Young People's Use of New Media through Communities of Practice

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ABSTRACT

This thesis explores how young people use new media in and out of school, in the Malaysian context, through communities of practice (COPs). A case study approach was used to investigate young people's digital practices in and out of school. This includes the relationships that are established between the contexts of in and out of school, and the identity formation that young people experience as they use new media in their everyday lives. In an attempt to unravel the complexity surrounding young people's use of new media in and out of school, this study captures insights from different groups of participants including the students, their peers, family members, as well as other individuals who use new media with them such as school leaders and teachers.

Despite the Malaysian government's continuous efforts to integrate technologies such as computers and the internet into teaching and learning, this study investigates why young people's use of new media in schools remains limited. The study found that teachers' attitudes and knowledge of new media influence the way digital technologies are integrated in the classroom. For this reason, it is essential to provide teachers with continuous professional development opportunities in order to ensure that their knowledge and skills in the use of new media are up-to-date and relevant in the constantly changing digital world. It is also important for the policy makers to reform the existing curriculum and, for educators to change their pedagogical approaches from teacher-centred classroom strategies to learner-centred approaches, for teachers and students to be able to fully optimise the potential of new media in teaching and learning.

Out of school, I found that the student participants' use of new media is generally richer, more varied and more frequent compared with their usage in school. The student participants generally have more frequent access to new media out of school as they engage in different practices such as playing computer games and using social media for an extended period of time. Even though the study found that the importance of the student participants' use of new media is often disregarded by their teachers, it revealed that they not only use digital technologies for leisure, but they also use these technologies to serve other important purposes including communication and socialising to meet personal needs, and to support their learning through communities of practice.

Through using the critical lens of Wenger's (1998) 'communities of practice' (COPs) as a theoretical frame, I found that there is a huge difference in terms of access to new media in school in comparison

with out of school, as well as differences in the way new media is used. There is a relationship established between in and out of school contexts regarding student participants' use of digital media. This relationship is established through the use of digital technologies that are considered as boundary objects and through brokering, as the student participants share their knowledge and, influence practices based on the new media experiences they gain from their participation in COPs. Relationships are also established across the boundaries of in and out of school through similar new media practices involving the student participants.

The findings from this study reaffirm Wenger's (1998) conception of identity, as the student participants' active participation in new media based communities, in and out of school, leads to the formation of their identities. For example, some students see themselves as 'geeks' and 'experts' in new media, as they frequently engage in practices such as gaming, downloading applications, music and videos and using social media. More importantly, it is through their active participation in shared new media practices, in and out of school, that student participants develop an understanding of the important roles of digital media in their everyday lives.

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DECLARATION

This thesis contains no material that has been accepted for the award of any other degree or diploma in any educational institution and, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Signature:

Nurzali Ismail

The research for this research received the approval of the Monash University Standing Committee for Ethical Research on Humans (Reference number: CF10/3113 - 2010001681)

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LIST OF ABBREVIATIONS

CCTV	Closed-circuit television
COD	Call of Duty
COP	Community of practice
COPs	Communities of practice
COLAT	Children Online Learning and Authentic Teaching Skills in Primary Education
CS	Counter Strike
DotA	Defense of the Ancients
EACEA	European Commission's Education, Audio-visual and Culture Executive Agency
HON	Heroes of Newerth
ICT	Information and communication technologies
ICTL	ICT Literacy
iTEC	Innovative Technologies for an Engaging Classroom
KLSS	Kuala Lumpur Secondary School
KLSSOBA	Kuala Lumpur Secondary School Old Boys Association
MAT	Mission Against Terror
MDeC	Multimedia Development Corporation
MSC	Multimedia Super Corridor Malaysia
MOE	Ministry of Education Malaysia
MUHREC	Monash University Human Ethics Research Committee
NFER	National Foundation for Educational Research
NUTP	National Union of Teaching Profession
OECD	Organisation for Economic Co-operation Development
PISA	Programme for International Student Assessment
PMR	Lower Secondary Examination
PPSMI	Teaching of Science and Mathematics in English
PTA	Parent and Teacher Association
PSP	PlayStation Portable
PS2	PlayStation 2
PS3	PlayStation 3
P2P	Peer-to-peer software
SPPK	National Education Assessment System

SPM	Malaysian Certificate of Examination
SSQS	Smart School Qualification Standards
STAM	Higher Malaysian Certificate for Religious Education
STPM	Higher School Certificate Examination
TESL	Teaching English as a Second Language
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UPSR	Primary School Achievement Test
VNSS	Valley National Secondary School
XP	Experience points

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 Introduction

Despite the educational potential of digital media, its maximal use still continues to be limited by a range of factors in education systems around the world (Somekh, 2004; Collins & Halverson, 2009). In countless schools globally, lack of hardware and software, limited access to technological support, inadequate professional learning for teachers and insufficient funding to access resources, continues to impact on the scope and depth of the use of new media in schools (McGarr & Kearney, 2009; Elgali & Kalman, 2010). Some teachers restrict their students from accessing new technologies in school through choice, preferring to hold on to old teaching and learning methods (Ng, 2008; Underwood, 2009), while others see the potential uses and are keen to change classroom practices to encompass new media. At the same time, young people around the world, with the financial resources to give them access to new media, have multiple technologies as a constant and integral part of their lifestyles (Green & Hannon, 2007). According to Prensky (2010), new media provides an effective path for young people to communicate, exchange information and learn. It might not be something that all parents and teachers willingly accept but, this is certainly the way younger generations with access to the hardware and software function daily (Green & Hannon, 2007).

Realising the important role of new media in young people's everyday lives (Green & Hannon, 2007), and the gap in knowledge pertaining to their use of new technologies in various contexts in and out of school (Wellington, 2001; Bulfin, 2009), this research has been conducted to closely examine young people's digital practices for different purposes including leisure, communication and learning. New knowledge is required on the role and importance of media in young people's everyday lives and in education, since it has a profound impact on how they learn, develop skills and engage with their family members, their peers and the wider world (Yelland, 2007). To date there has been limited research on the manner in which students engage in various new media practices in and out of school, particularly studies that view these interactions and use of new media through the lens of communities of practice theoretical perspectives.

My undergraduate background in communication studies, as well as my eight years' experience teaching communication and media subjects at tertiary level education, has influenced my interest in young people's use of new media. Through my personal communication with students in college, I

found that they are frequent users of digital technologies, particularly social media sites such as Facebook, MySpace, Friendster and Twitter. This was demonstrated in the ways they use social media as an important medium to communicate and maintain relationships with each other. I saw this as an opportunity to extend my classroom practices virtually by engaging them in a series of discussions through the use of social media. My attempt to engage them in online discourses about particular topics in the course syllabus and assignments was well received by students. I realised that some students were comfortable communicating using social media and, as result, they participated more actively online compared with during class time. This prompted me to think critically about the potential of new media for learning and whether digital technologies are utilised in schools. The increasing use of new media and rapid developments in this field also influenced me to commence research on issues related to young people's use of new media technologies. A further motivation for this study was the fact that I was keen to conduct research in order to understand the impact of the implementation of the Multimedia Super Corridor (MSC) and Malaysian Smart School policies. The implementation of these programs indicates the Malaysian government's strong recognition of the importance of new media, and efforts towards integrating digital technologies such as computers and the internet in schools, in order to systematically reinvent teaching and learning (Abdullah, 2006; MSC, 2010a; Yen, Bakar, Roslan, Luan, & Rahman, 2005).

The main focus of this study has been to investigate young people's everyday new media practices, since it is now common for students with access to it to use new media technologies extensively in every aspect of their daily life (Collins & Halverson, 2009; Iske, Klein, Kutscher, & Otto, 2008; Thomson & De Bortoli, 2007). Earlier studies in this field found that in and out of school, new media technologies are being used by young people for different purposes such as for education, work, leisure and socialisation (Johnson, 2009b; Robertson, Grady, Fluck, & Ivan, 2006). However, scholars argue that young people's use of new media technologies in school is very restricted and marginal (Somekh, 2004; Stevenson, 2008). This can be due to the rigidity of the existing curriculum and school practices in some contexts (Selwyn, Potter, & Cranmer, 2009). Research indicates that despite continuous efforts to integrate new media technologies in schools, its use and success remain very limited (Gulbahar, 2007; Ong & Ruthven, 2010; Razali, 2007). My study aims to enrich the research in this field and to add new knowledge to inform future practice in the application of new media in schools.

In comparison to their use of new media technologies in school, young people with access to new media have the liberty to engage in different digital practices when they are out of school. Many of them participate in various kinds of digital practices over extended periods of time, including by using Web 2.0 and through participating in activities such as social networking, file sharing and gaming (Lewin, 2004; Prensky, 2006; Rudd & Walker, 2010). However, young people's use of new media technologies out of school is often described by schools, teachers and parents as absurd and a waste of time (Grant, 2011; Green & Hannon, 2007). Some researchers claim that the educational and social potential of young people's practices with regard to their use of new media technologies at home or out of the formal school context are being undermined or underutilised (Clark, Logan, Luckin, Mee, & Oliver, 2009).

It is important to note that recent studies have shown that young people can learn important skills including literacy, communication, technology and creativity and overcome problems such as low self-esteem, lack of social belonging and lack of confidence when they use social media and play video games (Gee, 2007; Greenhow & Robelia, 2009; Sarsar, 2008). In these instances learning takes place as young people get online, interact and collaborate with one another in cyberspace (Fuchs, 2010; Johnson, 2009a). New media practices such as social networking and gaming can also relate closely to young people's formation of identity (Clarke, 2009; Gee, 2003). For instance, when young people use social media, they interact with one another in communities and form their identities. This is manifested in the creation and re-creation of their personal profiles online (Takahashi, 2010). In another example, Gee (2007) describes how, when playing video games, young people are inspired to pick up the identity of certain characters or to determine the identity of an empty character in the games they play.

Even though young people's use of new media technologies out of school is relatively different from what they experience in school, several researchers have argued that they still engage in important practices such as doing homework, performing research and discussing school assignments with one another online, which are related to school (Clark et al., 2009; Greenhow & Robelia, 2009; Johnson, 2009a). They also socialise by making friends with one another, maintaining relationships, exploring and forming identities as they use new media technologies (Clarke, 2009).

