CARDIFF UNIVERSITY

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School Twitter Accounts: Exploring the Perceptions of Primary School Children, their Parents and School Staff.

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Abstract

This exploratory study considered the perceptions of those involved with using a school Twitter account. Twitter is essentially an internet based microblogging (the posting of very short entries or updates on a personal webpage or social networking site) service in which members can post updates known as 'Tweets' of 140 characters (including spaces and punctuation) to answer the question *"What's happening?".*

The study analysed how pupils used Twitter in a mainstream primary school setting and evaluated the views and opinions of the pupils, parents and the staff who took part. It described ways in which schools, parents (and the wider community) could use this social media tool to communicate and share children's learning with key stakeholders. It also examined the use of social media from an eco-systemic viewpoint and considered how Twitter might fit in with the theory of a New Learning Ecology (Spires et al., 2009 & 2012). A combination of quantitative and qualitative data was collected.

The project ran in two separate phases – a pilot study (summer 2014) and a main research section (summer 2015). Each phase lasted approximately half a term. The pilot study involved twelve pupils from years five and six, a focus group of three parents and one member of teaching staff (n=16). Pupils from the first school helped to set up a school Twitter account and drafted Tweets which were then posted to the school account by their class teacher.

The second phase was conducted in a school with an existing Twitter account. During the research phase, the pupils were asked to compose their own Tweets to be posted onto the school Twitter feed. Participants in this part of the study spanned a wider age range (nine pupils from year one to year six took part). Semi-structured interviews were conducted with six of those pupils, two parents and five class teachers (n=16). In addition to these interviews,

a questionnaire was undertaken with an opportunistic sample of 10% of the parental population (total n=47).

The results of the quantitative data showed that Twitter use in the main research phase was extremely helpful in communicating with parents. 81% of the parents surveyed felt that Twitter is an effective communication tool to share the learning of their children and over half accessed the school account on at least a weekly basis. The majority of respondents (79%) mentioned that they used the school Twitter account in order to see photographs of their children.

From both sets of data, five individual themes were identified by the researcher. These subsequently formed part of a larger thematic analysis. Through the analysis of individual interviews it was found that the pupils were motivated by having responsibility for writing their class Tweets. Parents felt using Twitter helped them to talk to their children about school and kept them up to date with what was happening in their children's classrooms. Parents also commented that Twitter has advantages over some of the other communication forms currently used in school (such as text messages). Staff who were interviewed felt that social media have many benefits, but especially when it is used as part of a whole-school communication strategy and for a specific purpose (i.e., sharing children's learning).

The project concluded that, although little research has been conducted to date on the use of social media in primary settings, Twitter has the potential to communicate with many different stakeholders. It closes with the argument that educational professionals should continue to find ways in which to use social media to help engage students, parents and staff alike. It also concluded that if, by using a school Twitter feed, the four conditions of the 'New Learning Ecology' theory (Spires et al., 2009) can be satisfied, it could help schools to reach out directly to communicate with the communities that they serve.

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Chapter 1: Introduction

Margaret Atwood is an author of world renown. She is enthusiastic about the potential of social media and describes Twitter as a great tool for facilitating literacy. Atwood suggests that digital technologies are ideally placed to help children become more actively engaged with the reading process:

> People have to actually be able to read and write to use the Internet, so it's a great literacy driver if kids are given the tools and the incentive to learn the skills that allow them to access it (Atwood, CBC News, 2011, p.1).

In the above article she argues that, although it is a more modern equivalent, Twitter is merely an evolutionary step in already well established communication systems:

> Twitter is like all the other short forms that preceded it. It's like the telegram. It's like the smoke signal. It's like writing on the washroom wall. It's like carving your name on a tree (Atwood, 2011, p.1).

And in another article she maintains:

> Let's just say it's communication, and communication is something human beings like to do (Atwood, Why I love Twitter, 2010, p. 1).

It could be asserted that the importance of incorporating new digital technologies into a 21st century education system should be high on the agenda of school leaders (Dixon, 2012) and that the impact of social media platforms on children's social interactions should not be ignored. It is reasonable to suggest that today's children and young people are becoming more complex and demanding consumers of information, and their parents (and wider communities) want accurate information about the educational progress of their local school at their fingertips:

> In today's connected world, members of a school community expect more than just open houses and photocopied newsletters. They want frequent updates. They want to give their feedback. They expect to collaborate (Dixon, 2012, p.1).

Social media platforms, such as Twitter could be viewed as ideal ways to communicate that information and to reach directly into the homes of 21st century students and their families.

This thesis analysed how it might be possible to view the use of social media within education, specifically Twitter, through the lens of an ecological systems approach. It explored several motivational theories and considered how Twitter might help students, parents and staff to communicate what is happening in class on a daily basis.

1.1 What is Twitter?

Twitter is essentially an internet based microblogging (the posting of very short entries or updates on a personal webpage or social networking site) service in which members can post updates known as 'Tweets' of 140 characters (including spaces and punctuation) to answer the question *"What's happening?".* It was launched in 2006 by Jack Dorsey of Obvious Corp, San Francisco and on its website it describes itself as a *"real-time information network"* and the *"SMS of the Internet"*. In 2014 Twitter had approximately 646 million active users and these users were generating approximately 500 million Tweets a day in over 30 different languages (Twitter.com, 2014).

Twitter is mostly used for updating 'followers' of an account as to what the account holder is doing, or thinking, at that exact moment. Users can also post comments on someone else's Tweets, or 'Re-Tweet' (someone else's Tweet re-posted to your account). In a similar way to Facebook, many users post or share other media content, such as photos, GIFs (Graphics Interchange Format) or website links via their Tweets and Twitter has quickly become a powerful way for users to catch up with the latest news from around the globe:

> Worldwide events, from elections to government overthrows, have been broadcast via Twitter, bypassing and outpacing the mainstream media (Dixon, 2012, p.45).

Twitter (along with other newer social media platforms such as 'Instagram' 'Whatsapp' and 'Kik') appears to be usurping Facebook in the teenage user market. An online article from emarketer.com (2013) states that:

> The social network landscape is shifting. The firm queried 8,650 US teens with an average age of 16.2 years and found that for the first time, social network users in this age group said that Twitter was the "most important" social network to them (emarketer, 2013, p.1).

Therefore, if professionals are to communicate effectively within education, it seems important to understand the types of online communication that young people like to use most frequently. It was important that this research used a social media platform that schools and pupils would be familiar with and one which would be easy to use in busy classrooms. Unlike Facebook, where the posts can be any length, Twitter's brevity (it has a limit of only 140 characters) was considered to be a significant advantage.

This study examines how social networking sites might be used within classrooms to motivate and engage young people. It is also imperative to consider how social media might be used to liaise with students' families and the communities in which they live.

Because of the relatively small amount of research to date (there are virtually no published projects conducted within mainstream primary school settings in the UK), it was felt important that this study first focused on a general set of research areas and that there was capacity to test out any initial hypotheses using a small pilot study. After the pilot phase, these hypotheses were then refined into a specific set of research questions for the main body of research.

1.2 The Relevance of Today's Curriculum

The impetus for this study came partly from educational psychology's exploration of why it could be asserted that there might be such poor levels of pupil engagement with a 21st century

curriculum. Some educational academics feel that schools are becoming *"increasingly moribund and irrelevant institution(s)"* (Prensky, 2006, p.5) and they are persistent when they pose questions such as, 'What can be done to re-engage those students that might be struggling?'

Some writers (Palmer, 2015, Turkle, 2012) assert that an over-reliance on screen based activities and entertainments, might have a large part to play in childhood behavioural difficulties. In her popular parenting book, which describes the many facets of what she calls a "Toxic Childhood", Palmer states that when examining why children in the USA and the UK have such a high rate of behavioural difficulties, researchers need to examine "a complex cultural problem linked to the incredible speed of human progress" (Palmer, 2015, p.2).

Palmer shows her derision for Prensky's arguments (2005, 2006) for using technology to benefit education, and she maintains that screen time, in whichever form it comes, *"diminishes children's inborn motivation for real life engagement" (p.287).* She continues her argument by stating that, although some studies have shown a positive impact of high quality television programmes (when they are viewed alongside significant adults), most viewing has a detrimental impact on children's development:

> In an increasingly screen-saturated world the upcoming generation is going to need plenty of self-discipline to get the balance right between real-life and virtual activity (Palmer, p.289).

Although she does not blame technology entirely, Palmer devotes an entire chapter of her book to the risks she perceives to be contained within the 'electronic village', the one in which many children play and interact with others for a great part of each day. Part of this study seeks to investigate Palmer's arguments by asking whether there are ways in which online risks can be mitigated; and it considers whether ways to use children's fascination with technology to educational advantage can be found.

Another aim of the study is to explore whether it is possible to motivate pupils to engage in a meaningful two-way dialogue about their current in-class learning using social media. If they can, could this learning conversation be guided by teachers to include parents, extended family, friends and possibly the wider community?

The exploration poses an important central enquiry:

- What are the perceptions of those who use school Twitter accounts?

Furthermore, can social media be used as a tool that can provide a *"*way in*"* to open up other channels of communication? If so, can it help do this in a language that children and young people understand, relate to and, most importantly, trust?

As described above, Prensky (2005, 2006) believed that outdated curriculum delivery and a lack of appreciation about the way in which pupils really communicate with each other will eventually impact on their motivation. Prensky's work emphasises that there seems to be a need for educators to communicate with students and to start to analyse the complexities of their digital interactions.

This thesis highlights a way in which educational leaders might be able to enhance the way in which they conduct this communication, not only with their pupils, but with their teaching staff, families and the communities which the schools serve.

1.3 The Technology Transformation

Since stand-alone computers first made their entry into primary classrooms in the early 1980s, the technological landscape has changed at a very fast pace, and is now transformed beyond all recognition. It could be asserted that the use of laptops and tablet devices (small portable

computers that input directly on a screen) are now encouraged in most educational settings as staff hope to be able to exploit the many benefits that 21st century technology can bring.

Expensive interactive whiteboards, which replaced more traditional chalk blackboards, started to be introduced to classrooms in the latter part of the 20th century, but even they are now gradually being replaced by smart TVs (De Loatch, 2015, p.1).

Since the invention of the multi-function smartphone (mobile phone capable of linking directly to the internet which can perform many of the functions of a computer) in the mid-1990s, knowledge has become much more portable and, according to a survey by Ofcom in 2015, smartphones now appear to be the vehicle of choice when it comes to shopping and staying connected to the internet (2015, Ofcom.org.uk). In the survey it is stated that 66% of UK adults now own a smartphone, as do 90% of 16-24 year olds:

> On average mobile users spend nearly two hours online each day using a smartphone compared to just over an hour spent online by laptop and PC (Personal Computer) users (Ofcom, 2015, p.1).

Other reports, like the online BBC article from 1st July 2014 ('Digital textbooks in Edinburgh's classrooms of the future') noted that several secondary schools in Edinburgh were issuing whole year groups with their own digital devices to supplement the equipment available in class. The video reported that children have successfully been using apps (software applications which can be downloaded to a smartphone or tablet) such as translation devices in their language lessons. Teachers from one school were interviewed, stating that they felt that they were "helping to re-engage students with 21st century learning" (BBC video clip July 1st, 2014, 33 seconds).

As highlighted by the Ofcom research of 2015, dependency on smartphones has become commonplace. Some researchers argue that there can be negative impacts of smartphone use on physical health e.g., Singh and Yadav, 2015, describe the rise of 'smartphone addiction' and another research article examines the effect that smartphones might have on adult face to

face communication skills and desire for emotional intimacy (Lundquist et al., 2014). It has been hypothesised by some academics that the smartphone may have a major role to play in reducing true intimacy between college-age students and that they could be facing a difficult time in terms of 'addiction' to their phones:

> When the thoughts and actions of checking text messages or checking Facebook to 'stay in the loop' cause constant disruptions to daily life, this meets the criteria for addiction (Lundquist et al., 2014, p.87).

On the other hand, the emotional benefits of smartphone technology have also been highlighted in popular media in the past five years. Research in 2014 from Vodafone states that 89% of under 18s *"believe that mobile technology has helped them get along better with friends"* and 95% of teenagers "report that they feel safer leaving the house with their phone" (Vodafone, Digital Parenting, 2014, p.10).

Newspaper articles (such as the one in the Huffington Post by Tressel, 2015) also seem to be intent on creating a dialogue which maintains that smartphones will change the way students study. They discuss new *"21st century skills" (p.2)* as though they were skills that did not previously exist (the above article cites initiative, leadership and responsibility) and they describe the way in which:

> Mobile technology (referring to both mobile apps and the Internet) is an ideal tool to help support individualised, hands-on, student centred learning environments (Tressel, 2015, p.2).

Academics have also begun to formulate theories on how humans might be using their smartphones to expand their cognitive functioning (Clark and Chalmers, 1998) by relying much more on Internet search engines to supplant thinking. Some writers have acknowledged that it is now the time to consider how smartphones may be creating an 'extended mind' which "has transcended skull and skin" (Barr et al., 2015, p.479) and how society may be moving towards an:

> Impending integration of man and machine (that) will result in a broader understanding of human experience and cognition, though the work has only just begun (Barr et al., 2015, p.479).

Pupils in 21st century classrooms have previously been described as "digital natives" (Prensky, 2006, p.8), that is, he says they have grown up with technology and are "fluent in the digital language of computers, video games and the internet" (p.8). Prensky argued that these students will continue to adapt so rapidly to their environment that those born into a pre-digital world (the older 'digital immigrants') will struggle to keep up. Prensky proposes that many traditional ways of teaching are un-engaging to a huge majority of students and that 21st century educators have a duty to pay attention to them:

> If we don't stop and listen to the kids we serve, value their opinions, and make major changes on the basis of the valid suggestions they offer, we will be left in the 21st century with school buildings to administer – but with students who are physically or mentally somewhere else (Prensky, 2006, p.13).

Spires et al. (2012) also called for a radical transformation of the way that professionals view teaching and learning in relation to technology. In an abstract from a paper that was first presented in 2009 (as part of the Friday Institute White Paper Series) they argued that:

> Our schools and the teaching and learning enterprise at the heart of our schools need to undergo a transformation (as well). The result of such a transformation needs to be a type of educational experience and expertise that will not only support but also ignite participation in – and leadership for - an idea-driven, creative economy. Equally important as supporting a new economy is educational experience that supports a global citizenry. This paper argues for the importance of 1:1 laptop environments and related professional development initiatives as the catalysts for a new learning ecology that provide the dynamic educational reform described above (Spires et al., 2009, p.232).

It seems reasonable to assert that using technology might have an important part to play in helping students acquire valuable 21st century skills; skills such as critical thinking, creativity, innovation, collaboration and effective communication. It could also be suggested that teachers should no longer be gatekeepers of knowledge in their classrooms, but that they should be acting as 'facilitators' instead. If learners of the 21st century *have* changed, then it

would appear important that pedagogical approaches are adapted to remain in line with their needs. In the Huffington Post article (2015) Tressel argues:

> Education today is a rapidly evolving field in which students, institutions, administrators and research alike are critically challenging what it means to learn….digital literacy is a must in all areas….the modern approach sees the student at the centre, as the builders of their own knowledge, while the teachers act as guides and help facilitate said knowledge building (Tressel, 2015, p.2).

It could be asserted that social media has now become very much part of student's 1:1 learning environment (i.e., the interaction between a pupil and whatever form of technology they are currently using) and young people continue to need to make social connections using whatever platform is appropriate to them at the current time. Presenters from the Ontario Social Media and Teacher Learning Conference (Greenlaw, 2012) discussed the fact that social media is likely to continue to hold the interests of young people, even though the format may change:

> The need for social connection is what is at the heart of adolescent interest in social media (Holtermann, 2012, cited in Greenlaw 2012, p.166).

As part of the conference, Holtermann (2012) reported that the careful and supervised use of social media can encourage adolescents to develop psycho-social autonomy (the desire to individuate and grow in their understanding of themselves and others within their social contexts). Holtermann also argued that:

> When we feel socially and emotionally connected with one another there are opportunities to learn. As students believe they have control over their media production and online communication they gain a feeling of competence and a willingness to take risks through virtual social engagement that is different from the kinds of social interactions that they experience in face-to-face classroom interactions (Holtermann, 2012, p.166).

Other academics are now arguing for the importance of social connections in establishing positive learning habits throughout school:

> Social connections are a central feature of the normative developmental trajectory of adolescence to adulthood. When adolescents perceive a greater sense of belonging in

> school they place more value on the academic material they are learning (Allen et al., 2014, p.19).

It appears that connections via social media are very important to children and young people, and researchers know how often they are using them. In 2009, 97% of the students surveyed had a phone, and 75% of those students visited a social networking site at least once a day (Powers, 2009). In 2016 that figure is likely to have increased.

It also appears that students and parents are becoming ever more demanding in the information they wish to consume and to feedback to school management (Dixon, 2012). It seems no longer tenable to argue over whether such social networking sites such as Facebook and Twitter have value or longevity (new sites will continue to be created but the underlying premise of social connection will continue to be the same) but the questions seem to have instead transformed as follows:

- Why should schools use social media?
- How best can schools use social media?
- How can schools use social media safely?

These questions should always be asked with the interests and safety of children and young people placed at the very centre.

It must be noted that many of the assertions discussed in the above sections are based on media articles and the writings of those who support technological advances in education (the issues surrounding using social media in classrooms have not yet been widely researched in educational psychology research). It will be important that if sensible guidelines are to be created, more objective academic research is conducted. This thesis will help to begin exploring some of the pedagogical issues and psychological consequences of social media use in primary school settings.

1.4 The Pilot Project and Main Research Phase

The study considered the perceptions of those using Twitter in a mainstream primary school and the central research question was focused on an exploration of the opinions of children, parents and staff who were involved. It was conducted over a period of two years, each phase of the project running for approximately seven weeks (i.e., half of an academic term). The pilot study was completed in the second half of the Summer term of 2014 and the main research phase was conducted in the Summer of 2015.

The pilot study was completed in a large mainstream primary school in Wales (UK) and the main research phase took place in a smaller mainstream school in a neighbouring local authority. The schools were interested in exploring the perceptions of their childen and staff using a school Twitter account as a commuication method. Both schools were also interested in learning more about parental views on the subject.

1.5 Overall Research Question and Aims

The overarching research question was:

What are the perceptions of the children, staff and parents who use a school managed Twitter account?

One of the predominant aims of this study was to analyse how schools can best employ social media. Would letting pupils have control over the Tweets that are posted, interest, engage and motivate them? And in turn, would this help to involve more parents (and possibly the wider community)? It also examined the role that web based technologies might play in an individual's motivation for learning and for talking about that learning with significant others.

Due to this being a relatively recent area of research (especially within a primary school environment) this study was broadly exploratory in nature, looking also at some of the general

issues and difficulties that students and staff using Twitter encounter. It was designed to ask the following questions:

- **How might taking part in a school Twitter project help pupils feel more motivated about school?**
- **How might taking part in a school Twitter project help pupils to talk more to the people around them?**
- **How might a school Twitter project help staff communicate with their pupils' families and the community in which they teach?**
- **What effect might a school Twitter project have on the parents of those children who took part?**

Chapter 2: Literature Review

It was important for the relevance of this study that it was conducted within the research fields of educational psychology, technology and education. There are a wider range of research resources available which were not consulted on this occasion. For example, the Association for Learning Technology, Jisc and the former British Educational Communications and Technology Agency BECTA repositories.

2.1 Motivation

If some academics feel that the curriculum is no longer interesting or relevant to 21st century students (Prenksy 2005, 2006) then it seems logical to explore exactly how young people could increase their levels of motivation. This section describes the models of motivation that were examined for the background to this study.

Although many different motivation theories exist, trying to study motivation as a separate and distinct part of human behaviour is not at all easy. It can be argued that motivation underpins all human psychology, since psychology is the study of why people do things, or in other words, why or how they are motivated to do things. This means that the study of motivation is in fact a complex issue.

The dictionary describes motivation as, "what induces a person to act e.g., desire, fear, and circumstances". There are many varying psychological definitions, but Miller's 1962 definition seems to be fairly succinct. It examines the root word 'motive' from the Latin verb 'motivus' (to move):

> The study of motivation is the study of all those pushes and prods – biological, social and psychological – that defeat our laziness and move us, either eagerly or reluctantly, to action (Miller, 1962).

Since the dawn of philosophy, motivation has been of great interest to those wishing to understand and document the behaviours of individuals and groups more clearly. Many different philosophical theories arose that considered how individuals make sense of the world and what drives them to behave in the way they do. During the 17th century, the Rationalists (sometimes known as Idealists) such as Descartes, Leibniz and Spinoza, believed that reality had a logical structure to it (i.e., reason alone is the primary source of knowledge) and therefore human reason was the route to true knowledge. The Empiricists (such as the British philosopher John Locke) felt that knowledge was obtained from the senses and from reflection on those senses. The Hedonists (such as the philosopher Hobbes) maintained that all behaviour should be viewed from the viewpoint that life was all about universal maximising of pleasure seeking, gaining knowledge through sensory experiences and the avoidance of pain.

During the 1900s, these philosophical concepts evolved as scientific approaches became more sophisticated and viewing human behaviour and motivation as determined by various 'instincts' became popular. In 1908 William McDougall (cited in Gross, 2010, p.132) proposed the identification of separate instincts as part of his motivational theory. McDougall proposed that instincts are adaptive sequences of behaviours that result from the collaboration of genetics and developmental processes (due to the influences discussed within Darwin's Theory of Evolution). By 1932 McDougall had identified seventeen separate human instincts which included hunger, curiosity, sex, maternal/paternal instincts and the desire for laughter. He proposed that these goal-oriented behaviours were often subconscious and that many of them seemed to be based upon primal urges.

In the 1920s, a new term, 'drive', had entered scientific literature, replacing the word instinct and these drives were further contained within two theories:

i) Homeostatic Drive (Cannon, 1929, cited in Gross, 2010 – p. 132) was a mostly physiological concept based on examining sensations such as hunger and thirst,

which stimulate processes that serve to return homeostasis to the body (e.g., shivering occurs to return the body to normal temperature).

ii) Drive-Reduction Theory (Hull, 1943, cited in Gross, 2010 p.137) is a theory of learning and considered the effect of negative and positive reinforcements on behaviours, viewing all behaviour as occurring as a result of reducing or alleviating a drive.

In the 1950s, Maslow began to propose a theory in which people are all subject to differing motivational forces (or 'needs') and these needs are responsible for determining the majority of behaviours. His famous 'Hierarchy of Human Needs' (from 1954, illustrated and adapted below) categorised human needs as:

- survival or dependency needs (he referred to these as 'deficiency motives' or D-motives); and
- needs for growth (called 'being motives' or B-motives).

In contrast to McDougall, Maslow believed that to reduce all human behaviours into drives that must be eliminated or desires that must be sated (such as hunger, thirst and fear) was misleading. Maslow proposed that people cannot be motivated by the desire for self-actualisation (becoming all that one is capable of becoming / reaching ones full potential) if they have not had their lower, physiological needs met first (such as the need for food, safety or warmth).

Maslow's Hierarchy of Needs still has influence today since it covers all aspects of human needs, yet it is primarily focussed on the individual. Many academic criticisms of Maslow's theory exist (Kaur, 2013, Neher, 1991) and it appears that a major factor in these criticisms is that "questions of social interaction and culture are seriously downgraded" (Trigg, 2004, p.393). Later evidence from the experiment with monkeys carried out by Harlow (1965)

suggested that in some circumstances social needs may even come before basic physiological needs.

If Maslow's Hierarchy of Needs is used as the basis for exploring human needs then there appears to be a lack of consideration for the wider environmental factors that may influence the motivation of children. Indeed, this thesis proposes that, in the 21st century, Maslow's thesis is inadequate. Ignoring the complex digital world which today's children have to negotiate, seems at best unrealistic, and at worst, neglectful.

Fig 1: Maslow & the internet (funnyjunk.com)

2.1.1 Intrinsic and Extrinsic Motivation

Although many psychologists have studied the crucial role of motivation in learning (Dweck, 2003, 2005; Deci et al., 1999), there is some research which states that motivation to learn in school needs to be explored at a more fundamental level. Lazowski and Hulleman (2015) commented in their meta-analysis of motivational studies:

> A rich body of research in educational and social psychology has clearly demonstrated that student motivation is essential for learning, and if left unguarded declines in motivation will undermine system effectiveness. Not only do motivated students learn more, they persist longer, produce higher quality work, and score higher in standardized achievement tests, particularly if they are motivated by relatively intrinsic, as compared with extrinsic reasons (Lazowski & Hulleman, p.3).

In the above research, they offer an overview of 15 different types of theoretical frameworks for motivation. Although it is not feasible to explore each of those here, aspects of those considered to be most relevant will be further examined.

2.1.1.1 - Tangible rewards

For many years there have been prolonged debates about extrinsic and intrinsic motivation (being motivated by tangible rewards or by the task for the task's sake respectively) and psychological researchers seem to have come to a consensus that, in most situations, intrinsic motivation is more desirable in a classroom and individual learning context. In 1999, Deci et al. conducted a meta-analysis of 128 motivation experiments and, amongst other things, the authors concluded that:

> Although (tangible) rewards can control people's behaviour….the primary negative effect of rewards is that they tend to forestall self-regulation….strategies that focus primarily on the use of extrinsic rewards, do, indeed, run a serious risk of diminishing rather than promoting intrinsic motivation (Deci et al., 1999, p.627).

2.1.1.2 - Praise as reward

Deci et al., (1999) drew the distinction between actual rewards (such as team points, sweets or stickers) and rewards that take the form of verbal praise. Evidence which states that verbal praise per se is more effective at raising intrinsic motivation is debatable and much opposing evidence has been discussed in recent years. Henderlong and Lepper (2002) argue that (contrary to popular belief) "praise, like penicillin, must not be administered haphazardly" (p.774).

2.1.1.3 - Digital rewards

Immediate digital rewards (in the form of responses to Tweets posted) appear initially to fall into the category of tangible rewards, as users can choose to have them appear immediately as 'notifications' on the top of a smartphone screen. Depending on the account holder's

security and profile settings, a small Twitter icon can be set to appear on the notifications bar of the device indicating that there has been a reaction to a Tweet posted; this appears in one of several ways:

a) Liked / Favourited – someone has marked your Tweet as one of their favourites.

b) Reply – someone has replied to your Tweet.

c) Re-Tweet – someone has passed on your Tweet to their own followers (known as RT).

d) Mentions – someone has mentioned your user name (@Name) in one of their Tweets.

e) Quote – someone has embedded your original Tweet into one of their Tweets for others to see.

There is however a possibility that using Twitter could combine different types of digital rewards for users. If parents respond positively to a pupil's Tweets this could be seen as a praise reward or digital reward which may then instigate further Tweets. Henderlong and Lepper (2002) concluded that a person having autonomy or control over the task is important when considering the effectiveness of praise. Therefore, it could be predicted that giving control to the pupils and letting them decide what to Tweet (under adult supervision) might be likely to increase the sense of reward when receiving feedback. Additionally it was considered that more delayed rewards may be present e.g., positive thoughts about discussions had with parents/extended family members at the end of the school day (after Tweets have been posted and seen).

2.1.1.4 - The role of 'readiness' in motivation and impact of immediate feedback:

In the 1950s immediate feedback was shown to stimulate neurological based responses and motivational changes (e.g., the infamous rat/lever/electric shock experiments by Olds and Milner, 1954). It is important to acknowledge the more worrying side of such responses, since some experiments with animals led to addictive behaviours due to these neurological changes. More recent research indicates that the pleasure derived from social media 'likes' or

'favourites' can fulfil a myriad of gratifications, from the alleviation of boredom to escapism and relationship maintenance (Dunne and Lawlor, 2010, p.54). Therefore, feedback (in its many different forms in relation to Twitter) is considered to be an important part of this research.

If, as described in the above sections, feedback from interactions are important to pupil motivation; then there may also be merit in considering how ready the students are to participate in projects using social media and what value they might attach to participating in research.

In 2015, Mostafa published a paper entitled 'Engaging Students via Social Media: Is it Worth the Effort?' Although this research was conducted with 353 university level students, Mostafa concluded that "students who are ready to participate in value creation tend to perceive more value from social media engagement" (p.144). This was described as students perceiving value in the projects that were presented to them in one of three important ways:

- Functional value:
  - the extent to which the service achieves its goals.
- Social Value:
  - how valuable students perceive communicating with the instructor and other students.
- Emotional Value:
  - Students' perceptions of enjoyment and happiness whilst taking part (p.146).

It seemed, from this study, that those students who saw these clear values in a social media project (i.e., those who took part and enjoyed the benefits of their participation) attached more importance to the outcomes of such a project. Mostafa's study utilised a methodology common in papers which examine social media use, that of the student self-report using summated rating (Likert scale) measures. Likert scales were first conceptualised by Rensis Likert in 1932 (cited in Robson, 2011, p.303) and are frequently employed in many different

psychological research approaches because they are relatively easy to develop and use. In a self-report situation participants act as "observers of their own behaviour" (Robson, 2011, p.313) and as such there may be issues of validity and reliability.

Although for the purposes of this exploratory research, data was not specifically collected on the three separate benefits described in Mostafa's paper, it could be proposed that those students who describe an enjoyment of the Twitter project in their interviews could be more likely to show increased motivation for social media use. They might then display a 'readiness' for using social media more generally in their education. It might also be proposed that using social media could create an interactive process/cycle, where the feedback from Tweets and enjoyment of that feedback then contributes to an increased motivation for further digital use.

In the conclusion to the 2015 paper, Mostafa argued:

> The wide use of social media is a promising venue in offering new ways of student engagement and educational settings (p.155).

For this thesis, it was interesting then to consider whether a school-based Twitter account could facilitate enjoyment and enhance motivation for students through appropriate and rapid feedback. If a Tweet was posted that showed an example of a piece of work produced during a lesson and it was responded to by a friend or parent in a positive way then (as long as the feedback was seen as realistic and genuine) it could be argued that Twitter has potential to both engage and motivate the pupil.

2.1.2 Competence Motivation

However, there are motivational frameworks that have very little to do with immediate reinforcements or the reduction of human drives. In the Dictionary, competence is defined as the "ability to do something well or effectively, having sufficient skill or knowledge", in other words trying to define exactly how capable people are of achieving what they set out to do. This could be allied to the concept of self-actualisation or the higher levels of Maslow's

Hierarchy of Needs. However, it would appear that White (1959) considered this from a more evolutionary perspective, articulating the need for survival in a complex and unpredictable world.

In the essay, entitled Motivation Reconsidered: The Concept of Competence (1959) Robert White outlined his concept:

> To account fully for the fact that man and the higher mammals develop a competence in dealing with the environment which they certainly do not have at birth and certainly do not arrive at simply through maturation (White, 1959, p.297).

White maintained that competence is an absolutely crucial element for keeping humans motivated over long periods of time. He described the need for a 'personal competence' (understanding, predicting and controlling the world) as a need which is continuous throughout our lives. From White's accounts, personal competence appears to involve seeking stimulation, exhibiting curiosity and playing with friends and family. He described behaviour in which:

> Stimulation and contact with the environment seem to be sought and welcomed, in which raised tension and even mild excitement seem to be cherished, and in which novelty and variety seemed to be enjoyed for their own sake (White, 1959, p.328).

When participants use Twitter (or any social media platform) this might be viewed as helping to satisfy all of the above conditions, since social media can be used for a variety of different purposes ranging from pure entertainment to seeking out new information or to interacting with friends and family.

In their publication the Handbook of Competence and Motivation (2007) Dweck and Elliot collected papers from some of the most influential thinkers in this field. The notion that feelings of competence can be highly influenced by the reactions of those around us and are "transacted within a web of social relations" is described by Aronson and Steele (chapter 24, Dweck & Elliot, 2007, p.437). Aronson and Steele describe how many fragile beliefs can vary

according to the types of feedback that is received from other people. Aronson and Steele propose that:

> How a student construes the way he or she is viewed and treated by others matters a lot: how welcomed or excluded, how respected, how tuned in to others' difficulties and triumphs – these perceptions can exert a profound influence on intellectual competence, on motivation, and ultimately upon a student's academic self-concept (Aronson & Steele, cited in Dweck & Elliot, 2007, p.437).

Therefore, it seems likely that if the young people taking part in this study get positive reactions from the people around them (friends, family and staff via Twitter) then, according to Aronson & Steele, this could have a positive impact on their feelings of competence and their motivation for the task or project. They go on to conclude at the end of their chapter that:

> Social relations – how people think about and treat one another – can make a big difference for achievement (Aronson & Steele, 2007, p.452).

