B	Teacher C	TA C	Median	Range
TA having knowledge of teacher's expectations	2	2	3	1	3	2	2
Flexibility of TA to fulfil different roles	2	1	1	1	1	1	1
Preparedness of TA in lessons	3	2	3	1	3	3	2
Teacher and TA sharing knowledge and resources	3	2	3	3	3	3	1
Mutual respect	1	1	1	1	1	1	0
Organisation of the classroom, lesson and students	2	2	3	1	2	2	2
TA moving round the classroom	4	4	4	3	2	4	2
TA's knowledge of students	2	3	1	2	1	2	2
TA's knowledge of SEN	2	3	1	2	1	2	2
TA's having knowledge , understanding or experience of teacher role	3	5	4	3	3	3	2
TA's pedagogical knowledge	3	1	2	3	3	3	2
TA's pedagogical subject knowledge	3	2	2	3	4	3	2
Teacher is approachable	1	1	2	1	1	1	1
Teacher's relationship with students	2	1	3	1	1	1	2
Teacher's pedagogical subject knowledge	2	3	2	1	2	2	2
Students being equally respectful of teacher and TA	1	2	2	1	1	1	1
TA feeling valued	1	1	1	1	3	1	2
Teacher's roles and responsibilities are clear	2	3	3	2	1	2	2
Teacher's trust in TA	1	2	1	1	3	1	2
Honesty within partnership	3	3	3	1	3	3	2
Flexibility of teacher	2	3	1	2	1	2	2

Table 9.1 Continued

Factor/Characteristic	Teacher A	TA A	Teacher B	Teacher C	TA C	Median	Range
Teacher's training on or experience of working collaboratively with TAs	2	3	2	3	4	3	2
TA's appropriate involvement with behaviour management	3	2	2	2	4	2	2
Teacher's pedagogical knowledge	2	1	2	2	3	2	2
Teacher's knowledge of students	1	2	1	3	1	1	2
Teacher and TA working as a team	1	1	2	1	2	1	1
Teacher and TA positive relationship	3	1	1	1	2	1	2
TA's mathematical subject knowledge	3	2	4	3	3	3	2
TA being proactive (self-motivated)	2	2	1	1	2	2	1
TA's relationship with students	1	2	3	1	1	1	2
TA's job satisfaction	2	3	3	3	2	3	1
Consistency of TA presence in lessons	1	2	2	2	3	2	2
Teacher's job satisfaction	3	2	3	4	2	3	2
Teacher's knowledge of SEN	3	2	1	2	2	2	2
Teacher's knowledge, understanding of experience of TA role	2	3	2	3	3	3	1
Allocated planning and reflection time	1	1	3	4	4	3	3
Clarity of TA's roles and responsibilities	2	3	3	2	2	2	1
TA being based in mathematics	4	2	1	4	5	4	4
Teacher's mathematical knowledge	3	2	3	3	1	3	2
Communication between teacher and TA	1	1	1	1	1	1	0

Considering the values assigned to the factor 'teachers and TAs having allocated planning and reflection time', the teacher and TA based at school A both rated this factor as being one of the most important factors, by placing it in group 1. The teacher based at school B placed this factor in group 3 and both the teacher and TA at school C placed this factor in group 4. The teacher and TA at school A have allocated time outside of lessons for planning and reflection and this time enables them to organise the lessons and students effectively. This teacher and TA partnership described during the case study how this time is invaluable to them and how their effective partnership relies upon it. Their rating of the factor being of utmost importance was therefore to be expected.

The teacher and TA at school B do not have allocated time outside of the classroom to meet and discuss lessons and students. However, due to the TA being based in the mathematics department, the teacher and TA often have time to talk to each other during break and lunch, so some brief discussions do occur. Therefore, whilst they recognise the benefits of having time to meet and discuss lessons and student progress, they do not consider it essential for effective practice. The average rating of importance assigned to the factor by the teacher at school B is therefore understandable. Finally, the teacher and TA based at school C are not allocated any time for planning and reflection and have little time to meet outside of lessons. During the case study, this teacher and TA emphasised how they would make a conscious effort to meet outside of lessons, if a particular issue with a student emerged, but usually this was not necessary. Similar to their assessment of the factor relating to TAs being based in mathematics, both the teacher and TA felt this factor was less important than others, as they felt their own partnership was effective, irrespective of not having this allocated time.

9.5 Developing the self-evaluation forms

In order to develop the factors identified as important to encouraging effective partnerships into a form of self-evaluation, it is first necessary to convert the median values of importance into a suitable measurement system. It was decided that teachers and TAs should assess how well they met each of the factors on a sliding scale. The length of the scale is relative to the importance of each factor, such that the most important factors have the longest scales. The factors with a median of 1 have a set

length sliding scale, factors with a median of 2 have a scale of 80% of this set length, factors with a median of 3, 60% of this set length, factors with a median of 4, 40% of this set length and factors with a median of 5, 20% of this set length.

The varying length of the sliding scales is employed in such a way as to prioritise the factors which are seen as most important. An example of how this works in practice is illustrated in figure 9.1.

Having calculated the relative lengths of each of the sliding scales, it is possible to develop the first version of the self-evaluation forms (see appendix 15). The factors in this first version of the forms are separated into the categories defined previously in chapter 9, related to who should consider the factors and who can implement change. Following a discussion with my supervisor, two significant issues related to the design and use of the self-evaluation forms became apparent. The first issue related to the design of the self-evaluation forms themselves. This first version required both teachers and TAs to assess how well they feel they meet the factors which encourage effective partnerships. It was clear, however, that some of the factors should only be assessed by the teacher, some only by the TA and others by both the teacher and TA.

Communication

Poor   Very Good

Teacher is approachable

Not Approachable   Very Approachable

TA moving round the classroom

Doesn't Move   Moves Around whole class

In this example the communication between the teacher and TA has been identified as the most important factor as it has the longest scale, the teacher being approachable is the second most important factor and the TA moving round the classroom is the least important. Once the teacher and TA have assessed their current practice in relation to each factor, the marking which is furthest to the left highlights the area of the partnerships which requires further consideration and change to encourage the development of an effective partnership. In this case, the assessment of each factor highlights that the priority issue to address is the communication between the teacher and TA because this is the mark which is furthest left. Although the assessment of how approachable the teacher is, is further to the left of its individual scale, the communication between the teacher and TA is considered the priority as it is furthest left overall due to the length of the communication scale being longer. The other factors are not considered until the level of communication has improved, thus the self-assessments take into account the importance of the various factors.

Figure 9.1 Example of how the self-assessment forms function

The second issue related to the practicality of using the self-evaluation forms. The self-evaluation forms were designed to be completed by teachers and TAs collaboratively, so as to encourage reflection on their own practice and identify potential areas for improvement. This, however, presented an additional issue, as some of the factors may be sensitive topics which might be difficult to address honestly as a partnership. For example, if the teacher is not approachable, will the TA be honest and identify this factor if it means creating a potentially uncomfortable situation because the teacher is present? Therefore, the intention for use of the self-evaluation forms needs to be reconsidered.

Following the identification of these two issues, the self-evaluation forms were first redesigned so they now consisted of a teacher evaluation form, TA evaluation form and a teacher and TA evaluation form (see appendix 16). To overcome the second issue, once the evaluation forms are completed, they are given to a member of management, either the SEN co-ordinator or the head of mathematics or both, so that the responses of the teacher and TA can be compared and areas for improvement can be identified and discussed with the teacher and TA.

9.6 The self-evaluation process

The self-evaluation process consists of three steps, the first of which requires the teacher and TA to complete the appropriate self-evaluation forms. The teacher completes the teacher evaluation form, the TA completes the TA evaluation form and both the teacher and TA complete the teacher and TA evaluation form, though independently. Completion of the forms themselves involves the teacher and TA assessing where they feel they are on the sliding scale for each factor and marking this point on the acetate sheets which accompany the self-evaluation forms (see example in Appendix 17). The completed self-assessment forms are then given to the SEN co-ordinator or head of mathematics for comparison and analysis. The second step in the process requires the SEN co-ordinator or head of mathematics to compare the responses of the teacher and TA. The use of the acetate sheets aids the ease of comparison of responses. The first consideration in this comparison is to identify any significant discrepancies in the responses on the teacher and TA evaluation forms, as this may highlight an issue with the partnership caused by a difference of opinion regarding how well current practice works.

Once any significant discrepancies have been acknowledged, the assessments of all the factors can be compared. By placing all of the acetate sheets together, the SEN co-ordinator or head of mathematics is able to identify which assessment markings are furthest to the left. The factors associated with these markings are the areas of the partnership which potentially can improve the effectiveness of the partnership with further consideration and change. The third and final step of the self-evaluation process involves the SEN co-ordinator or head of mathematics discussing the results of the

analysis with the teacher and TA, identifying the areas which should serve as the main focus for future professional development.

9.7 Potential of self-evaluation forms.

The self-evaluations have the potential to focus the professional development of teachers and TAs to encourage the development of effective teacher-TA partnerships. It is anticipated that these effective partnerships, in turn, benefit the teaching and support of students, supporting their progress and learning. Following a discussion with the SEN co-ordinator at school A regarding the use of these self-evaluation forms, it was apparent that the forms have the potential to extend beyond supporting individual teacher-TA partnerships. The self-evaluations not only allow comparisons within the teacher-TA partnership but also enable comparisons between mathematics teachers working with the same TAs and TAs working with the same mathematics teachers. The results of these cross-comparisons further assist the self-appraisal of current school practice and highlight the differences between partnerships, illuminating decisions regarding how TAs are deployed within the school to best effect.

During the discussion with the SEN co-ordinator at school A she explained how they intended to use the self-evaluations at the start of the 2012/13 academic year to assess current teacher-TA partnerships in mathematics and identify areas where there exists potential for improvement. The potential use of the self-evaluation forms may also extend beyond being employed solely in mathematics departments. Providing the factors related specifically to mathematics are appropriately changed to other subjects, the self-evaluations may potentially be employed across the whole school. A trial of the self-evaluation forms in other subjects is necessary to justify this use, but the potential clearly exists.

Chapter 10 Discussion

10.1 Introduction

This research study aimed to inform the development of effective teacher-TA partnerships in mathematics departments in secondary schools in order to improve teaching and learning for all students. The focus of the study was the identification of factors which encourage effective teacher-TA partnerships. The study employed an embedded case study approach, examining three teacher-TA partnerships which were self-defined as being effective, to identify the common factors in these three partnerships which contribute towards each partnership being effective. The research questions addressed are:

1) What are the current models of teachers and TAs working together in mathematics classrooms?
2) Which characteristics of the ways in which teachers and TAs work together promote effective teacher-TA partnerships?
3) How can effective teacher-TA partnerships be encouraged and supported?

In the review of literature, presented in chapter 2, two key areas were considered: the impact and deployment of TAs and the partnership between teachers and TAs. Previous research examining the impact of TAs has mainly focused on their deployment within primary settings and the conclusions of the majority of these studies are made tentatively. My study of teacher-TA partnerships is undertaken in secondary school mathematics departments. It is apparent that few other research studies focused on the impact and deployment of TAs in secondary schools and no firm conclusions were developed prior to the publication of the DISS project (Blatchford et al., 2009). Subsequent to the initial stages of the study reported here, the publication of the DISS project (Blatchford et al., 2009) asserted that TAs have a negative impact on student learning and, consequently, the authors suggest that further research, focusing on improving the support provision for students, was necessary. Even this research, however, was not entirely conclusive in its assertion that TAs have a negative impact on student learning, as discrepancies existed between the quantitative data which suggested

that TAs have a negative impact and qualitative data obtained from interviews which suggested that the presence of a TA was beneficial to teaching and learning.

One prominent recommendation made by the authors of the DISS project was that future research considering TAs would be more beneficial if it focused on improving current practice and identifying how TAs can be deployed effectively, rather than attempting to further assess the impact of TAs. Despite being in process at the time of publication of the DISS project, my study centrally addressed the recommendations of Blatchford et al. (2009), focused as it is on the partnership between teachers and TAs, on the basis that this partnership holds the key to improving teaching and the support of students.

