

Perceptions of School Children of Using Social Media for Learning

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Abstract: Social media is lauded as a powerful tool for informal learning, and a tool of choice for teenagers. This paper reports on the findings of a survey of 384 secondary school pupils in the UK (aged 11-17) over a 12 week period. Our findings indicate a pervasiveness of social media usage amongst this age group, but variety in the types of engagement and self-reported importance of social media. Usage of social media for learning is dominated by logistical task support (for example, clarifying instructions) and heavily focused around homework activities. However, it appears that this provides a context for deeper engagement and learning around those homework activities. Our findings also indicate that social media is being used by this age group to support their learning, but that there is still great untapped potential both in terms of the range of activities discussed, and the number of pupils engaging.

Introduction

An enthusiasm for the use of Web 2.0 technologies and services, in particular online social media, by school-aged children would appear evident if one looks at the findings of recent surveys. In an investigation of children's media literacy Ofcom (2010) reported that amongst UK children who have access to the Internet at home, 25% in the age range 8 to 12 have an social media profile rising from 15% in 2008. For the age range 12 to 15 the figure rose from 52% to 70% over the same period.

What makes this enthusiasm for the use of social media interesting to educationalists and researchers is the possibility that the affordances enabled by social media may support formal or informal learning (Burden & Atkinson, 2008). If one subscribes to the current dominant theories of learning which hold that learning is a socio-cultural event (Brown & Adler, 2008; Lave & Wenger, 1991; Vygotsky, 1978; Papert, 1980), then it would follow that the collaborative nature of social media provides an ideal support framework for learning (McLoughlin & Lee, 2007). This has been extensively explored in a Higher Education context but there are relatively few studies looking at how school-aged children are using social media for their learning (Ahn, 2011).

This paper foregrounds an investigation of the use of social software enabled affordances in support of non-formal learning by seeking to develop a clear understanding of pupil perceptions and possible differences between these self reported perceptions and the actual use of social softwares by pupils. Utilising professional relationships developed over a number of years in an advisory role the lead researcher was able to gain access to a strongly 'gated' community, i.e. school pupils under the age of 18, to collect survey data about their social media usage in everyday life, and their attitudes and experiences of using social media in support of non-formal learning. The survey was designed to address the following questions:

1. How do school children perceive their use of social software in everyday life?
2. How do school children perceive their use of social software for formal and informal learning?
3. Does practice match perception in Q1 and Q2 - how is social software actually used by school children?

Our aim is to investigate pupil perceptions of the importance of social media in everyday life and learning whilst touching upon the tensions and challenges of gaining access and consent to working with young and adolescent learners. (Greenhow & Robelia, 2009). The findings contribute to the relatively limited field of knowledge regarding the use of social software by UK (secondary) school-aged children in support of informal, collaborative learning (Lee, McLoughlin, & Chan, 2007).

Methodology

Unlike conducting research with participants who are over the age of 18 recruiting participants who are of school age is a difficult stage in the research process (Alderson, 2004; Sinclair, 2004). Issues of approach (Hood et al, 1996), access through gatekeepers (Butler & Williamson, 1994) and consent (Cree et al., 2002; Hill et al., 2004; Masson, 2004; Miller, 2000) can appear to frustrate the research process leaving researchers feeling dependent upon the goodwill of organisation's to cooperate (Aldgate and Bradley, 2004). Our approach was to use the lead researcher's experience as a classroom teacher and exam board coursework moderator, and to utilise existing professional relations with departments of ICT in a group of six UK secondary schools, our sample can therefore be considered one of convenience. School leaders were invited to participate in the study who would then act *in loco parentis* for the school pupil population with respect to the parental consent required for participants under the age of 18. Further documentation was made available if required, the main approach, though, was to ensure that headteachers were aware of their ability to act *in loco parentis* as granted in the Research Governance Frameworks set in place by the schools Local Education Authority.

Due to the potential size of population sample, access to an online questionnaire or e-survey was selected as the most appropriate tool for data collection (Couper, 2000). The survey consisted of 8 sections including participant consent, use of social media, educational use of social media, and learning and sharing knowledge. From discussion with serving classroom teachers several factors affecting research instrument design were recognised early in the process. It was realised that as the participants could vary greatly in terms of reading ability and comprehension skills the survey design would require great care to accommodate this variation. To help participant understanding the questions would be couched in 'student speak'. Another important aspect to consider was the time required to complete the survey, as participant schools were asked to conduct surveys during timetabled classroom lessons, the content of which were planned in advance and accounted for the entire lesson time. Due to these time restrictions the questions were kept to the minimum required to gain baseline data for further qualitative research.

The survey questions were classed as high level e.g. "how do you perceive the use of social software in supporting informal learning?" or a supporting low level such as "have you ever used social software to help a friend with something they didn't understand in class?". This was to determine whether reported perceptions matched the stated uses of social software. An example could be that the participant may answer that they do not perceive social software to be important in support of learning, if they then proceeded to give examples of having supported or been supported through the use of social software perhaps their understanding of the first question was inaccurate or the use of social software was commonplace and taken for granted. In an attempt to maintain participant interest, and as a measure of validation, the answer options varied through each section from simple yes/no to drop-down options, radio button or multiple choice/multiple selection. Participants were given the opportunity to add comments if they felt that an important point has been missed or comment upon the survey in general.

Conducting research with school pupils as participants in the school setting is recognised as being fraught with difficulty (Greenhow and Robelia, 2009), not least of which is gaining access to the participants' school environment. The research instrument developed in this project was designed to be administered by school teachers during timetabled lessons without the need for researcher presence. Though addressing the issue of researcher presence and possible 'observer' effect in the classroom the drawback was dependence upon teacher willingness to administer the online survey.

In design of the survey instrument several steps were taken to ensure internal validity (Gray, 2009). Once the initial questions were drafted each question was subject to internal peer review (Cresswell, 2007). Then during informal usability style testing with volunteer participants at a local school the relevance of each question was discussed and participant comments noted for action if deemed necessary. Finally the study was submitted to and granted ethics approval by the University of Southampton ethics board (Ethics number 5942).

Once the surveys had been taken the raw data collected was cleaned in three stages to ensure that further analysis would produce meaningful results. The first stage was removal of participant records who had not agreed to take part in the survey (and had thus left the survey early). Next was removal of participants' records who reported that they did not use social media. These participants were given the opportunity, if they wished, to explain why they did not use social media for further analysis. The third stage of data cleaning consisted removal of records with questions answered in a meaningless way (either no selection, or more than one answer selected).