The term 'young people' is usually defined by a specific age range but it may vary from one definition to another. For instance, according to the Oxford Dictionaries, the term generally refers to persons

aged 14-17 (Oxford, 2014). While for United Nations Children's Emergency Fund (UNICEF), World Health Organization (WHO) and United Nations Population Fund (UNFPA), young people are defined as those between the ages of 10-24 (UNDESA, 2014). In my study, young people specifically refers to the main participants and almost all of their new media associates who are in the 10-24 age range.

1.2 Rationale for the Study

There is a need to critically analyse young people's use of new media technologies in and out of school based on social perspectives which comprise different aspects of practices, culture and society. This is explained by Selwyn (2010):

> While issues relating to the design, development and implementation of 'effective' learning technologies will continue to be of central importance to the field, it is reasoned that greater attention now needs to be paid to how digital technologies are actually being used – for better and worse – in 'real-world' educational settings. In this sense, it is contended that the academic study of educational technology needs to be pursued more vigorously along social scientific lines, with researchers and writers showing a keener interest in the social, political, economic, cultural and historical contexts within which educational technology use (and non-use) is located. (p. 66)

It is through a meticulous capturing and analysis of young people's new media practices in and out of school that we are able to gain insights into how and why these technologies are used (Bulfin, 2009). This study does not intend to negatively scrutinise the existing technological practices in schools or to undermine practices out of school, but aims to better understand the complexity of young people's new media practices in and out of school.

As students use new media technologies in different contexts, it is essential to understand their practices in and out of school, the kind of knowledge that they bring to school or out of school with regard to their use of new media technologies, and the relationship between both contexts (Bulfin, 2009; Yelland, 2007). In order to develop these understandings with regard to this study, Wenger's (1998) communities of practice (COPs) theoretical perspective is utilised as an analytical framework. As a theory of social learning, COPs provides a critical lens to explore community, engagement in social practice, meaning and identity (Wenger, 1998). COPs enable careful investigation to be conducted pertaining to the social perspectives of young people's use of new media technologies.

These include young people's new media practices in different contexts in and out of school, communities they participate in, and the relationships between both contexts and identity.

Based on the research aims stated above and the justification for choosing COPs as the main theoretical foundation, this study has attempted to answer the following core question:

- How do young people use new media in and out of school through communities of practice?

It is important to know how young people's new media practices in and out of school actually move, overlap and feed one another, and how this makes it possible for a relationship between both contexts to occur (Kent & Facer, 2004). Views suggesting that there is a total 'disconnect' between school and out of school due to the differences in the nature of technology use might be too simplistic considering the complexity of young people's new media practices (Bulfin, 2009). Consequently, this is worthy of research in order to provide a better understanding of the issue. According to Bulfin and North (2007), it is important to re-theorise the relationship between practices in and out of school and to understand how these practices are connected with one another based on young people's everyday life. Such understanding would help us to better understand the kinds of practices that young people bring to school and out of school as they use new media technologies (Kent & Facer, 2004). It also helps us to understand how relationships between both contexts of in and out of school are established (Kent & Facer, 2004; Yelland, 2007). This is the gap in literature that this study aims to fill.

This study focuses specifically on young people's new media practices within the Malaysian context. This includes the kinds of practices they participate in, the relationship between school and out of school with regard to young people's new media practices, and the identity they develop as they use new media in their daily life. In Malaysia, earlier studies in this area were mainly concentrated on issues such as teaching and learning in the Smart Schools (Halim, Zain, Luan, & Atan, 2005; Ong & Ruthven, 2010; Yen et al., 2005), secondary school students' engagement in computer games, its impact on their academic performance (Eow, Wan Ali, Mahmud, & Baki, 2009), and secondary school students' online community discussion (Vighnarajah, Luan, & Abu Bakar, 2009). So far, there has been no research published comparing young people's use of new media technologies in and out of school within the Malaysian context. This might be due to the difficulty in conducting such research. According to Wellington (2001), it is difficult to establish relationships between school and out of school new media use and it is also time consuming, as data from both contexts needs to be meticulously collected and analysed.

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It is also argued by Selwyn (2011) that little focus has been given to the social aspects of young people's use of new media, as studies in this field tend to focus more on the impact of new media technologies in education. According to Selwyn (2011), this has to change, considering that there is a pressing need for educators, parents and policy makers to thoroughly understand young people's everyday practices with new media, the contexts in which new media is used, and structures and relationships between contexts based on the social perspectives.

1.3 Research Questions

In order to understand young people's use of digital technologies, the communities that they participate in and out of school with regard to their new media practices, the relationship between both contexts and identity, I have conducted my investigation based on the following research questions:

1. What are the new media practices that young people participate in and out of school?
2. How and why are they participating in these new media practices in and out of school?
3. How do young people's new media practices compare in and out of school?
4. How does young people's sense of identity develop as they participate in new media practices in and out of school?

1.4 Overview of the Chapters

This thesis is organised into 9 chapters. A brief overview of each chapter is presented below:

Chapter 1: In the opening chapter, issues related to young people's use of new media in and out of school are outlined. These include the state of technological integration in schools in general and also students' use of digital media out of school. The rationale for this study and the research questions that this study attempts to answer are also discussed.

Chapter 2: In this chapter, young people's use of new media technologies in and out of school is further discussed based on the findings of earlier studies conducted in this field. As this study is conducted within the Malaysian context, the Malaysian government's effort to integrate digital technologies in schools through the implementation of the Multimedia Super Corridor (MSC) and the

Smart School Program is discussed. Malaysian youths' use of new media in and out of school is also explored.

Chapter 3: This chapter focuses on Lave and Wenger's (1991) Situated Learning and Wenger's (1998) Communities of Practice (COPs) concepts that are used as the main theoretical frameworks in which this study is conducted. COPs concepts such as participation and reification, practice, multi-membership perspectives, learning and identity are discussed in detail.

Chapter 4: This chapter contains discussions pertaining to the research methodology used in this study. The justification for using case study as the method of inquiry, the methods of data collection, the data collection process and the recruitment of research participants are thoroughly explained.

Chapter 5: Findings based on the student participants' use of new media technologies in and out of school are analysed and discussed. These include the participants' use of digital technologies during the ICT Literacy (ICTL) class and, at other times in school, and their use of new media for various purposes out of school. This chapter also analyses and discusses the COPs that the participants belong to with regard to their use of digital media.

Chapter 6: In this chapter, data collected from the student participants in a technology rich school are analysed. Data collected from school leaders and teachers in the two school sites in which this study was conducted are also analysed and discussed in this chapter. Other discussions include issues related to students' use of new media technologies such as the school ICT policy and teachers' attitudes and knowledge of digital media.

Chapter 7: This chapter specifically focuses on the possible relationship that can be established between in and out of school contexts as students use digital technologies for various purposes in their everyday lives. This is thoroughly analysed and discussed using COPs' multi-membership perspectives that include boundary object, brokering, boundary practices and peripheries.

Chapter 8: Students' formation of identity based on their experience of participating in shared new media practices in and out of school is analysed and discussed based on COPs' identity perspectives.

Chapter 9: In this closing chapter, all the earlier findings and discussions are summarised. Recommendations for improvements in policy and school practices related to young people's use of new media in and out of school are provided. Possibilities for future research and final conclusions are also included in this chapter.

CHAPTER TWO - LITERATURE REVIEW: YOUNG PEOPLE'S USE OF NEW MEDIA TECHNOLOGIES

2.1 Introduction

In this chapter, literature related to young people's use of digital media based on earlier studies is reviewed. The chapter begins with a brief introduction of the term 'new media' and how it is applied throughout the course of this study. This is followed by a review of literature related to young people's use of new technologies in and out of school, with a specific focus on the Malaysian setting in which this study is conducted.

Defining new media

Creeber and Martin (2009) argue that the term 'new media' refers to the changes in electronic communication associated with the arrival of digital technologies. New media is described as being digital, interactive, hyper-textual, virtual, networked and simulated (Lister, Dovey, Giddings, Grant, & Kelly, 2009). Unlike other media such as print and electronic media, 'new media' is a more complex term to define due to its evolving nature (Socha & Eber-Schmid, 2013). What is 'new' today will eventually become old, and for this reason the term can only be loosely defined. But as Socha and Eber-Schmid (2013) explain, new media should be understood as "all that is related to the internet and the interplay between technology, images and sound" (p. 1). In his explanation, Flew (2008) indicates that new media comprises a combination of the three Cs that are (a) computing and information technology, (b) communications networks and (c) digitalised media and information content. According to Flew (2008), the three Cs arise from a process of media convergence in which different forms of media are used simultaneously and linked together within the digital environment.

With regard to my study, the term 'new media' is used to specifically refer to a variety of digital media applications used by young people in different contexts in and out of school. These include computers and the internet, word processing, multimedia processing, social media, gaming consoles, mobile technologies, digital cameras, and digital video production.

The impact of new media for young people

The process of media convergence that characterises new media can change and transform different facets of our life (Albirini, 2007; Raza & Murad, 2008). According to Collins and Halverson (2009), "new technologies are transforming every aspect of work: reading and interacting with the web; writing memos and sending email; computing with spreadsheets and statistical analysis programs" (p. 9). Different forms of new technologies that we frequently use in our everyday life change the way we think, work, learn and communicate (Flew, 2008). This is evident in the advancement of new media technologies that enable us to engage in different communities of interest and networks regardless of our geographical location (Collins & Halverson, 2009). More importantly, these new technologies provide the possibility for deep learning, which refers to one's ability to understand, apply and transform what is learnt into innovation (Gee, 2007).

It is important to acknowledge that new media is not only used by adults but also used extensively by young people (Gee, 2007; Prensky, 2006). This is explained by Green and Hannon (2007), who indicate that young people frequently engage in a variety of new media practices to make their lives easier, to socialise and to maintain relationships with one another. This is shown in the increased percentage of young people engaging with new media as it becomes more available to them (Collins & Halverson, 2009; Lewin, 2004). An example of this is shown in a study conducted in the United States which found that the percentage of young people's computer ownership at home increased from 73 percent in 1999 to 86 percent in 2005. Also, a similar increase was recorded in their home access to the internet (Yelland, 2007). In a later study conducted as part of the Programme for International Student Assessment (PISA) by the Organisation for Economic Co-operation and Development (OECD) in 2009, it was reported that 94 percent of students from all the participating countries had access to at least one computer at home and the availability of the internet at home was at 89 percent (OECD, 2011). Not only do young people have increased access to new media at home (OECD, 2011), but their frequent use of digital technologies for different purposes also suggests that new media is being integrated into every aspect of their lives (Green & Hannon, 2007; Prensky, 2006; Weber & Dixon, 2010).