Dweck and Elliot describe how they believe that achievement is "best viewed through the lens of competence" *(2007, p.6)*. In order to understand how children and young people make sense of their own abilities when they are in school, this study considered how competent students might feel:

> Competence motivation is ubiquitous in daily life, it has a substantial impact on emotion and well-being, it is operative across the lifespan and it is evident in all individuals across cultural boundaries (Dweck & Elliot, 2007, p.6).

Further on in their book, Dweck & Elliot explore how parents and peers can influence feelings of competence and how individual characteristics such as age, gender and race are important. In later chapters they examine how factors within wider systems around the child such as government policy, socioeconomic status and culture may also have an impact.

In the conclusion to the introduction, Dweck and Elliot discuss their belief that (alongside the importance of cognitive ability) the social skills which children possess are vitally important:

> Cognitive expertise matters in school and in life, but so does social expertise. Both need to be taught in school and the home to all children. This latter kind of expertise may become even more important in the workplace. Until we expand our notions of abilities and recognize that when we measure them, we are measuring developing forms of expertise, we will risk consigning many potentially excellent contributors to our society to bleak futures (Dweck & Elliot, 2007, p.28).

This project aims to help children become successful contributors to the social processes within their classroom environments in a manner that is not dependent on the cognitive abilities of the child. It may be the case that Twitter can be used to 'level out' social positioning because it offers a chance for everyone to be competent and an opportunity for everyone to share in the celebration of classroom successes.

2.1.3 External Influences on Individual Motivation

If an educational psychologist's (EP's) job is to "apply psychology to promote the attainment and healthy emotional development of children and young people" (DfEE, 2000), then it seems essential that there is a concentrated effort by EPs to understand what motivates them to learn. Not only is it important to understand the young people themselves, but it is also necessary to comprehend the complicated systems that operate around students. Teachers, peers, parents, families and the wider community all have an important influence on pupils and it is valuable to examine each of these in turn.

Furrer and Skinner (2003) explored how children's relationships with others influence their school performance. They hypothesised that children are influenced by their early experiences with others and, as a result, the individual later holds dichotomous views about the self (being either worthy/unworthy of love and the world as being either trustworthy/untrustworthy). They found that children's sense of relatedness is important at different levels and with different social partners and that "a priority for schools should be building the quality of children's relationships" (p.160). They also conclude that levels of 'relatedness' to parents result in either the child having a "readiness to be socialized" with a "willing attitude and the desire to concentrate on the classroom agenda" (p.159) or a situation where the child is not

ready for school and this can result in the child struggling as soon as s/he enters formal education. They emphasise the absolute crucial nature of emotional well-being:

> Feeling connected and important is not just a by-product of doing well in school; a sense of belonging or relatedness plays an integral role in children's motivational development (Furrer & Skinner, 2003, p.160).

A teacher who can highlight a good piece of pupil work to an audience beyond the rest of the class using social media could potentially engage with a much wider set of stakeholders. The teacher may even be able to communicate with parents who have not been able to engage in more formal school events (such as parent consultation evenings). If this is the case, then it would appear that there may be strong links to Deci & Ryan's Self-Determination Theory, with Twitter use fulfilling one of their three important criteria. That is, the use of social media might help to strengthen 'relatedness' (the connection that already exists between pupil and teacher / pupil and peers in the classroom).

Covington (1992) also stressed the importance of peer relationships in academic success and motivation, stating that children often struggle to find the balance between trying too hard and not making sufficient effort in school in order to fit in with their friends.

As early as 1988, Ainscow and Tweddle wrote that there was a need to focus on the learning environment and on poorly motivated schools, rather than looking at within-child factors to explain failure. Much research has focussed on school effectiveness and positive ethos and teachers are now much more accountable for the learning environment in their own class rooms. McKee and Witt (cited in Frederickson & Cline, 2002, p.194) identified the classroom variables which can affect learning, such as:

i) Physical setting of the classroom – furniture, space, noise, lighting, etc.

ii) Classroom organisation and management – teacher's management skills and school procedures.

iii) Quantity and quality of instruction .

(McKee & Witt, 1990, cited in Frederickson & Cline, 2002, p.194).

If, as Bronfenbrenner (1979, 1989) suggests there can be many motivational forces in operation within and surrounding any one individual, we must look at the individual as part of a larger multi-layered system. This includes the learning environment that exists beyond the classroom.

In addition, it is important to consider ways in which Twitter may act as a de-motivator to some students. If Furrer and Skinner (2003) were correct in their assumption that early experiences with parents can influence children's later success in the classroom, then it might be that posting comments for parents to see which are subsequently not referred to (or worse, referred to in a negative way by the parent) may negatively impact on a child's perception of her/his own learning. If some of the children in the study receive a lot of attention and praise at home for their posts and others do not, there might be potential for the Twitter project to have harmful consequences for some.

2.1.4. Self-Determination Theory

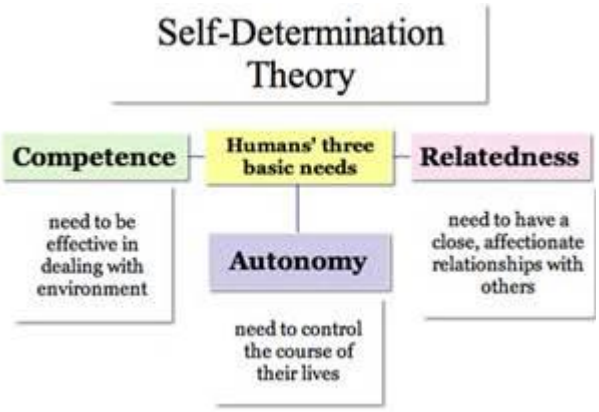
Deci and Ryan further developed White's description of competence as the master reinforcer and began to develop their Self-Determination Theory (SDT) from the early 1980s onwards. In contrast to Hull's Drive Reduction Theory, they believed that individual motivation arises from psychological needs that are *"innate organismic necessities" (Deci & Ryan, 2000, p.229)* rather than from negative physiological states (such as being hungry or in pain). They argue that for people to be motivated to complete tasks they must feel that they are competent to do the task, that they have control over the task and their part in it, and that they have a close relationship with the others that might be involved with what they are doing. Therefore, the three key elements in the Self-Determination Theory are: competence, autonomy and relatedness (see Fig. 2).

A crucial part of this theory appears to be the emphasis on human beings as being growth-oriented in many of their behaviours. That is they see people as not necessarily motivated

from a place of dis-harmony, but that they are naturally inclined to seek out ways in which to improve their psychological well-being. Of significant importance to this is the motivation to seek out the element of connectedness through social groups:

> It is part of the adaptive design of the human organism to engage interesting activities, to exercise capacities, to pursue connectedness in social groups (Deci & Ryan, 2000, p.229).

Fig 2: Deci & Ryan's Self-Determination Theory (2000)



In an article which looked at both positive and negative aspects of social media use, Allen et al., (2014) examined current research on the topic of 'relatedness' in adolescents. They described the paucity of research in this area and commented that:

> Although popular media (e.g., newspapers and magazines) have published on the topic of social media, empirical research on the topic lags behind (Allen et al., 2014, p.20).

Allen et al. propose that the need for social connections is embedded into the development of pupils and that when students, "perceive a greater sense of belonging in school they place more value on the academic material they are learning" (p.19). They also believe that social connections play a crucial part in helping pupils develop cognitive representations of who they are and how they fit in with the rest of the world (i.e., how they develop their unique identity),

"indeed, during this transitional period, social connection with peers increases in importance" (p.20).

Although the above research was conducted with teenagers, it seems possible to propose that positive experiences of social media usage might help fulfil the relatedness concept in Deci & Ryan's Self-Determination Theory in pre-teens. By allocating control of a school Twitter account to the pupils (under adult supervision) it is reasonable to suggest that the elements of competence and autonomy could also be fulfilled.

A recent meta-analysis by Van den Broeck et al. (2016) reviewed ninety-nine studies in relation to Self-Determination Theory (SDT) and examined Deci & Ryan's three basic psychological needs in the workplace. Various criticisms made by Van den Broeck et al. (to be covered in the discussion section) include the fact that Deci & Ryan's model does not seem to take into account the strength of each of the three components in individuals, nor whether other needs (or desires) such as the desire for power, status or money could have an equal or detrimental effect on overall psychological well-being. They report that it is "inappropriate to view needs as equal and interchangeable" (p.1220) and state that more research should be conducted which explores each of the needs individually, not as overall satisfaction measures. They also raise the important notion that many of the studies examined used self-report measures within the methodology, which they often considered unreliable. Van den Broeck et al. postulate that studies which include more objective measures of short term health (e.g., resting blood pressure, cortisol levels) or long term consequences (e.g., sleep quality, body mass index) could be extremely useful in future SDT research.

Despite the criticisms, Van den Broek et al. conclude that:

> Human needs are an essential part of motivation and SDT certainly is one of the most comprehensive theories of basic psychological needs (p.1225).

A further explanation of how SDT forms an important component of this research can be found in section 2.4.

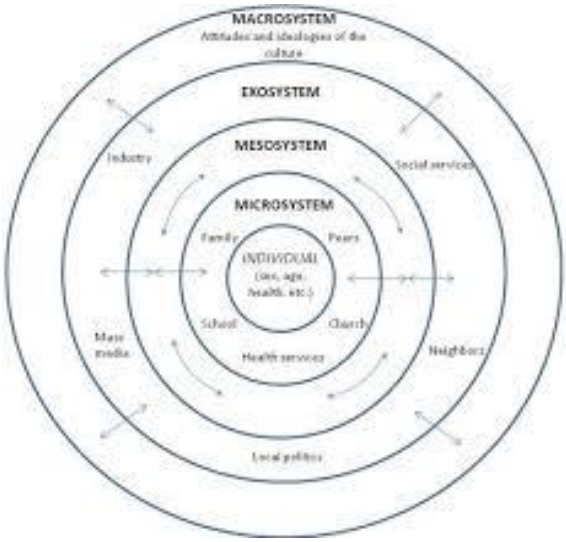
2.2 Eco-systemic Approaches

In psychology, eco-systemic frameworks are viewed as structured approaches to understanding the environment within which an individual functions and develops motivation. Components of these approaches can be found in Lewin's (1936) Field Theory, Bandura's (1977) Concept of Reciprocal Determinism and in Bronfenbrenner's (1989) ecological systems approach. Bronfenbrenner's approach outlines the fact that any individual child may be subject to multiple influences in his/her life and that it is the interactions between the child and the different environments which can change and further influence behaviours. Different environments can also affect the thoughts and cognitive processes in the child:

> The ecology of human development is the scientific study of the progressive, mutual accommodation throughout the life course between an active, growing human being and the changing properties of the immediate settings in which the developing person lives (Bronfenbrenner, 1989, p.188).

Bronfenbrenner's Ecological Systems Approach (1979 & 1989) contains distinct (but interconnected) levels**:**

Fig 3: Bronfenbrenner's Ecological Systems Approach (1979 & 1989)



- At the innermost level (Microsystem), there is the child, its family, peers and school. Studies at this level would examine the world as directly experienced by the child. The home and the classroom could be two of the settings where a child's experiences might differ from each other.

- The next level (Mesosystem) looks at the interaction between these immediate settings, for example the relationship between home and school, or between family and peers. This might include how parents and staff interact with each other directly.

- The next level (Exosystem) contains environments which, although they do not directly involve the child, might have an impact on the other systems. For example, stress in the parental workplace, mass media or the policies within the local education authority.

- The outer level (*Macrosystem)* is the much larger community within which all the sub-systems exist. For example, the culture of the child and family or the country's laws, culture & history, social policies or economic conditions.

Within the context of this research, it is reasonable to suggest that one of the aspects that Twitter might have the potential to improve is how children interact and communicate with their parents about their school life and daily learning.

This thesis suggests that the younger the child, the more involvement and information the parent tends to get back about the activities of the classroom. Nursery and foundation phase classrooms often have a whiteboard or poster outside the room so that parents can read what their children have been doing whilst they are waiting to collect them. Based on anecdotal discussions with parents, it seems that this detailed information sharing does tend to disappear as the children progress up the school.

Research shows that the involvement of parents is critical for positive outcomes. In 2003 Desforges and Abouchaar led a European Commission survey which assessed the importance of parental engagement with educational outcomes. It concluded that there is a need to increase a two way dialogue with parents, as often it is the nature of a parent's participation with their child's education that holds the most influence:

> In the primary age, the impact caused by different levels of parental involvement is much bigger than the differences associated with variations in the quality of schools (Desforges & Abouchaar , 2003)

As part of the research for a Department for Education DfE report entitled Review of best practice in parental engagement (Goodall & Vorhaus, 2010), a study by Estyn (Her Majesty's Inspectorate for Education and Training in Wales) in 2009 surveyed all local authorities in Wales. The authors further sampled 17 primary schools and interviewed head teachers, teachers, governors and groups of parents. The report stated that:

> Amongst the schools visited, few schools have a consistent approach that results in high levels of parental involvement (Goodall & Vorhaus, 2010, p.26)

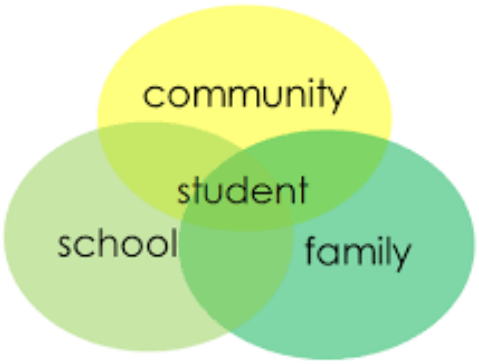
This study proposes that a social media tool such as Twitter could help parental engagement by opening a direct, immediate and meaningful communication channel between parents and the school. It might "help to build ongoing social engagement online" (Dixon, 2012, p. 48). What could be most important is that this information would be delivered in 'real-time' as events happen and as new projects are started in class:

> The sharing features of Twitter are what enable it to be such a powerful platform for your school…your followers can promote a link that allows users to donate to a classroom project. This information can be distributed through social networks further and faster than you could manage on your own (Dixon, 2012, p. 48).

2.2.1 Epstein's Spheres of Influence

In a similar way to Bronfenbrenner, Epstein (1995) described a similar interactive framework for viewing pupil progress in terms of partnership working between three different overlapping spheres. She described the main spheres as school, family and community.

Fig 4: Epstein's Overlapping Spheres of Influence (1995 & 1996)



Epstein maintains that simply viewing children in school as students means that we tend to see the school, family and community as separate entities. Whereas, if educators adjust their viewpoint to concentrate on seeing them as children:

> They are likely to see both the family and the community as partners with the school in children's education and development. Partners recognize their shared interests in and responsibilities for children, and they work together to create better opportunities for students (Epstein, 1995, p.1).

Her educational standpoint reinforces the concept of "learning communities" (p.1) and highlights the opinion that unless schools focus on reaching out to all parents /carers and to all parts of the communities that they inhabit, they will not achieve high outcomes for all children.

Both Bronfenbrenner and Epstein believe that children are active players in their development and education and that they will continue to grow and adapt to, or be thwarted by, the daily conditions of the systems in which they find themselves.

2.2.2 Parental Involvement

As described in section 2.2, research strongly suggests that parental involvement is a crucial factor in relation to attainment and outcomes (Eccles & Jacobs, 1986 and Lazarides et al., 2015):

> Parents tend to play a decisive role in the motivational development of children and adolescents and shape children's early achievement-related orientations and perceptions (Lazarides et al., p.53).

Therefore, strengthening this relationship through the use of social media tools such as Twitter could be an important part of the educational jigsaw. A survey on parental involvement for the Department for Children, Schools and Families (2007) stated in its conclusion that:

> Parents feel increasingly involved in their child's school life. They are also more likely to see education as their own responsibility as well as the school's, and this is likely to heighten their sense of involvement (Department for Children, Schools & Families, 2007, p.7).

This demonstrates parental appreciation of the important role that they have to play and highlights how keen they are to work in partnership with schools. Findings from this study were also replicated and enhanced by the DFE parental engagement study in 2010 (Goodall and Vorhaus).

More specifically, in his book 'Leadership with a Moral Purpose' Ryan (2008) states that:

> In the drive to constantly raise achievement and standards or the battle to improve the quality of teaching and learning, we fail to remember that in every hour of a child's life only nine minutes are spent in school and forty-one minutes are spent elsewhere. Teachers are only with the child for fourteen per cent of the time (Ryan, 2008, p.182).

He then goes on to state that most of the key factors that are associated with a child's educational success lay outside the direct control of schools. He hypothesises that the key factors of (educational) success are as follows:

1. The characteristics of the child as a learner.
2. The characteristics of the child's family.

3. The degree of parental involvement.

4. The effects of the local community.

5. Peer group pressure.

6. Family support services.

7. The quality of the school (Ryan, 2008, p.182).

He further describes the powerful influence that parents have in the learning partnership:

> Enlightened head teachers have always recognised that both the school and the home are learning environments and that the two need to work together in harmony….children have two significant educators in their lives – their parents and their teachers….in the best schools the roles actually become blurred and there is no clear line to show where the parents' role stops and the teacher's role begins (Ryan, 2008, p.183).

It is asserted, therefore, that if parental involvement is neglected by schools a very significant relationship will be ignored. It seems that, in opening a dialogue and asking pupils and their families what actually *does* matter to them, a clearer understanding of how these systems interact with each other could be gained**.** Twitter (and other social media platforms) may have the potential to reach directly inside the classroom and ask the very simple question, *"What's happening today?"* They can then share those answers with those who most want to know.

2.2.3 The New Learning Ecology Theory

A framework for considering how students can be motivated in the classroom can be useful when trying to understand the different types of learning tasks presented.

A new learning ecology is described as one:

> In which information and ideas are abundant, in flux and constantly evolving. Destabilization of information and knowledge is a critical factor within the contemporary learning environment, creating opportunities for new ways for students to be engaged and educated (Spires et al., 2012, p. 234).

Much has been written about pupils of today having to develop new 'digitial literacies' (Crook, 2008 & Lankshear & Knobel, 2011) and a learning ecology theory considers and takes into account how each child will develop these. It states that, as well as learning in a traditional

'chalk and talk' classroom, children must adapt and learn according to a 1:1 teaching and learning environment (not via direct adult support but through having technology at their fingertips which helps to personalise their learning experiences). Barronn (2006) also defined a learning ecology as the "set of contexts found in physical or virtual spaces that provide opportunities for learning" (p.195) and this could be proposed to include all the formal and informal settings in which children learn (e.g., in class, at home and with their friends in the local community).

Spires et al. (2012 p.234-235) explore this concept further. They state that in order for there to be a true learning ecology, a set of four conditions must be present, i.e.,

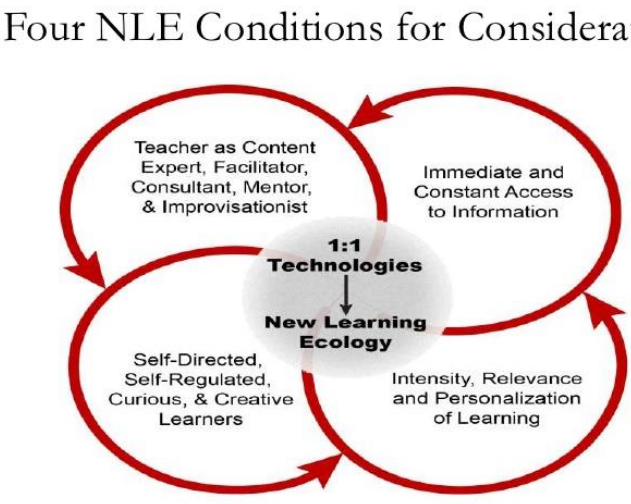
a) immediate and constant access to information and a global community;

b) intensity, relevance and personalisation of learning;

c) highly developed student dispositions for self-direction, self-monitoring, creativity and curiosity; and

d) highly developed teacher capabilities for facilitation, improvisation, consulting and mentoring.

Fig 5: Four Conditions of the New Learning Ecology (Spires et al., 2009 & 2012)



They go on to describe how, “the teacher is no longer gatekeeper” (p.234) to the knowledge in the classroom. Students and staff must learn to rely on each other to open new doorways to learning; to connect and synthesize the information that they have access to within a digital environment. Technology becomes a facilitatory tool. Its use should be supervised and guided by the teacher and then the tool can be manipulated by the student.

As students have at their fingertips more and more readily accessible information, it is no longer teaching of the content of information that is important, but the teaching of the critical analysis and application of such information (Spires et al., 2009).

The New Learning Ecology framework described above seems to add weight to the argument that educational establishments have a need to produce students who can demonstrate what they can do with knowledge, not what knowledge they possess. In fact, Pavlik (2015) calls for a radical transformation of pedagogy to take into account the implications of digital, social and mobile media:

> In the 21st century, teachers will serve as guides and students will be active participants in a continuous learning process helping to create, discover and share knowledge. This transition is vital because knowledge is advancing at an ever faster pace and no one person can manage alone (Pavlik, 2015, p.122).

2.3 The Use of Social Media to Enhance Social Capital

As long ago as 1916, Hanifan's article regarding educational support for rural schools made a distinction between ‘social capital’ and capital that might be gained from material possessions:

> I do not refer to real estate, or to personal property or to cold cash, but rather to that in life which tends to make these tangible substances count for most in the daily lives of people, namely, goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unit….If he may come into contact with his neighbor, and they with other neighbors, there will be an accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living

> conditions in the whole community. The community as a whole will benefit by the cooperation of all its parts, while the individual will find in his associations the advantages of the help, the sympathy, and the fellowship of his neighbors.
>
> (Hanifan, 1916, p.130-131).

The concept of social capital was further developed from the sociology of education in the mid-1980s but the idea rapidly spread to the rest of the social sciences (Perkins et al., 2002, p.34). The concept has often been described as the shared or economic benefits derived from the preferential treatment and co-operation between individuals and groups and is:

> Generally defined and measured at the interpersonal, community, institutional or societal levels in terms of networks (bridging) and the norms of reciprocity and trust (bonding) within those networks (Perkins et al., 2002, p.33).

Although different academic disciplines emphasize different aspects of social capital; they tend to share the central idea that social networks add value to the knowledge that individuals might already have. They consider that these networks are part of the mutual trust of a civil society.

Key concepts within Social Capital Theory (as expanded by Perkins et al. in the above quotation) are that of 'bridging' (the relationships among institutions) and 'bonding' (trust between those individuals who regularly engage in the network). More recently, other connected ideas and concepts similar to that of social capital or social learning have used the terms learning organizations and learning communities to describe virtual communication in addition to the term private learning networks (Dixon, 2012).

In his 2012 book, 'Social Media for School Leaders', Dixon describes teachers who participate in their continuing professional development (CPD) via Private Learning Networks (PLNs) on Twitter or Facebook. He states that these staff could be viewed as developing both 'bonding' and 'bridging' at the same time. As they first read about and then later join in with pedagogical discussions, they begin to reach out between different educational settings and form groups of like-minded individuals. Dixon presents some strong arguments, especially in

relation to consideration of parental engagement. He states that using social media (SM) in schools means that:

> Families are more engaged, [schools have a] higher student enrolment, a more collaborative school culture and stronger community buy-in (Dixon, 2012, p.3).

Dixon suggests that social network sites (such as Facebook and Twitter) can provide immediate and relevant feedback as to what the community thinks about schools in the area, and he believes that such sites could enable the students to contribute directly and effectively to their own learning plans. He also comments that teaching staff can benefit from the enhanced opportunities for CPD via PLNs accessed directly by their Smart phones. Dixon speaks directly to advise school senior management teams as he goes on to suggest that:

> Your target audience already uses many of the available social media tools. Families are watching online videos for their nightly entertainment. Students use Facebook to stay in touch with their friends. And more and more businesses are discovering the power of Twitter. Using these social media tools can radically influence the community's perception of your school. It also gives you opportunity to monitor what people are saying about your school and to **participate actively in that conversation** (researcher's bold and underline) (Dixon, 2012, p.4).

He also states that, whatever personal opinions are held about the inherent value of social media, tools such as Facebook and Twitter:

> (they are) here to stay, and the many benefits that social media offers for today's school leaders cannot be ignored (Dixon, 2012, p.5).

As social media networks rapidly grow, parents, pupils and educators are beginning to form extensive connections with people they might not otherwise have been able to get access to, and the learning that occurs as a result might be positively described as social capital (Burt, 2005; Perkins et al., 2002).

In the article 'Grassroots Professional Development: How Teachers use Twitter', Forte et al (2012) describe the payback of such professional and social interactions. They maintain that teachers who use Twitter to add to their pedagogical knowledge are:

> Well positioned to broker information as bridges between members of their local communities of practice and other networks of educators" (Forte et al., 2012, p.1).

They go on to describe Twitter as a forum where resources can be freely exchanged, questions can be quickly answered and good practice distributed. They postulate that the functions described above enable Tweeting staff "to get better at being teachers" (p.1) and that finding like-minded peers could "mobilize for social change" (p.1).

Perkins et al. maintained that social capital should always be analysed within a multi-level framework (i.e., there should be consideration of both the individual's unique contribution and the response to that contribution from the community in which that individual operates).

The concept of social capital also connects well with the Social Learning Theories of Lewin from the 1930s and Bandura from the 1980s. These theories outline how individuals can enhance their learning through observational learning or social modelling both of which Twitter could be argued as providing on a daily basis. A recent Australian study (Thibaut, 2015) drew heavily on Social Learning Theory when exploring how a class of year six pupils were using a 'closed group' academic social media platform called Edmodo in their everyday school practices. Edmodo is similar to Twitter and Facebook, but users have to be approved and provided with a security code in order to join. Thibaut concluded that both participants and observers benefitted from the use of Edmodo in the classroom, not least because:

> In such contexts the traditional discourse patterns based on 'vertical' teacher centered configurations shift towards more 'horizontal' and inclusive patterns of teaching and learning (Thibaut, 2015, p.91).

She also argued that students were:

> Stimulated to develop their own voice and to see themselves as students in a broader sense, not limited to the physical setting of the classroom (Thibaut, 2015, p.91).

In the conclusion to this particular study, it appeared that using social media with children who are in the upper primary range was beneficial because they already had significant technical knowledge and that it was easier due to the fact that:

> The interactions and the nature of dialogue and literacy practices were not naturally developed, but guided, stimulated and scaffolded by the teacher (Thibaut, 2015, p.91).

Thibaut questions at the end of her paper what would happen if the children were to use a completely open social network and if their interactions were not quite so structured by staff. This is one of the questions that this thesis hoped to explore.

Some research (mostly conducted in higher education institutions to date) has focused on the value of students using Twitter to engage with tutors and other members of their courses. Mostafa (2015) proposes that:

> Students' noticeable engagement with those tools in their daily lives has inspired interest within education because of possible new approaches of engaging students in individual and collaborative learning activities (Mostafa, 2015, p.146).

She describes ways in which:

> Students who are already using Web 2.0 technologies in their everyday lives would be likewise motivated to use them in an academic context and would already possess the needed technical skills (Mostafa, 2015, p.146).

However, she also raises the very important point that using social media in classrooms is only likely to be of benefit where the students are ready to participate (i.e., they have customer readiness). This would be where the students are already motivated to take part and they understand the value of co-creation (Mostafa, 2015, p. 145). This is a factor that was discussed in relation to the motivation literature.

2.4 Using Twitter in Education

In his article "Engage me or Enrage me" (Prensky, 2005) describes three types of student:

1. Those who appear to be intrinsically motivated - their motto is "I can't wait to get to class",
2. The students who go through the motions - "We have learned to play school",
3. The students who disengage – "Engage me or enrage me" (Prensky, 2005, p.2).

He maintains that in order for a school curriculum to be fully motivating to the third group of students (and to some extent the second also) ways have to be found to focus their attention and to sustain their long-term engagement:

> In school though, kids don't have the "don't buy" option. Rather than being empowered to choose what they want…in school they must eat what they are served. And what they are being served is, for the most part, stale, bland, and almost entirely stuff from the past. Yesterday's education for tomorrow's kids (Prensky, 2005, p.3).

Prensky believes that students of today are much more complex and demanding consumers and that given the chance to process "multiple streams of data" pupils can "make crucial decisions every half second" and are "continously challenged at the edge of their capabilities" (Prensky, 2005, p. 3). They quickly rise to the challenge that technology presents. He argues that even those with conditions such as attention deficit disorder might have a much more concerning message for their teachers:

> It's not ADD – I'm just not listening (Prensky, 2005, p. 4).

He perceived that if children in 21st century classrooms do have short attention spans, then maybe it is only for the traditional, more didatic, ways of learning:

> They certainly don't have short attention spans for their games, movies or Internet surfing. More and more they just don't tolerate the old ways (Prensky, 2005, p.3).

Although Twitter is a relative newcomer in the world of social media, there have already been studies examining the effect of using Twitter with groups of higher education students. One study of undergraduates (Clarke and Nelson, 2012) examined questions such as 'Can Twitter help increase classroom community?' 'Can Twitter increase pedagogical effectiveness?' and 'Can Twitter improve learning outcomes?' The study involved two separate groups of higher education marketing students. In one group (n=48) the students and teacher employed frequent Twitter use and in the other group (n=36) the students did not use Twitter at all. At the end of the study, it was found that the Twitter using group had a significantly higher sense

of classroom community and perception of pedagogogical effectiveness than the non-Twitter group:

> The pedagogical effectiveness scales imply that Twitter had a positive impact on the students' thoughts and/or feelings about course mechanics, delivery effectiveness, and usefulness (Clarke and Nelson, p.7).

The study above however acknowledged its own weaknesses in methodology. Its quasi-experimental design used Likert scales to assess the participants' own thoughts and feelings towards the course and control measures were not applied to ensure comparibility of both groups at baseline.

In a similar way to Prensky (2005 & 2006), a study by Kader (2012) described some students of his undergraduate classes who "are always disinterested and easily disctracted" (p.6) and the author believed that if he could encourage these students to contribute electronically then they might be "more invested in and motivated by the process" (p.6). For the purpose of this study he defined engagement as "educational benefit that is derived from a better interaction between students and instructor in the classroom" (p.10) and, although he did not measure engagement using a standardised tool, he discusses measures which could be used in later studies (e.g., the National Survey of Student Engagement – NSSE which can be obtained from www.nsse.indiana.edu). He used Twitter in two classes of economics students (1N=177) and (2N=145). In his conclusion, Kader states that:

> Student engagement improved dramatically, resulting in a more vibrant classroom experience (Kader, 2012, p.14).

In 2013, a study by Evans entitled 'Twitter for teaching; can social media be used to enhance the process of learning?' described how undergraduates on a Business and Management course were encouraged to use Twitter to communicate with their tutor and each other during a 12 week course. At the end of the project Evans described how "using Twitter is an effective way to engage students" (Evans, 2013, p.914) and he concluded that there should be further

research conducted exploring exactly which aspects of the learning process can be enhanced using social media. Although this and other studies (e.g., Junco et al, 2011) have tentatively highlighted significant positive correlations between Twitter use and student engagement, causal relationships could not be infered and Evans clearly states in his conclusion:

> It would be of considerable interest for future studies to assess which aspects of the learning process can be improved by Twitter and social media more generally (p. 914).

Some schools and teachers in the UK have been quick to use Twitter to communicate with their local communities. For example Cwmcarn High School in Wales had to close for a short period in October 2012 due to a risk of exposure to asbestos. The school was quick to publish its newsfeed directly on Facebook and Twitter in order to keep the community up to date with renovation progress. The school also published links to homework tasks that the children could access whilst the school was closed (BBC News, 2012).

Many primary and secondary schools are now running their own Twitter accounts, some of which exist in isolation and some operate in conjunction with other media such as school websites and Facebook pages. The way in which schools use their account differ, with some being mere noticeboards, some used for parental reminders about forthcoming events and some as broader, real-time glimpses into the daily functioning of the school.

Considerable variations are also revealed when the way in which children learn about using social media is examined. Contributers to an article in the Times Educational Supplement (Ritchie, 2009) maintain that teaching web-based tools such as Twitter are an essential way of equipping students to meet the demands of a modern workforce:

> The outcome of using any software would be about building pupils' confidence in adapting to new tools and to apply those critically…they need to have a set of key skills that they can use web-based technologies to reinforce (Fraser, 2009, cited in Ritchie, 2009, p.1).

Blagona (2009) also argues that social media platforms such as Twitter enable students to be more aware of the world around them and to develop curiosity and enthusiasm about the curriculum:

> Online learning has revolutionised the methods we use to teach pupils….and key to this is the feeling of being connected to the outside world that pupils like (Blagona, 2009, cited in Ritchie, 2009, p.1).