Quantitative questions were typically answered via a Likert scale, these were plotted and error bars calculated to show significant results at the 5% level. The Qualitative data results consisted of the reported examples of participants providing or receiving help with their learning through social media.

After a first reading of the comments initial codes were developed to describe a range of intentions and activities. Following a second reading, 14 days after the first reading of the comments, a set of high level themes were developed to give one interpretation of common themes and a high measure of intra-coder reliability (Neuendorf, 2008; Krippendorff, 2004), based upon intraclass correlation¹ (Rankin & Stokes, 1998). Once initial themes had been developed a second thematic investigation of the pupil responses was conducted seeking evidence for levels of thinking as described by Bloom's taxonomy.

Results and Analysis

In total 383 pupils responded to the survey across 17 classes in six different schools. Of these 71 were excluded from the study due to incomplete or poorly formed answers, of the remaining 312 pupils, 144 left qualitative comments as well as providing quantitative data.

The first section of the survey investigated pupils' perceptions of the importance of social media or social networking sites (SNS), participants were asked "do you think that social media is important in everyday life?", with 3-point likert answer options: 'very important', 'sometimes' or 'not important at all'. Fig 1. Gives an overview of the answers received, grouped by academic year. It indicates little change in average perception of importance as pupils progress through academic years, although there is a small spike in 'very important' answers in year 7 (11 years old) and another in 'not important' answers from year 10 (14 years old). We also analysed the replies by gender and year group, which revealed greater variance (Fig. 2, Fig. 3). Whilst the level of importance self reported did not seem to be effected by academic year ($n=313$, $\alpha=0.05$, $p=0.76$), when considered by gender as analysis indicated that gender did appear to have an effect ($n=313$, $\alpha=0.05$, $p=0.008$).

Responses from female pupils indicates that social media gains importance between year 8 (12 years old) with 20% of females reporting that social media is very important to 70% in year 10 (14 years old) after which levels of importance start to fall. But for male pupils instead of falling in year 8 levels of importance appear to peak at 45% then fall to 20% only rising slightly in year 11. These trends act to cancel each other out, and on average across all years, 31% of respondents reported that social media was very important, and a further 62% described it as important. However 7% described social media as not important at all, this challenges the popular views of the ubiquity of social media use and importance amongst young people, and echoes similar findings amongst University-aged students that challenges the idea of Digital Natives (Jones et al, 2010).

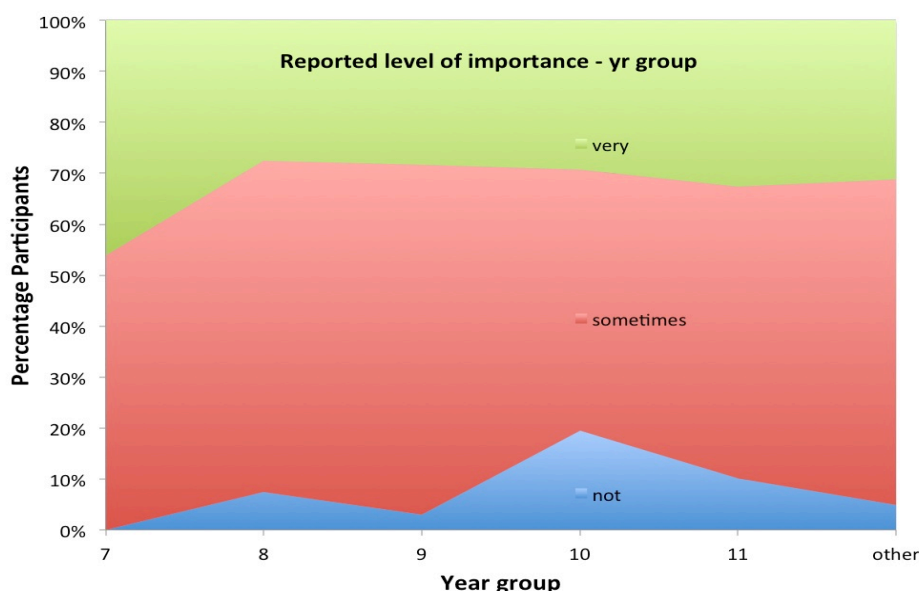


Fig 1. Reported level of importance of social media in everyday life by year group

¹ ICC = 0.96, with 95% CI (0.95, 0.97).

² Monte Carlo, Fisher's Exact Test used as expected cell count less than 5, sig=0.001 based on 10000 sampled tables with

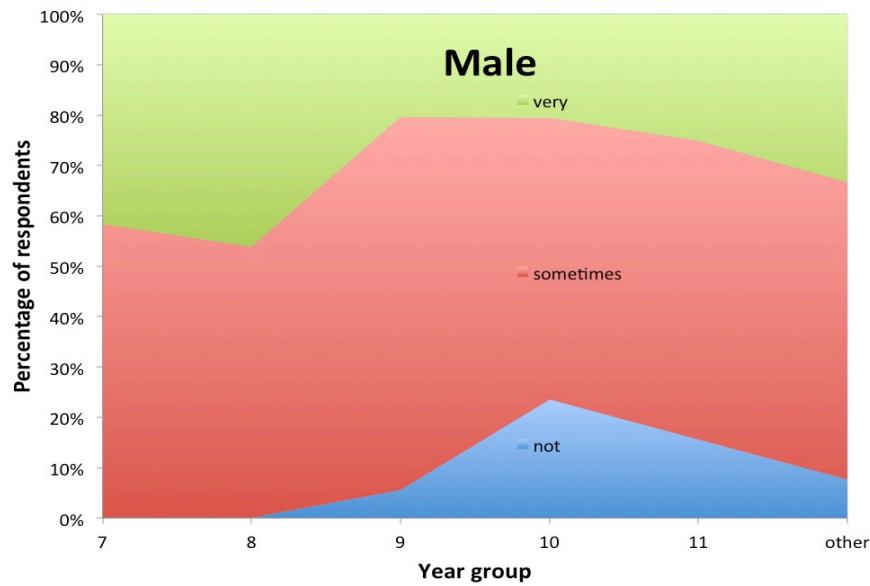


Fig 2. Reported level of importance of social media in everyday life by year group / Male