In their report on young people's use of new media technologies, Green and Hannon (2007) described young people's lives as they engage with new media as follows:

a. Digital pioneers – those who are always on the front foot, always leading the rest in their new media practices as they move away from being consumers to creators.

b. Creative producers – those who are creative in their new media practices. They create and maintain their own websites, post and edit images, movies and music and share it with one another.

c. Everyday communicators – those who use new media technologies to perform basic practices such as communicating with each other through texting and by using the social media and searching the internet to help them in their homework.

d. Information gatherers – those who gather information from the internet and use the information to help them to perform homework and school assignments.

These categorisations are not meant to place young people into any fixed category, but as a way to describe their use of new media technologies as they move from one category to another and combine them in creative ways (Green & Hannon, 2007). With regard to my study, Green and Hannon's (2007) description is useful, especially in framing young people's use of new media based on these categories and, how they shift through their everyday engagement in digital practices both in and out of school.

However, it is important to note that young people's access to new media, and their technological usage, are not necessarily limited to the above stated categorisations. Young people's usage of digital media, in general, is varied and is often influenced by their socio-economic background, including their parents' educational background, occupation and the geographical location in which they live (North, Snyder, & Bulfin, 2008; Vekiri, 2010).

New media presents both opportunities and risks to young people (Buckingham, 2006). Apart from being regarded as a source of knowledge, new media technologies can also expose young people to vulnerability and risk (Livingstone, 2003; Livingstone & Bober, 2006). Illegal content, offensive and harmful materials, illicit sexual content, violence, racism, manipulation, invasion of privacy and commercial exploitation are considered threats, especially to children. However, while parents are identified as being responsible for regulating their children's use of new media technologies, excessive control might invade young people's freedom and their exploration of information and knowledge (Livingstone & Bober, 2006). Even though my study does not specifically focus on issues related to vulnerability and risk faced by young people in their use of digital technologies, it is assumed that such threats can be evident considering that practices such as using social media and

playing computer and video games online involve joint participation with other individuals including strangers.

Despite the increase in new media ownership and access among young people discussed in the earlier part of this chapter, a digital divide is still evident, affecting the lives of young people differently in many parts of the world (Blanchard, Metcalf, Degney, Herrman, & Burns, 2008; Mertens & d'Haenens, 2010). In the Malaysian context in which this study is conducted, the issue of divide is mainly concentrated on the effort to bridge the gap between geographical locations of urban and rural (ENPNewswire, Dec. 24, 2010; Faziharudean, Ibrahim, & Sulaiman, 2009). This includes the need to address the digital inequalities experienced by young people in rural locations in Malaysia (Judi, Amin, Zin, & Latih, 2011). This inequality is further explained by Idris, Hashim and Abidin (2011), who indicate that young people in rural areas in Malaysia experience divides (a) in having access to computers at home, (b) in having access to the internet at home, (c) in terms of knowledge and proficiency of ICT and (d) in terms of frequency or regularity of using ICT.

In reality, the digital divide is a far more complex issue than the rural-urban distinction; it involves more than just 'haves' and 'have-nots' of the new media technologies (Selwyn, 2004). Additionally, the digital divide among young people should be examined based on the quality of use and how new media technologies are used relevant to age, gender and socio-economic status (Livingstone & Helsper, 2007). Consequently, a divide may also occur between young people who are in the same school and living in the same urban or rural location. Although my study primarily focuses on young people's use of new media in and out of school, and not on the digital divide, this issue is still relevant. For example, digital inequalities exist between richer students and their poorer peers with regard to access and ownership of new media out of school (Eamon, 2004; Muller, Sancho, & Hernandez, 2009).

Without doubt, increased access to new technologies among youth (OECD, 2011), and various digital practices that they frequently participate in (Weber & Dixon, 2010), show the impact of new media on young people's lives. But as Livingstone and Helsper (2007) argue, beyond the issue of access, new media use among young people should be examined based on the quality of the digital practices they engage in. To unveil this, a thorough investigation of young people's use of new media in and out of school is necessary (Bulfin, 2009). In the following section, earlier studies pertaining to young

people's use of new media technologies are critically reviewed and discussed. These include young people's use of new media in and out of school and the relationship between both contexts.

2.2 Young People's Use of New Media Technologies in School

In many parts of the world, new media technologies are being integrated into schools as they are believed to bring positive impacts to teaching and learning in the classroom (Koc, 2005; Robertson et al., 2006; Wang, 2008). In Australia, for example, government policy recognizes that media is a means to engage and improve young people's learning (DEEWR, 2010). In Malaysia, the integration of new media technologies in particular is seen as a move forward towards preparing for the survival of the younger generations in the era of globalisation (MSC, 2010a). According to Yelland (2007), "governments around the world seem to recognise that it is politically viable to support the growth and use of new technologies in educational contexts" (p. 4). This recognition is evident in government policies designed to incorporate these new technologies into schools (DEEWR, 2010; MSC, 2010a, 2010b).

However, even though the integration of new media technologies in schools promises improved teaching and learning practices, its implementation involves huge challenges and to some extent may result in failures (Elgali & Kalman, 2010), particularly when there are inadequate resources and infrastructure. One of the main challenges is to improve the quality of teaching and learning with the use of new media technologies (Ainley, Banks, & Fleming, 2002). In order for this to occur, traditional teaching and learning practices need to be transformed (Ainley et al., 2002; Zain, Atan, & Idrus, 2004). This requires a pedagogical reform from knowledge instruction to knowledge construction (Zain et al., 2004).

One way in which a pedagogical reform can take place is through the implementation of pedagogical content that suits the technologically rich environment. Yelland, Cope and Kalantzis (2008) argue that carefully designed pedagogical content is based on a 'learning by design framework' can be effectively applied within a technologically rich learning environment: it enables young people to engage in active learning, to think critically and to solve problems with the use of new media technologies (Yelland et al., 2008). The 'learning by design framework' consists of four fundamental ways of knowing and these knowledge processes are explained as follows:

a. Experiencing – meaningful learning consists of the link between the prior knowledge (known) and the new knowledge (new). Here, young people are given the opportunity to make connections between their prior experiences and their new learning.

b. Conceptualising – the young conceptualise and derive meanings based on their experiences. It is based on this conceptualisation that they generate ideas and concepts that relate to their learning.

c. Analysing – a process in which youths systematically and critically analyse concepts, events or information and how this relates to them, to their community and to the world.

d. Applying – young people extend the knowledge that they have to other contexts in different ways. They have the ability to transform this knowledge creatively to hybrid knowledge or to completely new knowledge.

Knowledge processes may vary based on the context or situation in which they are applied as they are sensitive to cultures, learners, knowledge domains and pedagogies (Yelland et al., 2008).

In their research, Collins and Halverson (2010) found that the pedagogical design that is to be applied within a technologically rich school environment should take into consideration young people's insights into the ways in which learning with new media in school can be performed based on their own frequent engagement and experiences in various technological practices in their lives involving the use of computers, the internet, video games, mobile technologies and social media. Collins and Halverson (2010) observe that, "…information technologies pose direct challenges to how schooling operationalises learning. These challenges illustrate deep incompatibilities between schooling and the new technologies" (p. 19). Schools need to attempt to better understand the role of new media technologies in learning and, more importantly, to change accordingly in order to suit the demands of young people (Collins & Halverson, 2010; Underwood, 2009).

Students' demand for liberated use of new media in school and the kind of learning that is adaptable, flexible and dynamic is also difficult to be achieved in schools, due to the rigidity of existing school practices (Groundwater-Smith, 2007). In order for liberated teaching and learning with the use of new media to occur, it is necessary for schools to change their existing practices by promoting the integration of new media technologies and encouraging students with opportunities to perform exploratory learning (Somekh, 2004). According to Somekh (2004), it is important for schools to provide the young with more flexibility and opportunity to take control of their own learning with new media technologies. In order to utilise the potential of new media technologies in learning,

schools need to ensure that the integration of new technologies into the classroom is liberating and not limiting to young people's capacity (Collins & Halverson, 2009).

In Ng's (2008) research, which was conducted in the state of Victoria in Australia, it is argued that learning with digital technologies, which is deemed as liberating by students, might not be considered ideal by their teachers. This indicates a mismatch between young people's demands and their teachers' expectations (Ng, 2008). Taking examples from students' self-directed learning using digital media in the science classroom, Ng (2008) explained how students appreciated the opportunity to learn science independently at their own pace on computers and the internet. But such learning was not considered effective by the science teacher, who believed that his students were unable to choose the right learning resources on the internet and this resulted in a failure to demonstrate sufficient understanding based on what was expected from them (Ng, 2008). In such instances, continuous dialogues need to be held between teachers and students in order to deal with the conflicting expectations and demands pertaining to their use of digital technologies for teaching and learning (Selwyn, Boraschi, & Ozkula, 2009). It is also important for students to be informed and guided regarding the potential benefits of new media technologies for their learning (Ng, 2008; Selwyn, Boraschi, et al., 2009).

In this section, critical issues pertaining to the integration of new media in teaching and learning in schools have been discussed. Despite efforts to integrate digital technologies into schools, their usage in classrooms remains insignificant (Collins & Halverson, 2009). Earlier literature shows that the integration of new media in teaching and learning involves a complex process that may result in failure (Elgali & Kalman, 2010). Such failure may be caused by incompatibility between rigid classroom practices and the liberating nature of new media (Groundwater-Smith, 2007; Underwood, 2009). Besides equipping schools with adequate technological access, it is necessary for policy makers, schools and educators to transform the existing teaching and learning practices and to provide students with greater opportunities to engage in exploratory learning with new media (Somekh, 2004).

2.2.1 The integration of new media technologies in Malaysian schools

Since the case studies explored in this study are conducted within the Malaysian context, this section of the literature review provides a contextual discussion of the literature in that nation. In Malaysia, information and communication technology (ICT) has been identified as an important domain of

learning in realising the 2020 Vision (Yunus, 2001). In 1996, the Multimedia Super Corridor (MSC Malaysia) was established with the aim of transforming Malaysia to become the global ICT hub and for the purpose of multimedia innovation, operation and services (MSC, 2010b). The establishment of MSC Malaysia is considered a significant leap forward towards realising the knowledge-based economy and to drive Malaysia forward towards becoming a developed nation by the year 2020 (Yunus, 2001). In Malaysia, knowledge-based economy or K-economy is regarded as a platform to sustain economic growth and increase competitiveness in order to achieve the status of a developed nation (EPU, 2001). In K-economy, knowledge contributes to the growth of economy and wealth in the country (EPU, 2001).