According to Deci & Ryan's Self-Determination Theory diagram (Fig. 2), it would appear that in order for pupils to feel motivated and engage with the Twitter study, the study should fulfil three distinct conditions. As participants are contributing to the class Twitter account they need to feel that they:

a) have enough skill in order to master the technological aspects of Tweeting;

b) as the appointed class Tweeter, have control over the content of their posts and

c) are connected to their classmates, teacher and family as they do so (or as a direct result of their posted Tweets).

However, it is also important to acknowledge that there is now emerging research which focuses on the damaging aspects of extended screen time and the over-use of technology for children. Palmer (2015) refers to the limits that should be placed on children when engaged in computer and other screen based tasks and Pavlik (2015) argues that it is important not to fall into the trap of solutionism (i.e., thinking that technology is the answer to everything). These issues, along with other concerns (e.g., possible addiction to social media and increased levels of depression and anxiety) and the risks that social media over-use can bring to face to face communication skills will be further discussed as part of the discussion section (5.5).

However, in the context of previous research, it is proposed that, in this study, Twitter usage might be able to help pupils feel connnected with each other, to engage with their lessons and begin to develop psycho-social autonomy. It may also strengthen engagement with the wider community and help to increase pedagogical knowledge. Furthermore, it is suggested that

there could be some benefit in investigating how social media can help to engage parents more fully in classroom education. In order to explore these possibilities, this study will explore the experiences of the young people and their families who were using Twitter within their primary classrooms and the perception of staff re: its use (For research questions see section 1.5).

Chapter 3: Methodology & Research Methods

This chapter firstly sets out the epistemological and ontological position of the author. It examines the specific approaches to data collection and analysis used and its relation to the research questions and objectives. Details of the sample and the methods used to collect, transcribe and analyse data will also be provided.

3.1 Epistemological and Ontological Considerations

It is important to consider which paradigms were considered for this study. Guba (1990) defines these as the researcher's worldview, a set of beliefs or values that inform how the study is undertaken. *Epistemology* relates to the types of evidence that is used to justify claims (the nature of knowledge, its foundations, scope and validity) and *ontology* to whether that reality is multiple or singular (the nature of being):

> The Ontology continuum sets out whether or not we think reality exists entirely separate from human practices and understandings – including the research we conduct to find such things out – or whether we think it cannot be separated from human practices, and so knowledge is always going to reflect our perspective (Braun & Clarke, 2013, p.27).

To begin with, this study considers Empirical and Rationalist (or Idealist) viewpoints. Empirical theorists (e.g., John Locke) believed that sensory interactions were the starting point for collecting information about the world (accumulating data and gathering 'external' information). Whereas the Rationalist theorists (e.g., Descartes, Kant, Leibniz & Spinoza) postulate that knowledge must come from reflection upon ideas.

Rationalist thinking emphasized the importance of the mind as being the source for new knowledge as people searched for one truth. Rationalists believed in an objective reality and considered that "knowledge of the world is often innate or inborn" (Gross, 2010, p. 37) and that all reality must have behind it some sort of logical structure.

However, each of these positions is underpinned by a belief that a truth can be discovered and the researcher does not influence the findings from a subjective perspective. Constructivism, however purports that there is no absolute truth that can be discovered, but there are many versions (or truths) which are constructed through the interaction between that which is outside and the individual or group.

Positivism "assumes a relationship between the world and our perception of it" (Braun & Clarke, 2013) it is the attempt to apply practical and scientific methods to old philosophical mysteries and is closely connected to empiricism. From 1690 onwards, the Empiricists (such as Locke, Hume and Berkeley) claimed that knowledge is founded on input from senses and they relied on direct experiences and observations to inform their thinking (Gross, 2010, p.37).

Post-positivist frameworks acknowledged the fact that although the truth can be discovered, and that research can be influenced by context, these viewpoints tended to emphasise the crucial importance of hard data and the non-fluidity of numbers, wherever possible, to substantiate their claims. They prefered to observe cause and effect in their experiments and regularly made use of quantitative data generated by their research.

Towards the more Relativist end of the spectrum (and more associated with qualitative data gathering) a Post-Modern lens would enable several versions of scientific truth to exist at any one time, with subjective experience varying according to the groups within which an individual operates. Associated with this is Social Constructionism (usually dated from the work of Gergen, 1973) which advocates that the truth is not waiting to be discovered; but rather that views are produced and sculptured according to the social groups to which individuals belong, the historical period and the cultural environment in which they live.

Researchers who use mixed methods to collect their data often approach their work by combining differing worldviews by using several philisophical/theoretical lenses at once. They

look for ways in which the research can combine the best of opposing scientific standpoints in order to gain collective strength. On one hand, quantitative data can allow for accuracy and precision, reliability over time and objectivity. On the other hand, gathering qualitative data often means that numerical data can be enhanced with the viewpoint and experience of individuals. It also means that the immediate environment in which such data is gathered can be considered, allowing explanations of context and multiple meanings to be explored.

A pragmatic approach was considered to be appropriate for this study (based on theories proposed by Hobbes, Bentham and Charles Sanders Peirce). This provides a more straightforward practical way of thinking and dealing with problems and tends to be concerned much more with results rather than with theories and principles (i.e., the end justifies the means). Within a pragmatic framework it is also believed that a concept should be evaluated in terms of how it works and its consequences.

A pragmatic study might mean that researchers make a commitment to understand how effectively a proposal works and to think about its practical application in the field. In 2011, Colin Robson stated that *"a pragmatist would advocate using whatever philosophical or methodological approach works best"* (p.28).

A pragmatic approach was suited to this research, due to the fact that one of the project's aims was exploring practical outcomes for schools. Teddlie (2005) believed that pragmatic researchers get on with the research rather than spend lots of time philosophising about it. He proposed that they:

> Decide what they want to research guided by their personal value systems; that is, they study what they think is important (Teddlie, 2005, cited in Robson, 2011 p.29).

The researcher's personal interest in practical technology use in education guided the initiation of this project, but the class teachers involved were also encouraged to explore their

own views and philosophies of education. This was especially true after the pilot phase had been completed and the final project design was under consideration.

Bryman (2006) argues that adopting a philosophical 'middle ground' in research methodology can often be beneficial. He stresses the importance of:

> Compatibility between qualitative and quantitative approaches and a pragmatic viewpoint, which prioritizes using any approach which allows the research questions to be answered regardless of its supposed philosophical presuppositions (Bryman, 2006, p.124).

Pragmatists have a freedom of choice between various methods and techniques when planning their research; they do not tend to look at the world in a fixed way, but rather look to see what works at that particular time in that specific context. Pragmatic researchers also emphasise the fact that social, political , historical and other contexts will also have a direct influence on the results of the study.

During this research, the perspectives of both the class teachers and the other participants were important when thinking about the effectiveness of the project. Therefore, these considerations will all be described using a pragmatic framework as a background.

Other aspects of the research seem to fit in with the approach of Critical Realism. Critical realism is Anti-Positivist and anti-reductionist. It was first described by Bhaskar in the 1970s, and later expanded by proponents such as Creaven and Norrie in the 1990s. It states that relationships between events are not sufficient to establish causality. It emphasises the viewpoint that social structures often change due to the reflections of those individuals studying them and that science should therefore be understood as an ongoing process in constant flux (i.e., that reality forever manifests itself differently under different conditions).

Researchers using this approach often make a commitment to try to change things and to contribute to the various bodies of knowledge that may have long-term impacts on society. Critical realists acknowledge the social world is not independent from the world that they themselves occupy, and it is this reflexiveness which in turn can alter the dimensions of study. A critical methodology was important for the Twitter research. The last two research aims consider the impact of the research on the wider social world (parents, staff and the wider community) and the qualitative data collected helps to evaluate how a 'virtual community' might change due to the reflections and input of the individuals in them. This is further explored in the discussion and relexive account sections, where the varying viewpoints and influences of the researcher and key participants are considered more fully.

3.2 Design

Several approaches were considered at the beginning of this research (mixed methods, exploratory design and action research). An action research design was initially considered for the pilot phase. Action research is:

> Primarily distinguishable in terms of its purpose, which is to influence or change some aspect of whatever is the focus of the research. In this sense it is concerned with the emancipatory purpose of research….improvement and involvement are central to action research (Robson, p.188).

It was initially the researcher's intention that the pilot project was owned by the children and class teachers as much as possible, in order to maximize feelings of empowerment and engagement. In the pilot project, students set up the school Twitter account (under supervision) and they considered the parameters for operation (including both purpose and content of Tweets). In this sense an action research approach initially seemed to fit:

> The close and collaborative relationship between researcher and researched central to action research fits well with the approach of flexible design research (Robson, p.189).

The commonly adopted version of action research views it as a "spiral or cyclical process" (Kemmis and Wilkinson, 1998, p.21). This means that initial thoughts and hypotheses are generated, which are then reflected on after the initial cycle of research, leading to further planning and changes later on.

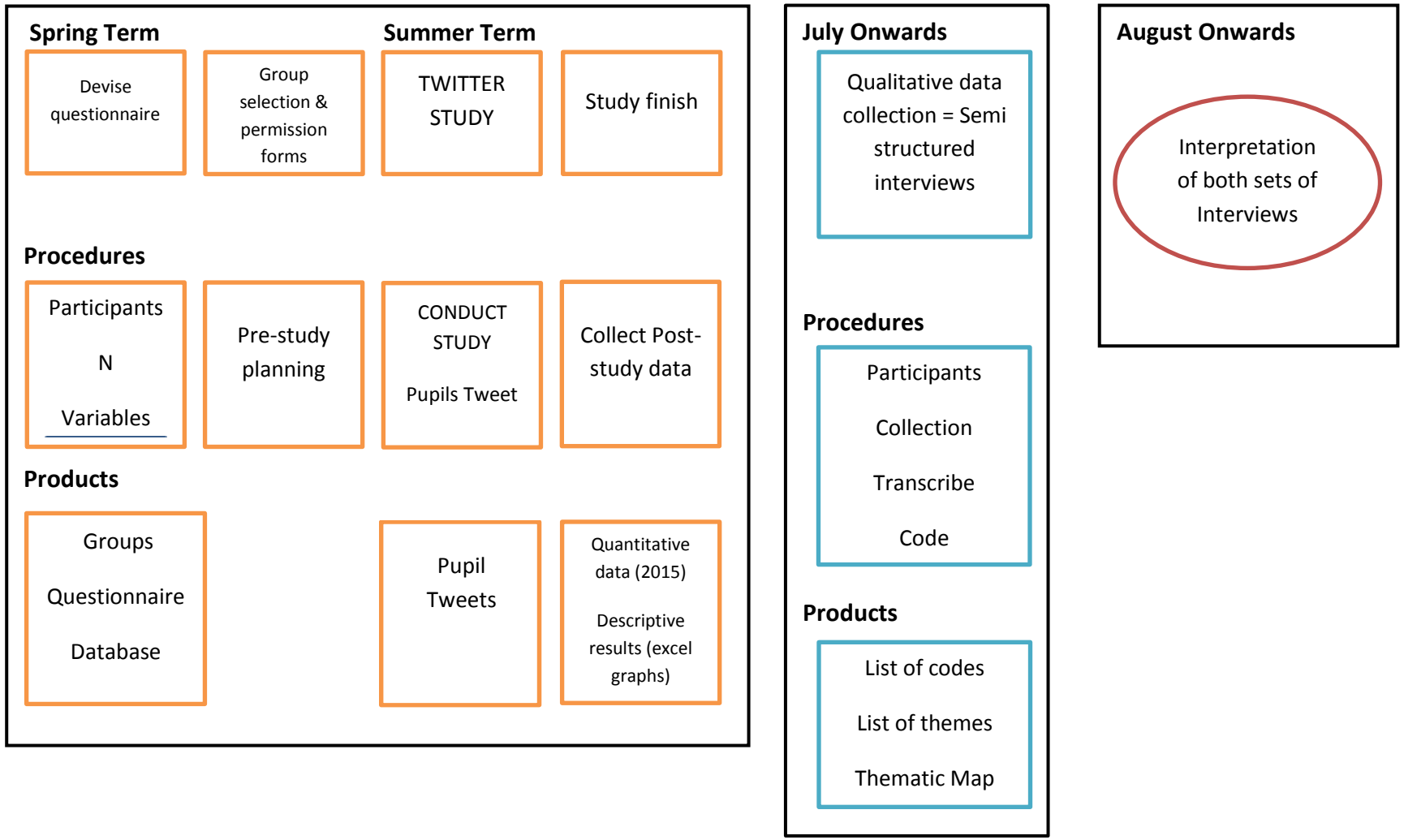
At the beginning of the pilot study, twelve pupils from years five and six were recruited (using an opt-in system of selection) as was a focus group of three parents and one member of teaching staff (n=16). During this phase the pupils helped the researcher to set up the school Twitter account, choose a photograph for the avatar (an icon or logo to represent the school) and write the Twitter account 'bio' (short description of the purpose of the account or account holder). The pupils were then allowed to write draft Tweets onto paper before these were then posted by the class teacher.

After conducting the pilot phase and reflecting on many participants' comments (mostly about the need for the Twitter account to have a specific purpose in order to be useful) it was clear that the study needed to be more exploratory in nature. This was also partly due to the fact that a paucity of academic research in this field meant that a clear design framework did not emerge at first. It also appeared that the three different types of participants (students, parents and staff) might have different things to say in respect of their experiences and it was considered important for the breadth of the study that these differing viewpoints could be explored. When there is very little known about an area of research it is appropriate to use an open and exploratory approach towards the investigation. In order to collect some data from each group of participants this project therefore made use of an exploratory framework.

The study design was altered slightly from the pilot phase. The additional element of qualitative data was supplemented since the school in the main phase of the research was particularly interested in the viewpoint of a larger sample of parents. This also ensured that a clear rationale for the research was explained to a large group of consent holders (parents). Gatekeeper consent was gained via the governors and the head teacher.

During the main phase of the study, nine pupils (one from each class, from year one to year six) took part, along with two parents and five class teachers (n=16). In addition to these participants, questionnaires were administered to an opportunistic sample of thirty one parents (total n=47). Pupils in the main phase contributed Tweets to the school account (which had already been in use by the teaching staff for several years). One pupil in each class contributed Tweets to the account under the supervision of the class teacher and the researcher.

Fig 6: Timeline of Primary School Twitter Study – Pilot (2014) and Main Phase (2015)



3.3 Ethical Issues

There are many ethical issues to be aware of when working with child participants and when carrying out research in a school setting (e.g., working with vulnerable participants - BPS Ethics Principles, 1992; the involvement of multiple stakeholders and the management of the consent process, Felzmann, 2009). The following points were all considered to be pertinent to this research:

- The researcher discussed with all of the class teachers and both of the head teachers the main ethical issues which were applicable to this project prior to commencement.

- The researcher held an up to date Enhanced DBS (Disclosure and Barring Service) certificate and adhered to the British Psychological Society Standards of Ethics and Professional Conduct to ensure the safety of all participants throughout the project (BPS, 2006). For instances when the researcher was not on the school site, the class teachers were the main support mechanism for the pupils and parents / carers.

- Before starting the main research phase, it was crucial that the school senior management team and the school governors were in agreement with the principles of the project. A research brief was put together and presented to the governing body before the research was started. Governors were in full support of the school senior management team and the researcher.

- Each participant (in both research phases) was a volunteer. Participants were informed that their participation would be voluntary, data would be held confidentially and that any data presented as part of the final project would be anonymous. Participants were informed that they had the right to withdraw from the project at any time (up until the point where their data was anonymised).

- Prior to the pilot and main phase of the study, a detailed briefing was given to all of the pupils and staff. After the briefing, individuals were asked whether they might be interested in taking part. This happened before individual consent sheets were completed to ensure true informed consent. Participants were encouraged to take their consent forms away with them to complete in order that they did not feel pressurised by the researcher into taking part.

- The pupils and parents / carers who volunteered to take part were given information sheets prior to the project (about how to use Twitter, advice on how to maintain online security and other general information about social media). The researcher and class teacher also discussed issues of e-safety with individual participants as they arose and were on hand to resolve problems.

- Weekly visits by the researcher were made to the school for the duration of each phase of the research. Email and telephone contact with a senior staff member from each school were maintained throughout.

- Each participant was made aware that the focus group sessions and individual interviews would be digitally recorded and then securely stored. Typed transcripts of interviews did not contain any names nor did they contain identifying features or descriptions. Where participants did accidentally mention the names of other people who were taking part, these were not transcribed.

- Each participant gave informed written consent for each part of the project. In the case of pupil participants, signed parental permission to participate was also obtained for each student.

- The Limits of Confidentiality were fully explained to the pupils taking part (see Child Protection Statement contained in the appendices). Guidance on this was taken from

the Cardiff University Child Protection Procedures and the 'All Wales Child Protection Procedures' (www.awcpp.org.uk).

- Apart from the Limits of Confidentiality statement, there was advice given about the expectations of confidentiality during focus group sessions and individual interviews.

- Pupils were also taken through the de-brief sheet at the end of the project and were given a further opportunity to ask questions should they wish.

- All participants were offered time after the focus group sessions and individual interviews for verbal de-briefing (this was not recorded). This was in order for the researcher to pass on any support information that was requested and so that sessions were terminated in a positive way.

- Participants were encouraged not to say anything during the interviews that might mean they, the school setting, or other participants were identifiable.

- All direct quotations presented in the results section were made anonymous.

- To ensure confidentiality of the original data, questionnaires, digital recordings and transcribed data were stored on a password protected computer in a locked cupboard within a secure building of the researcher's local authority.

- All participants were informed that they were welcome to contact the researcher at any time so that concerns or questions about the project could be discussed. Direct contact addresses for the researcher's local authority, Cardiff University School of Psychology's Ethics Committee and the researcher's supervisor were also provided to all participants, in addition to the e-safety leaflets and consent forms.

3.4 Participants

Participants for the pilot study were recruited by approaching the head teacher of a mainstream primary school which was known to the researcher. A general discussion was held during the planning stages of the project and the head was presented with a detailed project proposal in March 2014. At a follow-up meeting with the head teacher, a discussion about which class might be suitable occurred, and the class teacher was then approached for agreement.

Participants for the pilot study (and main phase) were recruited using an opt-in system. For the pilot study all of the pupils in the selected mixed year five/six class were given an explanatory letter and permission form and twelve pupils returned their completed forms (five year six and seven year five). From the pupils who returned their forms, parents were contacted via telephone to ask if they would like to take part. In the pilot phase of the study, qualitative data was collected from two separate focus groups (pupils and parents) and one individual teacher. Six pupils took part in the focus group discussion (names for this were selected 'out of a hat' by the researcher to ensure parity of opportunity), and three parents.

In the main phase of the research (prior to the Tweeting period), quantitative data was collected from thirty parents (via an opportunistic questionnaire). In the main phase of the research, selection processes were repeated as above in a second mainstream primary school. Nine children took part in this phase (one pupil from each of the classes in the school). From the sample, six pupils and two parents were selected for individual interview. Five members of teaching staff were also individually interviewed (n=16) using semi-structured interviews. Interviews were conducted with parents, pupils and staff (n=16).

The aim in both research phases was to study the effect of Tweeting on groups of participants for a period of approximately seven weeks and to consider the possible practical implications of the project after this time.

3.5 Materials

Individual interviews were deemed necessary in order to enhance the data obtained from the pilot phase focus groups and from the parent questionnaires. For the main research phase, the parental questionnaire was devised in conjunction by the researcher, project leader and senior management team. Prompt questions for the semi-structured interviews were devised after much of the initial reading for the project was completed, and after planning discussions with members of the senior management team in both schools.

Semi-structured interviews enable participants to say much more than structured questionnaire responses allow. They contained prompt questions which enabled the researcher and participants to engage in a more natural style of conversation about the topic; allowing the participant to steer the discussion towards areas of interest to them within boundaries set by the researcher. This process gave a much more detailed picture of what was important to each participant and allowed the researcher to generate exploratory comments, emergent themes, super-ordinate themes and subordinate themes via a thematic analysis (as described by Smith et al., 2009 and Braun and Clarke, 2013).

Although semi-structured interviews are commonly used in research projects which have a qualitative focus, some researchers (e.g., Houtkoop-Steenstra, 2000) believe that interview outcomes and data only represent the interviewer's perspective of what happened between the interviewer and interviewee in the context of that interview. Therefore, the data may not necessarily be a true reflection of the interviewee's real thoughts. This appears to be consistent with the notion of social constructionism and is something that will be further explored in the Discussion and Reflexive Account chapters.

In the pilot research phase, a series of open-ended prompts were prepared for each group of participants (children, parents and the teacher) and respondents were encouraged to use their own words to discuss with the researcher the points raised or to answer the questions. It was important that the prompts themselves could inform the main research questions and that participants could give honest opinions about the advantages and disadvantages of using Twitter in the study.

As part of the pilot study phase, semi-structured focus groups allowed participants to respond to comments that other people made and helped the sessions to remain as much like natural discussions as possible (Braun & Clarke, 2013). Focus group research started being used in social science research in the 1940s (Merton & Kendall, 1946) and is "now used extensively across the social sciences" (Braun & Clarke, 2013, p. 107). Focus group research has the advantage of being able to gain perspectives from multiple participants at one time, but also allows the researcher to observe the interactions between participants in response to the topic being discussed. However, there are also critiscisms of this approach in that group responses may be dominated by the most out-spoken or socially powerful member of the group. Thoughts about the alternative materials that could have been used and variations in possible methodology can be found in chapter five.

In the pupil focus group, the role of the researcher was slightly different (i.e., researcher as adult facilitator) than it was in the parent group (researcher as moderator) and it was the aim that semi-structured prompts would serve as a general guide for the discussion, rather than a set of prescriptive questions.

3.6 Procedure and Research Timetable

Due to the researcher's own personal interest in social media and the use of technology in the classroom, a personal Twitter account was set up in August 2011 (prior to the commencement of the project). This was in order that the researcher could become familiar with the use of Twitter and explore what sorts of things schools might already be using their Twitter accounts for. Several schools that were already using Twitter were 'followed' and the content of these accounts was monitored for background information.

After the planning and ethical submission phase of the project (March 2014), data collection for the pilot phase began in May 2014 and lasted for approximately half a term (until the end of July 2014). After analysis of the pilot study data, further design considerations were explored. Phase two of the research was conducted during the summer term of 2015.

Each of the interview sessions lasted between 30-50 minutes according to how much each of the participants / groups wanted to discuss. The interviews were digitally recorded and transcribed as soon as possible afterwards by a qualified audio transcriber.

3.7 The Pilot Study

The pilot study was completed in a large mainstream primary school (number on school roll 2015/16 was just over 450 pupils – inclusive of nursery pupils). It involved male and female pupils from one class (a mixed year group of years five and six), a focus group of three parents and an individual interview with the class teacher (total n=16). Pupils from the pilot study helped to set up the initial school Twitter account and contributed Tweets (via the classteacher and the researcher). The data from the pilot study was then transcribed and analysed to help finalise the project design and implement the main phase of the research.

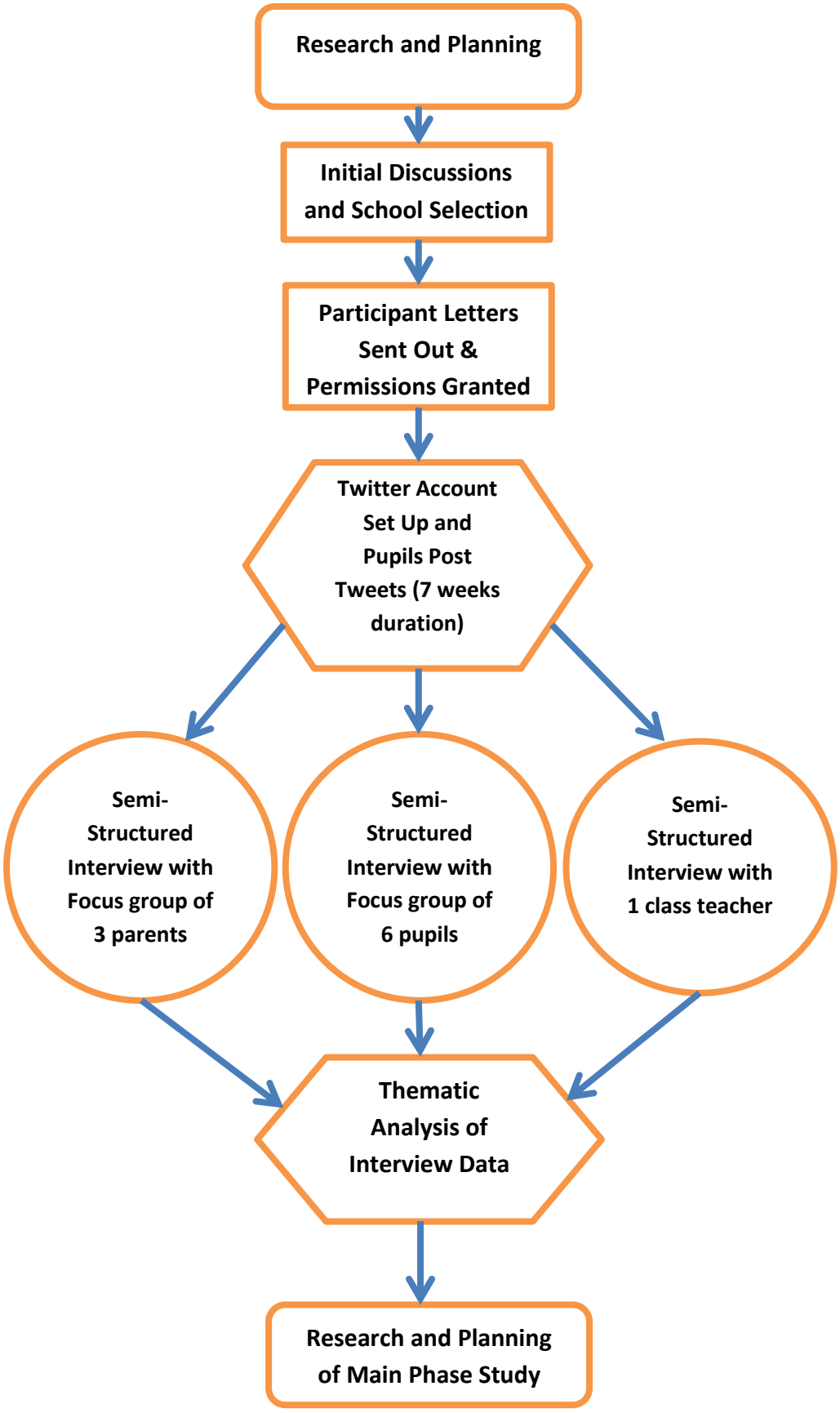
In order that pupils felt they had ownership of the study, it was considered important that they were active in helping the researcher to set up the pilot study Twitter account. The pupils in the pilot study:

- took several initial photographs from which they chose the profile avatar (main identity symbol) and the background 'wallpaper' for the account;
- helped to write the account 'bio' (short description of the person/people behind the Twitter account); and
- were able to choose which Twitter accounts they wanted to follow to set up their Twitter feed timeline.

During the pilot research, opportunities were provided for pupils to draft their Tweets on paper before they were posted, and the account was password protected in order to ensure pupils were not able to have unsupervised access. Tweets were vetted before they were posted by a supervising adult. Only the class teacher and the researcher had the password to maintain security of the account.

During pilot study focus group discussions, the researcher asked general questions about social media, and some more specific questions around the potential for such a project in primary schools. Semi-structured prompts encouraged participants to explore their individual perceptions and possible practical applications of using Twitter. Students and parents then gave their feedback as to how motivating they had found the project and what they thought of school communication via Twitter. The staff member in the pilot study was then interviewed individually and expressed her opinions about the wider issue of using social media in primary schools. She also explored her thoughts on how a project like this might go on to be improved within the next phase of research and what the practical implications might be of such research.

Fig 7: Flow Chart – Pilot Study Procedure



3.8 Main Research Phase

The main phase of the research involved a much larger number of participants; nine pupils, two parents, five teachers and thirty one parents via questionnaire (total n=47). It gathered more detailed qualitative data (as well as a small amount of quantitative data from thirty parental questionnaires). This phase was based in a second mainstream school (also in South Wales, UK). It was conducted within a smaller setting (number on school roll 2015/16 was just over 300 pupils) and was specifically chosen by the researcher because the school had already been running a Twitter account for a number of years. The researcher had been monitoring this school's use of Twitter for some time, knew that staff posted regular updates to the feed (some classes had been using their own #hashtag to group their Tweets together) and discovered that the majority of the school's parents already had access to, and were regularly using, the account. This had the distinct practical advantage that the rationale behind using social media in schools did not have to be introduced by the project, and that Twitter was already viewed in a positive way by the school senior management team, governors, pupils and parents (the implications of this 'participant selection bias' on the data will be explored further in chapter six).

In addition to the main project aims, the main research school was also very much concerned with finding out how parents perceived the overall communication strategy. The Head Teacher particularly wanted to find evidence to present as part of her school self-evaluation (corroborating the school's own hypothesis) that using Twitter is an effective way to help parents engage in their child's learning. Through a discussion with the project lead (who was a member of the school's senior management team) it was agreed with the researcher that a short questionnaire should be administered to 10% of the parental population (n=30) in order to explore parental views about social media based notifications.

In the main research phase, all pupils knew about the school Twitter account and they were used to staff using it to post classroom news. The Twitter feed was considered a valuable component of whole school celebration assemblies and other events, but pupils usually had very little control of or input into, what actually appeared in the school Twitter account. They had not previously been asked what they thought about the school's social media usage, nor had they been encouraged to contribute directly to it. The school's senior management team and governors were very keen for pupils to increase their levels of participation with and contribution to the Twitter account in order that they could monitor the potential impact on levels of pupil and parental engagement.

Due to feedback from the pilot school (and through further discussion with the second school) the pupil age range for the main phase of the project was expanded to involve pupils aged from five to eleven years (year one to year six). Nine pupils were selected, one pupil from each class in the school. Pupil names were selected 'out of a hat' and those who took part were given responsibility for being the 'class Tweeter' for the duration of the project (if permission forms were returned by parents).

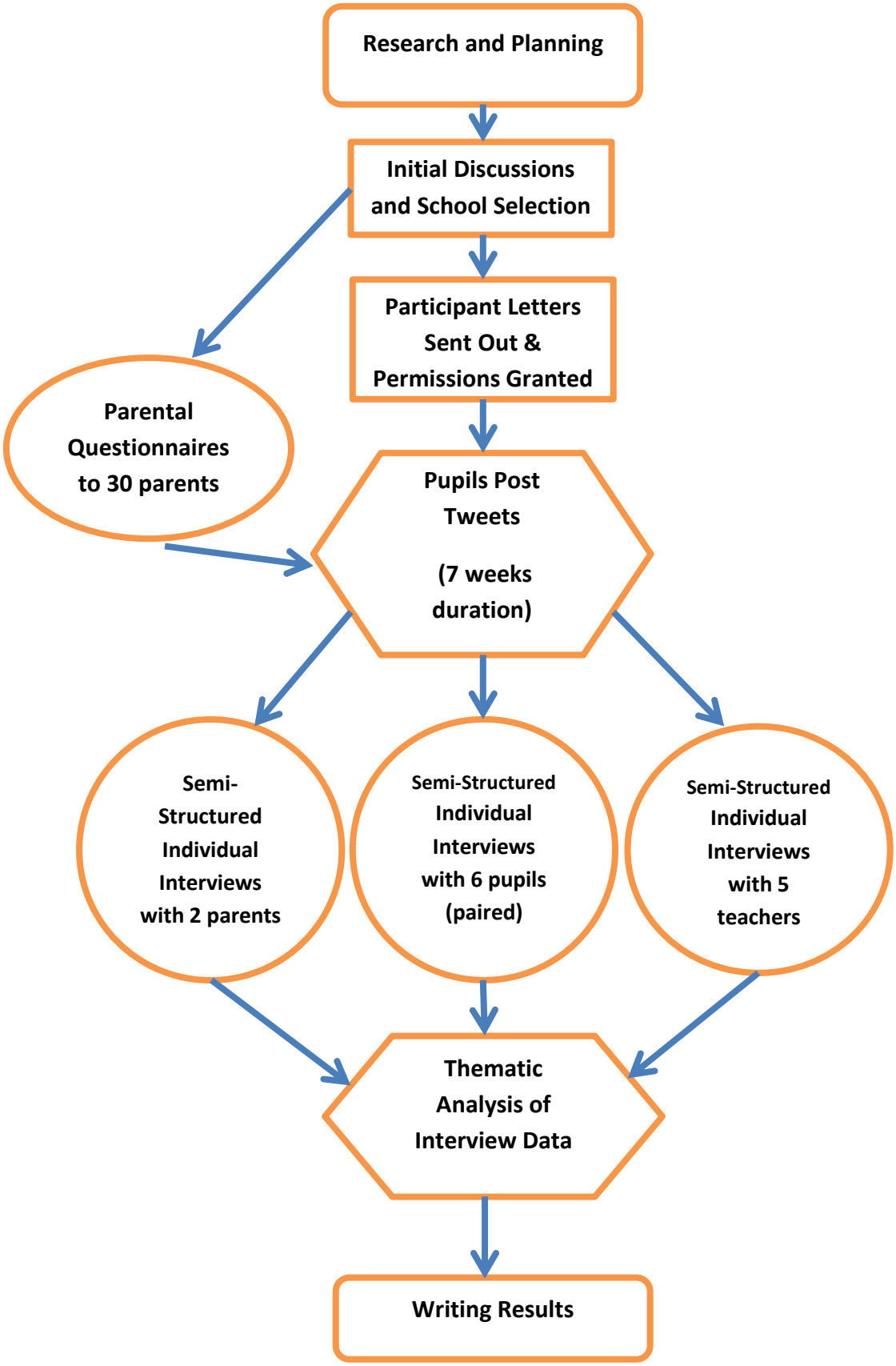
Pupils in the main phase had artistic control over the content of the Tweets (albeit always under their class teacher's direct supervision) and, after discussion with the senior management team, it was decided to alter project parameters to include pupil and staff photographs (this being a standard way in which the school had already been using its Twitter project). At the end of the seven weeks, six pupils from the pupil sample were then interviewed (names 'out of the hat', and in pairs so that the pupils felt at ease), two parents gave individual interviews and five class teachers were also asked to contribute (all using a semi-structured interview schedule developed from data gathered during the pilot project).