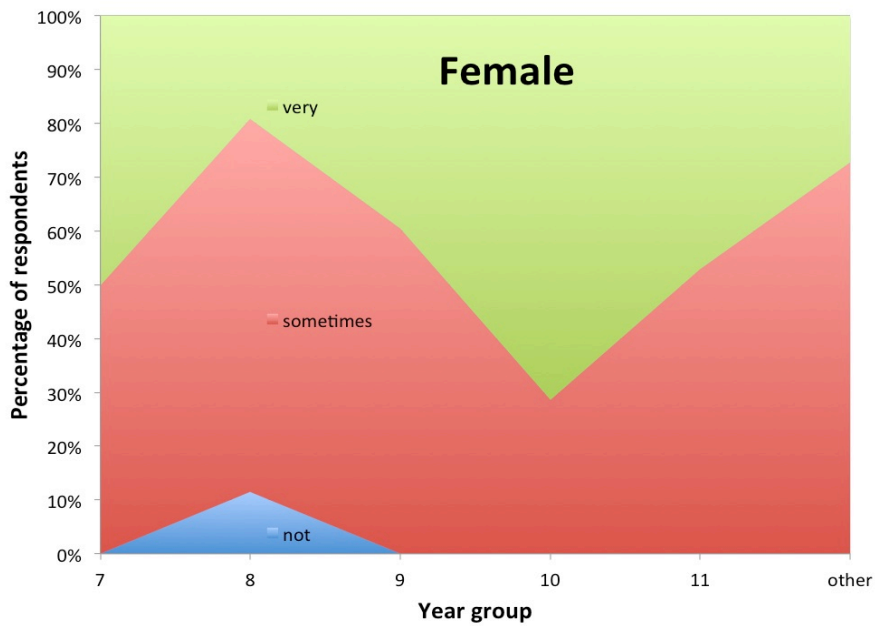


Fig 3. Reported level of importance of social media in everyday life by year group / Female

Results of data collected for participant time spent online on a daily and weekly basis followed quite closely the reported levels of importance. As might be expected results of statistical analysis suggest that self reported perceived level of importance does have an effect upon the amount of time spent online by participants both daily (Fig. 4), ($n=166$, $\alpha=0.05$, Pearson Chi-Square $p=0.001$)², and weekly (Fig. 5) ($n=149$, $\alpha=0.05$, Pearson Chi-Square $p=0.001$)³.

² Monte Carlo, Fisher's Exact Test used as expected cell count less than 5, sig=0.001 based on 10000 sampled tables with starting seed 215962969

³ Monte Carlo, Fisher's Exact Test used as expected cell count less than 5, sig=0.001 based on 10000 sampled tables with starting seed 726961337

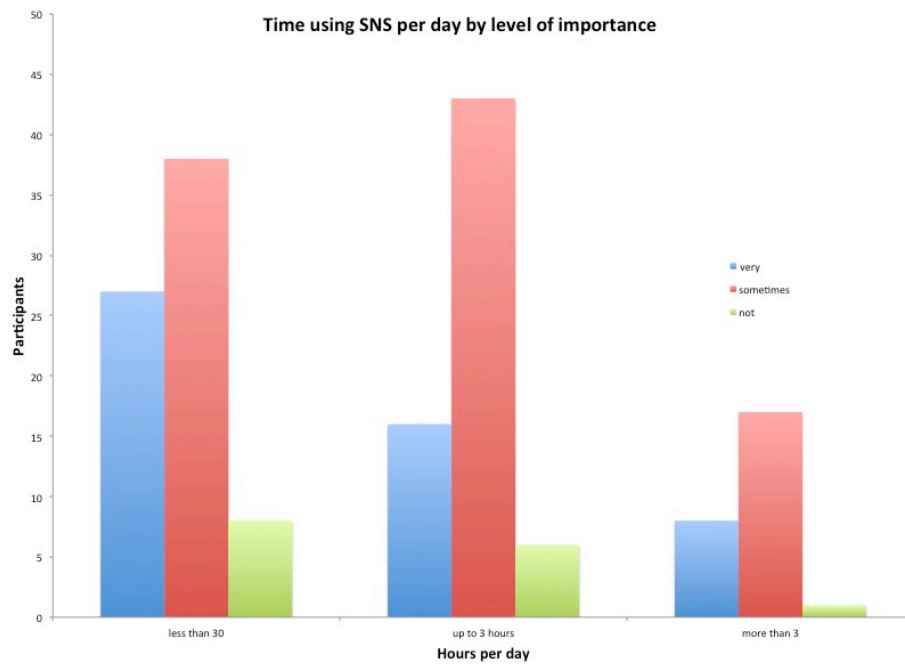


Fig 4. Reported level of importance of social media in everyday life by hours spent using social media per day

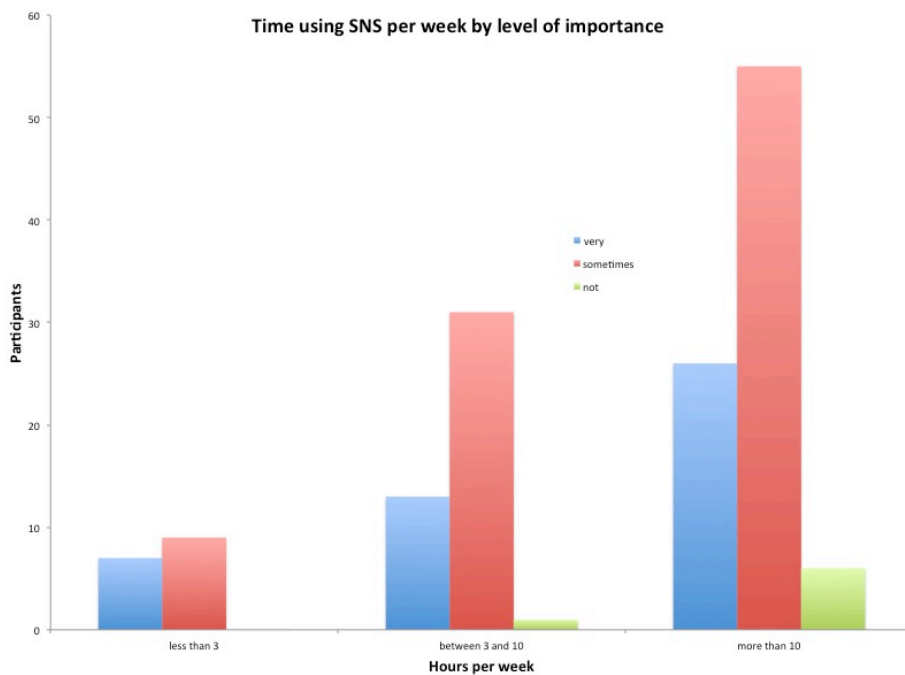


Fig 5. Reported level of importance of social media in everyday life by hours spent using social media per week

Other possible indicators of the level of importance reported by participants were number of social network site friends (Fig. 6) and the number of groups (Fig. 7) of which participants were a member. When questioned about group memberships and number of friends the analysis produced some unexpected results. In both cases the way in which pupil's answered the question about perceived importance of social media seemed to have little effect on their number of friends or group membership. Analysis suggests that self reported level of importance has no effect upon the number of friends a participant self reported (Friends: $n=290$, $\alpha=0.05$, Pearson Chi-Square $p=0.195$)⁴. The story is similar when group membership is considered, though level of importance appears to have little effect

⁴ Monte Carlo, Fisher's Exact Test sig=0.169 based on 10000 sampled tables with starting seed 743671174

within groups analysis suggests that an effect does take place *across* membership of ranges of groups (Group: $n=308$, $\alpha=0.05$, Pearson Chi-Square $p=0.09^5$).