MSC Malaysia is the Malaysian government ICT initiative that aims to attract world class technology companies and at the same time develop local ICT industry (MSC, 2010b). More importantly MSC Malaysia helps to boost the country's economy further (MSC, 2010b). The implementation of MSC Malaysia is divided into three phases. Phase 1 (1996-2003) was successfully completed with five Cybercities being fully developed, seven MSC Malaysia flagship initiatives being piloted and more than 1000 companies and higher learning institutions achieving MSC Malaysia status (MSC, 2010b). Cybercities are developed with the aim to attract, develop and sustain ICT-related industries (MSC, 2010b). In Phase 2 of its implementation (2004-2010), the MSC Malaysia initiative was expanded to the whole country in an effort to boost ICT in Malaysia (MSC, 2010b). In 2012, MSC Malaysia was in Phase 3 (2011-2020) of its implementation. By the end of the implementation of this phase in the year 2020, MSC Malaysia is expected to reach the whole nation, with the implementation of 12 intelligent cities and the transformation of Malaysia into a knowledge-based economy and society (MSC, 2010b).

The implementation of the Smart Schools initiative is one of the flagships in MSC Malaysia, which indicates the government's efforts in integrating new media technologies in teaching and learning in Malaysian schools (MSC, 2010a). According to Abdullah (2006), the core areas in the implementation of the Smart Schools are as follows:
   a. The curriculum – to assist students achieve balanced development.
   b. Pedagogy – uses a different mix of learning strategies to promote mastery of basic competencies and holistic development.
   c. Assessment – to provide accurate feedback of students' achievement.

d. Teaching and learning materials – combine network-based, teacher-based and courseware materials.

As one of the core areas in the implementation of the Smart Schools initiative, the use of multimedia teaching and learning courseware aims to make teaching and learning practices more effective. Halim, Zain, Luan and Atan (2005) explained that "the teaching and learning courseware designed for the Smart Schools utilises the internet / web or browser-based environment" (p. 107). The teaching and learning courseware includes communicative features, access to online information and resources and the right mix of media (Halim et al., 2005).

The Smart Schools are built and based on the concept of innovation (Shaharuddin & Abiddin, 2009), so innovative ways of teaching and learning are highly encouraged. The technologically rich environment in the Smart Schools enables students to make use of new media technologies and to participate actively in learning activities (MSC, 2010a). In the Smart Schools, teachers are required to perform the role of facilitators who are responsible for providing guidance and support to different students' needs in the classroom (Shaharuddin & Abiddin, 2009). The ultimate aim of the Smart School is to prepare young people to be innovative and capable in order to compete in the era of K-economy and to contribute to the development of the nation (MSC, 2010a). Without doubt, the aim for innovation instilled in the Malaysian Smart Schools is ideal as it should provide the opportunity for students to learn actively with new media technologies. But more importantly, the question of whether schools and teachers are capable of performing this task needs to be asked and then acted upon, so that talk about the use of new media is not simply a rhetoric that can never be actualised.

Earlier studies show that there are many challenges in the implementation of the Smart Schools initiative in Malaysia. One of the main challenges is transforming existing teaching and learning practices in new teaching and learning environments which are more engaging, stimulating and active (Zain et al., 2004). In a study conducted pertaining to the usability of the Smart School courseware, low usage was recorded, as only 12 percent from a total of 609 students frequently used the courseware. A high percentage of students (73 percent) indicated that they rarely used the courseware (Jaafar, 2008). In order to succeed, continuous commitments are required at all levels, including the Ministry of Education and its agencies, schools, teachers, administrators, students, parents and other community members (Zain et al., 2004). This finding is a further justification for my research. It is unfair to claim that the Malaysian Smart Schools program is a failure on the basis of the statistical data provided (Zain et al., 2004; Jaafar, 2008). In-depth research is required in order to examine the

state of integration of new media technologies in these schools and, more importantly, the actual teaching and learning practices involved.

According to Nordin, Yusof and Jusoff (2010), it is important for young people to be equipped with the right skills and knowledge of new media in school in order to ensure that they are ready to face challenges in the future. Realising this, the Malaysian government through the Ministry of Education Malaysia (MOE) introduced the ICT Literacy (ICTL) class for secondary school students (MOE, 2007a). The ICTL class is an initiative to expose students to the use of ICT, and more importantly, to ensure that they acquire the right skills and knowledge of technologies such as computers and the internet and to become ICT literate (MOE, 2007a). The course content of the ICTL class for secondary schools consists of the integration of knowledge, skills and values. This is explained as follows (MOE, 2007a):

- Knowledge – students will learn the foundation of ICT which comprises of basic knowledge about the computer lab, hardware, software, network and the internet.
- Skills – students will acquire different ranges of skills in the ICTL class including communication, information, computer system management and problem solving.
- Values – students are expected to observe the ethics of ICT and to develop positive values including responsibility, accountability, respect, cooperation and virtue as they attend the ICTL class.

The course content which consists of the integration of knowledge, skills and values, is instilled in four different domains that students will experience as they learn in the ICTL class. The four domains involved are computer lab management, computer hardware, computer software, networks and the internet (MOE, 2007a).

Except for the ICTL guidelines prepared by MOE, no other document or study was found in my review of the literature that focused on the implementation of ICTL classes in secondary schools in Malaysia. Elsewhere, earlier studies on the implementation of information communication technology (ICT) as a subject in school were more focused on issues relating to its pedagogical aspects, including student teachers' application and evaluation of a learner-centred ICT teaching method (Hadjerrouit, 2008), the satisfying and frustrating aspects of ICT teaching in schools (Deryakulu, Buyukozturk, Karadeniz, & Olkun, 2009) and on trainees and new ICT teachers in secondary schools (Hammond, 2004).

In a more recent study conducted in England, it was indicated that, in an attempt to reform ICT curriculum in school, the existing ICT curriculum is to be replaced by computer science in order to equip young people with the necessary digital skills for the future (Service, 2012a). The reform in ICT curriculum indicates that the teaching of basic computing and its applications such as word processors, spreadsheets and presentation software are no longer suitable for students who have been exposed to the use of digital technologies since an early age (Burns, 2012). Students are eager to learn more complex knowledge including web design and computer programming (Burns, 2012). However, according to Burns (2012), the implementation of computer science classes in school requires teachers who are experts in this field and the shortage of specialist teachers poses the main challenge to the new curriculum innovations. For this reason, it is important for teachers to be provided with the right training opportunities in order to equip them with the necessary skills required for the implementation of the computer science curriculum (Burns, 2012).

2.3 Young People's Use of New Media Technologies out of School

The findings of two separate studies conducted in the United Kingdom (UK) show that youths have access to multiple new media technologies such as computers and the internet, mobile phones, digital / audio players and computer and video games out of school (Clark et al., 2009; Keating, Gardiner, & Rudd, 2009). In another study, conducted by Clark et al. (2009), pertaining to young people's use of Web 2.0 and other new media technologies, which involved the participation of 51 students between the age of 11-16 in towns and cities in London and the South East of England, it was shown that 92% of the participants had mobile phone access, 88% had computer access, 94% had internet access and 73% had access to computer and video games consoles. In a larger study conducted by National Foundation for Educational Research (NFER) involving over 4000 primary and secondary school students in England, it was reported that young people's use of digital media technologies out of school is 'technologically rich', as each of them owns an average of six or seven devices and they use these technologies to engage in numerous new media practices on a frequent basis (Keating et al., 2009).

Young people describe their out of school use of new media technologies, such as computers and the internet, as being mainly for leisure, entertainment and social networking (Clark et al., 2009). However, it also important to note that, as young people engage with new media technologies out of school, they are also performing and developing their expertise in 'cyber-relations' with one another

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(Johnson, 2009c) and this involves a high level of skill development. Johnson (2009c) explains this by indicating that:

> There were cyber-relations involved in the participants' use of computers and the internet for research, whether teacher-directed, self-directed or interest-related…many of the participants contacted fellow students through instant chat forums to find out about homework requirements and assignment expectations. (p.193)

For some, learning takes place without them recognising it, as they find it difficult to distinguish between 'work' and 'play' (Johnson, 2009a). In this regard, young people's use of new media technologies out of school also opens up the possibility of informal learning, as they engage in various new media practices with one another (Greenhow & Robelia, 2009). Out of school, young people use the internet to search for information, which indicates how the internet is used as a source for informal learning (Iske et al., 2008). They also use internet sites such as Google and Wikipedia to look for information and to assist them in performing their homework and other school related tasks (Singh, Mallan, & Giardina, 2008). However, it is important to note that young people's use of the internet relates to their parents' educational background (Iske et al., 2008). Young people with parents who have higher educational backgrounds are more likely to use the internet to search for information (Iske et al., 2008).

One of the most commonly used new media platforms out of school is social media (Dunne, Lawlor, & Rowley, 2010). Young people's use of social media is growing and this is evidenced in their extensive use of Facebook, MySpace, Flickr, Bebo and YouTube (Rudd & Walker, 2010). According to Rudd and Walker (2010), social media sites are used generally by students to interact and collaborate with one another. The interactivity function of social media enables students to use it as a platform to build and maintain relationships online (McMillan & Morrison, 2006). As the young use social media sites like Facebook and Instant Messenger (IM), they socialise by making new friendships with one another, interacting with each other and maintaining their relationships online (Quan-Haase & Young, 2010). The interactions and collaborations that they perform through their use of social media also indicate how they are engaged with one another in online communities (Dunne et al., 2010).

Not only do young people use social media for socialisation (Quan-Haase & Young, 2010), they also informally develop their skills of technology, creativity and communication, but some research studies show this has minor relevance or connection to the knowledge and skills that are deemed

valuable in school (Greenhow & Robelia, 2009). This is further explained by Greenhow and Robelia (2009):

> In talking with participants and viewing *MySpace* accounts in-depth, we learned that simply participating in the SNS to the extent they did required knowledge of a range of information and communication technologies, including: the ability to search out, preview, select, incorporate, and share audio and video files; the ability to create, edit, copy, find, upload, tag, and arrange image files; the capacity to strategically monitor, respond, multitask, and navigate multiple communication channels (e.g., instant messaging, *MySpace* email, wall posts, blog comments, tagged photos, video shares, etc.), and more. (p. 133)

However, the possibility of learning through the use of the social media is often not recognised by schools (Greenhow & Robelia, 2009). Similarly, young people also do not necessarily realise the benefits of their own use of social media and this hinders their opportunity to fully capitalize on its learning potential (Clark et al., 2009). In order for this to change, it is important for schools to recognise the learning potential of social media and to conduct dialogues with young people, informing them of its potential to ensure that they benefit from its use (Clark et al., 2009).