The study reported here comprehensively explored factors identified by both teachers and TAs in practice in their partnerships. Other studies reviewed in the literature also examined the partnership between teachers and TAs (Devecchi and Rouse, 2010, Bedford et al., 2008, Walsh, 2005 and Smith et al., 2004). Although these studies employed a range of approaches to identify the factors, skills and attributes which encourage positive teacher- TA partnerships and effective practice, the conclusions of these studies are inconsistent and little attempt has been made to implement change based on any of the findings. My study sought not only to identify the factors which contribute towards effective teacher-TA partnerships, but also to implement change to improve partnerships in schools. This has led to the design and development of a model for teacher and TA partnership self-evaluation which is aimed at mutually specifying an appropriate focus for the professional development of teachers and TAs, leading to a more effective partnership.

10.2 Addressing research question one: What are the current models of teachers and TAs working together in mathematics classrooms?

This first research question required me to identify how TAs are deployed in the secondary mathematics classroom and how well the partnerships between teachers and TAs work. The results obtained from the questionnaire employed in the initial stages of this research study found that TAs are most commonly deployed to support a number of individual students, but are also, on occasion, deployed to support groups of students or a single individual student. The findings of this phase of the research regarding the

deployment of TAs and the range of tasks completed by TAs whilst supporting in lessons concur with results from previous research studies (see Smith et al., 2004, Walsh, 2005 and Blatchford et al., 2009). The variation in how TAs are deployed is likely to be dependent on a number of factors including the group of students being supported, the activity being undertaken by the class and the relationship that exists between the teacher and TA. Additionally, these classroom factors are likely to affect the tasks that TAs complete during lessons and this partially explains the wide range of responses to the question regarding the work of the TA in the classroom.

In respect of how well teachers believe their partnership with TAs works, responses were generally positive, with the majority of teachers claiming that their partnerships work well usually and acknowledging that the level of communication between teachers and TAs is good (modal average response rating of 8 out of 10). Despite these positive responses, the majority of teachers had received no specific training on how to work effectively with TAs and were able to identify a number of factors that they felt would improve the effectiveness of the partnership between teachers and TAs. These included allocated time for planning and reflection, improved communication, TAs being allocated to the department and clarification of job role (for a complete list of factors recommended, see appendix 6). This evidence regarding how well the partnership between teachers and TAs works and the lack of training received by teachers regarding how to work effectively with TAs aligns with previous research (Blatchford et al., 2009 and Smith, 2004).

The significance of the results obtained from the questionnaire is limited by the low response rate. Given the number of responses, it is not possible to generalise based on the findings or identify statistically significant relationships. Although limited, this initial questionnaire doe offer an insight into existing practice in partnerships between teachers and TAs. The content and design of the questionnaire itself was strongly modelled on previous research (Smith, 2004), but the methodological framework of the embedded case study, which built upon the results of the questionnaire and was designed to analyse the characteristics of effective teacher-TA partnerships, is original in the field of education.

The purpose of this research question was to gain an insight into current practice with a specific focus on teachers and TAs teaching and supporting mathematics learning for students. At the time the questionnaire was conducted, research considering the deployment of TAs in the classroom did not differentiate between different subjects and the insight into practice provided by these questionnaires form part of the originality of this study. Unfortunately, the publication of results from the DISS project (2009) has had a significant impact on the contribution of this questionnaire to current knowledge. The results of the large scale study conducted by Blatchford et al. has somewhat negated the need for the questionnaire in this research. However, the results of the questionnaire are considered invaluable as they not only provided the basis for the embedded case study phase of this research study, but also identified potential embedded case study participants.

10.3 Addressing research question two: Which characteristics of the ways in which teachers and TAs work together promote effective teacher-TA partnerships?

A significant outcome of this study is the identification of a range of factors which contribute towards the development of effective teacher-TA partnerships. Identifying these factors, and the depth to which they are utilised in this study, contributes to the originality of the research. In order to illustrate the significant interdependence of the factors identified in the partnership between teachers and TAs, I presented these results in Venn diagrams (see chapter 8). The identification of factors which encourage effective partnerships not only offers an insight into the intricacies and subtleties of the teacher-TA partnership, but also act as the basis for the development of a self-evaluation tool, specifically designed to identify a focus for the professional development of mathematics teachers and TAs to encourage the cultivation of an effective partnership. The implications for policy and practice (discussed in chapter 11) arising from the identification of these factors are strengthened by the trustworthiness of the research, which is enhanced by the use of a multiple embedded case study methodology.

The factors identified in this study are consistent with factors identified previously by Bedford et al. (2008), Devecchi and Rouse (2010), Walsh (2005) and Smith (2004), but extend beyond the findings of these previous studies to provide a deeper understanding of such factors which contribute towards effective partnerships. The only discrepancy

between factors identified in this study and factors identified in previous research arises when the study conducted by Perks (2000) is considered. Perks (2000) concludes that formal planning time (allocated planning and reflection time) is not necessarily required to have an effective partnership and was viewed as being less important than other factors which contribute towards effective practice. However, the importance of this factor to the development of effective partnerships is not of direct concern, as this factor was identified as contributory to the development of effective partnerships and this conclusion is not only supported by the evidence presented in this research study but is also supported by research conducted by Bedford et al. (2008) and Walsh (2005). To illustrate the differences between the factors identified in previous studies and the factors identified in this study, I summarise these research outcomes in table 10.1.

A comparison of the factors identified in this research study to those of previous studies highlights the substantive significance (see chapter 6) of the contribution that this study makes to addressing the recommendations of Blatchford et al.'s (2009) research. Evidence in support of the findings of my study has been triangulated both within and between embedded case studies. Comparison of the factors identified from the multiple embedded case studies with the findings of previous research studies illustrates that the results have both confirmatory significance (see Bedford et al., 2008, Devecchi and Rouse, 2010, Walsh, 2005 and Smith, 2004), due to the number of factors that are supported directly by the results of previous research, and innovative significance, due to the number of factors that have not been identified previously. As the identification of factors provides the basis for a self-evaluation tool which can be employed to identify a focus for teachers and TAs professional development in order to encourage the development of an effective partnership, the results also have implications for practice.

The range of factors identified in this study is far greater than the range of factors identified in any previous research study. The depth to which the partnerships have been analysed was necessary to ensure that the self-evaluations, developed from the outcomes of the analysis, could pinpoint the aspect of the teacher-TA partnership which is most in need of development. The factors identified in this research study are comparable to the four key areas which are highlighted in the model of effective practice presented by Bedford et al. (2008). Therefore, despite the range of factors not

being identified previously, they are still supported by this model of effective practice suggested by Bedford at al.

Table 10.1 Comparison of factors identified in this research study to factors identified in previous research studies

Factors identified in this research study	Smith et al. (2004)	Bedford et al. (2008)	Devecchi and Rouse (2010)	Walsh (2005)	Perks (2000)
TA's knowledge of teacher's expectations	-	-	✓	-	✓
Flexibility of TA to fulfil different roles	✓	-	✓	-	-
Preparedness of TA in lessons	-	-	-	✓	-
Teacher and TA sharing knowledge and resources	-	-	✓	-	-
Mutual respect	-	-	✓	✓	-
Organisation of the classroom, lesson and students	-	-	-	-	-
TA moving round the classroom	-	-	-	-	-
TA's knowledge of students	-	-	-	-	-
TA's knowledge of SEN	-	-	-	-	-
TA's knowledge , understanding or experience of teacher role	-	-	-	-	-
TA's pedagogical knowledge	✓	-	-	-	-
TA's pedagogical subject knowledge	✓	-	✓	-	-
Teacher is approachable	-	-	✓	-	-
Teacher's relationship with students	-	-	-	-	-
Teacher's pedagogical subject knowledge	-	-	✓	-	-
Students being equally respectful of teacher and TA	-	-	-	-	-
TA feeling valued	-	✓	-	✓	-
Teacher's roles and responsibilities are clear	-	-	✓	-	✓
Teacher's trust in TA	-	-	-	-	-
Honesty within partnership	-	-	-	-	-
Flexibility of teacher to fulfil different roles	-	-	✓	-	-

Table 10.1 Continued

Factors identified in this research study	Smith et al. (2004)	Bedford et al. (2008)	Devecchi and Rouse (2010)	Walsh (2005)	Perks (2000)
Teacher having training or experience of working collaboratively with TAs	-	-	-	✓	-
TA's appropriate involvement with behaviour management	-	-	-	-	-
Teacher's pedagogical knowledge	-	-	-	-	-
Teacher's knowledge of students	-	-	-	-	-
Teacher and TA working as a team	-	-	-	-	-
Teacher and TA positive relationship	-	-	-	-	-
TA's mathematical subject knowledge	✓	-	✓	-	-
TA being proactive (self-motivated)	-	-	✓	-	✓
TA's relationship with students	-	-	-	-	-
TA's job satisfaction	-	-	-	-	-
Consistency of TA presence in lessons	-	-	-	-	-
Teacher's job satisfaction	-	-	-	-	-
Teacher's knowledge of SEN	-	-	-	-	-
Teacher's knowledge, understanding of experience of TA role	-	-	-	-	-
Allocated planning and reflection time	-	✓	-	✓	✗
Clarity of TA's roles and responsibilities	✓	✓	✓	✓	✓
TA being based in mathematics	-	-	-	-	-
Teacher's mathematical knowledge	-	-	✓	-	-
Communication between teacher and TA	✓	✓	-	✓	✓

The method employed to identify the factors which encourage effective partnerships required a focus on three teacher-TA partnerships which were self-defined as effective. Devecchi and Rouse (2010) employed a similar approach, conducting an ethnographic study which focused on identifying the features of effective collaboration, rather than focusing on the factors that encourage the development of effective partnerships. The focus of my research on partnerships which are deemed to be effective is justified by the conclusions of Devecchi and Rouse who claim that effective teacher-TA partnerships can, and do, exist in schools. This approach is particularly appropriate as the factors identified will be present in the embedded case study partnerships, rather than theoretical improvements to the partnership which may be practically unfeasible. The use of factors identified from existing partnerships in practice also meets with one of the emergent ideas identified by Walsh (2005) who recognises the importance of establishing best practice within the limitations of the current educational environment.

10.4 Addressing research question three: How can effective teacher-TA partnerships be encouraged and supported?

The main practical output of this research is a self-evaluation tool that enables teachers and TAs to quickly and simply evaluate their partnerships and identify a focus for teacher and TA professional development which encourages the development of an effective partnership (see chapter 9). The self-evaluation tool also offers teachers and TAs the opportunity to systematically review their partnership and reflect on their current practice as regularly as time allows.

The self-evaluation tool is significant as it addresses the recommendations of Blatchford et al. (2009), in practice, by seeking to encourage the development of effective partnerships and practice which could reduce the variation in practice identified both in the research reported here and in others such as Walsh, (2005). Such variation results in some partnerships being effective and having a positive impact while others may not be so effective. The intention of the self-evaluation tool is not to limit discussion about the partnership to the factors identified, but to provide an open-ended tool which forms the basis for discussion about mutual professional development.

The factors included within the self-evaluation forms (see table 9.1) are based on the outcomes of three embedded case studies (discussed in chapter 8) and, as such, are not only grounded in professional practice but also analysed through valid and reliable methods. The contribution each factor makes to the development of effective partnerships has been assessed using aspects of Multi-Attribute Utility Theory (MAUT) in conjunction with the views of the embedded case study participants who are considered to be experts in the field. The purpose of assessing the importance of each factor is to provide informed guidance for teachers and TAs regarding what should serve as the focus for their future professional development.

The self-evaluation forms have been specifically designed to be intuitive, flexible and easy to use and interpret (see section 9.6). Both the teacher and TA are required to complete two self-evaluations forms independently, but these assessments do not have to take place simultaneously and thus can be completed at a time convenient to each of the professionals, causing minimal disruption to the work of both the teachers and the TAs. The recommendation within the self-evaluation tool that the head of the mathematics department or the SEN co-ordinator should act as an intermediary and compare the results of the self-evaluations is to ensure that both the teacher and TA feel confident about the need to be open and honest in their assessments of their partnership, a necessity to ensure optimising identification of the greatest need as a focus for future professional development

The development of the self-evaluation tool and the grounded method used to prioritise the factors which are most important to the development of effective partnerships is one of the significant and original contributions of this research. Bedford et al. comment about their own study, "this model is being considered as part of a framework that could be used as a diagnostic tool for self-review and to identify learning needs that are required in future professional development programmes" (2008: 22) but, as yet, no such evaluation has been developed. The self-evaluation tool developed from my research study therefore represents a significant advance in existing guidance available to mathematics teachers and TAs working in mathematics classrooms.