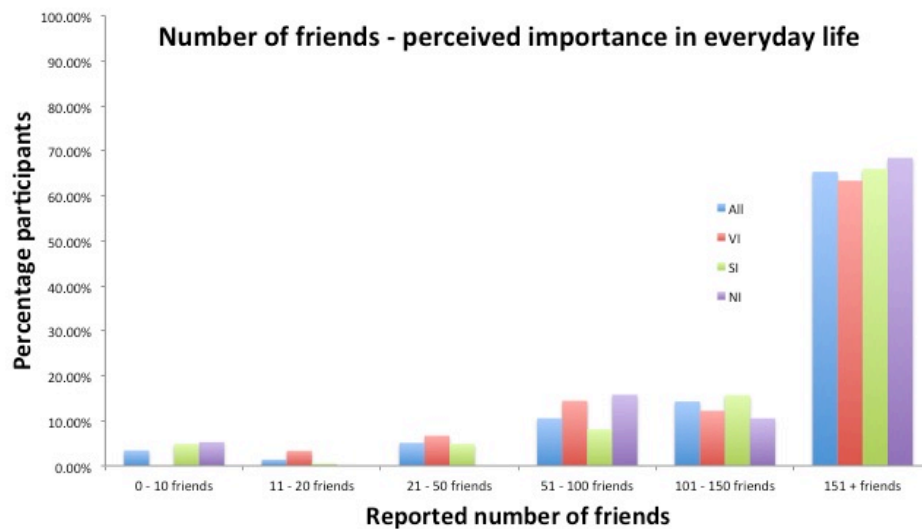


Fig 6. Reported level of importance and number of friends
(All – pupils, VI – very important in everyday life, SI – sometimes important in every day life, NI – not important in everyday life)

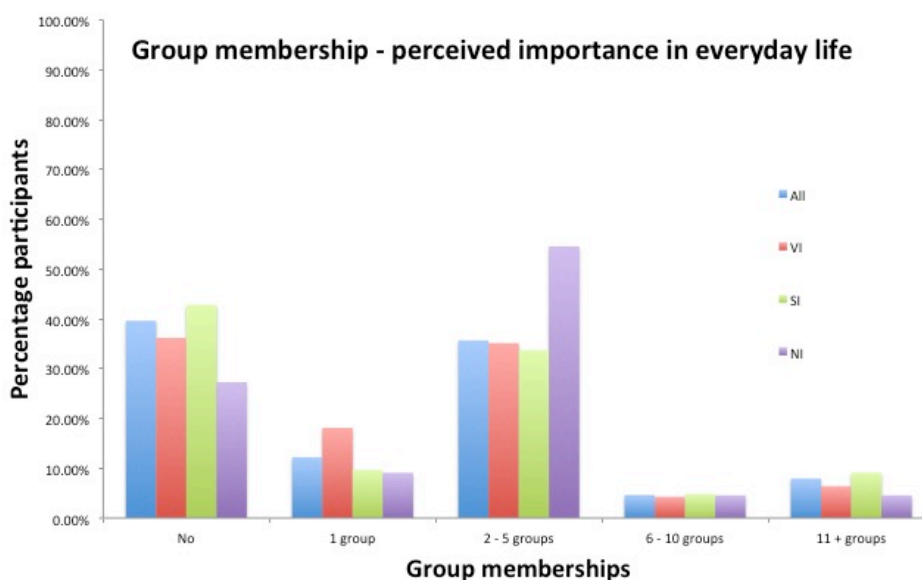


Fig 7. Reported level of importance and group membership

However, although nearly 40% of the sample responded that they were not a member of any group, in the most popular 2-5 groups range the percentage of those who apparently perceived social media as not important in everyday life was, surprisingly, almost 20% greater than for other groups (Fig. 7). This may be some artifact of the patterns of use amongst more experienced users, and requires further investigation.

The questionnaire also asked pupils which social media systems they used, and how frequently they used them. We were concerned that an open question might confuse younger children (who might not be aware of what we meant by social media) so the participants were asked to answer this in relation to 11 named systems. These included the most well known social networks (Facebook, Twitter and MySpace), curation style sites (Tumblr and Pinterest), photo sharing (Instagram and Flickr), Q&A (ask.fm), in-game communities (Minecraft), and sites popular with younger users (Bebo and SnapChat).

⁵ Monte Carlo, Fisher's Exact Test sig=0.006, based on 10000 sampled tables with starting seed 743671174

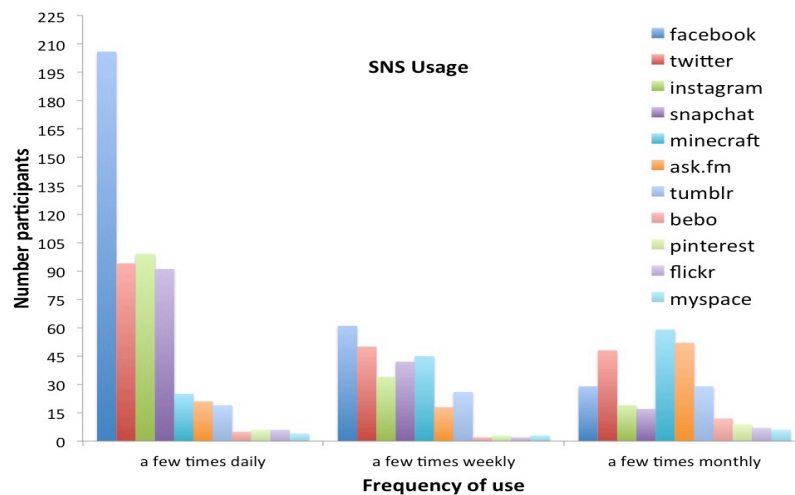


Fig 8. Reported Social Networking System (SNS) frequency of use

The data collected is shown in Fig. 8. There seems to be three categories of application depending upon popularity and frequency of use: (1) popular and used frequently: Facebook, Twitter, Instagram and Snapchat (2) popular but used infrequently: Minecraft, Ask.fm and Tumblr (3) unpopular and used infrequently: Bebo, Flickr, Pinterest and Myspace. These categories remained constant even when participant responses were grouped by year (Fig. 9), by reported level of perceived importance in everyday life (Fig. 10) or by gender (Fig. 11).