In the Malaysian context in which this study is conducted, there has recently been interest among scholars in investigating the use of social media and its impact on informal learning among students, especially among learners who are at the tertiary level of education (Kabilan, Ahmad, & Zainol Abidin, 2010; Tasir, Lingu, & Harun, 2011; Zakaria, Watson, & Edwards, 2010). However, these studies are still very limited (Zakaria et al., 2010), and more studies of a similar nature are necessary considering the significant number of users of social media in Malaysia. This is manifested in the statistics of internet broadband subscription and social media users in Malaysia. In the first quarter of 2011, 4.9 million were subscribed to the broadband service (MCMC, 2011).

The sustainability of internet usage among users in Malaysia is very much influenced by interpersonal and social network factors (Hasim & Salman, 2010). This can be seen in the statistics of social media users in Malaysia. For example, in June 2011, there were 11.2 million Facebook users in Malaysia or equivalent to 39.1% of the country's population (Stats, 2011). It was also reported by Graham and Stephens (2012) that, in the year 2012, Malaysia was considered among the top six countries in the world in terms of information production on Twitter. There is therefore clearly a need to study not only students who are in higher learning institutions but also younger learners who are in schools.

Even though there is no literature on school students' use of social media in Malaysia, based on studies conducted elsewhere such as those of Wylie and Marri (2010), Greenhow and Robelia (2009) and Dunne et al., (2010), and the high level access to new media noted above, it can be assumed that social media is commonly used by Malaysian students who are in secondary schools.

Gaming is another practice of new media that young people frequently engaged in at home and at other times out of school (ACMA, 2007). In a study conducted to analyse family use of electronic media and communication in Australia in 2007, it was reported that 70 percent of young people played computer and video games using different gaming platforms including personal computers, gaming consoles connected to televisions, hand-held gaming consoles and mobile phones (ACMA, 2007). Even though the content of some computer and video games is argued to be aggressive and harmful for young people (EC, 2008; Sarsar, 2008), it also has potential for education, especially in encouraging young people to be active and to develop their ability to strategise, to experiment, to think critically and to make the right decisions throughout their gaming practices (Abrams, 2009; Gee, 2007; Prensky, 2006).

According to Abrams (2009), young people's gaming experiences have the potential to be transformed into meaningful learning in school. When young people play computer and video games, they create meanings and learn from their gaming experiences (Abrams, 2009; Prensky, 2006). Prensky (2006) explained how young people learn from their gaming experiences based on five different learning levels as follows:

  a. Learning level 1: How – young people learn how to do something based on computer and video games they play. This includes how to operate, move, fight and protect.
  b. Learning level 2: What – young people learn from what is expected from them or the rules as they play computer and video games.
  c. Learning level 3: Why – young people learn why they need to perform appropriate actions in order to win the games. This relates to their ability to strategise and perform complex moves.
  d. Learning level 4: Where – young people learn to do something based on the context that they are situated in. As for instance, performing what they can and avoiding what they cannot perform in the computer and video games they play.
  e. Learning level 5: Whether – young people learn to make decisions based on the context of the computer and video games they play. At this level, they are expected to decide on what is appropriate for them.

In relation to my study, Prensky's (2006) framework of five different levels of learning has been applied in order to analyse meanings that the participants create and, learning that they experience as they play computer and video games (See Section 5.4.3). More importantly, this framework was used to explore how such meanings and learning were used by the participants to help them in the context of learning in school. It is important to note that, in order for young people to benefit from the meanings they create and the learning they develop through their gaming experiences, it is necessary for them to be able to make use of them by connecting and contextualising their gaming experiences with their school-based classroom learning (Abrams, 2009).

The statistical data pertaining to young people's use of new media derived from earlier studies such as ACMA (2007), Clark et al. (2009) and Keating et al. (2009) indicates rich digital access and usage among youths out of school. They engage in various new media practices such as using social media (Dunne et al., 2010) and playing computer games (ACMA, 2007). Even though the value of these practices is often dismissed by parents, and teachers tend to regard them as mainly for leisure, they actually open-up the possibility of informal learning occurring (Singh et al., 2008; Quan-Haase & Young, 2010). According to Greenhow and Robelia (2009), informal learning takes place as young people socially learn new things from each other through their participation in digital practices out of school.

As young people use digital technologies in and out of school, an important question arises: what is the relationship between young people's use of new media in and out of school and why such an understanding is necessary? This question is further discussed in the following section.

2.4 The Relationship between Young People's New Media Practices in and out of School

In the earlier sections of this chapter, young people's use of digital technologies in different contexts in and out of school was discussed (Clark et al., 2009; Robertson et al., 2006). As young people use new media in and out of school, and in a variety of contexts in their lives, they bring their prior encounters and competence with new media technologies into and out of school (Yelland, 2007). In this regard, there is a need to understand how they use these technologies in school and at home, and how a relationship between both contexts is established (Bulfin, 2009; Kent & Facer, 2004; Lewin, 2004; Lewin & Luckin, 2010; Vekiri, 2010). Proper understanding relating to young people's use of new media technologies is essential in determining the adjustments or changes that need to occur in

order to meet the presumed educational needs of the twenty-first century (Lewin, 2004; Wellington, 2001; Yelland, 2007).

In the 'Children of the New Millennium' project that was conducted in Australia, Yelland (2007) explained how a 'techno tour' was conducted in order to investigate young people's use of ICT at home and how their usage connects with school practices. In this project, Concepts of Information and Communication Technologies (C/ICT) framework (Figure 1) was created in order to look into young people's use of ICT and how it relates to their learning. In this framework, young people's use of ICT is categorised into (a) functional user, (b) meaning maker, (c) critical analyser and (d) transforming understanding. This framework was constructed based on different theoretical perspectives including semiotic, critical sociology, multi-literacies and developmental psychology. It was devised with the aim of enabling teachers to explore young people's learning with ICT and to design pedagogies based on their experiences (Yelland, 2007).

Functional user

As a learner what can I do and how I do it

How do I use a range of ICT – cameras, videos, computers?

How do I demonstrate my use of the internet / software programs?

How do I show evidence of exploratory play?

Meaning maker

What meanings or understandings am I creating?

Do I understand the purpose of the activity

What prior knowledge have I brought to this activity

What understandings do I have of multimodal literacies?

C/ICT Framework

Critical analyser

How do issues like race and gender impact on my ICT use?

How does power and positioning affect my ICT use?

What evidence is there that I am critically analysing the literacies on offer?

Can I choose appropriate media / software / hardware / information to support my learning?

Transforming understanding

What have I learned and what can I do now to extend that learning?

How can I use my skills in a different way?

What new knowledge has been created and how has it changed what I know?

Figure 1. C/ICT framework (Yelland, 2007, p. 69)

With regard to my study, Yelland's (2007) C/ICT framework has been used to explore the participants' use of digital technologies in both in and out of school (See Section 5.3.1). Different categorisations that are offered in this framework enable the participants' technological practices in and out of school to be categorised according to how they are performed. Together with the Multi-membership Dimensions of the Communities of Practice (COPs) (see Section 3.3.2), the C/ICT framework has also been used to explore the relationship between the participants' use of digital media in and out of school.

Young people's use of new media technologies in school is described by some researchers as being constrained and inferior compared to how they are used out of school (Selwyn, Boraschi, et al., 2009; Selwyn, Potter, et al., 2009; Somekh, 2004). Johnson (2009b) argues that, "current out-of-school learning and associated technological interests seem to further enlarge the divide between the relevance and reality of school" (p. 86). Thus, to remain relevant to young people's needs, it is important to adjust the integration of new media technologies within the school context based on students' use of new media technologies at home, their prior experiences, skills and competence (Lewin, 2004; Yelland, 2007). In order to understand how such practices connect, we should draw upon the complexity of young people's new media practices in and out of school, their experiences and the possible relationship between both contexts (Bulfin, 2009).

Based on the earlier studies conducted in this field, this chapter discusses young people's use of new media in different contexts in and out of school. Literature has shown that, due to the incompatibility between the rigidity of school practices and the liberating nature of new media, the intended integration of digital technologies in teaching and learning is difficult to achieve and this directly impacts upon young people's opportunities to use digital media within the school context (Zain et al., 2004; Underwood, 2009; Collins & Halverson, 2010). In comparison, young people's use of new media is reported as being richer out of school (Keating et al., 2009). They generally have better technological access and have the opportunity to engage in various digital practices out of school compared to when in school (Green & Hannon, 2007). As new media is used by youths in and out of school, it is necessary to examine the possible relationship that is established between both contexts (Bulfin, 2009). This includes the kind of knowledge that young people bring to school based on their out of school experience and the knowledge that they bring home from school (Yelland, 2007). Such understanding is valuable, as it can help policy makers, schools and educators to make necessary

changes to the existing school practices and, more importantly, to ensure that the schooling institution remains relevant to the changing needs of students (Lewin, 2004).

Beyond the statistical data that generally describes the percentage of digital access and uses among youths, a more in-depth analysis is required in order to thoroughly understand young people's use of new media in and out of school and the possible relationship that is established between both contexts. As Wellington (2001) argues, research on young people's use of new media in and out of school involves a complex process and, if it is to be carried out, it should be thoroughly conducted using case study method. According to Selwyn (2011), such a study should be performed based on the social theoretical perspective which allows closer examination to be conducted on different societal aspects including culture, community, politics and history which are located within young people's use of new media in different contexts in and out of school. In this study, I employ critical theory of the communities of practice (COPs) which is socially sensitive, to investigate young people's use of new technologies in and out of school. COPs' ability to address different societal aspects including community membership, participation and reification, practice, learning and identity is essential in understanding young people's use of new media. The critical lens of COPs theoretical perspective is thoroughly discussed in the following chapter.