The main purpose of the self-evaluations is to identify to what extent the factors which encourage the development of effective partnerships are present in teacher-TA partnerships in order to identify the factors which should be prioritised in future. In this way, the self-evaluation tool provides the means to examine individual teacher-TA partnerships in depth and identify appropriate areas for teacher and TA professional development as a partnership. Prior to this research study, there were two evaluation tools which focus on teachers and teaching assistants, one published by the TDA (2010) and the other by the DfES (2000). Both of these evaluation tools focus on identifying practice that would be present in effective teacher-TA partnerships and highlight which areas of current practice need to be addressed.

The self-evaluation tool, developed in my study, has far greater implications for policy and practice than these previous methods of self-evaluation for a number of reasons. The self-evaluation tool developed from this research study examines individual teacher-TA partnerships in far greater depth than the self-evaluations developed by either the TDA or DfES. Prioritisation of the most important factors through the variation in the lengths of the assessment scales provides guidance for teachers and TAs, which thence can be focused more specifically on the factors which should result in a more effective partnership. The ease of use and intuitive design of the tool should enable schools to implement a cyclic evaluation process whereby teachers and TAs continuously review their partnership on a regular basis without adding significantly to the already high demands on both the time of teachers and their TAs. Such a continuous reflexive process is the essence of effective professional development.

10.5 Key contributions of the study

There are three key contributions that have resulted from this research, which I will now discuss:

- the case study portraits of successful partnerships
- the self-evaluation tool
- the teacher-TA tracking software

The case study portraits of successful partnerships are one of the original contributions of this research, as the detailed descriptions of teacher-TA partnerships are not found elsewhere in the literature. Each of the partnerships involved in the embedded case studies were analysed and the focus on the characteristics and experiences of the individual teachers and TAs has led to rich descriptions of each case. Multiple sources of evidence were utilised to increase the trustworthiness of each description and the data collected has been analysed clearly and transparently. The discussion of the three embedded case studies has been presented in an accessible form and the profile maps for each teacher and TA are included to provide an overview of the key points. The purpose of presenting the data collected from the case studies in this way is so that the participants come to life, so that teachers and TAs are able to identify aspects of effective partnerships which resonate with their own practice.

The self-evaluation tool, which has been developed, based on the results of the embedded case studies has not at present been trialled with teacher-TA partnerships who were not involved with this research study. However the tool is a significant outcome of this research as it provides an initial design, which can be refined for use in mathematics departments in all secondary schools. Basing the tool on real-life partnerships that are self-defined as effective has led to factors which are practically achievable. The design of the tool has been carefully considered so that it is intuitive, easy to use and quick to interpret, so that it places minimal demands on the time of teachers and TAs.

The teacher-TA tracking software was designed for use during the data collection stage of the embedded case studies. The tool provided an opportunity to gather data focusing on how teachers and TAs work together in the classroom to support all students, whilst being minimally intrusive. The process of tracking the movements of the teacher and TA involved recording the movements of both the teacher and TA at one-minute intervals. The result of this process was an overview of the movements of the teacher and TA during the lesson. The visual representation of data, which results from the tracking process, clearly illustrates how often the teacher and TA work with the same/different students. The comments of the case study participants who had an opportunity to view their tracking results were very positive and they acknowledged

how interesting and useful it was to see which students occupy their time during lessons. The software itself has been designed to be flexible and, as such, can be used to track movements in a range of situations as both the classroom layout and number of people being tracked can be changed.

10.6 Limitations of the study

The main limitations of this study arose due to the difficulties experienced whilst trying to secure teacher-TA partnerships to act as the focus for the three embedded case studies. Even though individual teachers were willing to participate, often the wider department or school influences prevented them from doing so. In one particular original research site, data collection had to cease part-way through the embedded case study phase because of the internal school pressures which disenfranchised the participating teacher and TA from continuing to work within the study. I was faced with the dilemma of continuing with only two research sites, or approaching the pilot study school to request continued participation in the wider study. Since there was little change in the data collection methods I developed between the pilot study and the wider study, the pilot study school was approached and agreed to be further involved. However, due to a long term period of compassionate leave begun during the time of data collection in this school, the TA was not able to fully complete aspects of the study. This is acknowledged within chapter 9 and has had little influence on final outcomes. However, the situation demonstrates the difficulties of working with schools as research sites and the constraints of the pressurised systems teachers work within.

Originally, this study intended to not only develop a self-evaluation tool for use by mathematics teachers and their TAs, but also to trial the self-evaluation and assess the impact of the process on participating teacher-TA partnerships. The planned full trial was not undertaken. In seeking research sites for the embedded case studies, schools were reluctant to participate in a trial of the self-evaluation tool, despite both assurances to mathematics departments about the minimal time involved in using the self-evaluation tool and the choice of timing outside of examination pressures. Additionally, the issues in securing three teacher-TA partnerships to participate in the embedded case studies resulted in on-going time pressures to complete the trial process. Although a full trial was not possible, I was able to negotiate an opportunity

to return to the research site in school A to discuss the potential use of the partnership evaluation forms with the SENCO. The comments of the SENCO at school A were very positive and the self-evaluation tool was considered a valuable resource for assessing current practice and identifying an appropriate focus for the professional development of both teachers and TAs.

> *This is really good, we can use this to find out what we should be focusing on and, if we keep using it, it shows that progress is being made. And there is potential to use it to compare how well different TAs work with different teachers.*

(Personal communication with SENCO at school A)

This discussion of the self-evaluation tool with the SENCO at school A is not sufficient however to validate the tool's design, content and usefulness. Due to the atypicality of the teacher-TA partnerships involved in the embedded case studies (discussed in chapter 8) a thorough trial of the self-evaluation tool with partnerships who were not involved with this research study is necessary. The usefulness and validity of the tool in other schools cannot be demonstrated until a trial of this type has been completed.

During this research study, it was recognised that the importance of two of the factors identified as contributory to effective partnerships was a point of contention. The importance of having allocated joint planning time outside of lessons and the importance of having subject-based TAs varied significantly between partnerships. Those partnerships which had subject based TAs or allocated joint planning time felt it was invaluable and those that did not felt these factors were of least importance, as they believed they had an effective partnership without these factors. It was not within the scope of this study, however, to more accurately determine the impact of these factors on the effectiveness of teacher-TA partnerships, as further research focusing on the impact of changing these individual variables is necessary.

Chapter 11 Implications of the study

11.1 Implications for policy and practice

At present, guidance for teachers focusing on how to work effectively with TAs is scarce and the guidance that does exist has been developed based on research primarily completed in primary education. Both *Resource kit for schools: Effective deployment of classroom staff* (TDA, 2010) and *Supporting the teaching assistant: a good practice guide* (DFEE, 2000) offer advice and a self-evaluation tool to assist teachers and TAs in assessing and improving current practice, but neither have considered the teacher-TA partnership in depth, the practicality of working within a secondary school or have focused on effective partnerships to develop the self-evaluation tools.

The self-evaluation tool that I have developed is the result of extensive, in-depth research into three effective teacher-TA partnerships. The use of a multiple embedded case study design has led to valid and reliable conclusions regarding the factors that encourage effective partnerships and aspects of multi-attribute utility theory (MAUT) have provided the means to identify the importance of each of these factors. The resulting self-evaluation tool which prioritises the most important factors contributing to effective practice is an innovative and original concept that leads to more focused, and therefore productive guidance for teachers, TAs and schools on how to improve specific partnerships. In this way the self-evaluation tool as an outcome of this research study has far wider and greater implications for practice and potential influence on policy than previous guidance or systems of self-evaluation.

The implications for policy and practice arising from this research study all relate to the use of the teacher-TA partnership self-evaluation tool in secondary schools. The self-evaluation tool provides an opportunity for teachers and TAs to systematically review the factors that encourage the development of effective partnerships in order to identify a focus for their mutual professional development which will benefit their specific partnership and practice. At present, most teachers are actively encouraged to review their teaching and reflect on their practice in order to improve this, as this process of self-reflection and improvement is a key aspect of teachers' continuing

professional development. The self-evaluation tool for teachers and TAs which has resulted from this research study extends the focus of a teacher's reflection to incorporate their partnership with TAs and similarly extends the TA's reflection to include their partnerships with teachers.

The self-evaluation tool has been specifically designed to be easy to use and reasonably quick to complete, as teachers working in secondary schools often work with a number of TAs and TAs work with a range of different teachers. As the process is not overly time-consuming, it can be beneficial for teachers and TAs to review their partnerships on a regular basis to monitor progress and re-evaluate their partnership, regularly identifying the most beneficial focus for their professional development. Provided use of the self-evaluation tool within this process leads to targeted professional development which in turn results in more effective teacher-TA partnerships, there may be significant implications for policy as well as practice. The self-evaluation tool may also effect change in how TAs are deployed in secondary schools. As mentioned earlier, the possibility exists to cross-compare the outcomes of self-evaluations to identify partnerships which exhibit the characteristics that encourage effective partnerships and deploy TAs appropriately to maximise the potential for effective partnerships and consequent learning for students.

11.2 Implications for methodology

A number of methodologies have been employed in educational research studies designed to examine the impact and deployment of TAs and the partnership between teachers and TAs. However, an embedded case study method has not previously been used in the field and has been rarely utilised in educational research in general. This use of an embedded case study method required a thorough understanding of all aspects of this methodology in order to be confident that it was appropriate to address the research questions in an educational setting. An examination of the literature concerning embedded case studies identified some discrepancies regarding what constitutes a 'unit of analysis', a key concept related to the definition of an embedded case study. Following further investigation, however, these discrepancies were clarified and resolved and a detailed description of the methodology itself was developed and is presented in chapter 3. This description of the embedded case study

method contributes towards understanding of this methodology in an educational setting and seeks to clarify common misconceptions.

An embedded case study method requires researchers to focus on the individual units of analysis embedded within the case and it is this focus which leads to a thorough understanding of all aspects and factors associated with the case. This deep knowledge of the case and associated factors leads to a more precise description of the case and aids the analysis process. This level of precision and understanding of the case, obtained from data analysis, is one of the main advantages of the method. In addition to this, the necessary collection of data from multiple sources of evidence provides an opportunity to triangulate findings and the in-depth focus on all minor and major aspects of the case leads to conclusions which are strong in the reality of the contexts.

There are, however, disadvantages to the method which also need to be considered and addressed. The analysis of qualitative data usually obtained from interviews and observations is susceptible to issues associated with researcher subjectivity, as the process of analysing this type of data requires a degree of interpretation. The conclusions drawn from an individual embedded case study may not be generalisable to all cases and researchers need to be aware of this when considering how to present their findings and when assessing the potential impact and implications of their research. These issues are similar to those issues usually associated with case studies in general and, as such, are not new or unexpected. The use of an embedded case study methodology in this research study demonstrates its potential use in future research studies. The method has a number of positive attributes and, depending on the research questions, may offer the in-depth understanding necessary to fully address the aims of a study. I believe the understanding of all minor and major aspects of the case obtained from using an embedded case study methodology reveals its positive potential for use in other educational research projects.

An additional implication for methodology arising from this study relates to the use of the teacher-TA tracking software which was specifically designed to collect data regarding teacher and TA movements during observation lessons. In this study, the data collected via the tracking software provided an opportunity to identify those students whom the teacher and TA actively supported during lessons. Following the

collection and analysis of the data, the outcomes of the teacher-TA tracking process were presented to and discussed with the relevant teachers, all of whom recognised that these visual results provided them with an opportunity to reflect on their practice, enabled them to analyse their and the TA's usual working practices with students, and generally assess how they spend their time during lessons. The use of the teacher-TA tracking software has the potential to be beneficial to teachers and TAs (particularly if the tracking process can be automated) as it enables them to specifically reflect on effective use of their time during lessons. The tracking software also has the potential to be beneficial to researchers, as the tracking images are an additional source of data which can be triangulated with observation notes and video/audio recordings.