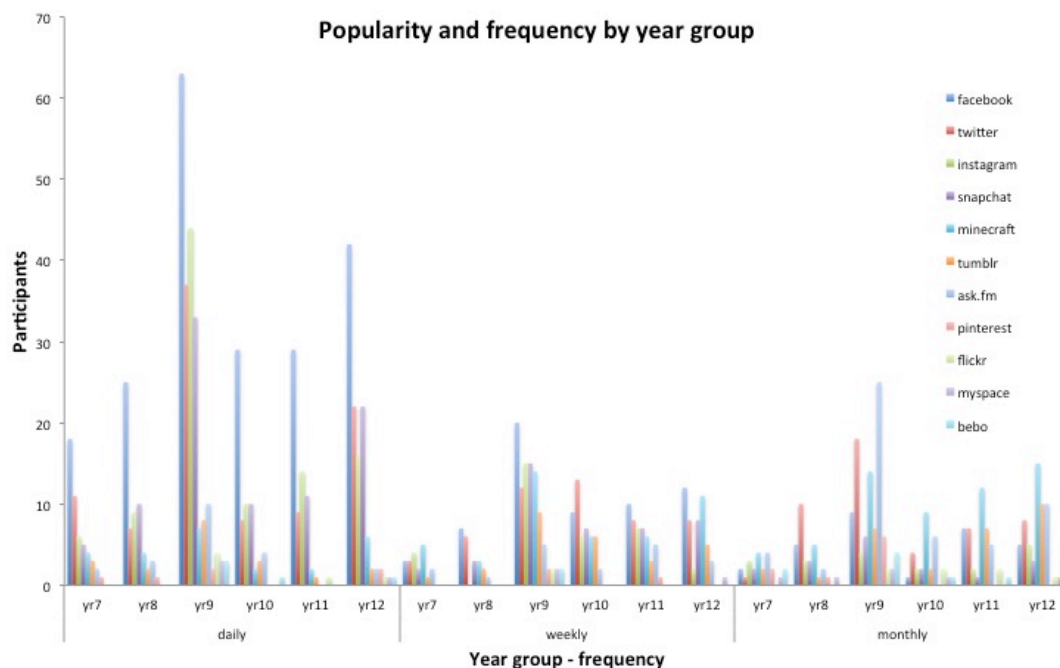


Fig 9. Reported Social Networking System (SNS) frequency of use by Year Group

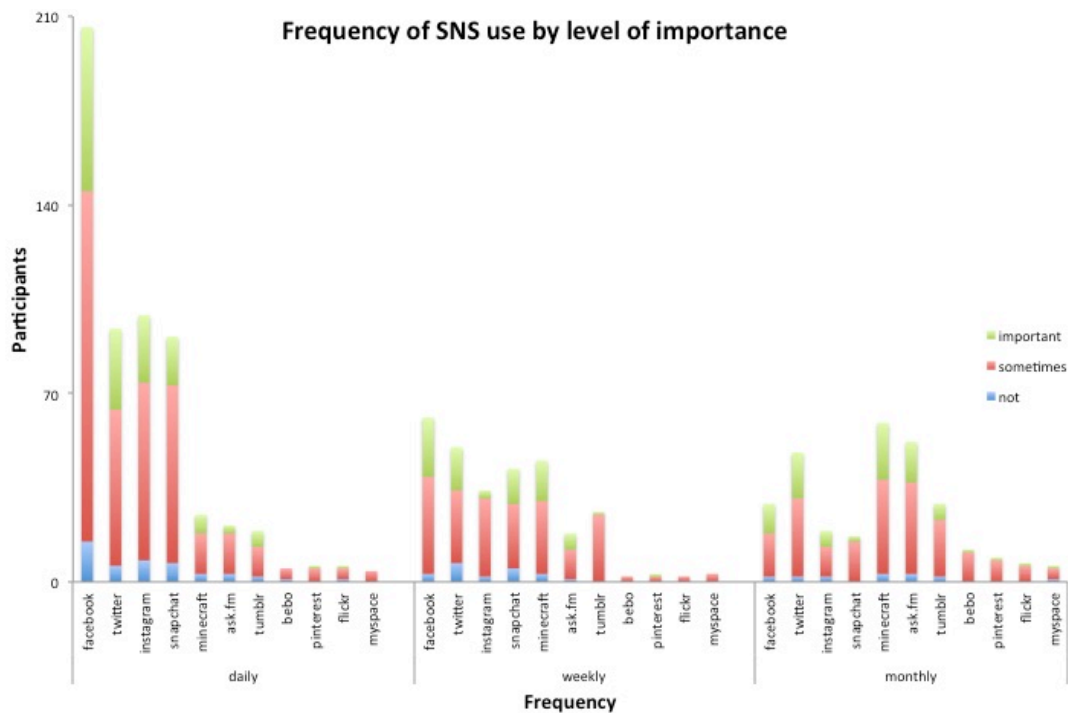


Fig 10. Reported Social Networking System (SNS) frequency of use by level of importance