CHAPTER THREE: COMMUNITIES OF PRACTICE

3.1 Introduction

This study focuses on young people's use of new media technologies in and out of school. The study includes the technological practices that the young participate in, the contexts that they belong to during school and out of school and the relationship between both contexts with regard to their use of new media technologies. In this study, the theory of communities of practice (COPs), based on the work of Lave and Wenger (1991) and Wenger (1998), is employed as the main theoretical foundation to explore young people's use of digital media in different contexts in and out of school practices. The sociological theoretical perspectives of COPs permit thorough analysis of young people's practices with digital technologies to be conducted and to provide better understanding of the human-technology relationships. More importantly, as a social learning theory, COPs enable meticulous investigations to be conducted relating to the ways in which young people use new media technologies based on their daily practices in and out of school. Such practices are influenced by the cultural and societal structures in which they are situated.

3.1.1 The rationale for selecting communities of practice

In this study, COPs theoretical perspectives are employed based on the works of Lave and Wenger (1991) and Wenger (1998). As a theory of social learning (Hartnell-Young, 2006; Thomas, 2005), COPs provide a lens to look into young people's participation in new media practices in and out of school, the relationship between both contexts, and the identity that is formed as the young use new media technologies in different facets of their everyday lives.

My study utilises several important concepts in COPs including participation and reification, negotiation of meaning, multi-membership perspectives, learning and identity (Wenger, 1998). Each of these concepts is described below based on how they will be used throughout this study:
   a. Participation and reification – this refers to young people's participation in digital media practices in and out of school. Participation indicates the social involvement and engagement that the young have toward their community. On the other hand, reification refers to the process of providing meanings to the experiences of participation. In regard to this study,

young people's participation in new media practices in various communities in both contexts of in and out of school will be explored.

b. Negotiation of meaning – this refers to the continuous process in which young people negotiate their new media practices with one another. It signifies their active participation and engagement in various communities in and out of school.

c. Multi-membership dimensions – as discussed in the previous chapter, young people use new media not only in school but also out of school, which indicates their belonging to various communities of practice with regard to their use of new media technologies in and out of school. It is through the multi-membership dimensions, that relationships between communities in school and out of school are explored. Practices in using new media may cross boundaries from a context to another. In the case of 'boundary crossing', relationship between both contexts may be established through 'boundary objects' and 'brokering'.

d. Learning – it is a social process in which members of a COP learn from one another as they actively participate in the shared practices of their communities. Such learning takes place socially through their participation in digital practices such as playing computer and video games and using the social media.

e. Identity – as students participate in new media practices with one another in various communities in both contexts of in and out of school, they continuously negotiate their membership and belonging to these communities. In this regard, it is through the experiences of participating in the communities of practice that the young form their beliefs and identities.

3.2 Communities of Practice

Lave and Wenger (1991) introduced the concept of situated learning in which learning is described as experiential, informal and social. They explain that situated learning takes place as COPs members participate in legitimate peripheral participation. This refers to how new community members progress from the state of newcomers to become full participants (Lave & Wenger, 1991). At the beginning, newcomers are only capable of performing simple tasks. But as newcomers participate actively in shared practices of their communities, they progress and are able to perform more complex tasks. Interactions concerning shared practices of the community, activities, identities and artefacts take place between newcomers and old-timers in COPs.

In his later work, Wenger (1998) extended the earlier conception of COPs. According to Wenger (1998), "we all belong to communities of practice. At home, at work, at school, in our hobbies – we belong to several communities of practice at any given time" (p. 6) . COPs are not a new phenomenon. It has always existed as communities worked together to provide food, shelter and survival (Wenger, 1998). In general, a COP comprises a group of individuals who share similar profession, practices, goals or interest (Campos, Moreno, & Landaeta, 2011; Toohey, 1998). Members of a community share similar practices and they participate in these practices every day. For instance, at work people share practices in order to get their tasks done. Based on participation in ongoing practices, they negotiate meanings and learn (Campos et al., 2011). This is explained by Wenger (1998), who indicates that we learn as we do things together and interact with other members of the community. It is through our shared practices that we form our beliefs and identities.

A COP involves three interrelated dimensions of (a) mutual engagement, (b) a joint enterprise and (c) a shared repertoire (Figure 2). These dimensions of practice are important as they indicate how members of a COP participate in shared practices, negotiate meanings, form their identities and provide a context in which learning can occur (Wenger, 1998). It is important to note that a COP is characterised by the mutuality of engagement or the relationship that binds its members together. It is through mutual engagement that members of a COP are related to one another. Engagement among COP members is enabled as they participate in the shared practices of their community (Kisiel, 2010). Members of a COP might differ in ethnicity, gender or age, but they come together to participate in their community's shared practices. This signifies how diversity is acknowledged by COP members. However, it is important to understand that mutual engagement between members of a COP is not always harmonious. Similarities, differences and conflict occur between community members (Wenger, 1998).

 As members participate in the shared practices of their community, they become mutually engaged with one another. Participating in shared practices of a COP also involves a series of negotiations among members. Joint enterprise is the response to such negotiations. A joint enterprise is described by Wenger (1998) as:

> The result of a collective process of negotiation…it is defined by the participants…it is their negotiated response to their situation…it is not just a stated goal, but creates among participants relations of mutual accountability that become an integral part of the practice. (pp. 77-78)
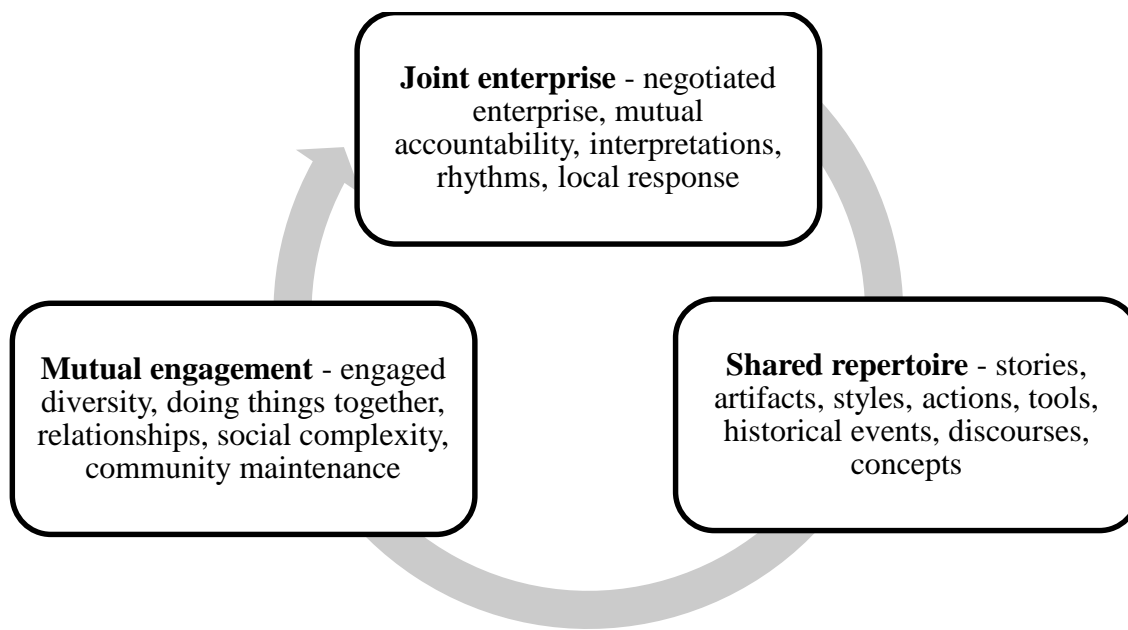
Figure 2. Dimensions of practice as the property of a community (Wenger, 1998, p. 73)

A joint enterprise is seen as a process in which members of a COP share (a) a negotiated enterprise, (b) an indigenous enterprise and (c) a mutual accountability. These elements are explained by Wenger (1998) as follows:

a. A negotiated enterprise – in COPs, members continuously negotiate their enterprise with each other which is their response to the situation in which they find themselves. Similar to mutual engagement, which does not necessarily mean harmony, the negotiation of an enterprise does not entail simple agreement among COPs members. The enterprise of a COP does not necessarily indicate agreement among all members but it symbolises how they are engaged to one another, their commitment to come together and to negotiate their situation.

b. An indigenous enterprise – even though a practice can be partly influenced either directly or indirectly by individual members or by other external entities and conditions, it has no absolute power to determine an enterprise of a COP. The enterprise of the community is determined from within through the process of negotiation that is performed by members themselves.

c. A mutual accountability – the continuous process of negotiating an enterprise in a COP creates the sense of mutuality among all its members. It is through their participation in the negotiation of a joint enterprise that members of a COP determine their course of actions, deciding what is significant for them and what is not.

It is through members' engagement with one another in the shared practices of their community, and their active participation in the continuous process of negotiation of a joint enterprise, that they produce a shared repertoire. In this regard, shared repertoire refers to the artefacts that are developed, produced and shared by members of a COP. Wenger (1998) explains that "the repertoire of a community of practice includes routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions or concepts" (p. 83) . These artefacts are produced as members actively participate in shared practices of COP. A shared repertoire indicates members' common views of the world, their expression of membership and their projection of identities (Wenger, 1998).

In relation to my study, dimensions of practice are adopted as the main framework to investigate young people's use of digital media in and out of school. It is assumed that young people belong to multiple COPs both in and out of school. Their memberships of communities are based on shared practices, interests and hobbies, such as communities of online gaming and networked communities established through the use of social media, online groups and forums. The three dimensions of practice that consist of (a) mutual engagement, (b) a joint enterprise and (c) a shared repertoire as described earlier, provide a useful lens through which to explore how young people become mutually engaged with each other through their shared practices of new media in and out of school, how they negotiate these practices together and how they produce a shared repertoire.

3.3 Participation and Reification in Communities of Practice

Participation refers to social experiences and the active involvement of people as members of a COP (Wenger, 1998). According to Wenger (1998), "participation refers to a process of taking part and also to the relations with others…it suggests both action and connection" (p. 55) . In this regard, our participation in a COP connects us to one another. For instance, in performing our tasks at work we connect with our colleagues. We share our knowledge and experiences with each other in order to get our tasks done. It is also through our participation in the shared practices of COPs that we gain valuable experiences, learn and form our identities (Guldberg & Mackness, 2009). Our experiences of participating in the shared practices of COPs are shared with other community members and this leads to the formation of our identities. Wenger (1998) discusses three important points relating to participation in COPs:

a. Participation which involves different kinds of relations among members of COPs – harmony, conflict, intimate, political, cooperation and even competitiveness.

b. Participation in COPs which shapes our experiences and also the experiences of those communities we belong to.

c. Meanings which are continuously negotiated as we participate in shared practices of COPs. This leads to the formation of identities.