In both schools, e-safety policies were strictly followed and only those pupils whose parents had given explicit signed consent (known as the 'opt-in' system of consent) were allowed to

take part. For all pupils in the second school there was already an extremely specific e-safety policy (mentioning more than one social media platform) and parents had to sign opt-in paperwork to agree to their child's photograph being used in school (for researcher consent forms, see the appendices section). Each classroom in the school had, on clear display, a list of those pupils who were not allowed to appear on school media channels and each member of school staff (including all non-teaching support staff) was provided with an updated list of these names once every term to ensure safety procedures were upheld.

Over a period of seven weeks, the pupils primarily used the Twitter account in order to share information about what they had been doing in class and school - rather like an information or display board. Each week pupils were able to post photographs and news from within their classroom (and from around the school if they wished). During the week the pupils were encouraged by the class teacher to think about things that had been exciting or interesting and to Tweet them as they occurred (if the time was convenient to the class teacher).

Fig 8: Flow Chart –Main Research Phase Procedure



3.9 Data Handling and Analysis in both Research Phases

Several decisions were made before embarking on the thematic analysis of data. According to the model proposed by Braun and Clarke (2006) it is first necessary to determine whether the principal aim of the research is to provide a rich description across the entire data set, identifying predominant themes, or whether the analysis is planned to provide a more detailed in-depth account of one particular idea or theme. In the research reported here, the aim was to identify, code and analyse themes to reflect the content of the whole data set, in relation to a broad research question, namely:

- **What are the perceptions of pupils, parents and staff who use a primary school Twitter account?**

Data collected in the main research phase was both quantitative (30 parent questionnaires - collected opportunistically from parents waiting to collect children from school) and qualitative (semi-structured interviews from those taking part in the actual Tweeting).

To explore the perceptions of those taking part, data analysis focused on the process of Tweeting, not on the Tweets themselves. Therefore, the number of Tweets made was not recorded, nor was the written or photographic content of the Tweets analysed.

In the main research phase, one pupil from each class was designated as the 'class Tweeter' (a total of nine pupils from years one to six).

3.9.1 Quantitative Data:

For the main phase of the study, quantitative data from the parent questionnaires were analysed using charts and graphs produced from an 'Excel' spreadsheet. Simple descriptive statistics were used in order to describe the results. The decision was made to use an Excel program rather than a more complex statistics package, because the charts were going to be

manipulated by school administration staff, who later wanted to import them directly into a report for school governors.

3.9.2 Qualitative Data:

Interview and focus group discussion transcripts were analysed by hand. As described in Braun and Clarke (2013) a pattern-based analysis was conducted. This presumes that:

> Ideas which recur across a dataset capture something psychologically or socially meaningful....it's about meanings rather than numbers. (Braun & Clarke, 2013, p. 223)

It is important to note that the process of pattern analysis is identified as part of an 'active process' (Braun & Clarke, 2013, p. 225). Braun & Clarke describe how it is possible for different researchers to create different themes from the same data set and how thematic analysis should be akin to the process of creating a sculpture (p. 225). Themes themselves are not simply there to be discovered but they have to be generated and moulded by the researcher from the data that surrounds them.

Themes were generated at differing levels, themes, subthemes and overarching themes and all these were created from each data item individually before comparing items across the dataset (Braun & Clarke, 2013). Initial themes (sometimes referred to as Candidate themes) were generated from the original data item and they aimed to provide the researcher with initial classifications which "capture the meaning of the dataset in relation to (the) research question" (Braun & Clarke, 2013, p. 234).

The process of analysis below follows the guidance taken from Braun & Clarke (p.202):

1. Transcription - Digital audio data was re-played and typed word for word using standardised transcription layout and punctuation.

2. Familiarisation with the Data - Individual transcripts were read and re-read a number of times so that the researcher could highlight and underline important phrases and key

words. All of the transcripts were read through in this manner until a full familiarisation with the data was achieved. Ideas about initial themes were written on the left-hand side of the transcript with brief exploratory comments on the right.

3. Complete Coding (across the whole dataset) - Each section of underlined text was then analysed line by line and allocated an individual code (each was given an initial letter and number). As each new code was identified the transcript was re-read to look for the existence of the same (or very similar) codes. Each transcript was analysed by itself initially and then comparisons were made across all transcripts looking for the existence of similar codes. Ninety eight codes were generated across the whole dataset and a coding manual was developed and used to categorize the responses given during the focus groups and semi-structured interviews.

4. Generating Initial Themes - Initial themes were finally generated (after many of the original themes had been altered or discarded altogether). Sometimes themes were present only once across the whole data set. These were retained if, on a second examination, they could not be amalgamated into other similar or more frequent occurrences.

5. Reviewing Initial Themes – Twenty eight initial themes were grouped together using a diagrammatic process (see thematic map). If there was doubt as to which codes fed into which theme, then the original transcript was re-consulted to confirm the context of the code and the occurrence of the theme. Themes were not simply generated from the volume of comments and, where a single comment from one participant was considered particularly interesting and relevant, it was allocated with a code of its own.

6. Individual Themes were Named and Overarching Themes Created - In order to make sure that there was little or no replication, theme specific labels were identified. After

review of the entire dataset, themes were further categorised and linked into five larger overarching themes (see thematic map).

3.9.3 Validity and Reliability of the Data:

To ensure that meanings and interpretations were robust across the whole dataset, the issues of validity, reliability and stability must be addressed. In discussing these issues there seemed to be three different types of threats that were relevant (as described in Robson's 'Real World Research', 2013, p.156):

- Description – inaccuracy or incompleteness of the data.
- Interpretation – imposing the meaning rather than this naturally emerging from the data.
- Theory – not considering alternative explanations for data.

The description threat can be addressed by ensuring a full transcription of all of the data. All interviews and focus group discussions were digitally recorded and transcribed by a highly experienced and qualified audio administrator (for notation code used see appendix 11).

When exploring the threat of interpretation, according to Harding (2013) there are two mistakes which could be made when analysing focus group data. They are "taking comments out of context and assuming incorrectly that there is a consensus" (Harding, p.158). When comments are read in isolation there is a danger that the contextual discussion around the comment may have been missed. It is also important to recognise that, where a particular group member fails to make a comment, it can be difficult for the researcher to decide between the participant agreeing with the prevailing discussion, or simply not having an opinion. Re-listening to the whole audio discussion many times before reading the typed

transcripts can help with issues of identifying tone, pace of speech and possible underlying motivations. This was done for each of the transcripts.

When answering specific question prompts, effects of social desirability can often be seen in both individual and group interviews. This occurs when participants are keen to be viewed in a positive light and may therefore be loath to provide honest answers in case it makes them look bad to others (Hewstone et al., 1988, p.73).

In order to try to counteract some of these difficulties it was necessary to present a fair representation of both the pilot study and main research phase material to an independent researcher in order that the results could be checked for reliability.

A selection of quotations (approximately 10% of the total data) was presented to the independent researcher (in isolation from the full transcript of interview data) and the researcher was asked to sort these quotations first into codes and then sort a separate group of quotations into the overarching five themes.

An inter-rater reliability rate of 83% was obtained using the above method for individual coding and a rate of 80% for the allocation of themes, therefore it was considered that the researcher had obtained an adequate rate of accuracy when coding and conducting the thematic analysis.

Triangulation can also be used to help with the issues of validity and reliability. The pilot project ensured that a wide range of data was gathered from two different mainstream settings. The use of more than one method of data collection is known as 'data triangulation' (in this case, focus groups, questionnaires and individual interviews). A 'methodological triangulation' approach was also adopted in that the data obtained was both qualitative and quantitative. Asking three different sets of participants meant that different viewpoints on the same topic were collected and this helped to reduce some elements of bias.

The prolonged involvement of the researcher may also have helped to reduce bias in relationship forming as Robson (2013) suggests:

> Researchers who spend a long time in the setting tend to become accepted and any initial reactivity reduces. Similarly, it permits the development of a trusting relationship between the researcher and the respondents where the latter are likely to give biased information (Robson, 2013, p.157).

However, Robson also states that the opposite may become true should the researcher have prolonged involvement suggesting that "it may be difficult to maintain the researcher role over an extended period of time" (p.157). These issues are further addressed in chapter six.

Chapter 4: Results and Analysis

This chapter illustrates the quantitative results compiled from an opportunistic sample of thirty parental questionnaires and it is followed by the themes that were generated from the qualitative data (individual audio transcripts of interviews).

Extracts from the transcripts are provided in order to help illustrate each of the themes and contributing participants are anonymised, using a numerical label for each. Links to the research, and the practical implications will be discussed in chapters five and six.

Discussion points in relation to the analysis of pilot and main phase data have been merged in order to provide a comprehensive overview of the complete dataset.

4.1 Parental Questionnaires

A pre-project questionnaire was administered to an opportunistic sample of parents from the second school in order to give some background and breadth to this area of research.

Thirty one parental questionnaires (approximately ten percent of the total parental population) were administered in the week prior to the main phase of the project. Respondents were selected by the researcher from those parents waiting on school grounds to pick up their children. Five of the respondents were grandparents of children attending the school and they answered the questions on behalf of the parents, where they felt able to do so.

Thirteen questions were asked and they all related directly to Twitter use (see questionnaire appendix 5).

Responses to Questions:

Question one asked 'Do you have a Twitter Account?'

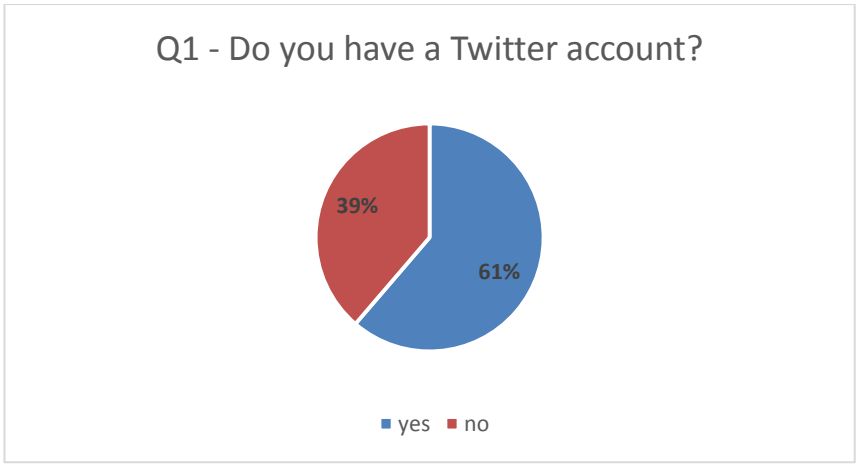


Chart 1: Pie chart showing percentages of parents having Twitter accounts

When they were specifically asked about Twitter, many parents stated that they only set up their Twitter account because they wanted to have access to the school Twitter feed. The actual percentage of positive responses to this question might well have been higher, but the respondents who were grandparents of the children stated that they thought the child's parents might have a Twitter account, but that they did not (three grandparents did however admit to using the school website to see Tweets containing photos of their grandchildren instead). Question two asked 'How often do you access your Twitter account?'

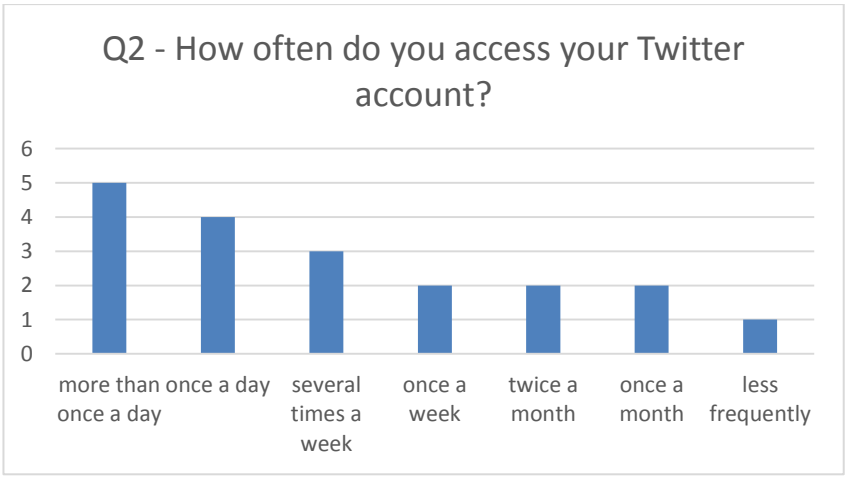


Chart 2: Bar chart showing how often parents access their Twitter account

As illustrated in the graph above, fourteen of the thirty one respondents surveyed said that they accessed their Twitter account at least once a week or more. Question three was 'What is your primary reason for using your Twitter account? and question four was 'Did you know that the school has its own Twitter account?'. Questions three and four were included as ones which the school wished to collect data on. Although they were useful questions for the school (added at the request of the Head Teacher), they were not relevant for this analysis and so graphs have been omitted. Question five asked 'Do you access the school Twitter account?'

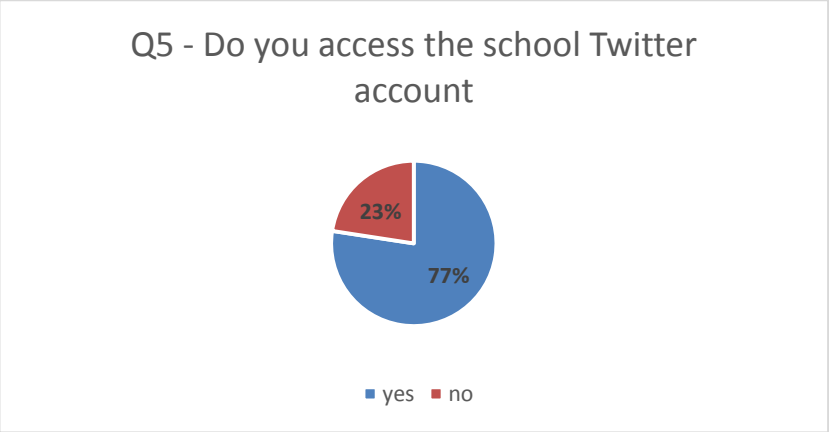


Chart 3: Pie Chart showing percentage of parents who access the school Twitter account

Question six asked 'How often do you access the school Twitter account?'

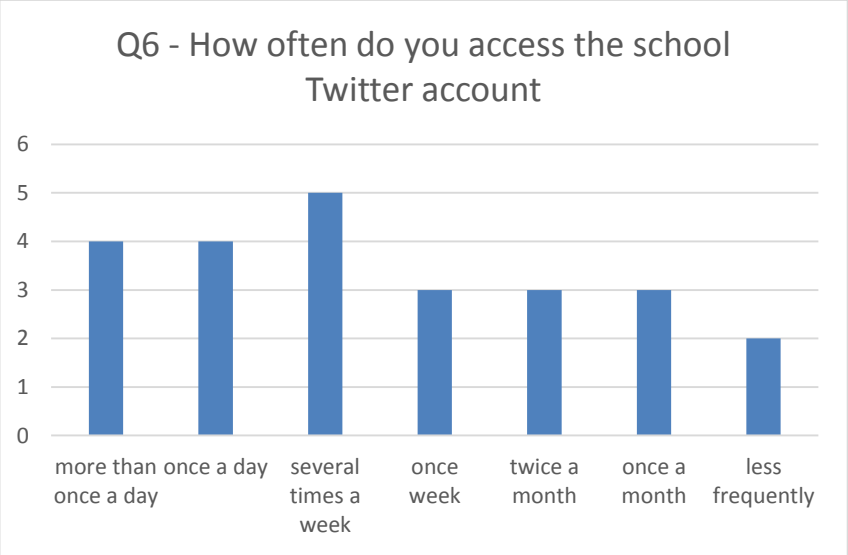


Chart 4: Bar Chart showing how often parents access the school Twitter account.

In response to these questions it was clear that over half of the people surveyed accessed the school Twitter account used it on at least a weekly basis. Some of the respondents stated that, although they do not have their own Twitter account, they can see the school account via the live feed embedded in the school website. Question seven asked parents 'What is your primary reason for accessing the school Twitter account?

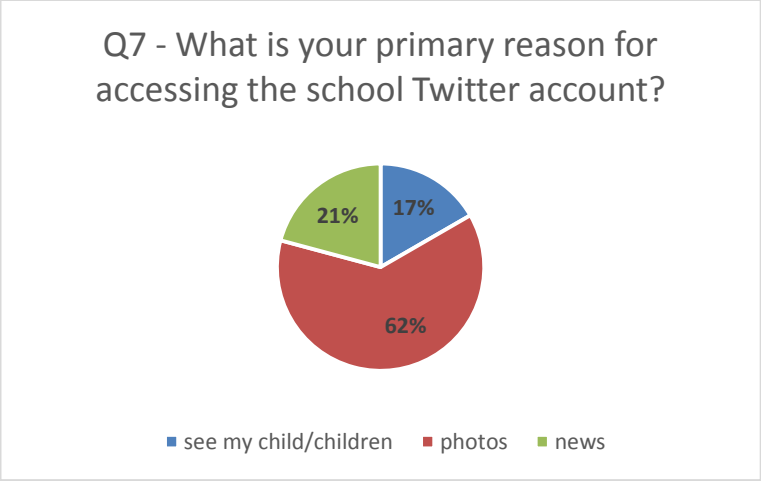


Chart 5: Pie chart showing the percentage of parents using Twitter to see either their child/children, photos or news.

It is clear from question seven, that the majority of parents accessed the school Twitter account to see photographs (although some of the respondents who had said 'to see my child / children' elaborated on this comment by saying they only really looked for photos of their own children, not general class pictures). Question eight asked 'Is Twitter an effective way to share the children's learning?'

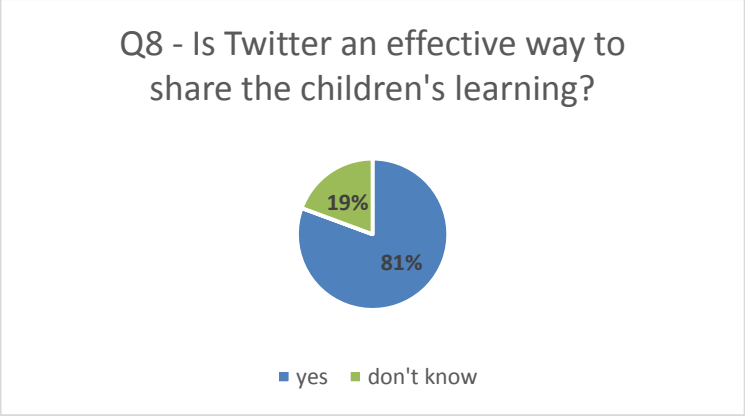


Chart 6: Pie Chart showing the percentage of parents who think Twitter is an effective way to share the children's learning.

As can be seen from the above chart, an overwhelming majority of parents from the school sample (81%) thought that Twitter is an effective communication tool specifically to share the learning of the children. 19% stated that they did not know.

4.2 Semi-Structured Interviews & Focus Groups Themes

Each of the overarching themes drawn out from the data will be explored under separate headings. The five themes generated from the study data (see thematic map) were:

1. Weighing up the Costs and Benefits.
2. Communication Underpins Everything.
3. We are all Responsible for E-safety.
4. Technology is more Powerful than you Think.
5. Why use social media?

The tables in this section help to illustrate some of the significant statements that were made during the pilot phase of the project; these have then been expanded by extracting detailed quotations taken from the individual interviews collected during the main research phase. Literature related to each of these themes will be examined as part of the discussion section.

4.2.1 Theme 1: Weighing up the Costs and Benefits

Any school which utilises social media has to think carefully about the advantages and disadvantages of doing so. Schools need to be absolutely sure that teachers have the necessary skills to keep the children safe whilst posting their content. They also need to make the operating parameters clear to parents.

As specified in the methodology section, a pragmatic approach to research means that understanding what these advantages and disadvantages are is vitally important (especially if there are to be practical applications for schools). One of the objectives of this research was that the findings should be relevant and useful to the schools involved.

The table below outlines some of the comments made by the interviewed participants during the pilot study which illustrate this theme:

Table 1: Examples of pilot study transcript extracts – Weighing up the costs and benefits

Selected examples of significant statements			
Significant statement	**Formulated meaning**	**Theme/s**	**Overarching Theme/s**
"They *(apps)* can do anything from cover the ICT curriculum or just enhance other learning as a key skill, I.T. work really". M – p.1 lines 20-21	Technology has a very wide range of uses in the classroom. (Benefit)	Curriculum	Cost / Benefit
"It aids children with confidence who don't want to be actually seen and it gives them that little bit of motivation". M – p.2 lines 3-4	Technology might be used to help introverted children. (Benefit)	Motivation Confidence Communication	Cost / Benefit
"We would be covering them all instead of doing some work". M – p.6 line 19	There isn't time to manage everything at once. (Cost)	Time	Cost / Benefit
"If you are in touch with other teachers in education, you get to know certain things I think you get fed….it's certainly a way to keep in the know"	Social media is useful for continuing professional development. (Benefit)	Knowledge Seek Information Give information	Safety Purpose

M – p.9 lines 6-8			
"There were people on there (Facebook) doing comments about the teachers that weren't very kind" S – p.7 lines 16-17	Social media can be used in a negative way which is harmful. (Cost)	Mis-use Risk	Cost / Benefit Safety Purpose
"It's not so much the children you don't trust but it's the people who are giving the things out on the internet and the companies that are setting these up. Because they have no conscience" M – p.12 lines 15-17	External influences on children who use the internet can be negative (Cost)	Mis-use Risk	Cost / Benefit Safety

The teachers in the main phase of the research described some of the benefits of using social media with children to enhance the learning that is taking place in the classroom:

> They are thinking about their learning and they are not just saying look at our writing...it's just another way of embedding and reinforcing the language we use in school and also for them to showcase their learning really (N – p.7 lines 3-9).

This teacher elaborated on this further by thinking of specific curriculum examples:

> Definitely links with literacy. I mean just writing a Tweet for example, you know, for X, the amount of times he said *"is this right how do you spell this?"*…they are unpicking what they are actually doing and the skill they are using…because if he's Tweeting about Maths there's discussion between him and the person he's Tweeting about what they are doing, so they are reinforcing what they are doing, they are thinking about what they are doing (N – p.9 lines 3-10).

And staff often mentioned the way that technology seems to engage the children because of its interactive nature:

> They don't see it as actually learning, it's a bit more engaging and they can become more independent, especially when they are researching (KD – p.1 lines 12-13).
>
> They do use the i-Pads where there is a few of them, but they like to almost cwtch (cuddle) up with it (A – p.2 lines 8-9).

One of the teachers considered the impact of Twitter as a reward or confidence boost for some of the children in her class:

> I think sometimes we can use Twitter as a *"come on, if you do really good, or you concentrate really hard and do a good piece of work we are going to Tweet you"*, that kind of thing. So it can be used as a positive reward that can sometimes encourage the children (A – p.9 lines 5-8).

She also described how one parent's opinion on using Twitter in school was changed because her child wanted to be part of the school project:

> He originally wasn't allowed on Twitter, but she, her opinion on it completely turned around because she was able to see him do his learning while she was in work, but also for his confidence (N – p.3 lines 8-10).

For the child she had been describing above, it was clear that, from the teacher's professional perspective, using Twitter had a positive impact on his individual motivation:

> Definitely motivation, even when X used it initially lots of children were saying *"if I do this can you Tweet me?"*. So there was motivation to complete a task so that he could Tweet it and share it with mum, dad or whoever (N – p.5 lines 15-17).

One parent mentioned how her son had felt about taking part in the project:

> He was happy to be chosen, he felt like it was a special thing that he had to do and that all his friends could take part in…he did like that level of responsibility (S – p.6 lines 2-5).

And she thought that there were clear benefits in helping *her* understand what her son was doing in the project:

> He was telling me *"do you know what hashtag means?"* so that was really nice. The fact that he knew something that I didn't know how to do was good (S – p.6 lines 10-12).

However, in order for any whole school project to be considered effective, members of the school senior management team have to be able to identify more benefits than costs. One of the issues raised by one member of the senior management team was the time that staff might have available to continue running a project such as this in the future:

> I need to consider the staff impact on their time and the time that they've got to put in to make these things happen (R – p. 11 lines 6-8).

This participant also stated that the technology the children were using to post their Tweets (i-pads) was not necessarily engaging for some pupils:

> We have a catchment where probably 60-70% of our children have an i-Pad at home, it's nothing new to them. They find our i-Pads quite boring because they don't have the latest FIFA (football game) on them! I think what the i-Pad has become is common, it's like a calculator, it's like a Pritt-stick, it's just seen as a tool that doesn't excite….it hasn't got the same impact as it had five years ago (R – p.2 lines 9-14).

One benefit that was identified was that Twitter can be a quick method of communication:

> It's so easy, it takes five seconds to Tweet and even if you did it when the children have left to go to lunch and taken the photo during the learning, it's not hours out of your day, whereas communicating with parents can take a long, long time. So it's a quick fix if you like (N – p.10 lines 3-6).

Another member of the senior management team interviewed, felt at first, that she was unable to see how Twitter could be of *any* benefit to either the children or to the school:

> I was really cynical…I was quite negative, thinking *'oh'* I could not see any benefits at all (J – p. 1 lines 12-18).

But then later described how quickly she became an advocate for the social media platform:

> Within about two weeks I think I was the biggest user, the most prolific user (laughs) (J – p.2 line 1).

When looking at the costs of the main phase of the research, it seemed that Twitter could have the potential to distract some students from completing a task:

> The only thing I did find is that it then actually took away from his learning because he was focusing so much on the Tweeting he then, it wasn't just a two minute thing, he would be trying to get different photo angles and shots and things and then other children would get involved (K – p.4 lines 16-20).

But, on balance, it appeared that these initial uncertainties were significantly outweighed by the way that the children were able to get directly involved and take control. The staff liked having the children play a much more central role in the process and seemed to imply that this may be empowering for them:

> I know it's been really helpful for some of the teachers even…because that child has taken on a responsibility of Tweeting in the class…that's great sometimes, because if you know, it's the child's responsibility (A – p.8 lines 10-13).
>
> Some children would really love having that role and doing that (AJ - p.8 line 18).

4.2.2. Theme 2: Communication Underpins Everything

Many of the individual adult participants mentioned the fact that that they like to be able to talk directly to important stakeholders about education. Schools have many ways in which they communicate with their parents, governors, staff and the local community, but several of the participants commented that Twitter is a practical social media platform. It is extremely visual, quick to use and can be accessed by anyone who has a laptop, tablet or Smartphone, even if they are not linked directly with the pupil population (provided that the school operates an open or public access account).

In their questionnaire responses at the start of the main phase, two parents alluded to the fact that Twitter quickly became their number one choice when it came to seeing their child involved in learning. One remarked that she probably wouldn't know anything about what her children were doing in school if it wasn't for the Twitter feed, as the children were often "hard to get information out of" (questionnaire respondent no.6). Another parent stated that seeing photographs meant that he felt "connected" to his child in a way that he had not previously (questionnaire respondent no. 16).

Table 2: Examples of pilot study transcript extracts – Communication underpins everything

Selected examples of significant statements			
Significant statement	**Formulated meaning**	**Theme/s**	**Overarching Theme/s**
"Those of them who react really well and respond really well to their mums and dads knowing what's going on, it's like that - *look here it is*". M – p.14 lines 1-2	Children want to tell their parents what they've been doing in school.	Parents	Communication
"It's a very real form of writing". M – p.15 line 14	Children need to have real audience for / purpose behind their writing	Curriculum	Communication
"You ask them *'what did you do at school today?'* and they say *'nothing'*, so at least that way we would have an idea about what they are doing".	Parents and other stakeholders need to know what's going on in school	Community Parents Friends Family Staff Pupils	Communication

S – p.10 lines 13-14			
"It's going to have an up to date notice board on there of what's coming up, details of anything that's going on at the school". S – p.6 lines 18-19	Parents need to be regularly updated with school news	Community Parents Friends Family Staff Pupils	Communication

In the second phase of the study, the Twitter 'bio' was considered by the researcher to be of central importance. A biography (or 'bio') is a short account description that introduces the Twitter feed and explains something about the account holder. The Twitter bio for this particular school was *"Where we share our learning"* and sharing learning with others was one of the main reasons the school reported setting up its account in the first place:

> So we can share as a school family some of the really great things that have been happening (R – p.7 lines 3-4).

When the school set up its Twitter account (prior to involvement from the researcher) the senior staff team was keen to open up a new communication channel with parents. From interview discussions it appeared that parental engagement with Twitter was a way to get the children talking about school:

> Parents love it! From your research the parents said they love it! What they like is the classic comedy if you like *"what did you do in school today?" "Nothing!"* I mean I remember saying it to my mother when I was in school and nine times out of ten it's because they don't want to engage with their parents, they wanna go home and play on their x-box or be left alone or whatever and they are killing the conversation because they didn't want it. Whereas I think now the parents are saying *"I noticed in school today you did this"* and then the children are…not being forced but being coaxed towards…I think it opens a conversation (R – p. 8 lines 18-22 & p.9 lines 1-5).

A parent made a similar comment about the interaction with her son about his learning:

> (Twitter is) a good conversation starter and it gives them that bit more of a voice and confidence to tell them, you get a bit more out of him...so using the Twitter post I was able to say *"Yeah I noticed you did this, this and this today and I bet that was really good"* (S – p.9 lines 9-14).
>
> I think that it's great because you can look at is as a parent and can get engaged with their learning and it's not boring stuff, it's relevant to them in the lesson (S – p.10 lines 17-19).

The pupils also felt that by creating and posting their own Tweets, it helped them to speak to their wider family about school:

> I told my uncles and grandparents about it and they were interested about Twitter because quite a lot of my family use it (H & Z – p.5 lines 17-18).
>
> It was exciting because people could see the good learning that we were doing (D & S p.5 lines 9-10).
>
> When I Tweeted I would go home and go on Twitter, the school Twitter and I would show my mum and dad my Tweets and they would be happy (D & S p.6 lines 11-13).

One male teacher mentioned the fact that the Twitter account even has a role to play in keeping the Head Teacher up to date with what is happening:

> X goes home every night lies in bed and looks at Twitter so that she knows what is going on in the school every day…she can actually look at live footage (R – p.9 lines 17-20).

And it was clear that the school senior management team had thought carefully about the way that the account could help them to make bigger connections in a global context:

> In that way it brings people in. I mean how it extends out, I suppose it's global it doesn't matter where you are (R – p.10 lines 8-9).