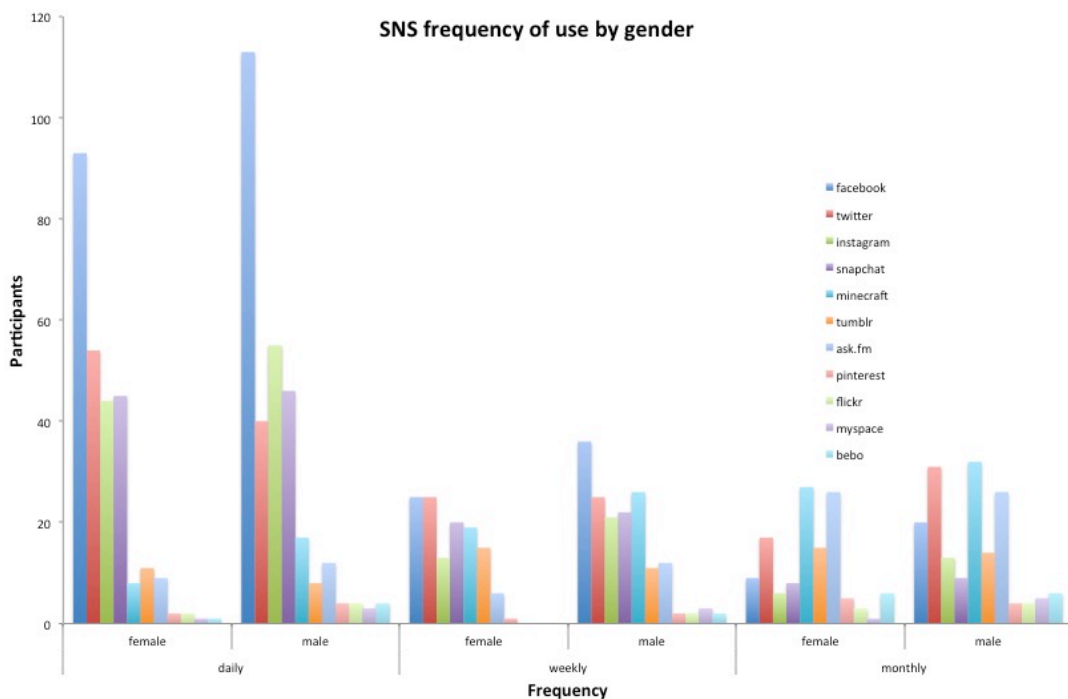


Fig 11. Reported Social Networking System (SNS) frequency of use by gender

It is interesting to note that the general age limit stated in terms and conditions for use of the social media listed (apart from Minecraft), was year 9 (age 13). As participants had submitted demographic data in the form of gender and academic year group it became clear that age limits were not generally being adhered to as some pupils in year 7 (age 11), reported holding accounts for over three years (Fig. 12).

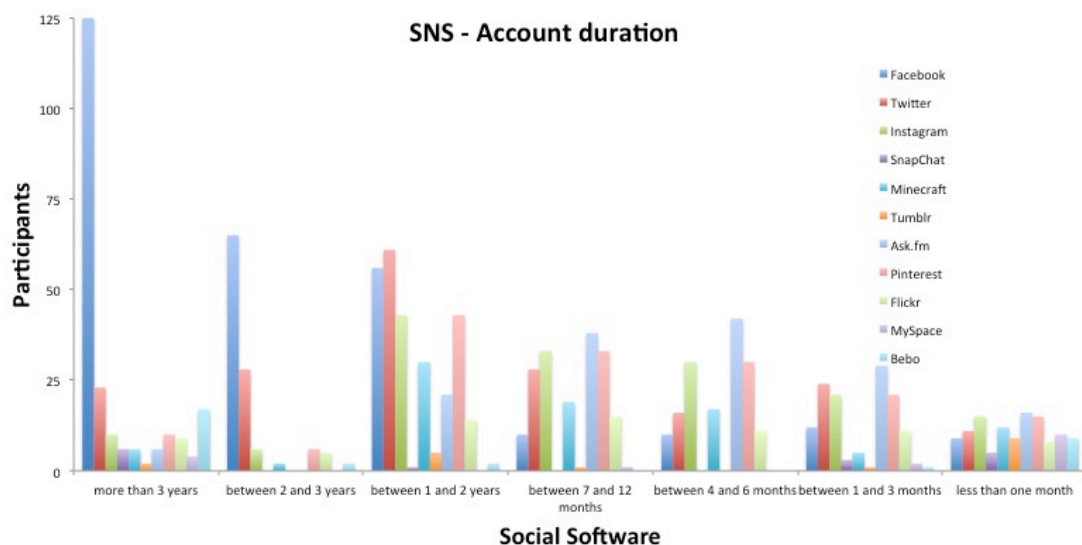


Fig 12. Number participants – duration of SNS accounts held

Looking at social media uses participants were asked to place a value on the likelihood of using social media for a particular task, a value of five for the most important 'I only use social media for this reason', and a value of one for the least important 'I will rarely use social media for this reason'. Fig. 13 shows the results; it is clear that 'talking to friends' was regarded as significantly more important than 'talking to relatives', and almost twice as important as 'organising events', 'sharing knowledge', 'taking part in discussions' or 'helping with schoolwork'.

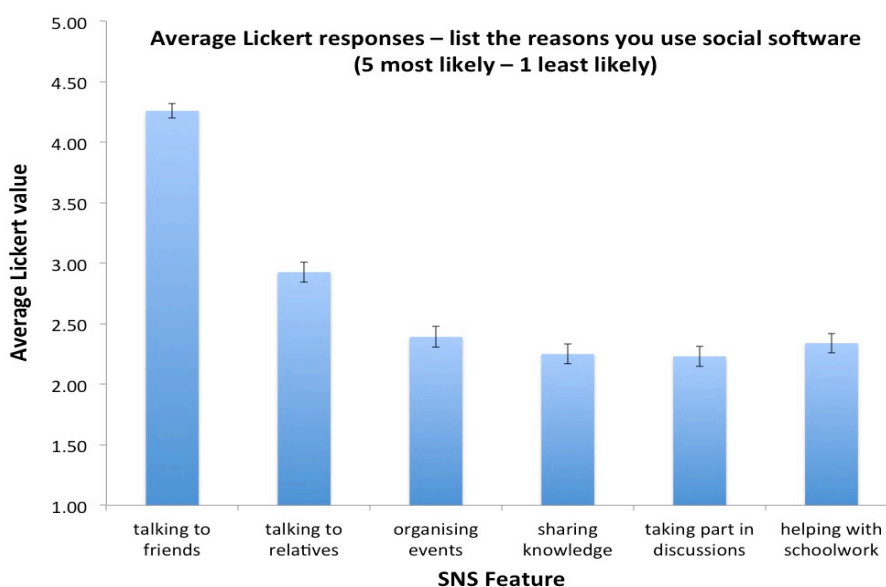


Fig. 13: Average values given for reasons for using social media (5 most likely – 1 least likely)

Analysis of responses by gender (Fig. 14) and year group (Fig. 15) yielded comparable results with few significant differences noted. This indicates that pupils are either not using social media for more advanced interactions (such as learning), or are not aware that they are doing so. This is explored further in the qualitative analysis below.