11.3 Implications for further study

One of the main outcomes of this study is a self-evaluation tool and process which enables teachers and TAs to assess their partnerships and identify areas which require further attention and change. As discussed previously, the potential use of the self-evaluations in schools was discussed with the SENCO from school B, who was very positive about the potential impact of these self-evaluations on changing practice. However, due to limitations on sourcing trial sites, it was not possible within this research study to evaluate the impact of the self-evaluation process on individual partnerships. Therefore, further research focusing on the practical use and impact of the self-evaluation process on teacher-TA partnerships in mathematics would be beneficial, particularly if it focused on student learning, participation and focus.

Once the impact of using the self-evaluations within the mathematics departments has been assessed, the potential for use of the self-evaluations within other subject departments in secondary schools could be considered. The majority of the factors included within the self-evaluations are not specific to mathematics teachers or TAs, so the possibility of employing the self-evaluations in other subject departments is feasible. In order to fully assess this possibility, further research focusing on the use of the self-evaluations in other subjects would be necessary. Similarly, the potential use of the self-evaluation tool in primary classrooms, where teacher-TA partnerships are often more stable, would be a fruitful direction for research. This context of less fluid teacher-TA partnerships, in classroom settings where both the teacher and TA

know the class as a whole and individuals within this, could provide enlightening evidence about the impact of a self-evaluation tool which focuses holistically on this setting via individual factors relating the teacher and TA.

One final implication for further research which should be considered is assessing the impact of having subject based TAs and allocated planning time outside of lessons for teacher-TA collaboration. These two factors were identified during the course of this research study, but the assessment of the importance of these factors was highly inconsistent between the embedded case study partnerships (as discussed in chapter 10). In order to fully assess the impact of these two factors a research study would need to purposively introduce these factors into teacher-TA partnerships and evaluate the outcomes. Further research considering how to improve the current TA support provision for students and teachers could now focus on the wider deployment of TAs in schools. The results of the self-evaluations which have been developed via this research could potentially contribute towards identifying how best to deploy TAs in secondary school.

Addendum

I have been working as a full time teacher of mathematics during the past year and have had the opportunity to make use of my self-evaluation tool to assist both the mathematics department and learning support department at my current school in evaluating current practice and partnerships. Both the mathematics and the learning support staff were eager to take part in the process and the head of the mathematics department and the SEN co-ordinator took active roles in evaluating the responses to the self-evaluations and discussing the results with the mathematics teachers and the teaching assistants. The aspect of my own practice which was highlighted as the most prominent issue was that TAs felt I was not very approachable. I have made a conscious effort to address this issue since discussing it with the head of the mathematics department and hope to see an improvement in the responses when the self-evaluations are next completed.

Appendix 1

Mr Paul Charles Spencer   RGO Ref: 7142
School of Psychology
University of Southampton
University Road
Highfield
Southampton
SO17 1BJ

24 March 2010

Dear Mr Spencer

**Project Title Promoting Mutual Professional Development and Developing Deeper
Mathematical Understanding through Teacher and Teaching Assistant
Collaboration**

This is to confirm the University of Southampton is prepared to act as Research Sponsor for this
study, and the work detailed in the protocol/study outline will be covered by the University of
Southampton insurance programme.

As the sponsor's representative for the University this office is tasked with:

1. Ensuring the researcher has obtained the necessary approvals for the study
2. Monitoring the conduct of the study
3. Registering and resolving any complaints arising from the study

As the researcher you are responsible for the conduct of the study and you are expected to:

1. Ensure the study is conducted as described in the protocol/study outline approved by this
   office
2. Advise this office of any change to the protocol, methodology, study documents, research
   team, participant numbers or start/end date of the study
3. Report to this office as soon as possible any concern, complaint or adverse event arising
   from the study

Failure to do any of the above may invalidate the insurance agreement and/or affect sponsorship
of your study i.e. suspension or even withdrawal.

**On receipt of this letter you may commence your research but please be aware other
approvals may be required by the host organisation if your research takes place outside
the University. It is your responsibility to check with the host organisation and obtain
the appropriate approvals before recruitment is underway in that location.**

May I take this opportunity to wish you every success for your research.

Yours sincerely

Dr Lindy Dalen
Research Governance Manager

Tel: 023 8059 5058
email: rgoinfo@soton.ac.uk

Corporate Services, University of Southampton, Highfield Campus, Southampton SO17 1BJ United Kingdom
Tel: +44 (0) 23 8059 4684 Fax: +44 (0) 23 8059 5781 www.southampton.ac.uk

Appendix 2

Participant Information Sheet

Study Title: Promoting Mutual Professional Development and Developing Deeper
                Mathematical Understanding through Teacher and Teaching Assistant
                Collaboration

Researcher: Paul Charles Spencer
Ethics number: 7142

**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.**

Information about the Research

I am currently studying at the School of Education at the University of Southampton for
a PhD. I was awarded a case studentship part funded by the Economic and Social
Research Council (ESRC) and part funded by the National Centre for Excellence in the
Teaching of Mathematics (NCETM) to research the teacher-teaching assistant
partnership in secondary school mathematics classrooms.

The study has 3 main aims. The first is to identify the current ways that teachers and
teaching assistants work together in the mathematics classroom. The second is to
identify the characteristics within the partnerships which encourage professional
development. The third and final aim is to identify how continual professional
development can be promoted through the teacher-teaching assistant partnership. These
questions are focused on the overall intention of designing an intervention strategy
which will encourage professional development and promote effective teacher and
teaching assistant partnerships.

The initial stage of the research involves 2 questionnaires which have been designed to
determine how teachers and teaching assistants work in the classroom and how effective
they feel their current partnership is. It is hoped that the results of this study will
provide opportunities for further research to take place in the form of 3 case studies,
focusing on teacher-teaching assistant partnerships in secondary school mathematics
classrooms.

Why have I been chosen?

As a teacher or teaching assistant currently working in a secondary school in the UK,
you will have first-hand experience of working in a classroom as part of a teacher-
teaching assistant partnership.

What will I be asked to do if I take part?

If you decide to take part in this study, you will be asked to fill in a questionnaire which
asks various questions about your working partnership in the classroom, any relevant
training you may have had, your opinions on current practice and opinions on what

would encourage effective teacher and teaching assistant partnerships. Participants will also be asked to indicate whether they would like to be involved further in the study.

Once the questionnaires have been analysed the results will be used to select 3 teacher-teaching assistant partnerships which will act as embedded case studies. Only those participants who ask to be involved with this stage of the research may be contacted. The case studies will include interviews with the teacher and teaching assistant and observations of the working partnership in the classroom. A further consent form will be offered at this stage.

Benefits to Participants, Colleagues and Classroom Education

Across the UK there are a significant number of teachers working with teaching assistants, with little guidance on how this partnership can be used as effectively as possible. The results of this study should highlight the importance of the teacher-teaching assistant partnership and provide guidance on how a more effective partnership can be achieved.

Risks of Involvement

There are no risks involved with taking part in this study, and participants are able to withdraw from the study at any time.

Confidentiality

At the end of the questionnaire all participants will be able to express their interest in being involved with the case study stage of the research. To enable the researcher to contact interested parties, participants will be asked to provide a contact name and e-mail address. Any names submitted will only be available to the researcher and their supervisor. All information will be anonymous once the raw data has been collated. All responses from participants who would not like to be involved further will be anonymous to the researcher.

The date and time of all questionnaires submitted are recorded, participants should note the date and time their questionnaires were submitted to provide a reference if they later wish to withdraw from the study. Any personal data collected will be stored according to the Data Protection Act and School of Education, University of Southampton policy.

Right of Withdrawal

If at any time during the research you would like to withdraw from the study, please do not hesitate to contact me and I will willingly remove questionnaire.

Complaints and Concerns

During the Research, if you have any concerns or you would like to make a complaint, please write in the first instance to Chair of Ethics Committee, School of Education, University of Southampton, Highfield, Southampton, SO17 1BJ

Where can I get more information?

If you have any questions or you require further information about the research please do not hesitate to contact Dr Julie-Ann Edwards, School of Education, University of Southampton, Highfield, Southampton, SO17 1BJ or Mr Paul Spencer (pcs1v07@soton.ac.uk), School of Education, University of Southampton, Highfield, Southampton, SO17 1BJ or Research Governance Office, University of Southampton, B37/4055, Highfield, Southampton, SO17 1BJ

Appendix 3

iSurvey

Questionnaire for Teachers

1. Initial Questions

Question 1.

How many years have you worked as a Teacher?

[   ]

Question 2.

How many lessons take place in your working week?

[   ]

Question 3.

How many lessons each week do you have a Teaching Assistant in the classroom?

[   ]

Question 4.

How many different Teaching Assistants would you usually have supporting in the classroom in an average school week?

0	1	2	3	4	5	6	7	8	9	10+
○	○	○	○	○	○	○	○	○	○	○

Done   🌐 Internet | Protected Mode: On   🔍 105% ▼

Questionnaire for Teachers

2. In the Classroom

Question 1.

Which of these best describes how you usually deploy Teaching Assistants in your classroom?

○ Work with 1 pupil for whole lesson

○ Work with a group of pupils seated together

○ Work with a number of individual pupils moving round the room

---

Question 2.

How well do you think the partnership between teacher and teaching assistant works in the maths classroom?

Doesn't work well	Works well occasionally	Works well usually	Works well all the time
○	○	○	○

Question 3.

What tasks do Teaching Assistants usually carry out when supporting in your lessons?

Done

Internet | Protected Mode: On   105%

iSurvey

UNIVERSITY OF **Southampton**

Questionnaire for Teachers

3. The Teacher and Teaching Assistant Partnership

Question 1.

How would you rate the communication between teachers and teaching assistants?

Poor |1 2 3 4 5 6 7 8 9 10| Excellent

Question 2.

Have you received any specific training on how to work effectively with teaching assistants in the classroom?

Please select ▼

Question 3.

What do you think would improve the effectiveness of the partnership between teachers and teaching assistants in the classroom?

241

Questionnaire for Teachers

4. Further Involvement

Question 1.

Would you be interested in being involved with the case study stage of this study?

| Yes | ▼ |

Please provide your name and a contact e-mail address:-

Survey Progress

Start ☐ ☐ ☐ ◼ Finish

← Back a page

Save and Finish →

Once this button is pressed you will not be able edit your responses

Done   🌐 Internet | Protected Mode: On   🔍 115% ▼

Appendix 4

<u>Questionnaire for Teachers</u>

Please be aware that by filling in and submitting this questionnaire you are agreeing that

   a)   you have read and understood the participant information sheet (09/03/10 Version 1) and have had the opportunity to ask questions about the study
   b)   the data you provide in this questionnaire will be used for the purpose of this study.
   c)   you understand your participation is voluntary and you may withdraw from the study at any time without your legal rights being affected.

Thank-you for taking the time to participate in this study, your input is greatly appreciated.

How many years have you worked
as a teacher?   ……..

How many lessons take place in your   How many lessons each week do you
working week?   ……..   have a Teaching Assistant in the classroom?   ……..

How many different teaching assistants
would you usually have supporting in the   0☐   1☐   2☐   3☐   4☐   5☐   6☐
classroom in an average school week?   7☐   8☐   9☐   10+☐

Which of these best describes how you   ☐ Work with 1 pupil for whole lesson
usually deploy teaching assistants in your   ☐ Work with a group of pupils seated together
classroom?   ☐ Work with a number of individual pupils moving round the room

How well do you think the partnership   doesn't work   works well   works well   works well
between teacher and teaching assistant   well   occasionally   usually   all the time
works in the classroom?

How would you rate the communication   Poor ———————————————————➤ Excellent
between teachers and teaching
assistants?

1	2	3	4	5	6	7	8	9	10

What tasks do teaching assistants usually   ......………………………………………………………......
carry out when supporting in your lessons   ......………………………………………………………......
                                              ......………………………………………………………......
                                              ......………………………………………………………......

Have you received any specific training
on how to work effectively with teaching
assistants in the classroom?   Yes / No

If yes, could you please give details:-   ......………………………………………………………......
                                              ......………………………………………………………......
                                              ......………………………………………………………......