During the research, this was achieved by linking the children up to celebrity Twitter accounts to help motivate the children (as in the Jamie Oliver example below) and by thanking local businesses for helping them to organise school trips:

> That's right because Tesco sent us a banana poem so we read that and we Tweeted that and sent it back (J – p.13 lines 13-15).
>
> The Tweet back (from Jamie Oliver) was *'wow thank you class 3'* or something so they were buzzing really, so yeah definitely I think it's an excellent communicating tool and I think the more we use it for those purposes then they will understand that (N – p.6 lines 18-20).

Staff reported that the school Twitter account has a big part to play in helping parents feel part of their child's educational experiences:

> It's things like sports day when we had the lovely images and some parents miss out on that and we are so lucky that we get to see it every day, but parents just don't, and I think it's lovely that they have that opportunity to see their children in all aspects of their school life, so it might be their Maths learning but it might be them having an

> amazing day in sports day if they weren't able to make it. It's just getting that community feeling where everybody is involved I think (K – p.8 lines 7-13).
>
> Twitter's been the biggest impact on building home to school links, because even parents that work can come and access it, and at the end of the day they might not drop their children and pick them up from school, yet at night before they go to bed I know lots of parents check on Twitter (A – p.10 lines 1-4).

They could also identify that Twitter helped them to make links with other people not just with the parents:

> It's brilliant for communication with parents, but also other people…it's not just a tool for taking photos it is actually a tool for communicating (N – p.6 lines 16-18).

4.2.3 Theme 3: We are all Responsible for e-safety

If pupils are to learn how to conduct themselves appropriately and keep themselves safe online, then parents, teachers and the wider community all have an important role to play. Distributing messages about e-safety through initial teacher training, ongoing professional development and parent information sessions seems to be very important. Participants in the pilot phase frequently mentioned internet safety:

Table 3: Examples of pilot study transcript extracts – We are all responsible for e-safety

Selected examples of significant statements			
Significant statement	**Formulated meaning**	**Theme/s**	**Overarching Theme/s**
"We wouldn't just throw them in a swimming pool, we'd teach them how to swim and put lifeguards in there". M – p.7 line 22 and p.8 lines 1-2	Children need to be explicitly taught about how to be safe whilst using the internet.	Guiding Supervising Teach rules Provide tools	Safety
"It's no good being naïve you know and you have to say the what-ifs, because the what-ifs might happen". M – p.10 lines 4-5	People need to plan for the worst	Guiding Supervising Teach rules Provide tools	Safety
"You have to be careful on these websites as well" T – p.6 line 8	There are risks involved with online use	Risk Mis-Use	Safety Cost / Benefit
"They can hack into your	The internet can be un-safe	Risk	Safety

account and then you lose your network and they have all your details and everything". T – p.7 lines 14-15	for children to use	Mis-use	Cost / Benefit
"I won't allow him to have a Facebook page as it is too dangerous" S – p.1 lines 15-16	Parents are concerned about keeping children safe	Risk Mis-use	Safety Cost / Benefit

The staff member who was interviewed for the pilot research felt so strongly about her duty to educate the children in her school about online safety she became a Child Exploitation and Online Protection (CEOP) Ambassador and undertook additional training in this field. She also felt it was her responsibility to cascade this training down to other teachers.

All staff in the main phase of the study implied that adults have a moral obligation to keep children safe online:

> It's really important to promote the dangers. I think it's also important for parents to be aware of some of the things that can happen so that they can possibly detect it before it happens rather than dealing with it after it's happened (RS – p.3 lines 17-20).
>
> It's our duty to them really to help them be safe to use it so hopefully they will become responsible adults and role models to others then (K – p.2 lines 6-8).

They spoke about the benefits of educating the children as young as possible:

> There has still got to be an element of control with social media. I think you know we see on the news how dangerous it can be, but we also have to educate the children as to how dangerous it can be and the earlier you start using it for a positive purpose i.e., communicating learning or networking with other people, then I think it will set them up to be able to use it more safely (N – p.2 lines 7-11).

But they also acknowledged that just because adults take care to teach the pupils something about e-safety, it doesn't mean they will remember or always follow the advice and guidelines:

> You could go through the whole of primary school and you would still get yourself into…they could learn the right way to do it and that's not necessarily going to mean…doesn't mean they are going to…it's like we teach them smoking is not a good thing to do but some of them will go on and do it, so I don't know (J – p.5 lines 13-18).

One of the parents mentioned her concerns over the safety of some aspects of her child's technology use:

> I'm a bit, you know, cautious about it because I'm not particularly clued in about putting parental controls and all that (H – p.1 lines 16-17).
>
> At the moment they are of the age that you can sort of monitor it and I think we'll have to look into what parental controls are on everything, because sometimes you think of something and then you forget, they might look at my phone and that hasn't got any parental controls on it (H – p.2 lines 5-7).

4.2.4 Theme 4: Technology is more Powerful than you Think

Leading a class of students in the 'always connected' (Turkle, 2012) age could be a daily challenge for teachers. Sophisticated out-of-school entertainment packages compete for the attention of students and, because of this, Marc Prensky suggested that teachers who use outdated communication tools in the classroom might find it difficult to hold the attention of 21st century children (Prensky, 2005 & 2006).

The teacher in the pilot study was keen to speak about the way that social media tools such as Twitter can help in achieving many different outcomes, from easing parental concerns, to helping the pupils become more critical and independent learners. She indicated (illustrated in the first quote below) that although the actual teaching methods may not have changed, developments in technology have enabled teaching feedback to be much quicker and more accessible to larger numbers of students. She also made the point that staff should acknowledge that children are already using social media for themselves and that teachers have to try to stay up to date with technological developments (last quote below):

Table 4: Examples of pilot study transcript extracts – Technology is more powerful than you think

Selected examples of significant statements			
Significant statement	**Formulated meaning**	**Theme/s**	**Overarching Theme/s**
"If children have done something really good in the olden days we'd have pulled the book up and said *'everyone look at this'*….now we take the teacher i-Pad over, take a	Sharing good work examples is much easier / quicker nowadays	Curriculum Knowledge Give information	Technology Safety Purpose

photo, throw it up on the TV screen and everyone can see it straight away" M – p.2 lines 16-19			
"It's about sharing everything" M – p.9 line 3	Technology can be used to share good practice	Curriculum Knowledge Give information	Technology Safety Purpose
"This is something we can put on Twitter and if you do a really good job we can take a photograph of it" M – p.10 lines 11-12	It can help in motivating the children to work hard	Curriculum Knowledge Give information	Technology Safety Purpose
"The local community police officer came in to do this with my year 5 class a few years ago, she said *'put your hand up if you've got Facebook or Bebo'*….two thirds of my class put their hands up, and I thought right - I need to know what's going on and I need to know what they are talking about because how can I guide them?". M – p.11 lines 11-15	If staff stay up to date with technology it can help them to teach students to use it responsibly	Guiding Teach Rules Provide Tools Curriculum	Technology Safety Purpose

Staff in the main phase of the study spoke about the power of technology to help children become facilitators of their own learning processes. They thought that Twitter could help children to examine their own learning and also think about the learning of others in the same class. They seemed to be describing a chance for some metacognitive strategies:

> He definitely got more involved with things and he saw things differently and was saying *"they are doing a fab job"* so he definitely became like a teacher, spotting the children who were showing great examples really (K – p.5 line 13-16).
>
> I think they all want to have a go and I think it would become just quite reflective, you know, I can think of a few others in my class who would probably say *"can I take a picture of her doing her art because she's really quite focussed"* (J – p.17 lines 10-13).

The staff also referred to the fact that children seemed to feel like they had more power and ownership when they were in charge of the actual Tweeting:

> We focussed on the children, we focussed on the learning and I think it's worked well because the children almost have ownership of it (N – p.8 lines 5-6).

> I think she liked the responsibility of being able to come and to do that she felt important (J p.8 lines 19-20).

And staff felt that using Twitter played a part in helping the pupils to explain the context of their learning to other people:

> So they are thinking about their learning and they are not just saying *'Look at our writing'*. They are having to explain to their parent at home or whoever it is, exactly what they are doing (N – p.7 lines 4-5).

One member of the teaching staff mentioned how using the Twitter feed in one particular curriculum area (Art) had made a real difference to her class. Having an interaction with the actual artist they were studying, created great excitement in the children about the task, even though that artist was in a completely different country:

> We were doing some art work by Jean Paul Baptiste and he was replying to our Tweets and the children were amazed, they thought it was fantastic that he was Re-Tweeting our Tweets and replying to us and he's like in St. Lucia on the other side of the world, and it connects children massively and they realise that everybody is in things together (K – p.6 lines 11-15).

It seemed that using Twitter has the potential for having an impact on pupil motivation, especially when those Tweets are shared within a whole-school celebration of learning:

> We always Tweet the children who are amazing, not those that have done the best job but those who have put the most effort in and tried the hardest, it does just filter through the school. In assemblies they often get the Twitter page up and children can see it and you just see the smiles on their faces when they see themselves up there on the big screen and they know that's on the internet out there for people to see and it does build up intrinsic motivation I suppose, to do better and to push themselves that much harder and succeed, because they are proud of themselves and it builds that feeling (K – p.7 lines 16-22 & p.8 line 1).

This staff member also spoke about ways in which she would like to see the project develop in the future. She stated that she would be keen to give other pupils the chance to be the class Tweeter in future and she thought that different pupils would make their own individual contributions:

> It's all about pupil voice and they can choose what they'd like to Tweet and what they feel is important to be shown (K p.8 lines 19-20).

Teachers also spoke about the power of technology to possibly help children with additional learning needs:

> With the i-Pad you can get more children on it and they are able to move it around the classroom, especially I'd say the quieter children particularly. I have got two children who are IEP (individual education plan) children. One, in Reception 'cause I had them last year, who is an elective mute, so she is quite quiet and then her friend, she is actually leaving us to go to a speech unit as she can't speak. They often take themselves off into the reading corner where it's a lot quieter so they are still accessing the IT, but in their own environment like where they are more comfortable (N – p.1 lines 13-18).

> I've got a little boy in my class who's got a 1:1 (adult support assistant) and I think mum is constantly impressed with what she sees him doing on Twitter, and I do Tweet him quite a lot (J – p.10 lines 12-14).

One teacher spoke about what she viewed as an unexpected benefit of the school account, using Twitter to help with the children's transition into the Reception class:

> Some parents worry when they first come to school, maybe if they're not happy, or are particularly worried in that first instance, if they've had to come in all upset and if they have a photo of them smiling that day then that almost eases their concerns and worries. Particularly I think for those in Reception when they first come in. That's probably a huge….I can imagine as a parent that would be a huge relief seeing a photo (A – p.10 lines 14-19).

4.2.5 Theme 5: Why use Social Media?

Social media is not going to go away. It will probably undergo several major transformations in the next few years, but ultimately students will still want to use web based technology to entertain themselves and to talk to their friends and family (Dixon, 2012). The parents in the pilot project highlighted the fact that social media can be a very useful tool to help them and the children stay in touch with the school and with each other.

Table 5: Examples of pilot study transcript extracts – Why use Social Media?

Selected examples of significant statements			
Significant statement	**Formulated meaning**	**Theme/s**	**Overarching Theme/s**
"Anything interesting like that about the school or	Parents are inquisitive when it comes to education	Parents Family	Purpose Communication

what the children are doing you know" R – p.10 lines 9-10		Friends Community	
"It's nice for the parents that work and stuff like that if they want to check in and see how their kids are doing and see something like that so they don't feel like they are missing as much as they are" S – p.11 lines 11-13	Keeping parents involved in school is important to keep them connected to their children	Parents Family Friends	Purpose Communication
"they can tell the parents straight away if they are really excited about something and so that if they are bursting they can actually get it out kind of right away and they can get the acknowledgement as soon as they Tweet back" S – p.14 lines 5-8	Children like the immediate reinforcement from parents for positive achievements	Parents Family Friends	Purpose Communication
"they can acknowledge one of their friends that's done something special, say out in the playground, so they can acknowledge them on there if they don't want to do it in class" S – p.15 lines 3-5	Could be used to strengthen the friendships between individual children	Friends	Purpose Communication

Teachers in the main phase of the study spoke of the ability of Twitter to help the children to connect with their loved ones over long distances:

> I have one dad, Mr X, he's often in Australia, but on parents' evening he commented on how much he loves the Tweets because there are times when he's away for three weeks at a time and he can't see his little boy, whereas he has only got to pick up his phone or tablet or whatever and he's there (N – p.7 lines 14-17).

The teachers commented on the importance of linking in and staying in touch with working parents. They seemed to be inferring that Twitter can make a real difference to maintaining an open dialogue between the pupils in their class and their families:

> It's definitely a brilliant home/school link, and for those parents who work. You know we have Open Days and not every parent can come. They work and in this school we have got a lot of parents that work in jobs that require lots of hours and commitment and you know we had five or six parents that didn't come to Open Day so I Tweeted them instead (N – p.7 lines 19-23).

One teacher mentioned that Twitter has also helped keep other professionals in touch with what the children are doing:

> I've heard a governor say it's helped, she's had conversations with the children because the children used to say…she'd say *"what have you done today?"* and the children would say *"nothing"* (J – p.10 lines 15-17).

A pupil explained how his mum was able to access the Twitter account when she was working:

> Even when she's at work, she's got a computer, she normally looks on the computer (Z & C p.5 lines 8-9).

And a parent stated that he thought it was also interesting for other members of the immediate family to see what the children had been up to in school:

> Grandad looked as well, yeah Grandad did as he's a bit more interested in technology so that was nice (Z & C p.8 lines 2-4).
>
> (Twitter is good for) people like Grandad, he doesn't live close does he? He doesn't come up here very often and so it is nice to be able to see, yeah X's grandad was looking at it wasn't he? And Grandma (Z & C p.8 lines 17-19).

A novel use for Twitter was so that a parent was able to stay connected to her son whilst she stayed with her daughter who was ill in hospital:

> When one of X's friends was in hospital and the Mum was staying in there with her, I sent her Tweets that featured her son so that she could still see what was going on (H – p.8 lines 10-12).

When looking for other benefits of using social media, teachers discussed how some of them are using it to keep up with good teaching practice and for helping them with their continuing professional development (CPD):

> We follow the Literacy Shed so they Tweet a few literacy videos and things that we use in our classes as a stimulus (K – p.7 lines 9-11).

One important thing that a participant mentioned was the subject of school ethos. They thought that Twitter could potentially help to communicate the school ethos to others. Staff commented that although ethos is "hard to pin down to one thing" (A – p.11 line16), Twitter could make a contribution:

> I can take so many more pictures and Tweet in that time, but then they are nicer pictures as well, because they are doing stuff, they're involved, they're so happy and animated and I think that represents all the opportunities the children have and that puts forward our school ethos (A – p.11 lines 21-22 & p.12 lines 1-2).

What all of the above responses have shown, is that participants were able to identify many good reasons to use social media when promoting and sharing the learning of children in school. Ideally, if it is conducted within the correct e-safety policies and procedures, this is something that more schools should be keen to do as part of their daily business.

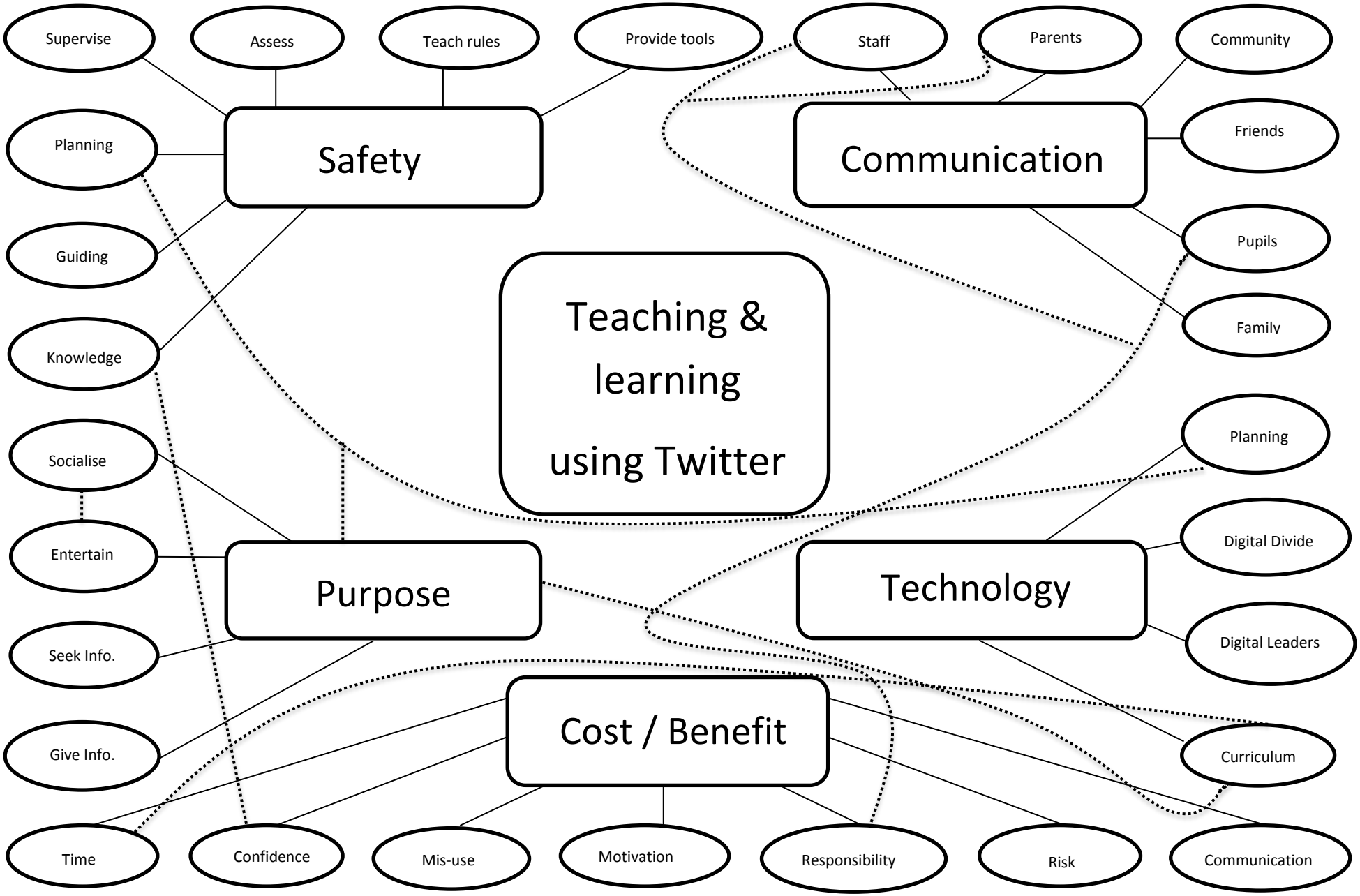
The possible difficulties with social media usage that *may* occur will be further discussed in the next two chapters. The potential opportunities for further development of this research will also be considered.

4.3 Thematic Map

Each of the sub-themes was placed onto a diagrammatic map (see Fig. 9) and the five over-arching themes that were generated were also linked together to make sense of the connections between sub-themes. As previously stated, the five over-arching themes were:

1. Weighing up the Costs and Benefits.
2. Communication Underpins Everything.
3. We are all Responsible for E-safety.
4. Technology is more Powerful than you Think.
5. Why use Social Media?

Fig.9: Diagram – Thematic Map



Chapter 5: Discussion

5.1 Technology Use in Education

Research from the last decade (Prensky, 2006 and Spires et al., 2012) has highlighted the positive impact of using technology in the classroom when thinking about how we can provide the "dynamic educational reform" that might be needed (Spires et al., 2012, p. 232). In order to contribute to this area of research, this study was designed to explore the perceptions of children, parents and staff using one specific web based platform (in this case, Twitter) as part of a whole-school initiative.

A limited amount of academic research to date has examined the use of social media in the area of higher education. In the last few years, a growing number of comprehensive schools are using social media platforms and many primary schools now use Twitter and Facebook to communicate with stakeholders. To date, however, there is little research in this area, so it was important to start to address this limitation through the present research.

In a BBC news video interview (September 2014) it was reported that the technology giant IBM had made positive strides in helping some schools and colleges use dashboard style 'predictive analysis' data tools. These systems are reported as helping institutions to analyse their social network data in order to *"help give staff a better understanding of their students"* (BBC News, September 19th 2014, video at 36 seconds) and to help provide their students with an enhanced learning experience. In 2014 the CEO and principal of Brokenhurst College in Hampshire (Di Roberts) stated:

> It's a development of what we already do. We have a system by which we share information about students. So in one particular class *'how is this student working?'* In another particular class *'are they doing as well?'*....It's a bit like Amazon when you go online you get followed around, but it's not going to be like big brother (BBC News, Sept 2014, video at 1m 41 seconds).

In the same interview, the representative from IBM (Dom Polonieck) stated that such predictive analysis tools could possibly be used to capture keywords from students engaging with social media such as "I'm bored or I'm not enjoying this" in order to monitor those students who may be struggling with their courses:

> It all comes down to preferences on how the colleges want to implement it and what students want to make available (Sept 2014, video at 1m 14 seconds).

Of course, although computers can use complicated algorithms to capture likes and dislikes, phrases or words used by pupils out of context may be picked up unintentionally and the changing nature of spoken vocabulary / text speak may also affect such analysis.

Whilst at first it may appear that the above scenario might describe an invasion of student privacy, if the information is freely shared by the student then this concern would disappear. Since educational psychology is concerned with *all* aspects of teaching and learning (and with monitoring the impact of initiatives on groups and individuals) it seems important that today's educational psychologists are aware of the opportunities *and* threats that social media could bring.

A key question seems to be 'How might schools consider using this rapidly evolving technology to help their pupils, parents and staff, within safe and ethical boundaries?'

In South Korea, the Department of Education was aiming by the end of 2015 to be able to deliver all of its school curriculum materials digitally. Quoted in an article by Gary Eason (BBC News, Oct 2011) the Korean Minister of Education, Ju-Ho Lee, stated that:

> The department was preparing a promotion strategy for 'Smart Education' which would focus on customised teaching and learning. The project launched during the summer will involve wireless networks in all schools to allow students to learn 'whenever and wherever' as well as an education information system that can run in a variety of devices including PCs, laptops, tablets and internet connected TVs (Oct 2011, p.1).

Eason goes on to explain that, although high levels of investment in new technologies are necessary in order to deliver these new digitisation promises, funds will be wasted if the teachers are not given the resources and training that they need in order to keep up with developments.

5.2 Using Twitter within a Primary School Environment

Although the answers to the research aims and their relationship to previous research findings are discussed in further detail in section 5.3, it is helpful to highlight some of the comments from participants that have evidenced the efficacy of using Twitter within a primary school setting:

- **How might taking part in a school Twitter project help pupils feel more motivated about school?**

If teaching staff can understand and become fluent in using electronic communication tools that children and young people use on a daily basis at home, then they may have a better chance of engaging their interests. It could be hypothesised that this might help to sustain their motivation in class.

Pupils commented on the way in which Twitter helped them to feel more connected to, and excited by, the projects they were undertaking (e.g., the Jean Paul Baptiste art project); and staff noted how Twitter responses back from interested parties (e.g., Jamie Oliver, Tescos) helped the children to feel that their projects were reaching out to a "global" audience (R – p.10 line 9). They also felt that Twitter has the potential to "connect(s) children massively" (K – p.6 line 14-15).

Individual children seemed to be motivated by having a sense of "responsibility" (K – p.8 line 17) when Tweeting for their class and staff felt that Twitter could be useful for building up "intrinsic motivation" (K – p.7 line 22) for the school as a whole (especially when the Twitter feed was shared in celebration assemblies). Staff also commented that the children who participated in the research felt a "motivation to complete a task" (N – p.5 line 16-17) so that they could share their in-class news with friends and family.

- **How might taking part in a school Twitter project help pupils to talk more to the people around them?**

The parents interviewed explored the way that Twitter had helped their child communicate with them about school, but also how they talked to their siblings, grandparents, aunts and uncles. Staff perceived that Twitter use in school "opens a conversation" (R – p.9 line 5) between pupils and parents and that it gives parents a way in to find out what their children are really thinking about when they are learning. They spoke about Twitter being an "excellent communicating tool" (N – p.6 line 19) and felt that by using Twitter to share learning they were creating a "brilliant home school link" (N – p.7 line 19).

Pupils interviewed for the pilot project stated that "you can talk to people and you can send pictures and show 'em what you've done" (T – p.6 line 7) and in the main project it was clear that some pupils had helped the class Tweeter by discussing what they should put on there - "a few people on my table helped" (H – p.3 line 18). In this way it seems that Twitter has helped the pupils talk to each other about their learning.

- **How might a school Twitter project help staff communicate with their pupils' families and the community in which they teach?**

Staff commented on the usefulness of Twitter to make contact with working parents and those who "didn't come to Open Day" (N – p.7 line 22) and also for some parents who were feeling

anxious or apprehensive on leaving their child when they first made the transition into the Reception class. Teachers spoke about how Twitter "almost eases (their) concerns and worries" (A – p.10 line 17) and how on Sports Day it was wonderful to be able to share photos of the children "getting that community feel, where everybody is involved" (K – p.8 lines 12-13).

In the pilot study, it was also apparent that the staff member could see the benefit of pupils talking to their families via the school Twitter account "making their parents aware of what they are doing and what they are enjoying in school" (M – p.5 lines 2-3). This teacher also felt that a school feed could have the potential to be used across the school with each class contributing something on a daily or weekly basis "almost like news….that's another way that we could get news out to the parents isn't it?" (M – p.16 lines 13-15).

- **What effect might the school Twitter project have on the parents of those children who took part?**

In the main research phase, the parental questionnaire responses showed that the majority of people supported the school in its use of Twitter as a significant part of its communication strategy. There were parents who said that the "range of communication" methods (H – p.9 line 19) adopted by the school to relay messages (texts, emails, hardcopy newsletters) is "invaluable" (H – p.7 line 20) in helping them organise their child's educational week. Questionnaire data indicated that Twitter was an important part of their child's learning package (81% of the parents responded that Twitter was an effective way to share the children's learning).

Parents felt that they were able to see what their children were doing in school and that it was "a good way of catching up" (H – p.6 line 2). They also mentioned that Twitter was a "conversation point" (S – p.6 line 8) between them and their child and that it gave them

something “more visible” (S – p.9 line 18) to help them document their child’s school experiences. They also felt this was an easy way to share information with other family members.

Parents from the pilot study focus group agreed that they felt more involved and that “it’s nice for the parents that work….so they don’t feel like they are missing as much as they are” (S – p. 11 lines 11-13).

All of the above comments showed the positive contribution that Twitter can make to primary school communication; and it may be that this research could be used as a catalyst for further studies into this important area.

5.3 Links to Previous and Current Research

5.3.1 Technology Today and the ‘Digital Natives’:

In 2006, Prensky (in his article ‘Listen to the Natives’) argued that children born into the 21st century technological teaching and learning environment will continue to adapt and change and that many of the older generation, the digital immigrants, might struggle to keep up. Although Prensky’s ‘digital natives’ term is being used less these days, it appears that young people do not always know everything about computers (a study by Sommer, 2014, stated that technology use varies a great deal and some young people no longer know how to use basic computer applications such as word processing or data spreadsheets). Prensky’s underlying theory about engaging children with technology remains relevant a decade later. A more recent article written by Kavanagh and O’Rourke from the Dublin Institute of Technology (2016) argued that:

> While Prensky’s identification of digital natives and digital immigrants is no longer widely accepted, a digital divide in our wider society and in our workplaces is recognised to exist. This divide is not age-specific and exists between those who understand the implications of digital culture and therefore possess a “digital mindset”

> and those who do not: many older people possess such a mindset, and many younger people do not (Kavanagh & O'Rourke, 2016, p.7).

As part of this thesis research, some participants commented that children seemed to know more than the adult, and that the learning (in some cases) was much more in the hands of the children:

> He shows me things, shortcuts and things and I thought you know, I've been using this for ages, they are just so up with it all. Which is a good thing (H – p.2 line 13-15).
>
> Compared to when I was in school a lot of them teach me things that I don't know, shortcuts and things, it is scary but they are the next generation and that is what this generation is (K – p.3 line 4-6).

The above quotes suggest an increased level of engagement which may be as a result of using Twitter in class. Dixon (2012) mentioned many benefits of using social media to help build a school online presence, which then results in a "more collaborative school culture" (p.3). The families in this study stated that being asked to "participate actively in that conversation" as Dixon proposes (Dixon, 2012, p.4) meant that they had more opportunities to talk to their children and that the children were "not being forced, but being coaxed towards" talking to their parents about their learning (RS – p.9 line 3).

In their 2011 article, Spires et al. stated that across the studies that they have examined:

> Parental support is important as they share equipment responsibility and can encourage or guide their children to use computers appropriately (Spires et al, 2011, p. 67).

In a study by Mouza (2008), it was described how some pupils experienced increased interactions between themselves and teachers about issues of technical support; as the teachers learned to ask the students for help when there were faults and problems with the operating systems they encountered:

> In such situations, students expressed pride over being able to help their teacher (Mouza, 2008, p.449).

This seemed to be reinforced by the opinions of the teachers in the main phase of this study who said that they felt the children often "teach me things that I don't know, shortcuts and things" (K – p. 3 line 4).

Conversely, it has been argued by journalistic writers such as Palmer (the author of Toxic Childhood, 2006, updated in 2015) that parents of developing children, especially those who are more socially and economically vulnerable, should spend much more time "prioritising real play over techno-play and books over screen until they're around six or seven" (p.295) in order for them to first develop the skills that are needed to handle participation in a virtual world.

Palmer believes that, although using technology can have some clear benefits for 21st century children and young people, the rise in the number of children in the UK and the USA who are suffering from "diagnosable mental health disorders" can (in part) be "linked to the incredible speed of human progress and the worldwide triumph of consumer capitalism" (Palmer, 2015, p.2). In her opinion, this includes the rapidly changing virtual world in which our children choose (or are allowed) to take part. Yet, it must be stated that this book is publicised within the 'parenting guidance' genre and does not appear to be based on rigorous academic research. However, Palmer's comments may be persuasive to those parents looking for a reason to limit their child's exposure to technology.

To support some of her more challenging views, Palmer refers to 'specialists' such as Dr Aric Sigman (a psychologist who is one of the UK's most frequent commentators on the subject of attention control in children) and Agnes Nairn (who was asked to investigate why the UK stands at the bottom of the childhood well-being league table in the 2011 UNICEF review). Both experts are quoted to supplement her argument that the UK government should be doing more to control children's use of technology and that they should issue strict 'screen time guidance' to parents. Palmer summarises that:

> Every hour of TV gazing or techno-play displaces time spent on activities known to facilitate healthy development and, since electronic entertainment brings such immediate rewards, it diminishes children's inborn motivation for real life engagement (Palmer, 2015, p.287).

However, in the original source report (Unicef, 2011) it was found that the two greatest factors that placed countries such as Spain and Sweden a long way above the UK for child wellbeing were:

- time spent with family and friends; and
- plenty to do outdoors

Instead, the report emphasised the importance of reduced parental working hours, shared childcare and the involvement of extended family, rather than blaming an over-use of technology for children's unhappiness.

It was also clear that some of the children who took part were aware of the potential dangers and costs that spending a long time engaging with technology could bring. Theme One (costs and benefits) draws attention to some of these threats (e.g., addiction to social media mentioned by one member of staff and one pupil) and these risks are further described in section 5.5.

Whilst arguments such as Palmer's target a general parenting audience and, at first glance, may appear to be convincing; it seems that there is a growing body of academic research which is highlighting the benefits of sensible technology use, especially within an educational context.

For the children who took part in this study, a limited exposure to Twitter during school time meant that there were clear benefits for their engagement with others. The social media project was conducted under the strict control and supervision of teaching staff and, in both the pilot and the main research phase, the children who participated showed a clear motivation for sharing their learning with their teachers and parents. Staff in the main

research phase school felt that their use of Twitter was certainly helping to sustain levels of parental motivation. That brings with it a real opportunity for parents to support children's learning and become invested partners in their education.

5.3.2 Twitter as Social Capital:

Social capital (as referred to by Burt in 2005 and Hanifan in 1916) also appears to have been an important feature of the outcomes, with 77% of the parents who were surveyed accessing the school Twitter account and over half of respondents saying that they look at the account at least once a week (see chart 4).

It does appear that using a school Twitter feed could fit the definition of social capital as it seems to be a way to communicate "goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unit" (Hanifan, 1916, p.130-131), especially if those individuals in the group are making contacts *with* and talking to each other within the group. An example would be one parent saying that she used the Twitter account to stay in contact with one of the other mums who was in hospital (H – p.8 lines 10-12). Or its use as described by the teachers who like to stay in touch with what is going on in other areas of the school "It's great to see my children because I don't necessarily know what they are doing" (J – p.11 lines 6-9).