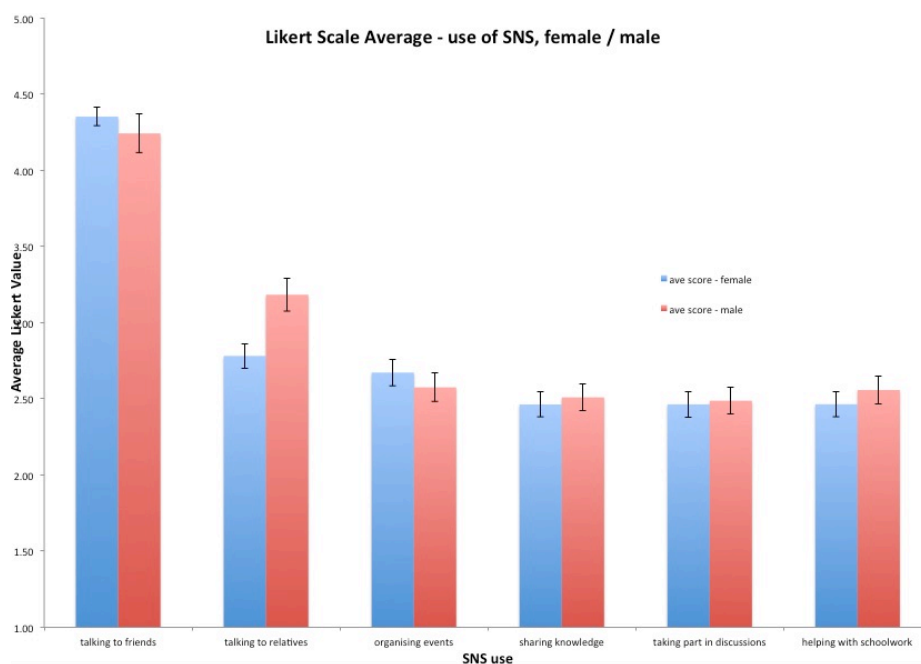


Fig 14. Average values by gender given for reasons for using social media (5 most likely – 1 least likely)

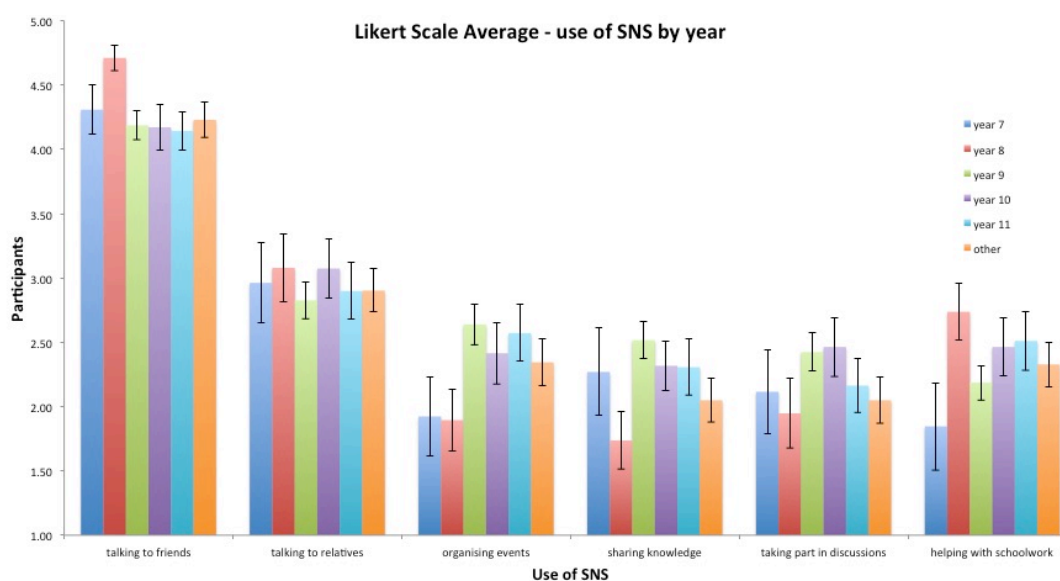


Fig 15. Average values by year group given for reasons for using social media (5 most likely – 1 least likely)

To determine if there was a difference between reported perception of the importance of social media in everyday life and in support of learning participants were asked how important they perceived social media to be in collaborative, informal learning and knowledge sharing when in lessons and out of school.

The chart below (Fig. 16) shows little difference in the three reported perceptions of social media when used in lessons and reveals a general ambivalence whatever the enthusiasm was for social media in other areas of life. However, when asked to consider the importance of social media outside of lessons to support learning those participants who perceived social media as least important in everyday life unexpectedly regarded it with greater importance for learning.

Further investigation is required to see whether this is because frequent users of social media do not see it as a special tool, and therefore fail to report it as being used for learning, or whether their patterns of behaviour are set by everyday use, whereas less-frequent users have less established patterns of behavior and are thus more open to other uses.

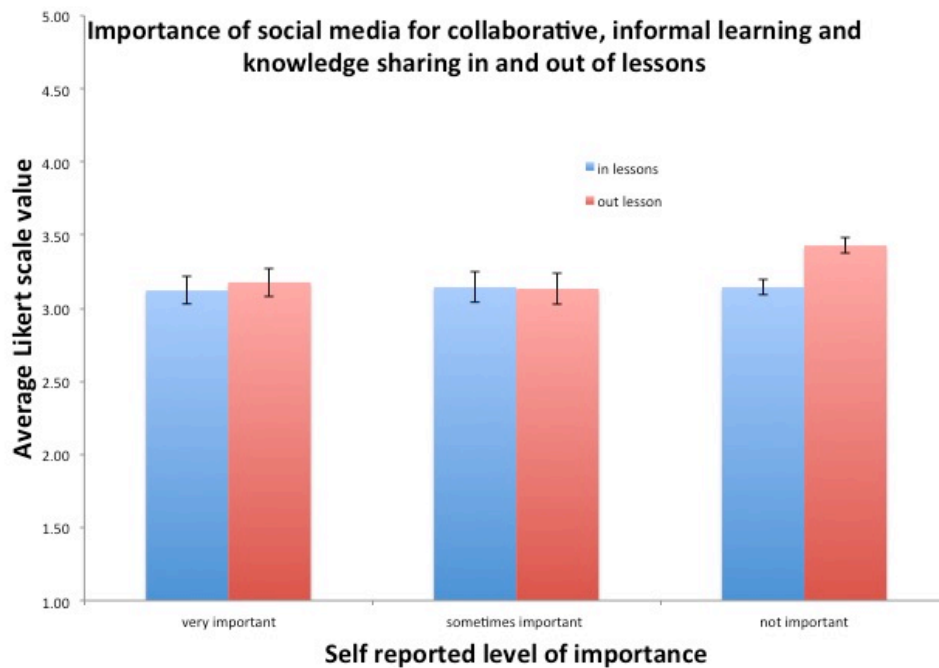


Fig 16. Perceived importance of social media in collaborative, informal learning and knowledge sharing

In addition to this quantitative data, we also gathered qualitative data directly about pupil's experiences. The participants were asked if they could give an example of an occasion they have been helped or had helped a peer through social media.