What do you think would improve the   ......………………………………………………………......
effectiveness of the partnership between   ......………………………………………………………......
teachers and teaching assistants in the   ......………………………………………………………......
classroom?   ......………………………………………………………......

If you are interested in being involved with the case study stage   Name: …………………………………
of this study please provide your name and a contact e-mail address. E-mail: …………………………………

Appendix 5

Task completed by TA during lesson	Frequency of Response	% of Respondents
Working with individual pupils	39	31.0
Reading support	36	28.6
Scribing	29	23.0
Explaining	29	23.0
Keeping pupils on task	20	15.9
General Support	19	15.1
Encouraging pupils	11	8.7
Working with pupils who have SEN	10	7.9
Working with small groups	10	7.9
Distributing or collecting work/equipment	10	7.9
Writing support	9	7.1
Motivating	8	6.3
Assisting with behaviour management	8	6.3
reinforcing concepts	7	5.6
Prompting	7	5.6
Explaining tasks	7	5.6
Providing differentiated work	4	3.2
Marking work	4	3.2
Aiding pupil understanding	3	2.4
Answering pupils' questions	3	2.4
Giving Feedback to teacher	3	2.4
Breaking down tasks	3	2.4
Making notes	3	2.4
Providing emotional support	2	1.6
Range of tasks depending on pupil needs	2	1.6
Asking questions to promote understanding	2	1.6
encourage discussion	2	1.6
Identifying misconceptions	2	1.6
Aiding interpretation	2	1.6
Working with small groups outside the classroom	2	1.6
Teaching basic numeracy skills	2	1.6
Providing additional examples	1	0.8
Working with physically disabled pupils	1	0.8
Working with pupils on differentiated work	1	0.8
Reinforce instructions	1	0.8
providing social prompts	1	0.8
Acting as partner for paired work	1	0.8
Register Students	1	0.8

Task completed by TA during lesson	Frequency of Response	% of Respondents
Working with pupils with EAL	1	0.8
Helping with calculations	1	0.8
Providing support for the teacher	1	0.8
Assisting pupils with using equipment	1	0.8
Checking suitability of resources	1	0.8
Providing catch up sessions for absent pupils	1	0.8
Recording information in pupils planners	1	0.8

Appendix 6

Factors that could improve the effectiveness of the partnership	No. of Responses
Time for Teacher/TA discussions	39
Joint planning time	34
TA consistency	17
Subject specialist TA's/Training	11
Better communication	11
TA attached to department	8
Clarification of job role	4
Time in general	3
Sharing lesson plans before lesson	3
Training for TA's	3
Record of pupils receiving help	2
TA's attached to teachers	2
Knowing TA availability	2
TA's attend department meetings	2
Training on how to best utilize TA's	2
TA's not taken for other tasks	2
INSET on effective practice	2
Action plan for individual pupils	2
Identification of Teacher/TA best practice	1
Use of e-mails to communicate	1
Teacher/TA identify progress targets for pupils	1

Factors that could improve the effectiveness of the partnership	No. of Responses
Better planning of TA deployment	1
Team planning time	1
Teachers utilize TA's expertise	1
Time to discuss expectations of TA's at start of the year	1
Increase TA pay	1
Experience of working together	1
Teacher training on how best to work with pupils who have particular SEN	1
Time every half term/term to discuss TA role and classes	1
Teachers have book to give to TA with details/notes on how they can help and who to help in particular lessons	1
TA punctuality	1

Appendix 7

Minute	Teacher												Notes
	Interaction								Deployment				
	I	SP	G	SG	WC	TA	N	O	PR	A	TA	NA	
2													
4													
6													
8													
10													
12													
14													
16													
18													
20													
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46													
48													
50													
52													
54													
56													
58													
60													

	Teaching Assistant												
	Interaction								Deployment				Notes
Minute	I	SP	G	SG	WC	T	N	O	PR	A	T	NA	
2													
4													
6													
8													
10													
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56													
58													
60													

Appendix 8

		Teacher											Teaching Assistant								
		Interaction					Deployment						Interaction					Deployment			
Minute	I	G	WC	TA	N	PR	A	TA	NA			I	G	WC	T	N	PR	A	TA	NA
2																				
4																				
6																				
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54																				
56																				
58																				
60																				

Appendix 9

Observation Form 1

Observation Number: _____   Teacher: A / B / C

Lesson Time: _____ - _____   Year Group: _____

Number of Pupils Present: _____

Observation Notes:-

Observation Form 2

Observation Notes:-

How effective is our classroom practice?

Q1. How clear are classroom support staff/teacher roles and responsibilities for teaching and learning?

EXAMPLE

Targeted support for pupils

Classroom support allocation is not reviewed or amended throughout the school year to match pupils' needs and progress.

Where we are   Where we'd like to be

Classroom support allocation is based on a clear understanding of pupils' needs and progress and is regularly reviewed.

Q1. How clear are classroom support staff/teacher roles and responsibilities for teaching and learning?

Targeted support for pupils

Classroom support allocation is not aligned to pupils' needs and progress and is not reviewed or amended throughout the school year.

Classroom support allocation is based on a clear understanding of pupils' needs and progress and is regularly reviewed.

Focus of lesson support

The role of support staff is restricted to performing routine tasks in a way that makes it difficult to respond to the needs of individual pupils within the lesson.

Classroom roles are flexed in order to accommodate pupils' needs in the lesson. Support within the lesson is directed to progress pupils' learning.

How effective is our classroom practice?

Team interactions within the lesson

Limited interaction takes place between the teacher and support staff during the lesson. Interaction tends to focus on task completion. Objectives for pupils' learning are not typically shared.

Continuous interaction takes place between the teacher and support staff throughout the lesson so that staff are flexible and responsive to pupil need. Support staff fully understand their role in supporting teaching and learning and know how their input can contribute to better outcomes for pupils.

Q1. Evidence and comments to support your thinking

How effective is our classroom practice?

Q2. To what extent do support staff and teachers plan as a team?

Team skills

There is limited understanding of team skills so that the skills, qualifications and experience within the team tend not to be used to their greatest potential.

There is good understanding of the skills that exist within the team. Support is used creatively to make maximum use of relevant skills, experience and qualifications.

Sharing lesson plans

Teachers prepare plans in isolation and the role of support staff is unclear or not communicated to them.

Time is set aside for teachers and support staff to plan so everyone is clear on their role in the lesson and how it is linked to pupil progress objectives.

Team review of lesson plans

The lesson review does not involve the full team so that plans do not fully reflect the team's view of pupils' needs.

Regular reviews between the teacher and support staff via a robust and inclusive process help staff identify pupils' needs so that plans can be amended to improve support for pupils and help pupils progress.

Q2. Evidence and comments to support your thinking

Indicator 2.1: Managers' and teachers' management strategies provide clear guidance as to how TAs should work in their classrooms

See Part One and Part Two, Section 2
Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Does the school make clear the responsibilities of the relevant managers - i.e. heads, deputies, SENCOs, etc - for TAs?	√	☐	☐	☐
Are teachers familiar with the job descriptions of TAs?	√	☐	☐	☐
Do teaching approaches and planning take account of the presence of TAs?	√	☐	☐	☐
Do teachers use strategies and classroom organisation that ensure that TAs have appropriate space within the classroom for carrying out their tasks?	√	☐	☐	☐
Do the contributions of TAs encourage pupil independence in classrooms?	√	☐	☐	☐
Do teachers' management strategies ensure that the presence of TAs foster pupil-pupil interactions?	√	☐	☐	☐
During whole-class teaching do teachers ensure that TAs work in ways that encourage pupils to remain engaged with all important aspects of the lesson?	√	☐	☐	☐
Do teachers manage their teaching so that all pupils receive direct teacher attention, when they are working individually or in small groups, as well as input from TAs?	√	☐	☐	☐
Where TAs are expected to work in different areas of the school is this coordinated by the senior staff involved?	√	☐	☐	☐
Are TAs aware of the need for confidentiality in relation to information about individual pupils?	√	☐	☐	☐

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Indicator 2.2: The expertise, skills and knowledge of TAs is used flexibly to foster the learning of pupils

See Part One and Part Two, Section 2

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Are TAs' previous experiences and skills used to support curriculum access and flexible approaches?	✓	☐	☐	☐
Are TAs encouraged to offer feedback to the teacher on classroom arrangements?	✓	☐	☐	☐
Is care taken to make sure that TAs are actively encouraged to work in curriculum areas or faculties in which they feel confident and interested?	☐	✓	☐	☐
Is the particular curricular knowledge of TAs recognised and used?	✓	☐	☐	☐
Do behaviour management approaches take account of the contributions of TAs?	✓	☐	☐	☐
Do TAs contribute to record keeping and collecting evidence of pupils' progress for formal assessments?	☐	✓	☐	☐
Are TAs encouraged to use their knowledge of pupils' views about their need for support?	✓	☐	☐	☐

Indicator 3.1: TAs work cooperatively with teachers to support the learning and participation of pupils

See Part Two, Section 3

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Do TAs understand the purpose of lesson activities?	☑	☐	☐	☐
Do TAs share in long- and medium-term planning?	☑	☐	☐	☐
Do planning processes ensure that TAs know what to do to achieve curriculum continuity and full participation for pupils?	☑	☐	☐	☐
Are TAs involved in the planning of specific lessons where teachers and TAs share the classroom?	☑	☐	☐	☐
Are TAs involved in flexible decision-making about plans during lessons?	☑	☐	☐	☐
Do TAs and teachers have arrangements that encourage them to offer one another constructive feedback?	☑	☐	☐	☐
Do TAs and teachers plan in ways that demonstrate to pupils their commitment to teamwork?	☑	☐	☐	☐
Are there agreed plans for TAs to respond to individual pupils' needs?	☑	☐	☐	☐
Are TAs clear about the emotional and/or learning requirements of pupils who have special educational needs?	☑	☐	☐	☐
Do TAs responsible for providing support to pupils with disabilities work in ways that foster their participation in class activities?	☑	☐	☐	☐

Indicator 3.2: Teachers and TAs learn together to improve the quality of their work

See Part Two, Section 3

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Are teachers and TAs committed to the idea of working together to improve the quality of their joint practice?	✓	☐	☐	☐
Do teachers and TAs reflect and talk together on a regular basis about their own learning?	✓	☐	☐	☐
Do the partnerships between TAs and teachers foster mutual confidence?	✓	☐	☐	☐
Do teachers use TA perspectives to better understand how their joint work can be strengthened?	✓	☐	☐	☐
Do all teachers and TAs meet together regularly in order to improve the quality of their partnerships (e.g., in year teams, departmental or faculty teams, and the whole school team)?	☐	✓	☐	☐

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How effective is our classroom practice?

Q1. How clear are classroom support staff/teacher roles and responsibilities for teaching and learning?   EXAMPLE

Targeted support for pupils

Where we are   Where we'd like to be

Classroom support allocation is not reviewed or amended throughout the school year to match pupils' needs and progress.   Classroom support allocation is based on a clear understanding of pupils' needs and progress and is regularly reviewed.

Q1. How clear are classroom support staff/teacher roles and responsibilities for teaching and learning?

Targeted support for pupils

Classroom support allocation is not aligned to pupils' needs and progress and is not reviewed or amended throughout the school year.   Classroom support allocation is based on a clear understanding of pupils' needs and progress and is regularly reviewed.

Focus of lesson support

The role of support staff is restricted to performing routine tasks in a way that makes it difficult to respond to the needs of individual pupils within the lesson.   Classroom roles are flexed in order to accommodate pupils' needs in the lesson. Support within the lesson is directed to progress pupils' learning.

How effective is our classroom practice?

Team interactions within the lesson

Limited interaction takes place between the teacher and support staff during the lesson. Interaction tends to focus on task completion. Objectives for pupils' learning are not typically shared.

Continuous interaction takes place between the teacher and support staff throughout the lesson so that staff are flexible and responsive to pupil need. Support staff fully understand their role in supporting teaching and learning and know how their input can contribute to better outcomes for pupils.

Q1. Evidence and comments to support your thinking

How effective is our classroom practice?

Q2. To what extent do support staff and teachers plan as a team?

Team skills

There is limited understanding of team skills so that the skills, qualifications and experience within the team tend not to be used to their greatest potential.