Similar to participation, reification also plays a central role in COPs. In the context of a community, participation and reification complement each other. Both are equally important as they exist in duality, interact, imply and interplay with each other (Wenger, 1998). In comparison to participation, reification refers to the form that we give to our own understanding. Wenger (1998) explains reification as "the process of giving form to our experience by producing objects that congeal this experience into thingness" (p. 58) . Our experiences of participating in COPs are reified into something that is concrete (Daele, 2010). For instance, when we are at work, our form of understanding that relates to the job is transformed into a form that is more meaningful to us through material practices such as documenting our tasks into manuals or performance related procedures.

Based on the COPs perspectives, reification is a very powerful concept which provides form to our understanding and learning, and as result, makes it meaningful (Daele, 2010). However, it also important to note that reification can also be misleading and potentially dangerous. Wenger (1998) explains that "reification as a constituent of meaning is always incomplete, ongoing, potentially enriching, and potentially misleading" (p. 62) . This indicates that the nature of reification is double-edged. It can be a useful form to analyse our understanding and at the same time it could also be wrongly interpreted (Wenger, 1998). Our experiences of participation might consist of something that is very broad, yet the reification that we perform to provide form to these enriching experiences might only be in simplified form, and not as extensive as it should be. Some important aspects might be missing, or left out, making reification incomplete.

In my study, participation and reification based on COPs perspectives are used to describe young people's engagement in practices of new media both in and out of school. It is through their experiences of participating in practices such as performing internet searches to look out for materials related to their homework and assignments, or randomly browsing the internet to feed their own curiosities and knowledge, that young people reify these experiences as a way to perform school related tasks and to learn.

3.3.1 Negotiating meanings

We negotiate and create meanings as we participate in the shared practices of our communities. Meanings are continuously negotiated and created as we get ourselves involved in everyday activities (Laluvein, 2010). According to Wenger (1998):

> All that we do and say may refer to what has been done and said in the past, and yet we produce again a new situation, an impression, an experience: we produce meanings that extend, redirect, dismiss, reinterpret, modify or confirm – in a word, negotiate anew – the histories of meanings of which they are part. In this sense, living is a constant process of negotiation of meaning. (pp. 52-53)

It is through our experiences in life that are both historical and dynamic that meanings are negotiated and created (Laluvein, 2010). The process in which meanings are negotiated and created is not static. New meanings are continuously negotiated and generated based on our daily encounters. We might engage in the same practices and routines every day but we still generate new meanings based on our participation in these practices (Wenger, 1998).

As discussed earlier, participation and reification exist in duality and they cannot be separated. These fundamental elements play a very significant role in negotiating and creating meanings. Wenger (1998) explains that, "through the negotiation of meaning, it is the interplay of participation and reification that makes people and things what they are" (p. 70) . We gain useful experiences through our participation in the shared practices of our communities, and reification provides form to those experiences, enabling meanings to be continuously negotiated and generated.

With regard to this study, it is through young people's experiences of actively participating in the shared practices of new media in communities in and out of school that they continuously negotiate and generate meanings with one another. For example, as the young participate in virtual practices which include their participation in online groups, forums and social media sites, they negotiate how to socialise with each other. Such negotiations result in the creation of new meanings and these are projected in the way they make new friends online by using emoticons for example, or by sending friend invites and messages (Marsh, 2011).

3.3.2 Multi-membership dimensions of communities of practice

As discussed in this chapter, we belong to multiple communities throughout our lives. The multi-membership dimensions of COPs enable us to participate in different communities at any given time (Wenger, 1998). Based on the multi-membership dimensions, Wenger (1998) introduced the concept of boundary. It indicates that, even though we belong to various COPs in our lives, we still permit our forms of experiences (reification) to cross boundaries, entering different practices (Figure 3). We can be connected to other communities by (a) boundary objects, (b) brokers, (c) complementary connections and (d) boundary encounters and the negotiation of meaning (Wenger, 1998).
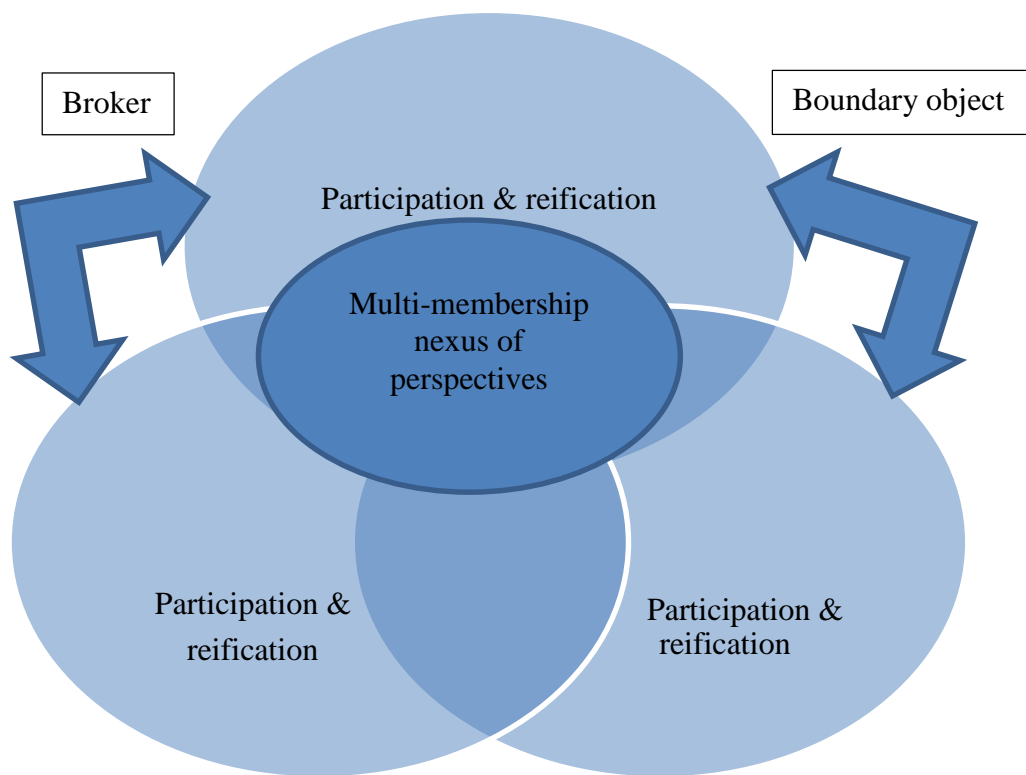
Figure 3. Participation and reification as connections (Wenger, 1998, p. 105)

Boundary objects refer to various forms of reification such as artefacts, documents and concepts (Wenger, 1998). Boundary objects are considered as similar elements that are used by different COPs. When similar objects are used by different COPs, it enables connections between communities to be made (Akkerman & Bakker, 2011). As my study intends to explore young people's participation in new media practices in and out of school, my investigations focus on multiple communities in both contexts that youths belong to with regard to their use of digital media technologies. It is assumed

that technologies such as computers and the internet are considered as boundary objects, connecting communities in school with those out of school. This is due to the use of these technologies in both contexts of in and out of school. For example, during school or out of school, young people use computers and the internet for different purposes including for learning and leisure.

Similar to boundary objects, brokers also permit connection between communities to be performed. Brokers refer to any member of a COP who is able to connect practices with another community (Wenger, 1998). A broker enables connections between practices to be made, opening new dimensions in the negotiation of meanings and influencing practices of COPs (Wenger, 1998). In my study, I explore how it is possible for the young to perform their roles as brokers in the digital media practices they participate in during school and out of school. Brokering may be performed at home as the young share their digital experiences in school with siblings and friends out of school. Through the knowledge and experiences they share with their peers during school, young people are also capable of becoming brokers in the online communities they participate in, and which influence their practices in social media, in online groups, forums and gaming. Similarly, as Yelland (2007) explains, young people also tend to bring their out of school experiences with new media technologies to school and share them with their peers during school. This implies that the practices of young people continue across the boundaries of school and out of school COPs. However, it is important to note that not everyone is capable of becoming a broker. In order to influence other members of the community and its existing practices, a broker needs to be highly regarded and influential.

Even though boundary objects can connect different communities of practice, they do not indicate that there is an overlap in terms of participation in these communities. COPs members do not necessarily bring their participation in a practice to another practice. This is explained by Wenger (1998) who indicates that participation and reification are connected across the boundaries of COPs in different ways. As both participation and reification complement one another, they offer connections that consist of (a) participative connections and (b) reificative connections (Wenger, 1998). According to Wenger (1998), "participative connections offer possibilities for negotiation that can give them the vivid character of a vicarious experience" (p.111). This explains how we know about other practices based on our negotiations with members of other communities. For instance, a youth who never uses social media knows about it through conversation with friends who are frequent users of social networking sites such as Facebook and Twitter. However, this form of connection is

limited, as it only offers partial knowledge and peripheral access to the actual practice of using social media (Wenger, 1998).

On the other hand, reificative connections enable us to connect without having to mutually engage in the actual practice. For example, it is possible for a student to gather information or knowledge by performing random searches using search engines such as Google and Yahoo. However, by relying only on artefacts such as information available on Wikipedia and Britannica alone, and not having mutually engaged in the actual practice, this kind of connection is ambiguous and it can be misleading. In this regard, it is useful to make use of participation and reification together as both are complementary to each other (Wenger, 1998).

COPs can also be connected through boundary encounters and the negotiation of meaning. Boundary encounters occur in different ways such as in meetings, conversations and visits (Wenger, 1998). According to Wenger (1998), "in terms of negotiation of meaning, the connecting effects of boundary encounters depends on the distribution of internal and boundary relations among those involved" (p. 112) . With regard to my study, boundary encounters may take place as the young participate in virtual practices such as chatting on Instant Messenger (IM) and participating in an online community as a guest and also through real-life practices such as conversing with or visiting other communities. For instance, when a gamer visits an open gaming forum on the internet, he has the opportunity to meet with other gamers who are members to that forum. As they engage in conversations, meanings are negotiated. This explains how two-way connections can be formed between members of different communities.

Based on COPs perspectives, a practice can move beyond boundary practices and become a practice-based connection between two or more COPs (Wenger, 1998). Practice as connection occurs through (a) boundary practices, (b) overlaps and (c) peripheries. Boundary encounters lead to the emergence of boundary practices. This is explained by Wenger (1998), who says of boundary practices that "its enterprise is to deal with boundaries and sustain a connection between a number of other practices by addressing conflicts, reconciling perspectives and finding resolutions" (p. 114). However, instead of connecting communities, boundary practices might possibly lead to the emergence of a new community (Wenger, 1998). In my study, as young people actively participate in different technological practices both in and out of school, they are involved in numerous boundary encounters which may lead to the emergence of new practices. For example, a new online music community may

emerge when youth who belong to different communities meet online and share their music interest and experiences with one another.