The staff also mentioned the fact that they were able to use Twitter and other social media platforms as ways to gain 'capital' for class activities and for sharing teaching and learning ideas:

> The girls (other staff) do say to me *'look at this stuff I've found on Pinterest'* (JR – p.8 lines 4-5).
>
> There's a guy, I follow this guy personally, called Mr X….he's got really creative ideas for Literacy….so whenever we write up a piece using his ideas I tend to get a close up of the work and send that and tag him (JR – p.13 lines 9-12).

5.3.3 Theories of Motivation and Interaction:

Many different theories of motivation and interaction were considered whilst planning and designing this study. Those which seemed most relevant were the eco-systemic theories which considered the multiple systems which children inhabit and examined the ways in which those systems interact with each other (e.g., Bronfenbrenner, 1979 and Epstein, 1995 & 1996). Results do appear to show that the Twitter project had some influence on individual participant motivation (for staff, pupils and / or parents), in line with some of the major motivational frameworks. These will be examined in turn.

The meta-analysis conducted by Deci et al. (1999) showed that children tended to be motivated in a number of ways, but an important distinction was made between rewards that build up extrinsic motivation and those which help to motivate on a more intrinsic level. The children and the staff involved in this project seemed genuinely engaged with the interactive nature of the immediate opportunities that Twitter presented them with (e.g., when Jamie Oliver and Tesco Re-Tweeted their Tweets and when Jean Paul Baptiste replied to them). They also seemed to benefit from delayed gratification i.e., the real life interaction that occurred (based on Tweets posted) when returning home to connect with their parents. One student commented:

> It was exciting because people could see the good learning that we were doing (D – p.5 lines 9-10).

One of the parents (after the formal recorded interviews were finished) told the researcher how she felt the project had actually increased the verbal communication she has with her son about things that are happening in school and how she was able to praise him for that. She felt that using Twitter could be a valuable tool for other schools - to "get (pupils) involved with the things that were happening in class" (H – post interview discussion).

Staff also mentioned the impact of having "responsibility" on their motivation (A – p.8 line 11) and described how Twitter often seemed to help the children to find "motivation to complete a task" (NG – p.5 lines 16-17).

One staff member interviewed for the project spoke of how she felt Twitter was helping to contribute towards building an internal motivation for learning:

> They know that's on the internet out there for people to see and it does build up intrinsic motivation I suppose to do better and to push themselves that much harder and succeed because they are proud of themselves and it builds up that feeling (KD – p.7 line 21-22 and p. 8 line 1-2).

Another teacher interviewed felt that Twitter almost certainly had some power to help the children to become more critical and reflective learners. She felt that by offering public Twitter praise on the efforts of their classmates the children could almost act as though they were mini-teachers:

> I can think of a few others in my class who would probably say *'can I come take a picture of her doing her art because she's really quite focused'* (J – p.17 lines 11-13).

Personal competence as described by Dweck & Elliot (2007) and White (1959) is an important component of motivation and therefore seems to be an important factor in this thesis. If personal competence involves "seeking stimulation, exhibiting curiosity and playing with friends and family" (White, 1959) then using Twitter may have helped the students in achieving some elements of this.

Staff mentioned that using technology stimulates curiosity by helping their students to research topics that they are particularly interested in:

> They don't see it as actually learning, it's a bit more engaging and they can become more independent, especially when they are researching (K – p.1 lines 10-12).

Several students mentioned the fact that they liked to bring information back to their familes after a day in school and a number of the pupils showed extended family what they were involved in during the research.

Aronson & Steele (cited in Dweck & Elliot, 2005) propose that feelings of competence (especially within an academic context) can be highly malleable, responsive either way to both criticism and to praise. They state that competence is:

> Quite literally the product of real or imagined interactions with others….competence is fragile, then, because it is transacted within a web of social relations (Aronson & Steele, cited in Dweck & Elliot, 2005, p.437).

If the children were rewarded by having a much more positive view of themselves as facilitators of the Tweets for their class, then this could be seen as having a possible positive impact on competence and motivation:

> The more we have used it as a school I think the more they have become confident. with it (NG – p.3 lines 5&6).

If peers also respond to the designated Tweeter in a positive way this could increase feelings of social acceptance, which Aronson & Steele (2007) believe is crucial to young people's motivation:

> (students) in schools care about belonging – fitting in socially with their peers – more than they care about nearly anything else (p.439).

They go on to describe how peer influences on children can be viewed as more important to the individual than the opinions of their teachers:

> Statistics suggest that this is particularly true during the middle school and high school years, when social concerns reach their apex (p.439).

Other authors within Dweck & Elliot's book (e.g., Wentzel – in chapter 16) quite clearly describe the positive impact that peers can have on the functioning of children and young people:

> Children who enjoy positive relationships with peers also tend to be engaged in and even excel at academic tasks more than those who have peer relationship problems. Children's social competence has been related positively to academic accomplishments throughout the school years (p.279).

Deci & Ryan (1985 & 2000) describe the way in which people are driven by a need to grow and gain fulfilment. They outline three aspects which they consider to be necessary as part of their self-determination theory; competence, connection (also referred to as relatedness) and autonomy.

It is reasonable to suggest that the children who took part in this research (more specifically those in the main phase) were probably able to fulfil all three of these conditions. They were informed that they were competent (by their class teacher and their families), they made connections to a variety of people (both internally in school and with also with some who were external to the school environment) and, even though they were supervised, they had autonomy about what they Tweeted. Deci & Ryan maintain that:

> Choice, acknowledgement of feelings, and opportunities for self-direction were found to enhance intrinsic motivation (Deci & Ryan, 2000, p. 70).

After exploring the perceptions of all of the participants, it certainly appeared as though the pupils were motivated and engaged to take part.

5.3.4 Social Interaction in a Digital Age:

In the conclusion to their paper, Deci and Ryan maintain that social context is of crucial importance when trying to examine the factors that underpin motivation:

> The mode and degree of people's psychological-need satisfaction is theorized to be influenced not only by their own competencies but, even more important, by the ambient demands, obstacles, and affordances in their sociocultural contexts (Deci & Ryan, 2000, p. 75).

They emphatically highlight the individual's chance of success when interactions happen within a supportive social environment:

> We found evidence of the dramatic power of social contexts to enhance or hinder the organismic tendency to integrate ambient social values and responsibilities (Deci & Ryan, 2000, p.76).

The paper also concluded that, if children function within these supportive conditions and they are allowed to make their own choices and stay connected to those around them, they are much more likely to succeed:

> Conditions supportive of autonomy and competence reliably facilitated this vital expression of the human growth tendency, whereas conditions that controlled behaviour and hindered perceived effectance undermined its expression (Deci & Ryan, 2000, p.76).

In later research, Allen et al. (2014) describe how there is a necessity for more research within this field, further examining the advantages and disadvantages of social media use with young people:

> Social media can enhance belonging, psychosocial wellbeing, and identity development, while at the same time exposing young people to potential negative outcomes. Given the prevalence of social media in the daily lives of adolescents, a greater understanding of its impact on social interactions is necessary. Such findings would have practical implications for the development of strategies and interventions for teachers, parents, and educational psychologists hoping to better manage cyber-bullying, cyber-ostracism, and the expression of sexual identity. In addition, adolescents could be taught how to enhance their personal experiences with social media use, by increasing belongingness and psychosocial wellbeing, as well as affirming their social identities (Allen et al., 2014, p.28).

From the above quotation, the relevance of studying social media use in education seems to be clear. Allen et al. argue that high schools should make 'digital interaction' an integral part of the school curriculum and those academic institutions should put this firmly on their agenda for future research.

Research from 2016 has added to the exploration of this topic. A paper by the Dublin Institute of Technology (Kavanagh and O'Rourke, 2016) concludes that "recognising fluidity as the norm in our society is a key element of digital literacy" (p.9) and children and young people should be allowed to use technology creatively. They do however exercise caution in their summary. They argue that:

> The social implications of the digital society – surveillance and the decline of privacy, cyberbullying and so on – are increasingly evident but are not yet wholly realised (Kavanagh & O'Rourke, 2016, p.9).

They call for a personal and universal debate about attitudes towards a digital existence. Again this is a reflection of wider comments that schools must play an important role in helping children and young people to develop a true 'digital literacy':

> The reality, now more than ever, is that young people need guidance in the areas of treating others with respect, avoiding bullying, being safe and critically evaluating information found online. This is not to view digital devices and communication methods negatively – the possibilities are truly exciting and full of promise, opening up new worlds of human activity and areas of scholarship (Kavanagh & O'Rourke, 2016, p. 10).

When thinking about how this thesis explores individual and group motivation it is important to re-examine the social learning theories of Lewin (1936), Bandura (1977) and Bronfenbrenner's Ecological Systems approach (1979 & 1989) and the Overlapping Spheres of Influence as described by Epstein (1995 & 1996).

If motivation is thought to be subject to multiple influences over a lifetime, then it seems realistic to propose that academic research into the use of social media should increase. This seems important especially as children grow older since they experience the "changing properties of the immediate settings" (Bronfenbrenner, 1989, p.188).

The fact that the data in this study illustrated that Twitter was seen by 81% of the parental sample as an effective way to share the children's learning, helps to corroborate the vast body of research which suggests that parental involvement in schooling is crucial to the educational outcomes for children and young people (Pomerantz et al., 2007; Lazarides et al., 2015; Abel, 2014; Brock & Edmunds, 2010).

If the findings of this study are explored through the frameworks of Bronfenbrenner (1979 & 1989) Lewin (1936) and Epstein (1995 & 1996), it does seem that social media might have the potential to be an important 'connective factor' between the various systems in the child's

world. Staff in the project commented on how enjoyable it was to be linked up with each other and to be able to observe what was happening in other parts of the school "it's really good because you don't necessarily know, you are in a little bubble…and I wonder what they're doing" (J – p.11 lines 6-7) and they thought that being able to observe and participate in other classes' activities via the Twitter feed was one of the biggest benefits:

> We can share as a school family some of the great things that have been happening (R – p.7 lines 3-4).
>
> It's powerful, our statistics tell us that it is massively viewed and I think we set it up for the right reasons (R – p.7 lines 8-9).

They also stated that "getting that community feeling" (KD – p.8 line 12) and reaching out on a "global" level (RS – p.10 line 9) was massively important to the school and that it helped to communicate "opportunities that the children have". They also commented how it could be part of a positive school ethos (AJ – p.11 line 16-18).

If it is considered that a Twitter feed could be developed to be part of a much larger online school community, then this may have the potential to make connections between all of the systems in a child's existence. Twitter could be a significant connection between the layers that are described within Bronfenbrenner's ecological perspective, which proposes:

> The scientific study of the progressive, mutual accommodation throughout the life course between an active, growing human being and the changing properties of the immediate settings in which the developing person lives (Bronfenbrenner, 1989, p. 188).

During the researcher's off-record conversations with parents, it became apparent that many families join the Facebook or Twitter page for their son or daughter's class because these are frequently used to discuss upcoming class events and projects or to share information about internal and external class social occasions (e.g., dressing up days, children's birthday parties). These could be thought to be operating as smaller systems within the child's larger ecosystem. One participant pointed out that "a lot of the mums are a lot younger than me and so they are living on Facebook and Twitter and so I imagine there is a big demand" (H – p.8 line 4-6).

Parental involvement in this project appeared to be central to the motivation of the children. If the children's parents had not been able to see individual Tweets from them then the outcomes might have been very different. Research on the positive impact and importance of parental involvement in education is now widely accepted. Pomerantz et al. (2007) proposed that:

> Because parents are central figures in most children's lives, they have the potential to shape children's orientation toward achievement (Pomerantz et al., 2007, p.259).

Parents viewed the children's Tweets on at least a weekly basis (some significantly more frequently) and they were able to directly discuss these Tweets with their children at the end of the school day. This meant that their comments and their views on what their children were doing became highly relevant to the cycle of positive feedback. Pomerantz et al. (2007) report (in the conclusion to chapter 15 of Dweck & Elliot's book) that:

> Research conducted over the last two decades has established that parents play a central role in how children approach achievement….as a whole, parents have the potential to facilitate children's fulfilment of their psychological needs through multiple modalities, thereby providing children with the resources necessary to approach achievement positively (Pomerantz et al., cited in Dweck & Elliot, 2005, p.273).

This quotation lends academic weight to the argument that schools which include parents in their communication and social media planning (and evaluations of those) will contribute to more positive outcomes for children. The dialogue between the parents and the children taking part in this research was reported as being more open than it was without the use of social media and the conversations that followed seemed to thrive as a result.

5.3.5 The New Learning Ecology:

Barronn (2006) described a 'learning ecology' as the "set of contexts found in physical or virtual spaces that provide opportunities for learning" (p.195) and it seems that these contexts may adapt according to each child's 1:1 teaching and learning environment. When reflecting on the school Twitter account and the school's 'virtual learning space', it can be seen that the

experiences that participants had quickly became part of the 'new learning ecology' process as described by Spires et al. (2012, p.235 – see Fig. 5):

- The children had 'immediate and constant access to information and a global community' e.g., when they were speaking directly to the artist that they were studying or to the local business that they had recently visited as a class.

- They also were able to find 'intensity, relevance and personalisation of learning' e.g., the "smiles on their faces" of the children when they can see themselves in the Twitter feed displayed up on the big screen in celebration assemblies (K – p.7 lines 19-21).

- Some of the children in the project were beginning to develop 'dispositions for self-direction, self-monitoring, creativity and curiosity' e.g., when one of the teachers spoke about how some of the pupils were using Twitter to spot the good work of their fellow pupils "he definitely became like a teacher" (K – p.5 line 14).

- Some staff improved their technological skills and are on their way to having 'highly developed teacher capabilities for facilitation, improvisation, consulting and mentoring' e.g., the way in which staff were using Twitter to deviate from planned lessons to interact with an artist that the children were studying and the way they use Twitter (and other social media platforms) to keep up with their CPD.

To investigate this notion further, it seems appropriate to explore the writing of Bray, a policy advisor who works with schools and governments to improve education outcomes for learners through the use of technology and outdoor learning. In his e-book entitled 'Social Media in Education: Enhancing Learning and Managing e-Safety' (Bloxx Media, 2012) he argues the pedagogical advantages of schools using social media:

> Social media is both powerful and purposeful yet its full potential is still to be realised in education (Bray, 2012, p.3).

Bray (2012) examines current models of teaching and learning and states that students tend to do best in educational settings that:

- "challenge traditional models and reverse the hierarchy;
- allow young people to communicate and collaborate;
- provide an authentic audience for children's work; and
- exist within systems that are both open and transparent" (Bray, 2012, p. 4).

He also states that these are also "common characteristics associated with educational reform" (Bray, 2012, p.9).

Bray encourages school leaders to think about alternative ways to re-engage disillusioned students and families (similar to those described by Prensky in 2006) and he considers the best ways to do this. Prensky (2006) stated that "teachers must practice putting engagement before content" (p. 2) and he called for a much higher level of student collaboration when planning both the curriculum and individual classroom tasks:

> It's only by listening to and valuing the ideas of our 21st century students that we will find solutions to many of our thorniest education problems (Prensky, 2006, p.3).

Bray elaborates his opinions by listing the six reasons for his belief that social media can enhance teaching and learning (p. 9-11). Social media:

- has cultural relevance,
- uses real-time data,
- is collaborative,
- has a real audience,
- can be used as a tool for data collection, and
- can be used for research purposes.

The teachers interviewed as part of this research saw the benefits for the children in terms of the real audience for their work and appreciated the fact that the pupils could engage in real-time with the people that were important to them:

> Those of them who react really well and respond really well to their mums and dads knowing what's going on, it's like that – *'look here it is'* (MP - p.14 lines 1-2).

In addition to this, the school management team felt (from the initial conception of their Twitter feed) that it had a strong collaborative purpose for the account and that this would be to "share the learning". One of the teachers commented:

> I think it's powerful and our statistics tell us that it's massively viewed and I think we set it up for the right reasons….so we can share as a school family some of the great things that have been happening (R – p.7 lines 3-4 and 8-9).

If this research is viewed within a systemic framework (inspired by the work of Bronfenbrenner, Lewin and Epstein) it helps consider how students can be encouraged to develop their own 'learning ecologies'. In 2013, Jackson described how he saw the ecological metaphor applying to an educational context:

> An individual's learning ecology comprises their process and set of contexts, relationships and interactions that provides opportunities and resources for learning development and achievement….they are the means by which experiences and learning are connected and integrated across the contexts and situations that constitute a person's life (Jackson, 2013, p.1).

He describes this as an essential part of 'knowing how to learn' and believes that learning ecologies have the following characteristics (p.2). They are:

- adaptive and responsive;
- chaotic;
- self-organising and individually directed;
- alive;
- diverse;
- structured informally; and
- emerging (Jackson, 2013, p.2)

The pupils that took part in the Twitter study were allowed to write their own Tweets and, to some extent, they were allowed to take the project in the direction that they chose. In the researcher's opinion they were able to satisfy most of the above criteria for a learning ecology.

Staff felt that if the project continued they would be able to involve more pupils and direct the Twitter feed towards new and exciting evolutions.

Inclusion of the family and community in the research meant that a "system of interdependent processes" (Lemke, 2000 cited in Jackson, 2013 p.3) was developed. The potential existed for further dynamic connections to be made.

There is now a rapidly growing body of research, which suggests that "active multi-model learning" (Pavlik, 2015, p.119) helps students to engage more dynamically with their learning curriculum. It appears that by harnessing the use of Smartphone mobile technology teachers could be accessing a resource that young people with a 'digital mindset' already understand. Those children and young people may be able to use it in more intuitive ways than was ever thought possible:

> This is a strategy to take advantage of many students' natural inclination toward ubiquitous and often non-stop mobile device use. Rather than fight against the tide, so to speak, this is an approach to exploit it for educational benefit (Pavlik, 2015, p.119).

In conclusion to the paper, Pavlik calls for a complete overhaul of everything that is known about teaching and learning. He describes this as a transformation of the "third paradigm of education" (Pavlik, 2015, p.113). It is proposed that teachers must thoroughly embed the process that Spires et al. previously described (2009 & 2012), the 'New Learning Ecology'. Instead of traditional didactic teaching methods, staff should instead focus on acting as a "mentor (to) their students" (Pavlik, 2015, p.121). Pavlik goes on to describe how, in the most interactive of classrooms, the "line between teacher and student can blur" (p.122).

5.4 Using Digital Technology in the 21st Century Classroom

In order to make sure that schools have enough resources to capitalise on the pedagogical advances described above, then it is important to ensure that schools considering social media use make a priority of replacing failing and old technology. In an era of repeated government budget cuts, this seems to be an extremely challenging (and possibly somewhat unrealistic) objective. An article by Jane Wakefield (BBC News, 2014) warned that a report from BESA (British Educational Suppliers Association) found that 65% of primary schools in the UK and 54% of secondary schools complained about unreliable Wi-Fi and poor broadband connections. Many schools who find it difficult to use of information technology (I.T.) are situated in areas of the UK where broadband services are not reliable. In the article, the director of BESA (Caroline Wright) stated:

> It is of great concern that pupils are being denied access to innovative and effective digital learning because of poor internet connectivity in more than half of the UK's schools. In today's digital society, classroom connectivity to an online world of knowledge and resources should be a right for every student in their place of learning and not a lottery (Wright, 2014, p.2).

Educational leaders must also ensure that as well as helping to support the actual digital infrastructure of a school's technological network, they invest resources in teacher training, otherwise school students, who may have access to the best technology, are always going to remain one step ahead. It seems logical to propose that schools should encourage those teachers who have just completed their initial training (or those who have special curriculum responsibilities) to seek further qualifications in information technology and, wherever possible, to help to cascade this training down to other staff. Spires et al. (2011) recommend:

> Initial teacher training on a few 'core' tools such as a course management system, will ensure that each teacher has a platform on which to build his or her expertise (Spires et al, 2011, p.70).

Studies have shown that where I.T. systems are not invested in, or the technologies not maintained to an adequate standard, teachers will lose confidence. Drayton et al. (2010) stated that experiencing technological difficulties (i.e., faults and failures with computers) will:

> In some cases have substantial impact on teachers' attitudes and actions about the innovation (Drayton, 2010, p.40).

This was confirmed by Shapley et al. (2010) who noted a correlational relationship between schools who had not fully embraced new digital technologies and increased technical issues.

Senior school leaders also need to make certain that staff fulfil the moral and safeguarding obligations to teach children explicitly about e-safety. They should ensure that the traditional focus on attainment outcomes (i.e., national curriculum levels and Reading and Maths testing scores) does not outweigh the huge importance of emotional and social wellbeing. A school that fails to uphold its responsibilities when it comes to social media and digital technology as part of Personal and Social Education (PSE) may find it difficult to keep its students safe; both online and elsewhere.

At home, students may not have access to, or parents or carers with understanding of the technologies schools want their pupils to be able to use. One of the important responsibilities that teachers have is to help these parents become more engaged in the discussions about technology usage. By offering information technology open evenings and / or safer internet days (each managed by the I.T. champion / digital leader for the school), schools can create opportunities to draw parents closer and help them understand what their children might be taking part in online.

In his 2012 book, Bray concludes that instead of a "lock and block" (p.15) approach (i.e., using heavy internet filtering systems) schools must instead talk to pupils about "responsible use of social media" (p.15) and try to find a common language that both adults and students understand. He discusses issues of privacy and outlines the importance of each educational

setting having its own social media policy which is in line with wider county and national guidelines.

Scott (2016) emphasises that schools need to take direct responsibility for appointing their own online safety ambassadors and that, due to their knowledge, children may be best positioned to contribute to this role. It mentions the 2008 work of Byron which concluded:

> The constant evolution of the Internet and of children's online opportunities remains a challenge for educators; therefore, an awareness of the online activities of children within individual educational settings ensures schools and teachers are adequately equipped with the knowledge and skills needed to provide guidance to pupils (Byron, cited in Scott, 2016, p.6).

5.5 Concerns about an Over-Reliance on Technology

Although this study has highlighted many positive outcomes of using social media in a primary setting, it would be naïve to ignore the concerns about social media usage that are often widely expressed (as explored in the theme Costs and Benefits). Pavlik (2015) states that it is important to not fall into the trap of solutionism (i.e., thinking that technology is the answer to everything):

> Technology, no matter how advanced, does not guarantee better education. Nor is it necessarily a pathway to solving any societal problems (Pavlik, 2015, p.122).

Pavlik discusses how digital networking should be seen as an opportunity for change rather than a complete resolution to the problems that outdated curriculums may present.

Turkle (2012) comments on the way that people use (and abuse) technology. Turkle works within the Department of Social Studies of Science and Technology at the Massachusetts Institute of Technology (MIT). She is the founder and director of the 'MIT Initiative on Technology and Self' and is also a licensed clinical psychologist. Turkle has written three books which explore the complex relationship between humans and technology. The third of these

books, 'Alone Together' (2012), describes how she believes technology can have a negative impact on individuals and why people can often neglect those they love because of the dominance of technology in their lives. She describes both children and parents who are tethered to their devices and who, because of this, are always giving continuous partial attention to their familial and romantic relationships. She argues that:

> These days, insecure in our relationships and anxious about intimacy, we look to technology for ways to be in relationships and protect ourselves from them at the same time…..We expect more from technology and less from each other (Turkle, 2012, p.xii).

Throughout the book, which explores a myriad of complex technological topics such as artificial intelligence and robots which are designed to be social and even sexual companions, Turkle discusses the potential dangers of losing the social communication skills that distinguish humans. She describes how the younger generations must be educated to ensure that technology does not consume their relationships altogether:

> At the extreme, we are so enmeshed in our connections that we neglect each other. We don't need to reject or disparage technology. We need to put it in its place. The generation that has grown up with the Net is in a good position to do this, but these young people need help (Turkle, 2012, p. 295).

Towards the conclusion of her book, Turkle describes the day she attended a memorial service of a close friend and observed people hiding behind their order of service cards to check their phones or to text. She reflects on this:

> I have referred to our vulnerabilities rather than our needs. Needs imply that we must have something. The idea of being vulnerable leaves a lot more room for choice. There is always room to be less vulnerable, more evolved. We are not stuck. To move forward together – as generations together – we are called upon to embrace the complexity of our situation. We have invented inspiring and enhancing technologies, and yet we have allowed them to diminish us (Turkle, 2012, p.295).

There are also many academic papers that talk about the impact of the always on, always on you culture of the smartphone. A recent study from 2015 (Clayton et al.) indicated that being separated from one's phone for even short periods of time can cause "greater feelings of anxiety" (p. 120). They described the feeling that a mobile phone can be like "an extended

self" (p.120) similar to an arm or a leg, and that loss of it can cause great distress. In fact the word 'Nomophobia' the fear of having no access to your mobile phone now has its own entry on Wikipedia.

Some research papers are now describing a negative physical impact that smartphones can have on their users. Singh and Yadav (2015) describe a Smartphone addiction which can cause health problems. They conclude that:

> The impact of these phones on the human body are worrisome, they need immediate redressal and the smartphone users need to be educated on the complications caused by their favourite device if overused (Singh & Yadav, 2015, p.122).

Indeed when interviewed for this research project, one staff member (in the main phase of the enquiry) mentioned that, for her, addiction to social media can sometimes be a real threat:

> I'm on there all the time. I do have my five minutes Facebook and Twitter time every day which is getting longer and longer, the more you follow, the longer it takes to go through! (JR – p.7 lines 9-11).

One of the children interviewed as part of the pilot study mentioned that he thought he might be addicted to playing computer games:

> I'm like on them every single day….I'm addicted to them…when I go home an like if I go on my X-Box I'm on it like till 9 o'clock (S - p.18 lines 11 & 15 and p.19 line 2).

Another of the children in the pilot study group had considered another downside of technology:

> That's the bad bit about computers because sometimes they can keep you from going out into the sun and when you go on X-Boxes and PlayStations as well. They can make you lazy (T – p. 16 lines 19-21).

For some time it has been considered that extended screen time can have a negative impact on children's speech and language (Zimmerman et al., 2007, Byeon & Hong, 2015). The Korean study (Byeon & Hong, 2015) indicated that for toddlers who watch over three hours of television a day the negative impact was three times greater (and increased proportionately

with increased viewing time). It appears that studies investigating the impact of screen time generally are now building up their evidence base, and further research may be appropriate to consider what negative impacts there may be for children who are allowed to overuse their smartphones, tablets and laptop computers.

A recent survey from Common Sense Media (reported by BBC World News, 4th Nov 2015) surveyed almost 3,000 young people in the United States between eight and eighteen years old. They drew attention to the fact that 45% of those surveyed use social media every day, but that only 10% of those stated that social media was the favourite online activity. The research seemed to indicate that these young people preferred to use their online devices for either listening to music (66%) or watching TV online instead (58%).

There are additional areas of potential concern when it comes to young people and social media use. Research has stated that social media use in already vulnerable students (who may be suffering from mental health difficulties) may help to spread certain harmful practices:

> Ideas also spread through "social contagion." Social Contagion Theory argues that ideas or behaviours can spread through populations unintentionally, just as a disease or illness might. Individuals can "catch" a new attitude or behaviour from the people – or media – with whom they come into contact (Transue & Whitlock, 2010, p.1).

There have already been studies which directly link the over-use of social media with increased risks of depression and other psychiatric disorders (Lin et al., 2016, Andreassen et al., 2016). Andreassen et al. argue that:

> Symptoms of underlying psychiatric disorders are associated with addictive use of technology (p.19).

Lin et al. studied 1,787 randomly sampled US adults between the ages of 19-32 and found that those who checked social media most often were 2.7 times more likely to develop depression. However, it is important to note that this research was not part of a longitudinal health study and only considered social media use at the 18 month follow-up stage (because social media

questions were not asked at baseline). Lin et al. acknowledge that "published studies on the association between social media use and depression have yielded mixed results" (p.2) and state that assessing social media use based on self-report scales could prove to be significantly limiting.

Nevertheless, in their recommendations, Lin et al. highlight the importance of:

> Clinicians interacting with young adults to recognise the important balance to be struck in encouraging potential positive use, but re-directing from problematic use (p.6).

More recent studies are now beginning to explore the relationship between technology use and addictions (Andreassen et al., 2016) and although a great deal of the evidence at the moment appears to be correlational in nature, it does seem as though there could (in some people) be negative consequences arising from the over use of social media.

5.6 Technology Cannot Replace Pedagogy

There are significant variations in the way that teachers across the UK are currently harnessing technology in their classrooms. It could be proposed that the biggest investment should not be in the computer programmes or hardware that will make this possible, but in the staff and school leadership teams themselves. Spires et al. (2011) argued:

> Teacher pedagogy appears to be the most critical factor in ensuring that one-to-one initiatives (technology) are implemented in effective ways, yet teachers tend to integrate computers differently based on available time and preparation with likewise sporadic gains in achievement (Spires et al., 2011, p. 70).

To clarify, it is not the tools that can make the real difference, but the informed and competent use of them by good staff via a developing pedagogy. As Weston and Bain (2010) explain:

> Books replaced by webpages, paper report cards with student information systems, chalkboards with interactive whiteboards, and filing cabinets with electronic databases. None of these equivalents addresses the core activity of teaching and

> learning. Each merely automates the practices of the prevailing paradigm (Weston & Bain, 2010, p.10).

It is clear that to focus narrowly on technology at the expense of investment in pedagogy would be to miss the most important learning outcomes from this study. That is teachers may no longer need to be the gatekeepers of knowledge. It is proposed that technology in classrooms is unhelpful without skilled staff to find the most productive (and safe) ways to harness it.

Spires et al. (2012) explored their view that there must now be a drive to empower teachers to become facilitators of knowledge rather than use a didactic model of imparting knowledge to children. Skilled teachers of the future will be able to improve on what children can do with the knowledge they find, not on what they know. In the conclusion to their 2012 paper they argue:

> Teachers take on the challenge of acquiring the new global skill set themselves and then being co-learners with their students within the new learning ecology of the classroom….the result of this transformation needs to be a type of educational experience and expertise that will not only support but also ignite participation in (and leadership for) an idea-driven, creative economy (Spires et al., 2012, p. 249).

It is proposed that teachers have always been, and always will be, the key to student success. Strong partnership working with families and community will mean that conditions for learning are optimal and each stakeholder should be able to make increased contributions. Pavlik (2015) believes that:

> Education should no longer be about going to school or class. In the third paradigm, education can become a process of shared discovery and collaborative and creative problem solving and innovation. It can be available universally for a variety of people at an affordable cost (Pavlik, 2015, p.122).

As more and more children have access to technology at their fingertips, the conditions of the traditional top-down classroom (where the teachers speaks and the children listen) have changed and global learning opportunities exist that simply were not there for previous generations:

> The constant access to tools and rich information in the 1:1 classroom can create what we refer to as a new learning ecology, in which information and ideas are abundant, in flux, and constantly evolving. Destabilization of information and knowledge is a critical factor within the contemporary learning environment, creating opportunities for new ways for students to be engaged and educated (Spires et al., 2012, p.234).

The 'new learning ecology' depends on four conditions:

- immediate and constant access to information and a global community;
- intensity, relevance and personalization of learning;
- highly developed teacher capabilities; and
- highly developed student dispositions. (Spires et al., 2012).

If school Twitter use fulfils the above criteria, then it is possible that using it within primary classrooms can help develop pupil learning, engagement with families and the establishment of virtual school communities.

Chapter 6: A Reflexive Account of the Research

This section begins with a statement which explains the original contribution to knowledge this study has made. It then outlines the justification for the research and considers its relevance to children, young people, their families and schools (reflecting on the implications for educational psychologists). Following this, subject sample and possible researcher bias are explored, along with a consideration of possible alternative methodology and suggestions and recommendations for further study.

6.1 Original Contribution to Knowledge

As described in the literature review, there are several ways in which this study makes an original contribution to knowledge. Researchers are now beginning to reflect on the advantages and disadvantages of using web based technologies in education. Some research has already outlined the negative impact that technology and screen based addiction can have on the developing minds of children and young people (Lin et al., 2016; Andreassen at al., 2016; Zimmerman et al., 2007; Turkle, 2011; Byeon & Hong, 2015; Palmer, 2015). Conversely, there have been a number of studies which highlight the benefits that social media can have on the engagement of students studying in higher education settings (Greenlaw, 2012, Holtermann, 2012 & Allen et al., 2014) and on staff who may benefit from a variety of continuing professional development opportunities through using social media (Dixon, 2012).