There is good understanding of the skills that exist within the team. Support is used creatively to make maximum use of relevant skills, experience and qualifications.

Sharing lesson plans

Teachers prepare plans in isolation and the role of support staff is unclear or not communicated to them.

Time is set aside for teachers and support staff to plan so everyone is clear on their role in the lesson and how it is linked to pupil progress objectives.

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Regular reviews between the teacher and support staff via a robust and inclusive process help staff identify pupils' needs so that plans can be amended to improve support for pupils and help pupils progress.

Q2. Evidence and comments to support your thinking

Indicator 2.1: Managers' and teachers' management strategies provide clear guidance as to how TAs should work in their classrooms

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Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
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Where TAs are expected to work in different areas of the school is this coordinated by the senior staff involved?	☑	☐	☐	☐
Are TAs aware of the need for confidentiality in relation to information about individual pupils?	☑	☐	☐	☐

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Indicator 2.2: The expertise, skills and knowledge of TAs is used flexibly to foster the learning of pupils

See Part One and Part Two, Section 2

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
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Is the particular curricular knowledge of TAs recognised and used?	✓	☐	☐	☐
Do behaviour management approaches take account of the contributions of TAs?	✓	☐	☐	☐
Do TAs contribute to record keeping and collecting evidence of pupils' progress for formal assessments?	☐	✓	☐	☐
Are TAs encouraged to use their knowledge of pupils' views about their need for support?	✓	☐	☐	☐

Indicator 3.1: TAs work cooperatively with teachers to support the learning and participation of pupils

See Part Two, Section 3

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
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Are TAs involved in the planning of specific lessons where teachers and TAs share the classroom?	☑	☐	☐	☐
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Do TAs and teachers have arrangements that encourage them to offer one another constructive feedback?	☑	☐	☐	☐
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Are there agreed plans for TAs to respond to individual pupils' needs?	☑	☐	☐	☐
Are TAs clear about the emotional and/or learning requirements of pupils who have special educational needs?	☑	☐	☐	☐
Do TAs responsible for providing support to pupils with disabilities work in ways that foster their participation in class activities?	☑	☐	☐	☐

Indicator 3.2: Teachers and TAs learn together to improve the quality of their work

See Part Two, Section 3

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Are teachers and TAs committed to the idea of working together to improve the quality of their joint practice?	√	☐	☐	☐
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Do the partnerships between TAs and teachers foster mutual confidence?	√	☐	☐	☐
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Do all teachers and TAs meet together regularly in order to improve the quality of their partnerships (e.g., in year teams, departmental or faculty teams, and the whole school team)?	☐	√	☐	☐

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How effective is our classroom practice?

Q1. How clear are classroom support staff/teacher roles and responsibilities for teaching and learning?

Targeted support for pupils

Classroom support allocation is not reviewed or amended throughout the school year to match pupils' needs and progress.

Where we are

Where we'd like to be

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Q2. Evidence and comments to support your thinking

Indicator 2.1: Managers' and teachers' management strategies provide clear guidance as to how TAs should work in their classrooms

See Part One and Part Two, Section 2
Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Does the school make clear the responsibilities of the relevant managers - i.e. heads, deputies, SENCOs, etc - for TAs?	☐	☐	☐	☑
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Do teachers manage their teaching so that all pupils receive direct teacher attention, when they are working individually or in small groups, as well as input from TAs?	☑	☐	☐	☐
Where TAs are expected to work in different areas of the school is this coordinated by the senior staff involved?	☑	☐	☐	☐
Are TAs aware of the need for confidentiality in relation to information about individual pupils?	☑	☐	☐	☐

Indicator 2.2: The expertise, skills and knowledge of TAs is used flexibly to foster the learning of pupils

See Part One and Part Two, Section 2

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
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Is the particular curricular knowledge of TAs recognised and used?	✓	☐	☐	☐
Do behaviour management approaches take account of the contributions of TAs?	✓	☐	☐	☐
Do TAs contribute to record keeping and collecting evidence of pupils' progress for formal assessments?	☐	☐	✓	☐
Are TAs encouraged to use their knowledge of pupils' views about their need for support?	✓	☐	☐	☐

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Indicator 3.1: TAs work cooperatively with teachers to support the learning and participation of pupils

See Part Two, Section 3

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Do TAs understand the purpose of lesson activities?	√	☐	☐	☐
Do TAs share in long- and medium-term planning?	☐	☐	√	☐
Do planning processes ensure that TAs know what to do to achieve curriculum continuity and full participation for pupils?	☐	√	☐	☐
Are TAs involved in the planning of specific lessons where teachers and TAs share the classroom?	☐	☐	√	☐
Are TAs involved in flexible decision-making about plans during lessons?	☐	√	☐	☐
Do TAs and teachers have arrangements that encourage them to offer one another constructive feedback?	√	☐	☐	☐
Do TAs and teachers plan in ways that demonstrate to pupils their commitment to teamwork?	√	☐	☐	☐
Are there agreed plans for TAs to respond to individual pupils' needs?	√	☐	☐	☐
Are TAs clear about the emotional and/or learning requirements of pupils who have special educational needs?	√	☐	☐	☐
Do TAs responsible for providing support to pupils with disabilities work in ways that foster their participation in class activities?	√	☐	☐	☐

Indicator 3.2: Teachers and TAs learn together to improve the quality of their work

See Part Two, Section 3

Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Are teachers and TAs committed to the idea of working together to improve the quality of their joint practice?	☑	☐	☐	☐
Do teachers and TAs reflect and talk together on a regular basis about their own learning?	☑	☐	☐	☐
Do the partnerships between TAs and teachers foster mutual confidence?	☑	☐	☐	☐
Do teachers use TA perspectives to better understand how their joint work can be strengthened?	☑	☐	☐	☐
Do all teachers and TAs meet together regularly in order to improve the quality of their partnerships (e.g., in year teams, departmental or faculty teams, and the whole school team)?	☐	☐	☑	☐

Results of Observation 1
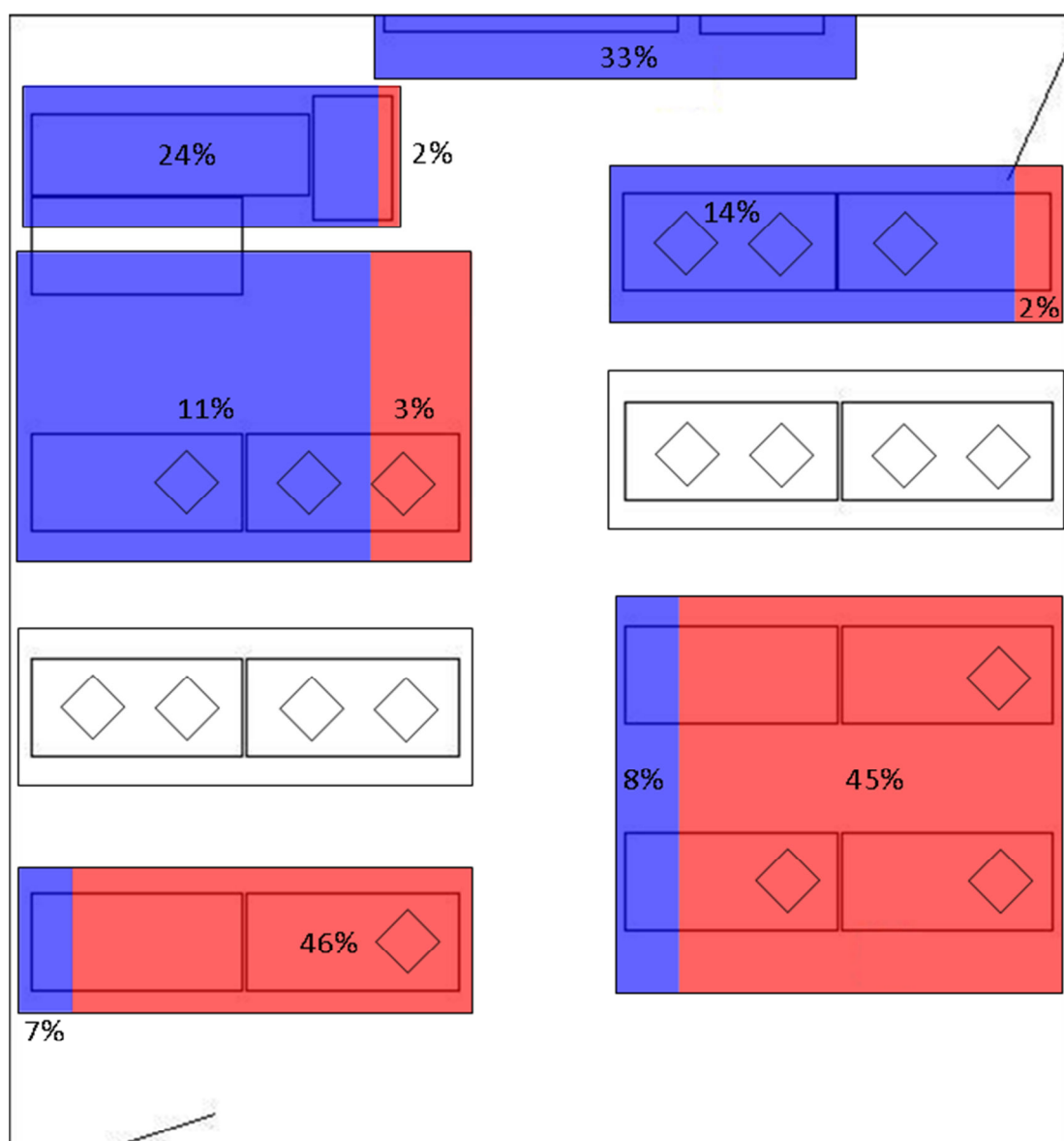
Teacher: General presence 5%, Out of room 0%

Teaching Assistant: General presence 3%, Out of room 0%

Results of Observation 2
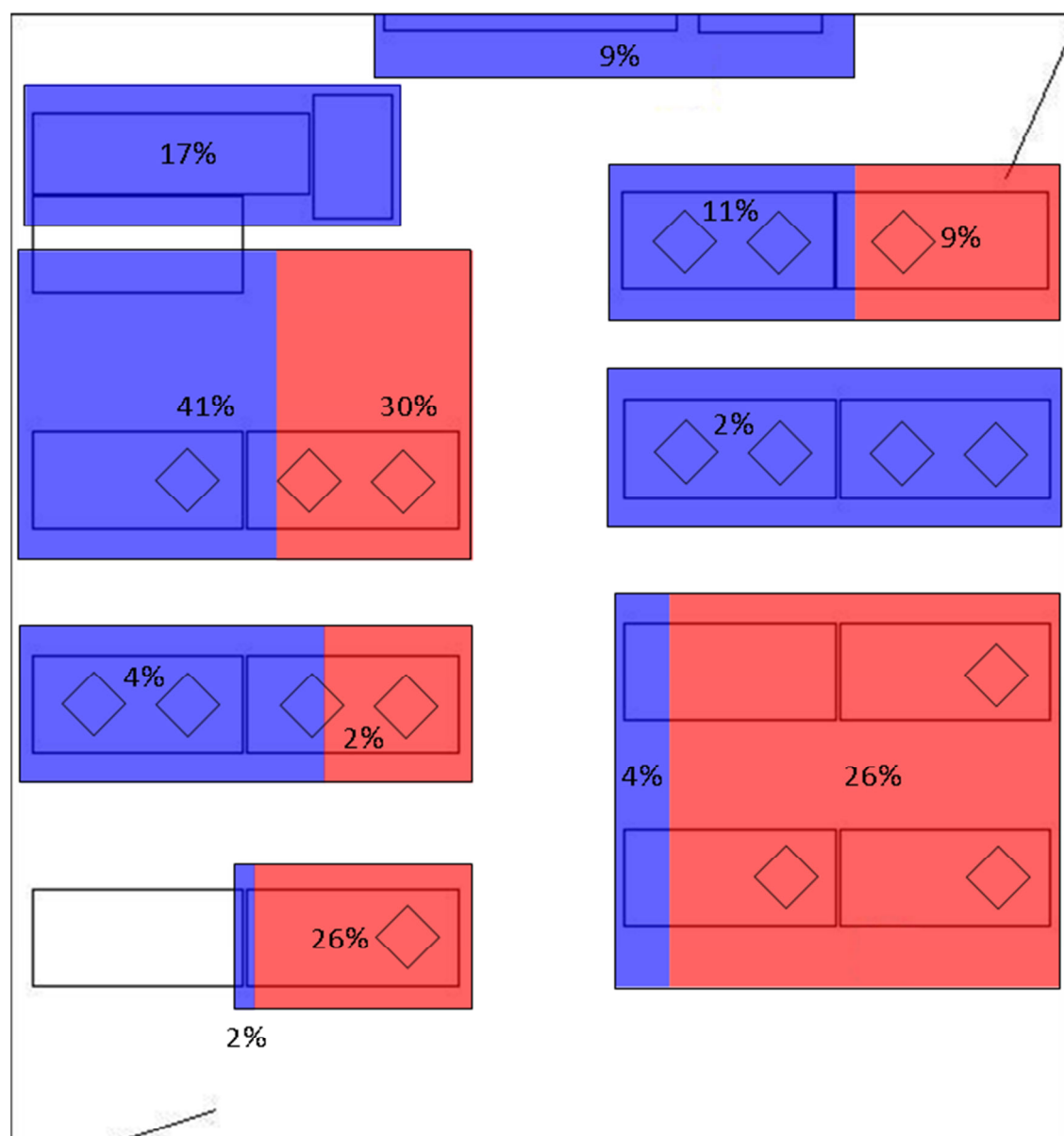
Teacher: General presence 9%, Out of room 2%