The participants were also directly asked their opinion about the use of SNS to support learning out of school. The optional responses were: 'it is a good idea', 'I'm not bothered', 'I don't mix school work with fun'. By crosschecking these responses with the examples given we can begin to see whether perceptions of usefulness (the direct question) are actually a good reflection of experiences (the examples).

Table 1. shows the data about how students responded and about how this maps to the examples they shared. As one would expect those participants who thought that use of social media to help with school work was a good idea reported relatively high instances^a of receiving (64%) or providing (65%) help. Even amongst pupils who did not think social media should be mixed with schoolwork there was some reporting of examples^b (8% for help given, 11% for help received). It is interesting to note that amongst those that reported that no help had been observed^c (153 no help received, 139 no help given) a significant proportion^d (62 no help received, 53 no help given) still reported examples, this represents a certain ambiguity in self-reporting in 40% and 38% of cases respectively.

Participant responses: has helped or been helped by a peer	Helping with school work - what do you think about using social media to help with school work when you are not in school:			
	Total	It's a good idea	I'm not bothered	I don't mix school work with fun
# Initial responses	298	138	122	38
Received support (yes)	145 (49%)	88 (64%) ^a	50 (41%)	7 (18%)
Received support (no)	153 ^c (51%)	50 (36%)	72 (59%)	31 (82%)
(yes) example given	52 (17%)	28 (20%)	21 (17%)	3 (8%) ^b
(no) example given	62 ^d (21%)	18 (13%)	35 (29%)	9 (24%)
Offered support (yes)	157 (53%)	90 (65%) ^a	57 (48%)	10 (26%)
Offered support (no)	139 ^c (47%)	47 (35%)	64 (52%)	28 (74%)
(yes) example given	60 (20%)	36 (26%)	20 (16%)	4 (11%) ^b
(no) example given	53 ^d (18%)	14 (10%)	30 (25%)	9 (24%)

Table 1: Percentage of students who expressed an opinion about use of social media for learning when not in school and had received or provided help for learning

The examples provided by participants were coded in an effort to develop a general picture of how participants might be using social media to support nonformal learning. Comments referring to help received by participant were labeled 'in', and those for help that was offered were labeled 'out'. Initial codes which developed organically through participant choice of terms and topic, we identified two codes that were concerned with logistics (understanding tasks and accessing school systems materials):

- **administration:** examples related to practical matters associated with school activities (for example passwords and deadlines)
- **homework:** examples related to the support of homework tasks (for example, explaining requirements, passing on copies of materials)

We also identified two codes that were pedagogical and were about interpreting, understanding or discussing the actual material being learned:

- **understanding-homework:** examples related to the understanding of homework materials
- **understanding-lesson:** examples related to the understanding of lesson materials

Analysis of themes			
Themes	Code	Responses (%)	Participant Comments
Logistics (114)	Administration(5)	In 3 (2%)	"When Was The homework due in?"
		Out 2 (1.4%)	"what the password is for my maths"
	Homework(109)	In 68 (49%)	"They helped with homework as i wasnt here when we got a sheet and he/she told me the questions"
		Out 41 (29%)	"explanation of the homework given to us."
Understanding (78)	Understanding-homework (55)	In 13 (9%)	"have had French homework explained and maths homework explained over facebook."
		Out 42 (30%)	"they where stuck on some english homework and i gave them some helpful tips"
	Understanding-lesson (23)	In 8 (6%)	"they explained something to me which we did in a lesson that i didnt get in the lesson"
		Out 15 (11%)	"i explaned something to them which we did in a lesson that they didnt get in the lesson"

Table 2: Development of codes and themes from qualitative responses

As the purpose for analysis of the qualitative data was to develop an understanding of how social media was actually being used by the participants, comments from the original (uncleaned) data set were included. The logic behind this being that although a participant may have selected more than one option thus invalidating their record with regard to quantitative data, it would not effect the validity of their qualitative answers. From the original data set 140 (36.5%) 'in' comments and 141 (36.8%) 'out' comments were analysed. Table 2 shows an overview of the themes, codes, and numbers, and includes examples of each code for both In and Out. What immediately stands out is that the majority of examples were about Logistics (114 total) rather than Understanding (78 total). It is also clear that help in understanding concentrates around homework (55) rather than lessons (23). This data indicates that although the primary use of social media is relatively straightforward and task orientated, there are plenty of examples where more advanced engagement is occurring. Understanding the nature of this engagement is important future work. It could well be the case that the conversations occurring around the logistics of homework have established certain norms, and thus enabled secondary conversations around understanding, whereas this mechanism has not applied to other learning activities such as lessons.

Conclusions

Social media is perceived as holding great promise for learning, especially from a constructivist or connectivist perspective. But the majority of work to date looking at how learners use social media for learning has concentrated on adult learners. In our work we have tried to examine how school-aged children engage with social media, perceive its value for learning, and use it for learning. Over a 12 week period 384 pupils (aged 11-17) at six UK secondary schools took part in our online survey investigating their perceptions and use of social media in everyday life and for learning. We set out to investigate three separate questions.

1. How do school children perceive their use of social software in everyday life?

Though school aged children report using social media extensively there is a significant minority (20%) who do not view it as important in their everyday lives. Different social media tools are regarded as having specific uses with only a handful of tools being used by a large number of pupils, and there appears to be very little difference of use irrespective of gender or age. There are gender differences in perceived importance, but these perceptions do not seem to effect actual engagement.

2. How do school children perceive their use of social software for formal and informal learning?

Findings show that low level uses (chatting to friends or relatives) were seen as the most important aspects over more complex uses (such as arranging events or sharing content). In support of learning social media is primarily used for logistical reasons (e.g. managing homework tasks), there is a strong secondary activity around engaging with the content itself, but this is primarily based around homework activity, rather than other school activities such as lessons. This may be because the use of social media for homework logistics provides a social expectation and framework around homework, which is missing for other school work.

3. Does practice match perception in Q1 and Q2 - how is social software actually used by school children?

There is some evidence that self-reported behaviour is not reliable, for example over 40% of students who reported that they did not receive support via social media, still reported examples of this occurring. There also appears to be a reporting bias, in that students reveal more examples of them helping others, than others helping them, and this shows how important it is to ask these kinds of questions from both sides.

We believe that our work will contribute to the still relatively small set of studies looking at how school children both perceive and actually use social media for their learning, and will highlight some of the challenges of working with this age group. Building an evidence base in this area can help to challenge myths about the social media use amongst young people, and provide a platform to build both new skills and new tools to enable school children to use these powerful social media tools more effectively.

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