An Internet search of recently written doctoral thesis papers indicated that there have only been four doctoral papers uploaded in the past two years which have included the use of social media in some way and none of these was based within the discipline of educational psychology. One Doctor of Philosophy and Educational Technology study Mix-Yard, 2015, Waldon University, USA) was identified which considers the use of technology and social

media in motivating at-risk high school students to complete high school. Mix-Yard in her conclusion argues that:

> Social media is a ubiquitous part of our society. Harnessing its potential to create positive influences on student learning goals could provide the impetus for school success and increase high school graduation rates. Allowing students the use of their most familiar and accessible technology, the smartphone, could provide an additional tool promoting success. Educational professionals must embrace social media as a benefit rather than a risk. Efforts should be made to incorporate effective and appropriate social media tools into the educational setting to enhance communication, provide information, and create connections to peers and experts (Mix-Yard, 2015, p.256).

However, although research rapidly continues within the higher education and secondary age group, there has been little enquiry into the positive impacts that social media use can bring to primary school settings (children between the ages of 5-11 yrs). This particular research considers the perceptions of those using Twitter in primary school, not only examining the thoughts of the children involved, but also those of parents, teachers and school staff. It is argued that this thesis is original within the field of educational psychology for this reason, and although other research has focussed on the general use of social media, examining the specifics of Twitter has not yet been explored. It is argued that examining the perceptions of younger children may lead academics to conduct further research into other possible ways in which social media could be useful (e.g., the use of social media to raise attainment scores, or for increasing social and emotional well-being in classes or as a way to measure the value added progress for whole school improvement).

6.2 Justification of the Study and Relevance to the Role of the Educational Psychologist (EP)

It was important that, because of the current paucity of research in this area, this study did not seek qualitative data from the participants, but instead focussed on exploring themes. However, it may be useful to take cognitive, attainment or motivational measurements at the

beginning and end of social media interventions as this research area broadens over the next few years.

One of the roles of the educational psychologist (EP) is to conduct research and investigate strategies for supporting children and young people when they experiences difficulties in education. Such research projects may involve finding new social media interventions to improving academic outcomes, teaching and learning and social and emotional well-being. It is important that EPs continue to find new ways to engage children and young people and gain their opinions as to how they perceive their education.

Social media occupies a place of great importance in the lives of children and young people (emarketer.com, 2013) and researchers such as Prensky (2005 & 2006) are adamant that using familiar internet based tools is a way to connect directly with them. Many schools now have comprehensive online policies and it would be remiss for educational psychologists to remain unaware of the importance of these to the safe functioning of schools and to the safety of individual pupils.

This study has highlighted the prominence of considering the social settings and systems around individual children. Parents need (and want) to be highly involved with their children's education (Ryan, 2008) and it appears that in order for schools to maintain good links between families and schools, they could harness the power of social media based communication.

Educational psychologists routinely use an eco-systemic approach when working with students and families and social media could be seen as an important tool to allow children and young people to participate actively in decisions which might affect them.

6.3 Participant Sample and Possible Influence on Results

The subject sample in this research consisted of children from two mainstream primary schools in the South Wales area. Both primary schools had members of staff who had taken responsibility for overseeing the use of Twitter in their school and who were enthusiastic about describing the benefits of Twitter to other members of staff. This meant that the staff interviewed in both schools tended to have a positive bias about using information technology with their classes. In the main research phase, all staff were familiar with Twitter and were competent with the process of Tweeting.

The primary school used in the pilot study allowed the research to begin the project by setting up the Twitter account. Therefore, for the main research phase, it may have been advantageous to find another school in which to replicate this study with a bigger group of pupils.

However, there were many benefits identified in finding a school which already had an account up and running; for example staff were clear about what they were using their account for, the majority of the school's parents knew about the account and were already 'signed up' as active participants, and they were able to provide the researcher with a much broader range of interviewees. The importance of true 'informed consent' was also considered to be a vital part of the project and it seemed that attempting to set this up in a school unfamiliar with using Twitter might have been too much of a practical hindrance.

The leadership and senior management team (SMT) of the main study phase school were considered to be important in influencing the effectiveness of this study. The teacher responsible for helping to organise the project in that school was part of the SMT and therefore may have had a positive influence on the staff and children. A recent study has shown that, where there is a strong leadership team and drive towards embracing new technology, there are more positive results for students and staff (Shapley et al., 2010).

It is also important to highlight that the schools used in this research were from two very different types of socio-economic areas. The pilot study was conducted in a school with 35% of its population entitled to free school meals (FSM). The other primary school had fewer than 2% of children entitled to FSM. A member of SMT in the second school commented that almost all of the children in his school had regular access to tablet technology. It might have been advantageous to collect initial data on the available 'at home' technology in both schools in order to consider issues of familiarity and ease of use for the different groups of pupils and parents.

In 2014 the main research phase school was judged by Estyn to be an excellent school with excellent prospects for improvement and this *may* have influenced results obtained from the participants. The school used in the second phase of the study has a greater proportion of working parents who may have tended to use Twitter more frequently to stay in touch whilst at work and they also may have a larger proportion of parental income to spend on technological devices. As a result of the above, it could be that pupils in the second school might have had more access to Twitter and more motivation to communicate with their parents using it.

Mostafa (2015) indirectly refers to this type of selection bias in the paper 'Engaging Students via Social Media: Is it worth the effort?' It describes a particular set of participants who are likely to find social media more engaging because they already have a "customer readiness for co-creation" (p.145). In other words, they are already excited by and engaged with social media use, therefore it is more likely that positive outcomes to any learning initiative using social media are likely to follow. The study of the students and parents in the main phase of this project may well have fallen into such a category.

In the conclusion to the paper by Mostafa (2015) it is proposed that in order for students to find social media use in the classroom useful it must be introduced within a culture of true collaboration:

> The effects of students' social media engagement on perceived value depends on students' readiness for value co-creation (Mostafa, 2015, p.155).

However, in this small study, it appeared to be not only the students who were ready to participate, but the teaching staff and the parents too.

6.4 Researcher Bias

There are many considerations to plan for when conducting an inquiry in which the researcher plays an active role. It is well known that both the behaviour of the researcher and the expectations of the participants can influence the results of psychological studies (Valentine, 1992; Weisstein, 1993).

At the planning stages of this project the researcher was keen to create a study that had the potential to involve pupils and staff alike. Informal monitoring of the use of social media in schools had already taken place via reading of articles from newspapers and other popular media. Informal conversations about children's use of social media then took place; this included discussions with several parents with whom the researcher was personally familiar as well as with two senior members of the local authority education service. From these conversations it was hypothesised that there would be enough interest in the subject to make such a project viable.

The researcher began project planning by signing up for a Twitter account and using it to discover what schools were using their media accounts for. There is no question that the collaborative nature of Twitter and the positive interactions that the researcher experienced helped to positively frame thinking around the use of social media in education.

Early in 2013, the researcher had a particularly engaging discussion with a parent who had begun to use her son's social media account to interact with his school and, as a result, the direction of the research became more formalised in the mind of the researcher. The parent was adamant that, as a full-time working mum, the school's Twitter account had allowed her opportunities to actually 'see inside' her son's classroom and for her to be kept up to date as to what her son was working on in school on a daily basis. She informed the researcher that her husband worked away a great deal of the time and, that he too, was finding the Twitter account extremely useful in remaining connected with his son. As a result of the school Twitter account, both parents had informally reported that they felt more involved in their children's education.

6.5 Design Considerations – School Views and Influence

Each of the phases in this research employed data from three separate participant groups to triangulate the evidence (parents, pupils and teachers). Although there are benefits to this approach to research (e.g., speed and ease of data collection), there are various criticisms of this approach and a design which involved a control group (who did not post Tweets) is likely to have yielded valuable data.

In further explorations it may be possible to collect data from two classes of participants, one of which was able to contribute directly to the school account and one in which the teacher remained in control of the content. However, after a discussion with the second school involved it was felt that the children who might not get the opportunity to take part may have felt disappointed, and this was something that the school was keen to avoid. Further research in this area is likely to benefit from an approach using two matched participant groups, which would also allow the researchers to examine the effects of pupil control on their levels of

engagement. Standardised tools which could accurately measure pupil engagement at the beginning and end of the research would have also been extremely helpful.

The main research phase school was also keen to involve all year groups from the school, although comments were made by teachers who felt that the infant aged children might not have participated as often as older children. In general, staff in the younger classes felt that their pupils needed more guidance on what sorts of things to include in their Tweets and that they had to spend more time in supervising them. Due to this, further studies may wish to focus their projects on the thoughts and opinions of children of different ages.

6.6 Recommendations for Further Study

It is hoped that this small research project set in a mainstream environment will generate further explorations of the potential that 21st century technology (particularly social media) has to influence teaching and learning both in the UK and abroad.

Research that is based on the use of technology in education risks becoming outdated the moment it is published. There are however, several ways in which the researcher believes that similar projects could be enhanced in the future, as follows.

- It might be important to investigate how different social media platforms are used in schools and whether there are major differences in the ways in which parents, staff and pupils communicate according to which social media tool they choose.

- A larger population of children could be studied over a much longer period (possibly one academic year) to measure longitudinal impact and to investigate individual differences in reactions to / engagement with the project.

- Engagement / motivation measures could be taken from children, parents and staff at the beginning and end of a similar project. In this way there would be additional quantitative data to analyse, providing a more detailed statistical analysis. Pre and post-intervention data would add an impact measure to the research.

- There may also be some benefit in exploring how social media could be used to help a specific project. For example, could social media help vulnerable pupils with their key stage transition (e.g., between Key Stage 2 and 3) or could a social media project be used to motivate and engage particularly isolated groups of pupils? (e.g., pupils with particular learning difficulties or those who attend an off-site pupil referral unit for pupils with behavioural needs).

- A mainstream project could allow children to have individual responsibility for Tweeting for a period of one week each during the school year, which would allow all of the children in an average sized class to participate equally. It would also ensure that children do not become overly focused on the Twitter account at the expense of taking part in other valuable educational activities.

- Schools who have existing Twitter accounts could be made aware of the findings of this project in order that they can best decide how to continue supporting their parents, pupils and staff.

- Schools who have not yet adopted the use of social media could be made aware of the potential benefits via local authority briefings (as part of the e-curriculum or internet safety training).

- School leadership teams and the staff who teach children are likely to need more training in the implications of social media use and also in the ways in which they can continue to engage with rapidly changing digital consumers (the children).

- Schools may wish to re-consider their e-safety, I.T. and digital communication policies in light of some of the issues discussed in this research.

Chapter 7: Conclusion

7.1 Positive Outcomes of the Study

There have been many positive aspects to this research. The school which took part in the second phase of the research has considered whether it will hand over the responsibility for Tweeting to the pupils on a more regular basis. The school was pleasantly surprised by the maturity of the children who contributed and hope that social media use will become an embedded part of classroom practice in the future. Governors were presented with an executive summary of the project to use as they saw fit. Staff also felt that the project might be able to make a contribution to the school's evaluation of its digital policy and practices.

The school also felt that the parental questionnaire responses showed support for the ways in which the school communicates with its parents and community. It now wishes to explore whether this can be enhanced by exploring greater digital freedom in the next few years. The study also gave the senior management team of the school evidence to show governors that their communication systems with parents were used frequently, valued and that the purpose for which they set up their account (i.e., to share the learning of children) was valid.

Many parents who were involved in the study commented that Twitter has given them a rare insight in to what it is that their children actually do all day in school. It meant that they could arm themselves with knowledge that allowed them to participate in learning conversations and engage more actively in their child's educational progress.

Staff felt that they were able to communicate much more frequently with existing stakeholders. They also felt they were able to obtain individual points of view from the children who took part. They are keen to take this forward and to explore the ways in which more children can contribute and they hope for many more opportunities to connect the children with real audiences for their learning.

It is hoped that the contribution of this study to research on the use of social media in primary schools will be positive. It has highlighted important perceptions of the three main groups of users and has raised some interesting questions about how schools should communicate with parents and the wider community. It has also examined what the pupils themselves consider Twitter usage to be important and corroborated theories of parental engagement with student learning outcomes.

7.2 Conclusion

Using digital technology in schools is a complex topic and the use of social media to enhance learning in schools has been a little studied area of research (especially within the primary sector). The studies describing use of social media in education that do exist have predominantly been based in higher education or secondary environments, and some of these have shown cautiously positive results.

Although the findings reported in this project are embedded in the specifics of two individual schools in Wales, UK, this primary based exploratory study has illustrated that using social media in schools can have both costs and benefits.

If not supervised well (within thoughtfully planned policies of e-safety) children could be placed at risk and school / individual privacies might be breached. On the other hand, when undertaken in a safe and controlled way, it can be powerful, engaging and motivating. Social media use can establish connections that draw individuals and communities in and it can extend those networks outwards, sometimes on a global scale. This particular small scale project engaged the children that took part in it and helped the parents and teachers see what was important to their children on a day-to-day basis.

Educational psychologists help staff and pupils to deal with difficulties amidst the challenges of rapidly changing environments. EPs are likely to encounter issues such as online bullying, sexting and social media harassment more frequently and pupils will need the supporting adults to put their emotional and social wellbeing at the top of the priority list in order to safeguard them.

Educational professionals have a responsibility to connect with the children and young people that they work with, and communicate with them using a common language (as specified in the Draft New Code of Practice and Green Paper for Wales). Bray (2012) concludes:

> Combined with appropriate technology solutions, what is required now is for educators to take risks in the classroom and unlock the power of social media to create better learning environments for children and young people. Remember we need more classrooms that challenge traditional models and reverse the hierarchy, allow young people to communicate and collaborate, that provide authentic audience for children's work and exist within systems that are both open and transparent. The adoption of social media in our schools will help us on our journey (Bray, 2012, p.21).

For the researcher, this personal journey through the 'Twittersphere' has been a long and often multi-faceted one. It has illustrated how the connections that are made can be entertaining, enlightening and personally enriching. It has also highlighted the risks that everyone must be aware of in order to make the adoption of social media in schools safe for all those who choose to participate.

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Appendices

Appendix 1: Permission Letters

Dear Headteacher,

I am a postgraduate researcher at the School of Psychology, Cardiff University. As part of my doctoral qualification, I am carrying out a project on how Twitter might help to motivate pupils and engage their parents more fully in their child's education. I am writing to enquire whether you would be willing to participate in this research.

In order for this project to go ahead, I would like to ask for your permission to help 9 pupils contribute to the school Twitter account for one half term during 2015.

At the end of the term the pupils will be asked to have a 30 minute individual interview with me about how they feel the project went.

The children who take part will be asked to comment on such things as:

- what they think about the use of social media in schools generally,
- whether they enjoyed contributing to the account,
- what it was like to have their parents read their Tweets,
- whether it helped to increase their motivation for school,
- whether it helped them to feel more confident.

I also hope to conduct a semi-structured interview with their class teacher/s and individual interviews with the parents. All of these discussions will be digitally recorded and all data will be confidential and anonymised within 2 weeks of collection.

At the beginning of the project, pupils will be given an information sheet about how Twitter works, and advice on how to maintain online safety whilst taking part in the project. The project will be fully explained to them and they will be allowed to ask questions *before* they sign their consent forms. I will also be providing each parent with a leaflet on the safe use of social networking sites and other relevant information about e-safety and social media throughout the project.

As an additional part of the project, questionnaires about the usefulness of websites/social media in education will be administered to as many parents as possible.

To maintain confidentiality, the collated anonymous data will be stored on my private computer which is password protected and is not linked to any outside server. Original data will be stored within a locked cupboard in a secure council building. The School of Psychology Child Protection Procedures and All Wales Child Protection Procedures will be followed in the case of any suspected abuse or harm. A statement will be read and given to the children taking part in order to explain the 'limits of confidentiality'.

After the data has been transcribed & collated, original transcripts will be destroyed within 12 months of the end of the project. The school and all participants will be anonymous in the final write up.

Individual participants may ask to withdraw from the project at any time, up until the point where all data is collected and anonymised (2 weeks after collection). Any pupils or families who do not wish to take part in this project directly will still be able to follow the school account and read the children's Tweets.

A de-briefing sheet will be issued on completion of the project for all participants. This sheet will mention the fact that the final project will be written up as a doctoral thesis and may, at some point, become a published research paper.

Many thanks in advance for your consideration of this project, please do not hesitate to contact me should you wish to discuss this further.

Samantha O'Shaughnessy MEd, MSc, CPsychol (Educational Psychologist)

FAO: Educational Psychologist – Twitter Project

(Head Teacher slip)

Please sign below to show you have read and given your consent for the activities as described in the above letter. Then tear off this slip & return to Mr X.

Name: (please print)

Signature:

Date:

Dear Class Teacher,

I am a postgraduate researcher at the School of Psychology, Cardiff University. As part of my doctoral qualification, I am carrying out a project on how Twitter might help to motivate pupils and engage their parents more fully in their child's education. I am writing to enquire whether you would be willing to participate in this research.

In order for this project to go ahead, I would like to ask you to help supervise the pupils engaging in this project for one half term during 2015.

At the end of the term, the pupils will be asked to have a 30 minute individual interview with me about how they feel the project went.

The children will be asked questions such as whether they enjoyed contributing to the account, what it was like to have their parents read their 'Tweets' and whether it helped to increase their motivation for school. They will also be asked about their opinions on the use of social media in schools generally.

I would also like you to express your opinions via a semi-structured interview. During the interview, you may wish to comment on such things as:

- what you think about the use of social media in schools generally,
- whether you think Twitter could be a useful motivation tool in schools,
- whether it might help pupils become more involved in school life,
- whether it might help individual levels of confidence,
- whether it might help parents to feel more engaged in their child's education

The interview will be digitally recorded & stored confidentially within a locked cupboard in a secure Council building. Your data will be anonymised within 2 weeks of the interview. Any of your comments which appear in the final write up will be completely anonymous and you do not have to answer any question asked by myself that you do not wish to.

At the beginning of the project, pupils will be given an information sheet about how Twitter works, and advice on how to maintain online safety whilst taking part in the project. The project will be fully explained to them and they will be allowed to ask questions *before* they sign their consent forms. I will also be providing each parent with a leaflet on the safe use of social networking sites.

As an additional part of the project, questionnaires about the usefulness of websites/social media in education will be administered to as many parents as possible.

To ensure the safety of the children, the Cardiff University Child Protection Procedures and All Wales Child Protection Procedures will be followed and a statement will be read and given to the children taking part in order to explain the 'limits of confidentiality'.

After the data has been transcribed & collated, original transcripts will be destroyed within 12 months of the end of the project. The school and all participants will be anonymous in the final write up.

Individual participants may ask to withdraw from the project at any time, up until the point where all data is collected and anonymised. Any pupils or families who do not wish to take part in this project directly will still be able to follow the school account and read the children's Tweets.

A de-briefing sheet will be issued on completion of the project for all participants. This sheet will mention the fact that the final project will be written up as a doctoral thesis and may, at some point, become a published research paper.

Many thanks in advance for your consideration of this project, please do not hesitate to contact me via Mr X should you wish to discuss this further.

Samantha O'Shaughnessy MEd, MSc, CPsychol (Educational Psychologist)

FAO: Educational Psychologist – Twitter Project

(class teacher slip)

Please sign below to show you have read and given your consent for the activities as described in the above letter. Then tear off this slip & return to Mr X.

Name: (please print)

Signature:

Date:

Dear Parent / Carer,

I am a postgraduate researcher at the School of Psychology, Cardiff University. As part of my doctoral qualification, I am carrying out a project on how Twitter might help to motivate pupils and engage their parents more fully in their child's education. I am writing to ask whether you would be willing to take part.

Your child will have the opportunity to contribute 'Tweets' (with help from the class teacher and myself) to the school Twitter account for one half term during 2015.

At the end of term, the pupils will be asked to have a discussion with me about how they feel the project went. This will happen in pairs so the children feel comfortable.

The children will be asked questions such as whether they enjoyed contributing to the account, what it was like to have their families and friends read their 'Tweets' and whether it helped to increase their motivation for school. They will also be asked about their opinions on the use of social media in schools generally.

At the end I would also like you to have a 30 minute discussion with me about the project - you may wish to comment on such things as:

- what you think about the use of social media generally in schools,
- whether you think Twitter could be a useful motivation tool in schools,
- whether it might help pupils become more involved in school life,
- whether it might help individual levels of confidence,
- whether it might help parents to feel more engaged in their child's education.

Your discussion will be digitally recorded and stored confidentially within a locked cupboard within a secure Council building. Comments from all participants will be anonymised. You do not have to answer any question asked by myself that you do not wish to and all original data will be destroyed within 12 months.

You may ask to withdraw you and/or your child from the project at any time, up until the point where all data is collected and anonymised. Any pupils or families who do not wish to take part in this project directly will still be able to follow the school account and read the children's Tweets.

For your information I am enclosing a fact sheet which contains more details about Twitter use and a Childnet leaflet which contains guidance about the safe use of social networking sites.

Please do not hesitate to contact me or Mr X so that we can answer any questions that you might have. We can also provide you with the contact address of Cardiff University School of Psychology and the Council Education Department in the case of complaint.

Many thanks in advance,

Samantha O'Shaughnessy (Educational Psychologist)

FAO: Educational Psychologist – Twitter Project

(parent/carer slip)

Please sign below to show you have read the above letter and give your consent for your child to help to contribute to the school Twitter account.

Then tear off this slip & return to Mr X.

Name: (please print)

Parent of: (please print)

Signature:

Date:

Dear Pupil

My name is Samantha and I am a student at Cardiff University. As part of my work I am carrying out a project about using 'Twitter' in schools, and I was wondering whether you would like to help me?

Twitter is a bit like a giant online notice board where you can tell everyone what you have been doing in school. The purpose of the project is to see if posting short comments (known as 'Tweets') to the school Twitter account can help you to:

1) Feel more motivated / confident about participating in learning.
2) Talk to the people around you.
3) Join in with more things in school.
4) Tell your parents / family / friends about what you have been doing in school and get them more interested.

The teachers and I will help you to decide what to 'Tweet', this might include taking photos of good work that you or others have done, commenting on what the class has done that day, or Tweeting about other school events (e.g., sports, shows, class trips).

At the end of our project, I would like you to tell me what you thought about the Twitter project. The discussion will take place in pairs and should last about 30 minutes and will be recorded. To keep your answers safe, the recording (and its typed-up version) will be stored securely in a locked cupboard - after 2 weeks I will make your comments anonymous. Any information you give me may be used to explain to the University how well the project has gone, but your name will not be mentioned at all. After the project has finished, your original comments will be destroyed.

If you are unhappy, you may ask to leave the project at any time (up to 2 weeks after completion of the project). Your teachers and I will explain the project in full to you before we start and we will also talk to you about how to keep yourself safe whilst using Twitter and other social media.

If you would like to help me with this project please sign the slip below.

Thank you very much!

Samantha O'Shaughnessy (Cardiff University)

FAO: Educational Psychologist – Twitter Project

(pupil slip)

Please sign below to show you have read this letter and want to help us post Tweets to the school account. Then tear off this slip & return it to your teacher or Mr X.

Name: (please print in capitals)

Signature:

Date:

Appendix 2: Head Teacher/Governor & LA Project Information Sheet

Twitter - Postgraduate Research Project

About Me:

I have been working as an Educational Psychologist with the Borough Council for the past 12 years. Prior to that, I was a secondary school teacher and a nursery worker in Hampshire and Wiltshire. In total, I have over 20 years' experience in working with children from 0-19 years of age and their families.

The Project's Aims:

The project hopes that by enabling children to contribute to the school Twitter account they will want to talk to their parents and carers more about what they have been doing in school and that parents and carers will be more interested in their child's education. It also aims to raise individual levels of engagement in classroom activities and may also possibly impact on pupil confidence.

Why Choose Twitter?

It's *extremely popular*! In 2012 Twitter had approximately 500 million active users and generated approximately 340 million Tweets a day in over 20 languages (Twitter.com, 2012).

Twitter is now *instantly recognisable* by young people in the UK. Extensive TV, radio and celebrity usage has contributed to this massively over the past 4 years.

Twitter gives young people a voice that can be heard by a *real audience*. They can publish links to, or photos of, their work instantly; and parents/carers will be able to read in *real* time what their child is doing in school. Staff involved will be able to give immediate, meaningful and genuine feedback as the children take part (which research has shown is crucial in motivating and encouraging children).

How will we Keep the Pupils Safe Online?

E-safety is absolutely paramount. As adults we have a direct responsibility to understand how pupils use social media, keep up with what our children are using the internet for, and to teach them about e-safety:

Children and young people still need support and guidance when it comes to managing their lives online and using the internet positively and safely

(Childnet.com, 2014)

Throughout the project both myself and the class teacher will talk to the pupils about online safety. The children will be monitored at all times and will only be allowed to post Tweets under the direct supervision of either their teacher or myself.

No personal details of the pupils taking part will be revealed (e.g., names, addresses, dates of births).

I will be distributing leaflets about e-safety and the safe use of social media for participant's information and I welcome questions about the project at any point.

What Child Protection Procedures are in Place?

The Cardiff University Child Protection Procedures and the All Wales Guidance will be followed. A statement will be read and given to the children taking part in the focus group session in order to explain the 'Limits of Confidentiality'.

Contact Details?

For more details on the Twitter project please contact:

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In case of complaint please contact:

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Appendix 3: Child Protection Procedures and 'Limits of Confidentiality'

The Cardiff University School of Psychology Child Protection Procedures and All Wales Guidance will be followed in the case of any suspected abuse or harm. A statement similar to the one below was read to the children taking part in the focus group session in order to explain the limits of confidentiality:

> *"Although most of what we talk about is private, there are three kinds of problems you might tell me about that we would have to talk about with other people. If I find out that someone has been seriously hurting or abusing you, I would have to tell the police or social care about it. If you tell me you have made plans to seriously hurt yourself, I would have to let your parents or carers know. If you tell me you have made a plan to seriously hurt someone else, I would have to warn that person. I would not be able to keep these problems just between you and me because the law says I can't. Do you understand that it's OK to talk about most things here but that these are three things we must talk about with other people?"*

Staying safe on Twitter

1. **Followers:** consider who you choose to accept as a follower on Twitter. Once you accept someone they are able to see your content. It's important to always remember that not everyone online is reliable and some people may lie about who they are.

2. **Privacy:** never give out personal information such as e-mail address, passwords, date of birth, phone numbers or addresses. We would recommend that you change your settings to 'private' so that you are only sharing with your real life friends and family.

3. **Think before you Tweet:** would you be happy for your head teacher or your grandparents to see all of the things you have Tweeted online? It is important to remember that once you post something online it is potentially there forever! Remember there have already been instances of people losing their jobs over something they have posted online. Criminal prosecutions can also occur.

4. **Meeting:** meeting someone you have only been in touch with online could be dangerous. Talk to someone else about who you would like to meet and only meet up with your parents' or carers' permission (making sure they can come with you). Always let someone know where you are and who you are with.

5. **Photos:** think carefully about the photos you choose to share online; do they give away a lot of information about you? Also keep in mind that photos can be easily copied, changed, shared and used illegally – would you want a future employee to see that photo? Only share a photo of someone else with their permission.

6. **Reporting:** Twitter has a reporting feature in place. If something or someone has broken the site's terms of use and are upsetting or bullying you, then you are able to make a report. All reports are anonymous and will be responded to promptly.

See link below for full resource:

http://esafety-adviser.com/Resources/Twitter%20for%20Twitchy%20Teachers.pdf

e-safety adviser

www.esafety-adviser.com

Twitter for Twitchy Teachers

(A common sense guide)

This guide is intended for schools or teachers considering or already using the social networking service, Twitter, in the school. It does in no way constitute legal advice and is to be used as a guide only.

This is version 1.0 of this document written on 1st July 2012. If you have comments or think anything else should be included please email me:

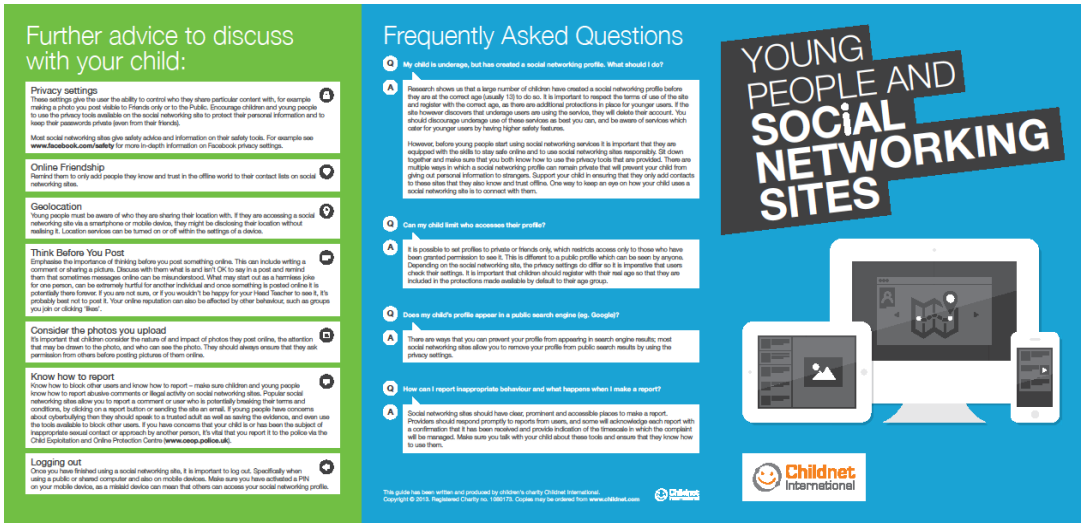
alan@esafety-adviser.com

Image Copyright: http://www.bitrebels.com/wp-content/uploads/2009/06/Twitter-Icon-2.jpg

Email: alan@esafety-adviser.com Twitter: @esafetyadviser

See link below for full resource:

http://www.childnet.com/ufiles/Young-people-and-social-networking-A.pdf



Further advice to discuss with your child:

Privacy settings
These settings give the user the ability to control who they share particular content with, for example making a photo you post visible to Friends only or to the Public. Encourage children and young people to use the privacy tools available on the social networking site to protect their personal information and to keep their passwords private (even from their friends).

Most social networking sites give safety advice and information on their safety tools. For example see **www.facebook.com/safety** for more in-depth information on Facebook privacy settings.

Online Friendship
Remind them to only add people they know and trust in the offline world to their contact lists on social networking sites.

Geolocation
Young people must be aware of who they are sharing their location with. If they are accessing a social networking site via a smartphone or mobile device, they might be disclosing their location without realising it. Location services can be turned on or off within the settings of a device.

Think Before You Post
Emphasise the importance of thinking before you post something online. This can include writing a comment or sharing a picture. Discuss with them what is and isn't OK to say in a post and remind them that sometimes messages online can be misunderstood. What may start out as a harmless joke for one person, can be extremely hurtful for another individual and once something is posted online it is potentially there forever. If you are not sure, or if you wouldn't be happy for your Head Teacher to see it, it's probably best not to post it. Your online reputation can also be affected by other behaviour, such as groups you join or clicking 'likes'.

Consider the photos you upload
It's important that children consider the nature of and impact of photos they post online, the attention that may be drawn to the photo, and who can see the photo. They should always ensure that they ask permission from others before posting pictures of them online.

Know how to report
Know how to block other users and know how to report – make sure children and young people know how to report abusive comments or illegal activity on social networking sites. Popular social networking sites allow you to report a comment or user who is potentially breaking their terms and conditions, by clicking on a report button or sending the site an email. If young people have concerns about cyberbullying then they should speak to a trusted adult as well as saving the evidence, and even use the tools available to block other users. If you have concerns that your child is or has been the subject of inappropriate sexual contact or approach by another person, it's vital that you report it to the police via the Child Exploitation and Online Protection Centre (**www.ceop.police.uk**).

Logging out
Once you have finished using a social networking site, it is important to log out. Specifically when using a public or shared computer and also on mobile devices. Make sure you have activated a PIN on your mobile device, as a mislaid device can mean that others can access your social networking profile.

Frequently Asked Questions

Q My child is underage, but has created a social networking profile. What should I do?

A Research shows us that a large number of children have created a social networking profile before they are at the correct age (usually 13) to do so. It is important to respect the terms of use of the site and register with the correct age, as there are additional protections in place for younger users. If the site however discovers that underage users are using the service, they will delete their account. You should discourage underage use of these services as best you can, and be aware of services which cater for younger users by having higher safety features.