Teaching Assistant: General presence 6%, Out of room 2%

Results of Observation 3
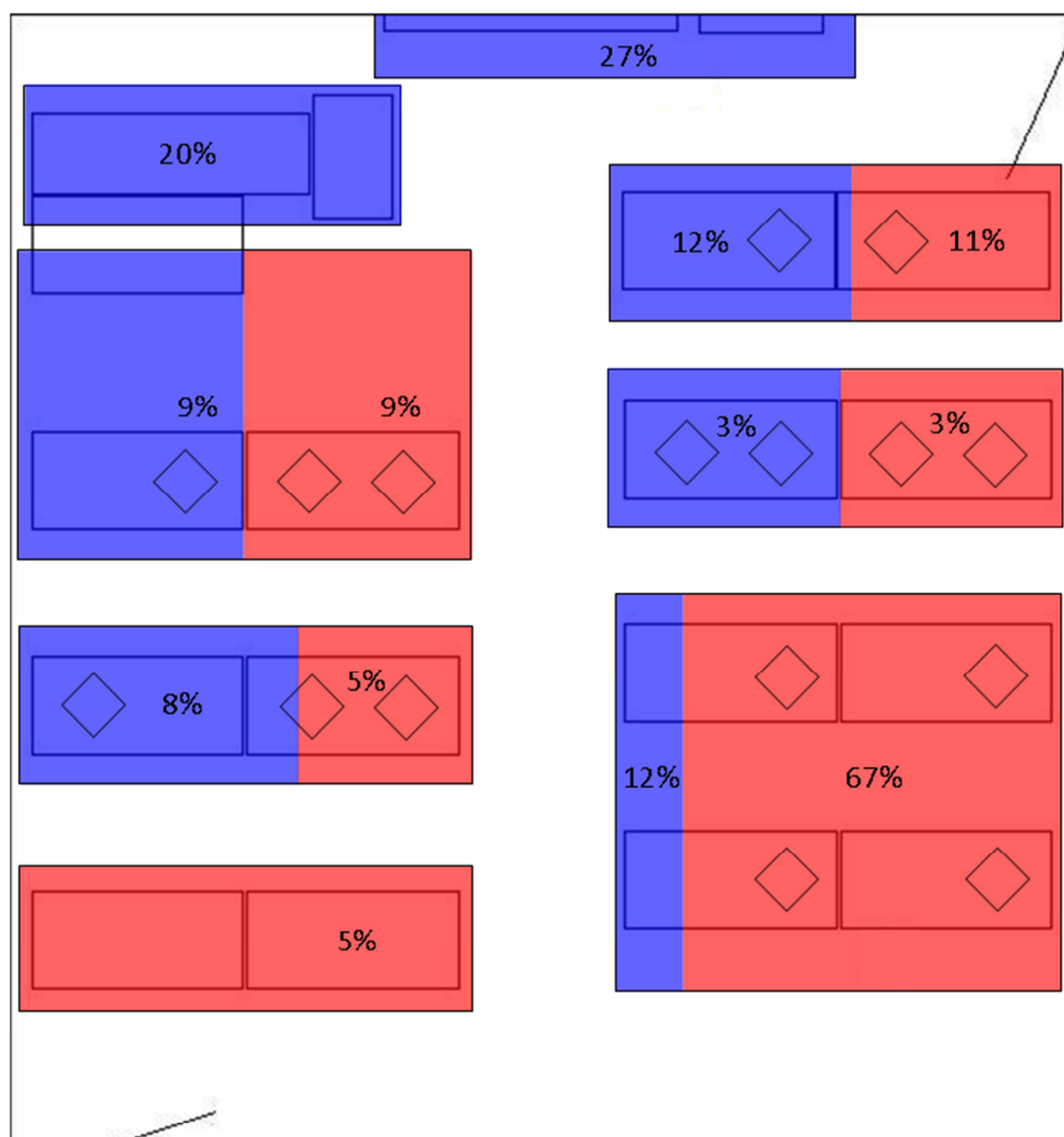
Teacher: General presence 9%, Out of room 0%

Teaching Assistant: General presence 2%, Out of room 0%

n.b. Percentages may not sum to 100% due to rounding.

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Appendix 13 Teacher Assessments

How effective is our classroom practice?

Q1. How clear are classroom support staff/teacher roles and responsibilities for teaching and learning?   **EXAMPLE**

Targeted support for pupils

Classroom support allocation is not reviewed or amended throughout the school year to match pupils' needs and progress.

Where we are   Where we'd like to be

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Q1. Evidence and comments to support your thinking

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Q2. To what extent do support staff and teachers plan as a team?

Team skills

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Sharing lesson plans

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Q2. Evidence and comments to support your thinking

Indicator 2.1: Managers' and teachers' management strategies provide clear guidance as to how TAs should work in their classrooms

See Part One and Part Two, Section 2
Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Does the school make clear the responsibilities of the relevant managers - i.e. heads, deputies, SENCOs, etc - for TAs?	☐	☑	☐	☐
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Where TAs are expected to work in different areas of the school is this coordinated by the senior staff involved?	☑	☐	☐	☐
Are TAs aware of the need for confidentiality in relation to information about individual pupils?	☑	☐	☐	☐

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Please add comments as you go along

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Indicator 3.2: Teachers and TAs learn together to improve the quality of their work

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	Mainly	To Some Extent	Rarely	Need More Information
Does the school make clear the responsibilities of the relevant managers - i.e. heads, deputies, SENCOs, etc - for TAs?	✓	☐	☐	☐
Are teachers familiar with the job descriptions of TAs?	☐	✓	☐	☐
Do teaching approaches and planning take account of the presence of TAs?	✓	☐	☐	☐
Do teachers use strategies and classroom organisation that ensure that TAs have appropriate space within the classroom for carrying out their tasks?	✓	☐	☐	☐
Do the contributions of TAs encourage pupil independence in classrooms?	☐	✓	☐	☐
Do teachers' management strategies ensure that the presence of TAs foster pupil-pupil interactions?	✓	☐	☐	☐
During whole-class teaching do teachers ensure that TAs work in ways that encourage pupils to remain engaged with all important aspects of the lesson?	☐	✓	☐	☐
Do teachers manage their teaching so that all pupils receive direct teacher attention, when they are working individually or in small groups, as well as input from TAs?	✓	☐	☐	☐
Where TAs are expected to work in different areas of the school is this coordinated by the senior staff involved?	✓	☐	☐	☐
Are TAs aware of the need for confidentiality in relation to information about individual pupils?	✓	☐	☐	☐

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Indicator 2.2: The expertise, skills and knowledge of TAs is used flexibly to foster the learning of pupils

See Part One and Part Two, Section 2
Please add comments as you go along

	Mainly	To Some Extent	Rarely	Need More Information
Are TAs' previous experiences and skills used to support curriculum access and flexible approaches?	☐	☑	☐	☐
Are TAs encouraged to offer feedback to the teacher on classroom arrangements?	☐	☑	☐	☐
Is care taken to make sure that TAs are actively encouraged to work in curriculum areas or faculties in which they feel confident and interested?	☐	☐	☑	☐
Is the particular curricular knowledge of TAs recognised and used?	☑	☐	☐	☐
Do behaviour management approaches take account of the contributions of TAs?	☑	☐	☐	☐
Do TAs contribute to record keeping and collecting evidence of pupils' progress for formal assessments?	☐	☑	☐	☐
Are TAs encouraged to use their knowledge of pupils' views about their need for support?	☑	☐	☐	☐

Indicator 3.1: TAs work cooperatively with teachers to support the learning and participation of pupils

See Part Two, Section 3

Please add comments as you go along

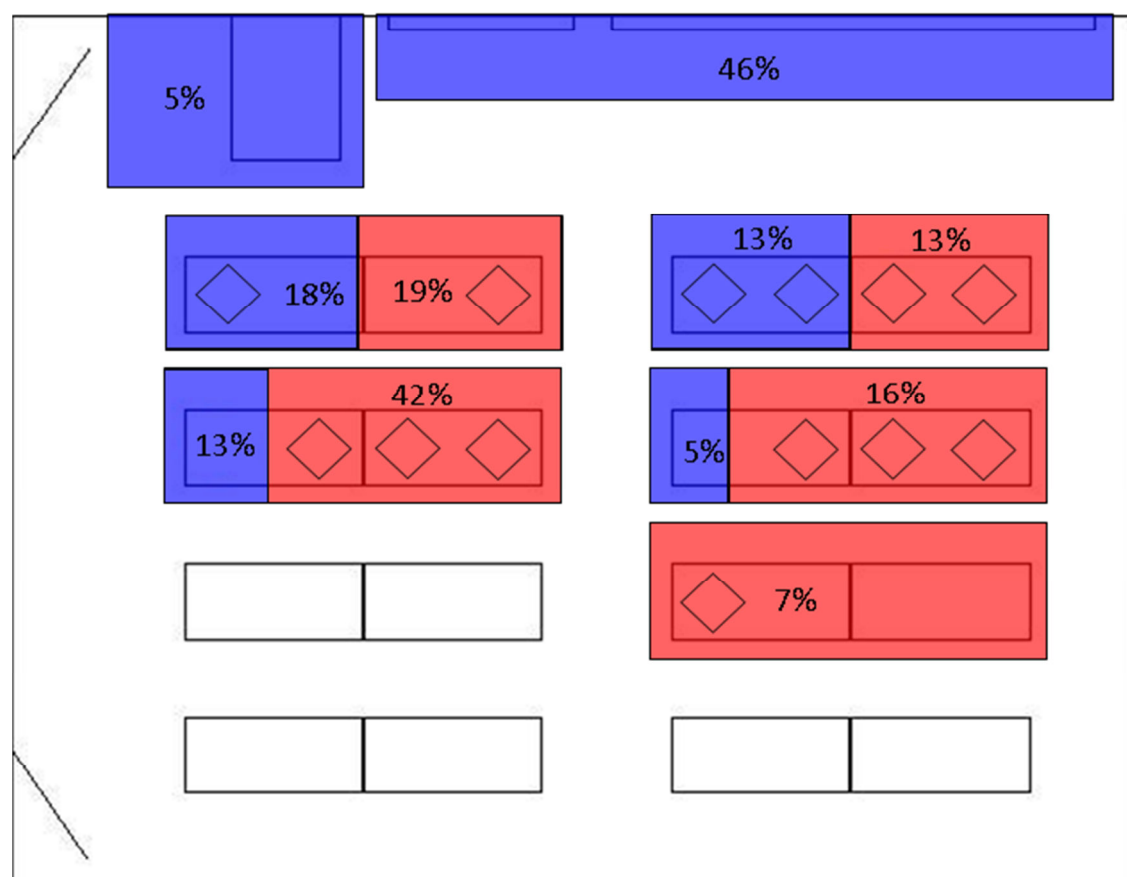|	Mainly	To Some Extent	Rarely	Need More Information
Do TAs understand the purpose of lesson activities?	✓	☐	☐	☐
Do TAs share in long- and medium-term planning?	☐	☐	✓	☐
Do planning processes ensure that TAs know what to do to achieve curriculum continuity and full participation for pupils?	☐	✓	☐	☐
Are TAs involved in the planning of specific lessons where teachers and TAs share the classroom?	☐	☐	✓	☐
Are TAs involved in flexible decision-making about plans during lessons?	☐	✓	☐	☐
Do TAs and teachers have arrangements that encourage them to offer one another constructive feedback?	✓	☐	☐	☐
Do TAs and teachers plan in ways that demonstrate to pupils their commitment to teamwork?	☐	✓	☐	☐
Are there agreed plans for TAs to respond to individual pupils' needs?	☐	✓	☐	☐
Are TAs clear about the emotional and/or learning requirements of pupils who have special educational needs?	✓	☐	☐	☐
Do TAs responsible for providing support to pupils with disabilities work in ways that foster their participation in class activities?	✓	☐	☐	☐

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Indicator 3.2: Teachers and TAs learn together to improve the quality of their work

See Part Two, Section 3

Please add comments as you go along

|	Mainly	To Some Extent	Rarely	Need More Information
Are teachers and TAs committed to the idea of working together to improve the quality of their joint practice?	☑	☐	☐	☐
Do teachers and TAs reflect and talk together on a regular basis about their own learning?	☐	☐	☑	☐
Do the partnerships between TAs and teachers foster mutual confidence?	☑	☐	☐	☐
Do teachers use TA perspectives to better understand how their joint work can be strengthened?	☐	☑	☐	☐
Do all teachers and TAs meet together regularly in order to improve the quality of their partnerships (e.g., in year teams, departmental or faculty teams, and the whole school team)?	☐	☐	☑	☐

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Results of Observation 1

Teacher: General presence 0%, Out of room 2%

Teaching Assistant: General presence 4%, Out of room 0%

n.b. Percentages may not sum to 100% due to rounding.
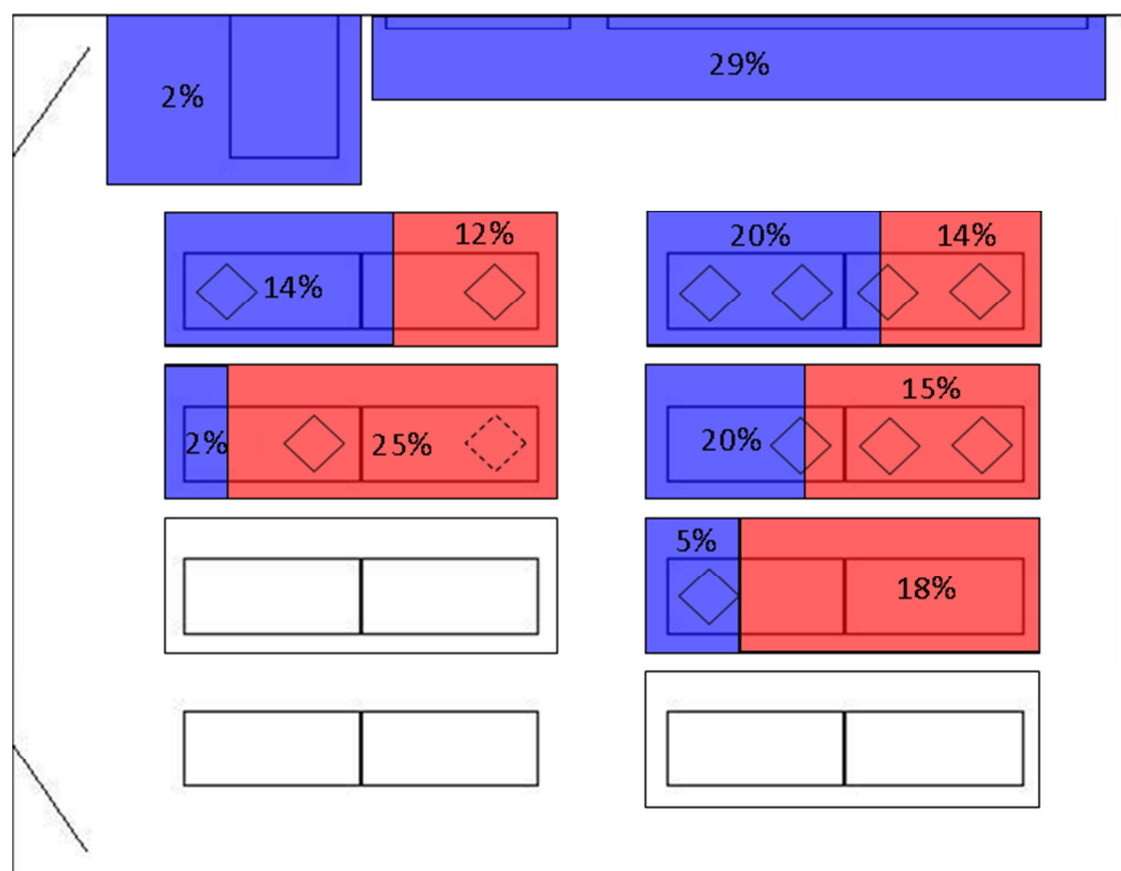
Results of Observation 2
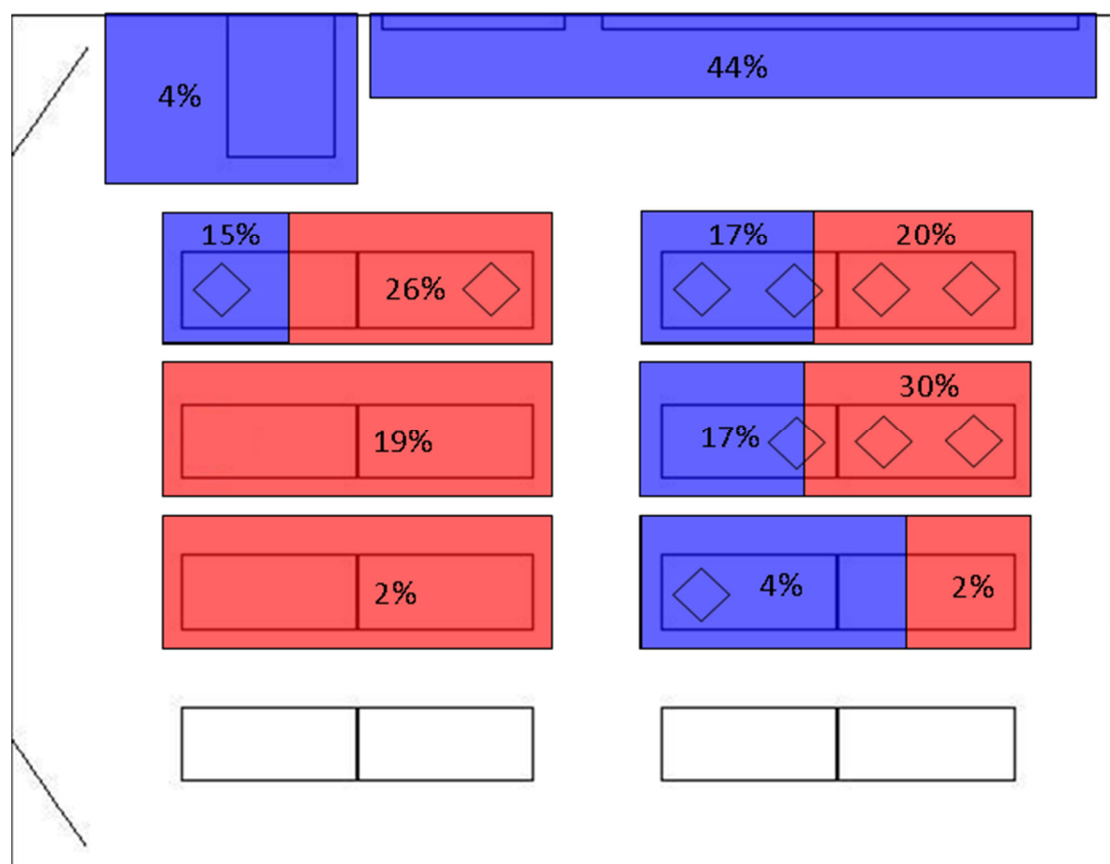
Teacher: General presence 0%, Out of room 0%

Teaching Assistant: General presence 2%, Out of room 0%

n.b. Percentages may not sum to 100% due to rounding.
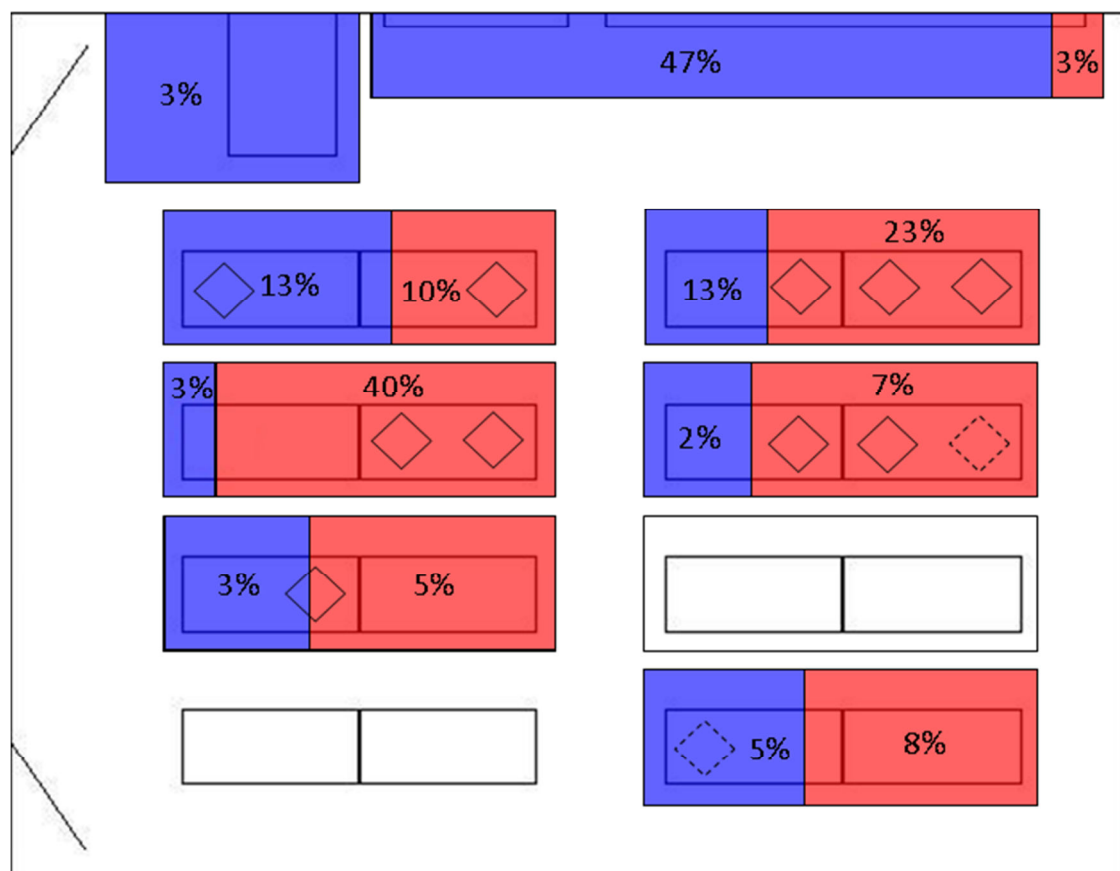
Results of Observation 3

Teacher: General presence 8%, Out of room 0%

Teaching Assistant: General presence 2%, Out of room 14%

n.b. Percentages may not sum to 100% due to rounding.

Results of Observation 4

Teacher: General presence 3%, Out of room 7%

Teaching Assistant: General presence 3%, Out of room 0%

n.b. Percentages may not sum to 100% due to rounding.

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