However, before young people start using social networking services it is important that they are equipped with the skills to stay safe online and to use social networking sites responsibly. Sit down together and make sure that you both know how to use the privacy tools that are provided. There are multiple ways in which a social networking profile can remain private that will prevent your child from giving out personal information to strangers. Support your child in ensuring that they only add contacts to these sites that they also know and trust offline. One way to keep an eye on how your child uses a social networking site is to connect with them.

Q Can my child limit who accesses their profile?

A It is possible to set profiles to private or friends only, which restricts access only to those who have been granted permission to see it. This is different to a public profile which can be seen by anyone. Depending on the social networking site, the privacy settings do differ so it is imperative that users check their settings. It is important that children should register with their real age so that they are included in the protections made available by default to their age group.

Q Does my child's profile appear in a public search engine (eg. Google)?

A There are ways that you can prevent your profile from appearing in search engine results; most social networking sites allow you to remove your profile from public search results by using the privacy settings.

Q How can I report inappropriate behaviour and what happens when I make a report?

A Social networking sites should have clear, prominent and accessible places to make a report. Providers should respond promptly to reports from users, and some will acknowledge each report with a confirmation that it has been received and provide indication of the timescale in which the complaint will be managed. Make sure you talk with your child about these tools and ensure that they know how to use them.

YOUNG PEOPLE AND SOCIAL NETWORKING SITES

Childnet International

Appendix 5: School Questionnaire - 2015

(please circle answers as appropriate - Don't know can also = unsure / no opinion)

MALE / FEMALE

Years of children attending = R, 1, 2, 3, 4, 5, 6 (circle all that apply)

1. **Do you have a Twitter account?**

   Yes / No (if no, go to question 10)

2. **How often do you access your Twitter account?**

   More than once a day / once a day / several times a week /

   once a week / twice a month / once a month / less frequently / never

3. **What is your primary reason for using your Twitter account?**

4. **Did you know the school has its own Twitter account?**

   Yes / No (if no, go to question 14)

5. **Do you access the school Twitter account?**

   Yes / No (if no, go to question 14)

6. **If yes, how often do you access the school Twitter account?**

   More than once a day / once a day / several times a week / once a week

   twice a month / once a month / less frequently

7. **What is your primary reason for accessing the school Twitter account?**

8. **Do you think Twitter is an effective way for school to share the children's learning?**

   Yes / No / Don't know

9. **Did you know that each class has their own Twitter #hashtag to group their Tweets together?**

   Yes / No / Don't know

10. **Do you think children enjoy contributing to the school Twitter account?**

    Yes / No / Don't know

11. **Who do you think that the school Twitter account is *most* useful for?**

(circle 1st choice & then tick all others that apply):

Pupils / Parents / Other family members / Friends / Staff / The community / LA Reasons for 1st choice?

12. Would you have any concerns or worries about your child / children making a personal contribution to the school Twitter account? (if supervised)

Yes / No / Don't know (specify concern if necessary)

13. Any additional comments?

Thank you for your time, your answers will be extremely useful!

Appendix 6: Example discussion prompts for pilot study focus group participants

1. What do you think about the use of social media in schools generally?
2. What did you particularly enjoy about this project?
3. What did you find difficult/challenging about this project?
4. Do you think that Twitter is a good way to help pupils communicate with:
    a) Their parents / carers — Yes / No / Not sure
    b) Their friends — Yes / No / Not sure
    c) Their teachers — Yes / No / Not sure
    d) The community — Yes / No / Not sure
5. Did this project help you to feel more motivated towards (or engaged with) school?
6. Is there anything we could have done differently during this project?

Appendix 7: Example semi-structured interview prompts for main research phase participants

1. Tell me a bit about the technology you use in your classroom.
2. Is it better to teach our children about social media when they are young?
3. Tell me about how you teach e-safety in your classroom.
4. Do parents or children worry about e-safety?
5. How would you rate yourself as a user of social media from 0-5 (where 0=I never use it to 5=I'm a bit of an expert)
6. Which SM platforms do you use?
7. What are your main reasons for using SM?
8. What did your pupils think about the project?
9. Did it impact on pupil confidence or motivation?
10. Is it a good way for children to link / talk to to their friends and family?
11. Are there benefits to any other parts of the curriculum?
12. Does Twitter help to communicate school ethos?
13. Is there anything we could have done differently?

Appendix 8: De-brief sheet for Staff & Parents / Carers

Dear (name of participant)

Thank you very much for taking part in my project which was called 'Join the conversation: Using Twitter as a motivational project to increase parent and pupil engagement'.

This project has been part of a doctoral research programme with Cardiff University supervised by Dr Simon Claridge (School of Psychology).

The project involved asking pupils to contribute (via an adult) to the school Twitter account. The project examined whether Twitter might help to motivate pupils, and engage their parents more fully in their child's education.

Pupils from each class were asked to contribute to the Twitter account for one half term. They were asked to complete short pre and post project questionnaires; and both pupils and staff were asked to give verbal feedback (via discussion groups) on how they thought the project went.

The final write up will be submitted to Cardiff University and may, at some point, become a published research paper.

If you wish to read more about web-based technology and social media use in schools I will be happy to supply you with a list of references that I used for this project.

Thanks again!

Samantha O'Shaughnessy MEd, MSc, CPsychol (Educational Psychologist)

For more details on the Twitter project please contact:

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Appendix 9: De-brief sheet for Pupils

Dear (name of pupil)

Thank you very much for taking part in my project which was called 'Join the conversation: Using Twitter as a motivational project to increase parent and pupil engagement'.

This project has been carried out with Cardiff University and was looked after by Dr Simon Claridge (School of Psychology).

In the project I asked you to help Mrs 'X' to post Tweets to the school Twitter account. We thought about whether Twitter might help to motivate you, and get your parents more interested in what you do in school.

You were asked to contribute to the Twitter account for one half term. You completed short questionnaires and both pupils and staff were asked to talk to me in discussion groups about how they thought the project went.

The final write up will be handed in to Cardiff University and may, at some point, be published.

If you wish to learn more about the use of the internet and social media in schools then please discuss this with your teacher.

Thanks again for helping me!

Samantha O'Shaughnessy MEd, MSc, CPsychol (Educational Psychologist)

For more details on the Twitter project please contact:

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Appendix 10: Coding Grid / Themes

Code	Code Title	No. of times it occurred	Initial theme/s	Overarching theme/s
A1	Addiction	10	Risk & Mis-use	Cost / Benefit
A2	Adult Control	13	Supervise & Guide	Safety
A3	Audience	4	Parents, Community, Friends, Family, Staff & Pupils	Communication
A4	Accessibility	5	Staff, Pupils	Cost / Benefit Technology
B1	Bullying	4	Risk, Mis-use & Pupils	Cost / Benefit Communication
B2	Benefits	15	Confidence, Knowledge, Entertain, Socialise, Seek Info, Give Info, Motivation, Responsibility, Communication	Purpose & Cost / Benefit
C1	Class	5	Pupils	Communication
C2	Community	1	Community	Communication
C3	Celebration	2	Staff, Parents, Community, Friends, Pupils, Family	Communication
C4	CPD	2	Knowledge, Staff, Digital Leaders, Curriculum	Safety, Communication Technology
C5	Control	1	Supervise, Planning, Guiding, Teach Rules, Provide Tools	Safety
C6	Curriculum	5	Curriculum	Technology
C7	Costs	1	Mis-use	Cost / Benefit
C8	Confidence	1	Confidence	Cost / Benefit
C9	Communication	31	Communication	Cost / Benefit Communication
C10	Collaboration	6	Pupils, Staff, Parents	Cost / Benefit
C11	Comfort	2	Pupils	Cost / Benefit Technology
D1	Digital Divide	3	Digital Divide, Pupils, Parents, Family & Community	Technology
D2	Digital Leaders	1	Digital Leaders, Staff	Technology
E1	Engaging	4	Motivation	Cost / Benefit
E2	Entertainment	4	Entertain	Purpose
E3	Exciting	3	Motivation	Cost / Benefit
E4	E-Mail	6	Seek Info, Give Info & Communication	Cost / Benefit Purpose
F1P	Feedback (pos)	3	Assess, Knowledge, Parents, Staff, Community, Friends, Pupils & Family	Safety Communication
F1N	Feedback (neg)	0	Assess, Knowledge, Parents, Staff, Community, Friends, Pupils & Family	Safety Communication
F2	Friends	10	Friends, Socialise, Entertain	Purpose Communication

F3	Family	9	Family, Socialise, Entertain	Purpose Communication
F4	Favourited/Like	6	Give Info	Purpose
F5	Fear	4	Risk, Mis-use	Cost / Benefit
G1	Generation Divide	1	Digital Divide, Parents, Family & Community	Technology Communication
G2	Gaming	16	Entertain & Socialise	Purpose
G3	Google	1	Seek Info	Purpose
H1	Home/School Link	12	Parents & Staff	Communication
H2	Homework	8	Curriculum, Knowledge, Pupils, Planning & Assess	Technology, Knowledge, Safety Communication
H3	Hacking	8	Mis-use & Risk	Cost / Benefit Safety
I1	ICT	2	Curriculum, Digital Leaders	Technology
I2	Internet	10	Socialise, Entertain, Seek Info, Give Info, Curriculum, Guide, Supervise, Teach Rules, Provide Tools	Purpose, Technology Safety
I3	Individuals	1	Pupils	Communication
I4	Improvements	14	Planning, Assess, Risk & Digital Leaders	Technology, Safety & Cost / Benefit
I5	Inactivity	2	Mis-use, Risk	Cost / Benefit
I6	i-Pads	8	Pupils, Motivation, Teach, Entertain, Assess	Cost / Benefit Technology
I7	Involvement	6	Pupils, Parents, Curriculum, Supervise	Communication
K1	Knowledge	7	Knowledge, Give Info & Seek Info	Safety Purpose
L1	Life-Skills	2	Responsibility, Pupils & Parents	Cost / Benefit &Communication
L2	Learning	21	Curriculum, Knowledge, Staff, Pupils, Digital Leaders	Technology, Safety, Communication
L3	Literacy	8	Curriculum, Pupils, Assess, Teach Rules, Provide Tools, Confidence	Technology, Safety, Communication Cost / Benefit
M1	Motivation	2	Motivation	Cost / Benefit
M2	Moderation	1	Responsibility, Guiding, Supervise	Cost / Benefit Safety
M3	Mis-use	14	Mis-use & Risk	Cost / Benefit Safety
N1	News	9	Seek Info, Give Info & Communication	Purpose Cost / Benefit
N2	Naivety	1	Guiding, Supervise, Risk, Teach Rules, Provide Tools	Safety Cost / Benefit
N3	Novelty	2	Pupils, Mis-use, Risk, Time	Cost / Benefit

O1	Opt-out	1	Pupils	Communication
O2	Outdoor activity	11	Risk, Socialise, Entertain, Friends, Family	Cost / Benefit, Purpose Communication
O3	Ownership	5	Pupils	Cost / Benefit
P1	Photos	8	Provide Tools, Risk, Mis-use & Responsibility	Safety Cost / Benefit
P2	Pupils	1	Pupils	Communication
P3	Planning	1	Planning	Safety
P4	Procedures	2	Teach Rules, Provide Tools	Safety
P5	Purpose	5	Socialise, Entertain, Seek Info, Give Info	Purpose
P6	Privacy	9	Risk, Guide, Supervise, Parents, Staff	Safety Cost / Benefit
P7	Parents	11	Parents	Communication
P8	Permanence	1	Risk	Safety
P9	Profile	1	Risk	Safety
R1	Rules	4	Teach Rules, Provide Tools, Supervise, Guide	Safety Communication
R2	Reminders	9	Supervise, Guide, Teach Rules	Safety
R3	Responsibilities	5	Responsibility	Cost / Benefit
R4	Risk	16	Risk	Cost / Benefit
R5	Relationships	4	Friends, Family, Parents, Staff, Pupils	Communication
R6	Rota	5	Pupils, Responsibility, Supervise, Friends, Guide	Communication Cost / Benefit
S1	SM types	41	Communication	Cost / Benefit
S2	Staying ahead	3	Parents, Staff, Curriculum, Supervise & Guide	Technology, Communication Safety
S3	Supervision	7	Supervise	Safety
S4	School	2	Parents, Pupils & Staff	Communication
S5	Sharing	20	Parents, Pupils, Friends, Family, Community, Staff, Risk	Communication Cost / Benefit
S6	Socialising	18	Socialise	Purpose
S7	Security Filters	10	Guiding, Supervise, Responsibility, Teach Rules, Provide Tools, Parents, Staff	Safety Communication
S8	Safety	20	Risk, Responsibility, Mis-use, Parents, Staff, Confidence	Cost / Benefit, Communication Safety
S9	Secondary pupils	2	Pupils	Communication
S10	Secure groups	3	Planning, Supervise	Safety
T1	Tiredness	4	Motivation, Risk, Friends, Socialise	Communication, Purpose Cost / Benefit
T2	Time limits	8	Supervise, Guide, Assess, Teach Rules, Parents, Pupils	Safety Communication
T3	Technology	12	Digital Divide, Time, Curriculum	Technology Cost / Benefit

T3O	Tech overload	11	Risk, Supervise, Guide, Parents, Staff, Responsibility, Curriculum	Cost / Benefit, Safety, Communication Technology
T3G	Tech for girls	5	Pupils, Motivation	Communication Cost / Benefit
T4	Teaching/Teacher	16	Staff, Guiding , Supervise, Planning, Assess, Pupils	Safety, Communication
T5	Transition	1	Pupils	Communication
T6	Texts	3	Pupils, Socialise, Friends	Communication
V1	Videos	4	Provide Tools, Risk, Mis-use & Responsibility	Safety Cost / Benefit
V2	Pupil Voice	2	Responsibility, Motivation, Pupils, Give Info	Purpose Communication
W1	Welsh	2	Curriculum	Technology Purpose
W2	Whole Class	5	Pupils, Staff	Communication
W3	Whole School	1	Staff, Pupils, Parents	Communication
W4	Writing	6	Curriculum	Technology
W5	What's Happening	18	Give Info, Parents, Pupils, Staff	Purpose Communication
Y1	You Tube	3	Entertain, Pupils, Supervise	Safety Technology
Y2	Young children	2	Responsibility, Risk, Mis-use, Supervise, Parents	Safety Cost / Benefit

Appendix 11: Notation System used to transcribe interview data

The table below explains the notation system used when transcribing the interview data. It is based on the work of Braun & Clarke (2013).

Notation	**Explanation of use**
(.)	A short pause (i.e., one second or less)
((pause))	A long pause (i.e., a few seconds)
((long pause))	A very long pause (i.e., longer than a few seconds)
((laughs))	Signals the speaker laughing
((inaudible))	For speech or parts of the recording that is completely inaudible
()	When it is not clear what was said, single brackets are used to show best guess
erm/mm/mm-hm	Other sounds / utterances
‘’	Single quotation marks for reported speech
…	For speech that trails off
XX	For named people or places – anonymised for security of data

Appendix 12: Interview Transcript Example – Main Phase: Teacher 2

Me - okey doke (.) so it's XX isn't it?

NG – yes

Me - thanks for giving up your time today XX (.) right we are just going to have a little chat about the Twitter project (.) and some of your thoughts around the use of technology and social media in schools particularly ((pause) erm, can you tell me a bit about the technology you use with your class?

NG – yeah erm (.) probably the i-pads now we have got them

Me – ok (.)

NG - erm ((pause)) if you went back to last year (.) I would say the interactive white board

Me – ok (.)

NG – erm (.) but the i-pads are much more popular with my children now.

Me – yeah (.) what year do you teach?

NG - year 1 (.) so erm they are portable as well so you know with the interactive white board ((pause)) and also the interactive white board is quite old now (.)

Me – yeah (.)

NG - and with the interactive white board it's just stationery and like two people can play on it and that's it ((pause)) whereas with the i-pad you can get more children on it (.) and like they are able to move it around the classroom (.) like especially ((pause)) I'd say the quieter children particularly (.) I have got two erm children who are ((pause)) IEP children.

Me – ok (.)

NG - one in reception (.) cause I had them last year (.) who is an elective mute ((pause))

Me – ok (.)

NG - so she is quite quiet (.)

Me – yep (.)

NG - and then her friend ((pause)) she is actually leaving us to go to a speech unit as she can't speak.

Me – ok (.)

NG - they often take themselves off into the reading corner where it's a lot quieter (.) so they are still (.) erm accessing the IT (.)

Me – yep (.)

NG - but in their own environment (.) in like where they are more comfortable (.) whereas the other children who are a bit more competent might just stay on the carpet where it's a bit louder

Me – yep (.)

NG - but yeah that's probably i-pads are the most used (.) erm we have got an i-pod ((pause)) but when the i-pads came in that sort of became a little bit redundant to be honest ((pause))

Me – yeah yeah (.)

NG - So yeah (.)

Me – and they are all pretty skilled at using them aren't they now?

NG – yeah (.) I don't have to ((pause)) erm tell them very often (.) if anything they tell me.

Me – yeah ((laughs)) brilliant

NG – ((laughs))

Me – erm so is there an argument to say that thinking about social media now (.) is there (.) would there be some sort of an argument to say that the earlier you teach children about social media the better they are going to use it in future (.) or the more responsibly they use it in future or…?

NG – Definitely ((pause)) I think you know (.) there has still got to be an element of control ((pause)) with social media (.) erm I think you know ((pause)) we see (.) we see on the news how dangerous it can be ((pause)) but we also have to educate the children

Me – mm

NG - as to how dangerous it can be and (.) the earlier you start using it for a positive purpose (.) erm i.e., communicating learning or networking with other people (.) then I think it will set them up (.) to be able to use it more safely (.) I think there will always be a time in their life when they become a teenager or something where they start maybe experimenting in a way that we don't necessarily want them to (.) erm but I think the earlier we start it the more positive (.) erm results will be when they do use it later on in life as well

Me – yeah yeah (.) brilliant (.) ok (.) so tell me a bit about internet safety then, how do you (.) how do you teach that? Is it taught right the way through?

NG - yes (.) yeah from reception we've got little posters around the school in classrooms (.) erm and I think each teacher's different (.)

Me – yeah

NG - I have shown a video to my class (.) also XX erm often does whole school assemblies (.) erm whereby erm he's the last one he did was a big power point and with a video I think (.) and erm he basically just ((pause)) is it (.) oh I can't (.) is it VECOP?

Me – CE-OP

NG - CE-OP yeah (.) I have used that before (.) erm XX sort of discussed it slightly ((pause)) erm (.) but I think his was a more personalised power point for our children (.) But yeah (.) it's taught discreetly (.) more so lower down I would say (.) whereas I think there's full on lessons

Me – yep

NG - up here where they are probably accessing it a lot more ((pause))

Me – ok (.) brilliant (.) ok (.) do you think your children or your parents worry about e-safety at all?

NG – yeah I know my parents do (.) only a handful ((pause)) probably three or four (.) have commented during a parents evening (.) erm about Twitter (.) but the more we have used it as a school ((pause))

Me – yep

NG - I think the more they have become confident with it so…

Me – so it's more about their anxieties about the use of it isn't it?

NG – yeah (.) for example (.) the little boy who was doing it in my class XX (.) he originally wasn't allowed on Twitter ((pause)) erm (.) but she (.) her opinion on it (.)

completely turned around because she was able to see him do his learning while she was in work but also for his confidence (.)

Me – yeah

NG – the fact that he wasn't being Tweeted (.) and being able to show off his learning

Me – yeah

NG - was maybe having an impact (.) not in school (.) but she said that he was going home and saying 'I wanted to be Tweeted and I wanted to have my learning on Twitter' so yeah (.) I think there are some reservations but very few (.)

Me – yeah

NG - and as we use it more as a school there is definitely a more positive reaction from parents (.) than there are negative really

Me – brilliant (.) lovely (.) so (.) yourself on social media if you were to rate yourself as a user (.) where 0 was 'I never use it' and 5 'I am a bit of an expert user' where would you put yourself do you think?

NG – probably a 4 (.) I wouldn't say I am an expert but erm

Me – which ones do you use?

NG – Twitter (.) Facebook and Instagram.

Me – and what are the main reasons for your use of social media?

NG – erm (.) Facebook is really socialising really (.) but Twitter is more sort of networking (.) I do a lot (.) I follow a lot of things for school (.)

Me – Yeah

NG – and erm (.) just get lots of ideas and things from there really (.) so Twitter more erm (.) I dunno (.) for my own personal development (.) whereas Facebook is more social ((pause)) Instagram is totally social (.) I do follow a few things for school on Facebook because there is more and more coming on there now (.) but erm ((pause))

Me – yeah (.) is there a difference in Facebook and Twitter? The erm (.) is it easier to find stuff on Twitter than it is to find stuff on Facebook or are they pretty much the same?

NG – erm (.) do you know I would probably say they are the same (.) It depends what you are looking for really (.) I would say it is harder to find something with regards to work on Facebook (.)

Me – yeah

NG - than it is on Twitter ((pause)) erm (.) because you know if you are looking for a specific company for example (.) or erm (.) I don't know (.) the LEA (.) or whatever and they are there (.) they are on Twitter it's a little bit harder to find on Facebook.

Me – ok (.) brill (.) what do you think the pupils made of the project then? You said about erm XX?

NG – XX yeah (.) He loved it at first (.) erm ((pause)) but being his age of 5/6

Me – yep

NG - he did get fed up (.)

Me – yeah yeah yeah (.) he's too young isn't he?

NG - so I found the first week and a half (.) two weeks (.) maybe three (.) literally constant (.)

Me – ((laughs))

NG - like ‘can I Tweet, can I Tweet?’ along with others in the class (.) they said ‘can I Tweet with XX?’ (.) yes you can Tweet with XX (.) so I had a few that were erm able to Tweet together (.) I don’t know if you noticed one of them I was going to take it off but I thought I’d leave it (.) they did a selfie!

Me – yeah ((laughs))

NG – ((laughs)) but (.) I said its fine (.) but it was very sweet (.) it was their Tweet so (.)

Me – it was nice (.) it was a lovely photo (.)

NG – those two in particular loved it (.) but then it sort of died off (.) and if I (.) I’d either prompt him (.) or he’d be like ‘no I’m doing this now’ or ‘I’m doing that’ but I think that’s natural you know and (.) I think maybe if we were to (.) to do it again (.) maybe we’d start it at the beginning of the year

Me – yep

NG - when they are new to a class and you can embed it further.

Me – would you like to do some sort of rota thing? Where the kids each take a little turn or…?

NG – Yeah (.) and (.) I think then it would be more consistent (.)

Me – yep

NG - and I also think if you were promoting it (.) as well (.) so that maybe I’d say right ‘who is going to be our Tweeter this week?’ or whatever (.) and had the rota like you just said ((pause)) it would become more popular and it would be a lot more consistent with regards to Tweeting effectively then.

Me – yeah ok (.) would there be any impact on (.) sort of (.) because you talked about the little girls who who (.) or the little girl who couldn't talk and things (.) would there be a situation where you could see an increase in confidence ((pause)) or motivation or ((pause))?

NG – definitely motivation ((pause)) erm (.) even when XX used it (.) initially lots of children were saying 'if I do this can you Tweet me?' (.) so there was sort of a (.) well there was motivation to complete a task so that he could Tweet it (.) and share it with mum, dad or whoever at home (.) so that was lovely.

Me – so that was motivation from the other kids (.) ok (.) I see (.) that's interesting.

NG – Yeah so that was nice really (.) and erm (.) particularly (.) the less able then ((pause)) erm the only issue I see (.) or foresee happening (.) would be the ability to (.) Tweet independently for (.)

Me – little ones

NG - or those less able (.) XX is a very more able child erm (.) I have got sort of half and half (.) so half my class would be able to confidently do it (.) and erm (.) then half my class would probably (.) take the photo and then I would have to be doing it with them (.) you know (.) to be able to type it out.

Me – yes, at least you could always pair them up couldn't you? You could have two Tweeters in the room doing it together (.)

NG – yeah yeah yeah (.) yes definitely ((pause)) I think it would work.

Me – what about (.) erm (.) communicating with people outside school? Is it a good way to to (.) for the pupils to make links with their family and friends and…?

NG – yes definitely (.) they always say ‘oh I want mummy to see this’ so ‘can we put it on Twitter?’ (.) but not just family you know (.) like ((pause)) we did our erm (.) project this term as ‘being nice to eat you’

Me – yep

NG – and erm (.) and we did the ((pause)) Jamie Oliver’s Food Revolution (.) when we introduced it on the first day (.) there was five (.) six of my children knew who Jamie Oliver was ((pause)) then we then signed this petition ‘The Food Revolution’ and then erm (.) er Tweeted Jamie Oliver who then Tweeted us. Now my whole class know who Jamie Oliver is and they have probably been on the internet and they know his song (.) so (.) yeah it’s brilliant for communication with parents (.) but also other people (.)

Me – yeah

NG – yeah (.) ok he is sort of a celebrity (.) so I mean in general I think you know (.) that as children learn that actually it’s not just a tool for (.) taking photos ((pause)) it is actually a tool for communicating.

Me – did that excite them? The fact that they have contacted somebody real (.) somebody famous?

NG – they loved it (.) and in the Tweet back was erm ‘wow thank you class 3’ or something (.) so they were buzzing really (.) so yeah definitely (.) I think it’s an excellent communicating tool (.) and I think the more we use it for ((pause)) those purposes then they ((pause)) will understand that use rather than…

Me – cause a lot of the writing we do with kids in school and a lot of the things that they end up sort of doing (.) is not really for a real audience is it?

NG – no that’s right (.) and I think erm some of XX Tweets were quite simple (.) playing on the Lego (.) and other erm (.) Tweets (.) were a lot more educational (.) oh I am

trying to think ((pause)) and I can't remember (.) but for example he could of put (.) writing adjectives and similies (.) so they are thinking about their learning you know (.) and they are not just saying 'look at our writing' (.) they are having to explain to their parents at home or whoever it is (.) exactly what they are doing (.) I think what someone put (.) I don't know if it was XX or someone else (.) about being resourceful (.) because we use BLP language here (.) so it's just another way of embedding and reinforcing the language we use in school (.) and erm also for them to showcase their (.) learning really.

Me – and involving the parents and just drawing the parents in (.) isn't it?

NG – yeah

Me – brilliant (.) so the home school links then building up home school links is a good use of that?

NG – yeah definitely (.) yeah (.) I have got one dad erm (.) Mr XX (.) he's (.) often away (.) in Australia ((pause)) but on parent's evening he commented on how much he loves the Tweets because (.) you know (.) there are times when he's away for three weeks at a time and he can't see (.) the (.) his little boy (.) whereas he has only got to pick up his phone (.) or tablet (.) or whatever (.) and he's there (.) do you know what I mean?

Me – in real time as well isn't it?

NG - yeah it's there (.) and it's then so (.) it's definitely a brilliant home school link (.) particularly (.) and for those parents who work (.)

Me – yeah

NG - you know we have open days and not every parent can come ((pause)) they work (.) and in this school we have got a lot of parents that er (.) work in erm (.) jobs that

require lots of hours (.) and big commitments ((pause)) and you know (.) we had five or six parents that didn't come to (.) er (.) open day (.) so I Tweeted them instead.

Me – lovely

NG - obviously it got personalised about Class 3 and I made sure those children were in it ((pause))

Me – brilliant

NG - but erm (.) yeah it's definitely a brilliant home school link (.) I mean I have seen other schools use it for other purposes like letters and things like that (.) we didn't go down that route…

Me – no and I think that's what makes this account very different and very special actually.

NG – yeah we've focussed on the children (.) we've focussed on the learning (.) and I think it's worked well (.) erm (.) because the children almost have ownership of it. Ok, we are the ones Tweeting or (.) XX when we did the study you know (.) but they are saying 'can I Tweet this?' you know (.)

Me – this is my learning, I want to share it with you (.)

NG – yeah (.) so there's (.) you know so there is definite ownership from them and I think ((pause)) the route that we have gone down is a positive one.

Me – I think it is definitely the right way (.) rather than 'don't forget to bring your wellies on Wednesday' (.) that sort of thing!

NG – I don't necessarily think that's erm an effective use of Twitter at all (.) I mean that's not necessarily what Twitter's about anyway (.)

Me – no (.) I mean the parent's love the text service (.) and they say that's absolutely brilliant and that's how they want to get all their reminders (.)

NG – yeah (.) and now we do the e-mail service as well (.) we don't send letters out we e-mail them ((pause)) so if they've have got text (.) they've got e-mail (.) they've got the website (.) erm they don't really need ((pause)) they've got 'communicating with us' so they don't really need any more reminders and gosh it would be like…

Me – and this is something different isn't it?

NG – yeah yeah definitely

Me – brilliant (.) ok (.) what about benefits for literacy or any other parts of the curriculum (.) can you see any sort of (.) links to that?

NG – definitely links with literacy ((pause)) I mean just writing a Tweet for example (.) you know (.) for XX (.) the amount of times he said "is this right how do you spell this?" you know (.) so and not only that (.) like I said earlier (.) rather than just saying 'this is our writing' (.) they are unpicking what they are actually doing and the skill they are using (.) and also it has massive links with oracy (.) when erm the two (.) XX and one of the other boys were ((laughs)) you know Tweeting (.) you know the discussions that were going on (.)

Me – yeah

NG - were brilliant (.) erm (.) and that goes across all areas of learning cause if he's Tweeting Maths there's discussion between him and the person he's Tweeting (.) about what they are doing (.) so they are reinforcing what they are doing (.) they are thinking about what they are doing (.) erm so it's got definite (.) you know (.) curriculum links.

Me – brilliant (.) ok (.) erm (.) what about erm school ethos (.) is there something about your Twitter account particularly and school ethos (.) and getting the message out there about XX Primary?

NG – we are definitely all about learning (.) at XX (.) and think what I said just now you know (.) about Twitter (.) that encompasses that completely (.) erm everything that goes on there is the children (.) the learning (.) erm but also the achievements you know (.) we (.) we talk about being happy and safe at XX and I think the pictures of the learning of the achievements on there (.) show that that's what we are about ((pause)) I think anyway.

Me - yeah yeah (.) no it does it does (.) it's a really really lovely use of it and it is one of the best uses of the school Twitter account that I have seen to be honest.

NG – that's good (.) I do (.) I love it (.) I know there are times where I go home (.) as well (.) you know I don't (.) I can't say I Tweet straight away all the time (.) because sometimes it's impossible (.) erm…

Me – and you don't want to overload people either do you?

NG – no no

Me - or the kids (.) so often that it gets…?

NG – no exactly (.) but having said that (.) it's so easy((pause)) it takes five seconds to Tweet (.) and even if you did it when the children have left to go to lunch and taken the photo during the learning (.) and quickly Tweet it (.) it's not hours out of your day ((pause)) whereas often communicating with parents ((pause)) can take a long, long, time ((pause)) so it's a quick ((pause)) fix if you like. Erm (.) but yeah.

Me – yeah yeah yeah (.) brilliant, thank you very much! Ooh, is there anything that we could have done differently do you think (.) or (.) anything that you would like to do differently (.) or (.) anywhere that you would like to take the project?

NG – erm (.) I think like what you said earlier (.) possibly erm (.) rolling it out so that children have (.) a role each week (.) to have a go (.) because especially lower down erm ((pause)) because then (.) it gets them all involved and erm (.) it will stop them getting sort of a bit (.) no (.) he wasn't fed up with it (.) but he was just you know (.) wanting to go off and do other things (.) which is fine ((pause)) erm but it will just enable all children to become involved there really and have a go (.)

Me – thank you for your time (.) thank you very much.

NG – no worries.

Appendix 12: Parental Twitter Questionnaire 2016 – Collated responses

Question No.	Question	Responses							
1	Do you have a Twitter account?	Yes = 19	No = 12						
2	How often do you access your Twitter account?	More than once a day = 5	Once a day = 4	Several times a week = 3	Once a week = 2	Twice a month = 2	Once a month = 2	Less Frequently = 1	N/A = 12
3	What is your primary reason for using your Twitter account?	To share photos = 8	To see other's photos = 4	Business = 3	Social = 2	To nosy at other people = 1	To get the racing news = 1	N/A = 12	
4	Did you know the school has its own Twitter account?	Yes = 30	No = 1						
5	Do you access the school Twitter account?	Yes = 24	No = 7						
6	How often do you access the school Twitter account?	More than once a day = 4	Once a day = 4	Several times a week = 5	Once a week = 3	Twice a month = 2	Once a month = 3	Less Frequently = 2	N/A = 7
7	What is your primary reason for accessing the school Twitter account?	To see my child / children = 4	To see photos = 15	To get news = 5	N/A = 7				
8	Is Twitter an effective way to share the children's learning?	Yes = 25	No = 0	Don't know = 6					