According to Wenger (1998), an overlap refers to a direct and sustained overlap between two practices. Here, instead of connecting two communities, they remain distinct in their own enterprises and practices. But as practices of these communities overlap, learning is enabled. Overlaps open the possibilities for participants in both communities to learn from one another through their practices (Wenger, 1998). For instance, it is argued that young people's digital practices both in and out of school are connected as they bring their digital experiences that they have gained in school to out of school communities and vice versa (Lewin, 2004; Selwyn, Boraschi, et al., 2009; Selwyn, Potter, et al., 2009). However, it is also possible that these practices remain distinct. Instead of being connected, young people's technological practices in and out of school tend to overlap with each other.

Practices of a community might also be connected to those of other communities through peripheries. Wenger (1998) explains that:

> Communities of practice can connect with the rest of the world by providing peripheral experiences – of the kind I argued newcomers need - to people who are not on a trajectory to become full members. The idea is to offer them various forms of casual but legitimate access to a practice without subjecting them to the demands of full membership. (p.117)

Peripheral experiences indicate how a COP can open its enterprises and practices not only to members but also to non-members. Learning takes place as members and non-members engage in practices at the periphery of a community (Wenger, 1998). One example of this is where a gamer visits an online gaming forum as a guest, engages in conversation with other gamers in that forum, and eventually learns useful gaming tips and cheat codes through such engagement without having to become a member of that particular community.

3.4 Learning in Communities of Practice

According to COPs perspectives, knowledge is both individual and social. Instead of seeing learning as an end product, COPs view learning as a social process (Wenger, 1998). The core concept of learning in COPs is that it takes place as learners participate in shared practices of their communities. Based on the earlier work of Lave and Wenger (1991) and Wenger (1998), Fuller (2007) summarises learning in COPs as follows:

a. COPs promote the group as an important unit rather than the individual. Individual members are connected to one another through their engagement in the shared practices of the community.

b. Learning takes place within the shared practices of the community. COPs members learn as they participate in the practices of their communities.

c. Learning is a social process and it is not a final product. COPs members participate and learn in order to become full participants of their communities.

d. Members of the COPs regardless of their 'novice' or 'expert' status contribute in learning as they participate in the shared practices of their communities.

In COPs, the dimensions of practice comprising (a) mutual engagement, (b) a joint enterprise and (c) a shared repertoire, are essential for learning to occur. According to Wenger (1998), "members interact, do things together, negotiate new meanings, and learn from each other" (p. 102) . This implies that learning takes place as we participate in the shared practices of COPs. Learning occurs as we negotiate and create new meanings based on our participation and reification in COPs. Our competences in the community are essential indicators of learning (Wenger, 1998).

It is essential to note that a community is simultaneously involved in the processes of 'knowledge acquisition' and 'knowledge creation' and, as members participate in the shared practices of their communities, they become involved in acquiring and creating knowledge (Gebhart, 2008). Based on COPs perspectives, members not only learn from one another as they negotiate the meanings of their practices but they also create new knowledge and improve the existing practices of their communities. This signifies how meanings are constantly negotiated and learning is continuous and not stagnant (Wenger, 1998).

According to the theory of COPs, learning takes place in daily encounters. It is a continuous process that occurs in our every day practices (Wenger, 1998). Thus, it is important for us to expand our learning conception beyond what is formally learnt in school or other formal learning institutions. Fuller (2007) highlights four misleading learning assumptions as follows:

a. Learning occurs only in formal settings.

b. A qualified teacher is a requirement for learning to occur.

c. Learning is a knowledge transfer from an expert (teacher) to a student.

d. Learning is a product.

It is also important to note that learning that takes place within the community is not easily identified. This type of learning is difficult to detect or recall. In a study conducted among a community of workers, Mittendorff, Geijsel, Hoeve, de Laat and Nieuwenhuis (2006) looked at different groups in relation to COPs and how learning took place within these groups. The findings of this study indicate that COPs do not necessarily exist in all groups of workers. Nevertheless, it was observed that groups with many elements of COPs certainly stimulate learning. This indicates that a COP encourages learning among members of a community. However, it is also argued that groups of workers with many elements of COPs tend to be very rigid and unwilling to change (Mittendorff et al., 2006).

Based on my literature review of the COPs perspective, I conclude that learning takes place as young people participate in shared new media practices with other members of their communities of practice. For example, learning may occur as a group of students work together and negotiate with each other the way to accomplish their homework and assignments by making use of the information and knowledge they find on the internet. They may learn from one another the way to effectively use search engines that will provide them with the access they need to accomplish their tasks. This would require them to participate actively in the shared practices of COPs and become mutually engaged with other members of their communities, continuously negotiating their enterprises and learning. This kind of 'learning', according to Lave and Wenger (1991) and Wenger (1998) is social and is situated in our participation as members of COPs.

3.5 Identity According to Communities of Practice

In the earlier parts of this chapter, I introduced the COPs concepts that are related to this study, such as the dimensions of practice, participation and reification, and the multi-membership perspectives and learning. As described, these notions are communal as they involve engagement with others in the shared practices of communities. In contrast to the earlier concepts that are more focused on the communities, identity based on the COPs perspectives consists of the individual and the collective. Identity is considered to be both individual and social because it encompasses our beliefs and cultures, histories and experiences of living in the world (Wenger, 1998). With regard to identity based on participation in communities of practice, Wenger (1998) explains that:

> Our identity is formed through participation as well as reification…our membership constitutes our identity. In this context, our membership constitutes our identity, not just through reified markers of membership but more fundamentally through the forms of

competence that it entails. Identity in this sense is an experience and a display of competence that requires neither an implicit self-image nor self-identification with an ostensible community. (p. 152)

The experiences of participating in communities of practice help us to become a more competent member of our communities. It is by engaging in the shared practices of our communities, contributing to the process of negotiation of a shared enterprise and making use of the repertoire, that we transform our experiences and competence into identity (Battey & Franke, 2008; Wenger, 1998).

Membership of COPs involves not only in doing things together, but in a larger context it comprises several important notions that are related to one another, such as learning and formation of identities (Aguilar & Krasny, 2011). Identity based on the COPs perspectives is characterised by Wenger (1998) as follows:

a. Identity as negotiated experience – we form our identities based on our participations and reifications in COPs. It is in this context we negotiate meanings and define ourselves.

b. Identity as community membership – identity is defined as a form of competency. It the way we project ourselves as members by recognising what is familiar and what is not within the boundary of COPs.

c. Identity as trajectories – identity is temporal and we negotiate it throughout our whole life. We learn by participating in the practices of COPs and what we learn is essential in our formation of identities.

d. Identity as nexus of multi-membership – we participate in the practices of various COPs. Our identities are formed based on our multi-membership of those communities.

e. Identity as a relation between the local and the global – we negotiate our practices and identities in a broader context, enabling a relation between the local and the global.

Similar to meanings that are continuously negotiated within COPs, identity also is not static. It is temporal and is negotiated throughout our lives (Wenger, 1998). Histories and past experiences play a significant role in our formation of identities as these make us the persons we are (Battey & Franke, 2008). In my study, I wanted to investigate how exposure to various digital media practices that students experience throughout their lives makes them believe to be a certain person such as technology experts or 'geeks'. I also wanted to examine how they form their identity based on their participation in multiple communities of practice with regard to the use of digital technologies.

Wenger (1998) argues that identity is formed not only by our experiences of participating in COPs but also by our experiences of non-participation. Further, Wenger (1998) states that, even though not all that we encounter outside the boundaries of our communities is relevant to us, the experience of passing the boundaries of other communities and being in contact with other practices may have significance for our identity. According to him:

> In a world complexly structured by interlocked communities of practice, we are constantly passing boundaries – catching, as we peek into foreign chambers, glimpses of other realities and meaning; touching, as we pass by outlandish arrangements, objects of distant values; learning, as we coordinate our actions across boundaries, to live with decisions we have not made. Not all that we encounter becomes significant and not all that we meet carries our touch; yet these events can all contribute in their own ways to our experience of identity. (p. 165)

We experience numerous encounters every day, including those which are not related to our practices within the boundaries of our COPs. Still, these experiences can be crucial as they may significantly contribute to the formation of our identity (Wenger, 1998). This implies that our identity is not only based on the practices with which we are familiar, but also unfamiliar practices. For example, young people's experiences of being with their parents who are performing online transactions from the comfort of home, such as using the internet banking service or buying things on eBay, might not be something familiar or directly relevant to them. Nevertheless, these experiences might influence the way they perceive digital media and how new technologies can be used in regard to their COPs.

As mentioned earlier, not everything that we encounter becomes significant to our identity. However, when our participation and non-participation interact with each other, it can provide us with a different kind of experience that could influence our participation or non-participation, competence and identity. This is explained further by Wenger (1998) who divides the interaction between participation and non-participation into (a) peripherality and (b) marginality. In peripherality, participation defines the role of non-participation. Our non-participation provides us with the opportunity to participate in a practice. Even though participation at the periphery of a practice is not considered as a full participation, it opens up the possibility for us to fully participate in the practice in the future. In his work, Wenger (1998) provides an example of how a 'newcomer' to a practice begins by participating peripherally before eventually progressing and becoming a fully functioning member of a COP. On the other hand, in marginality, it is non-participation that defines the role of participation. In this state of non-participation, we keep ourselves marginal and it closes any

possibility for us to progress as a functioning member of a practice. Here, our non-participation limits us from fully participating in a practice (Wenger, 1998).

3.5.1 Identity based on the modes of belonging

Wenger (1998) also proposes that identity can be formed based on the COPs modes of belonging (see Figure 4). When the three modes of belonging comprising engagement, imagination and alignment work together, it can result in learning among members of COPs (Henderson, 2007; Wenger, 1998). Wenger (1998) further explains the three modes of belonging in COPs as follows:

    a. Engagement – refers to our participation in COPs. We engage and get ourselves involved in the negotiation of meanings, learning and forming identities. Engagement enables transformation of communities, practices, persons and artefacts.

    b. Imagination – it is our ability to creatively broaden the idea and conception of the practices we participate in. The ability to visualise new images is essential as it expands the horizon of our identity and reality.

    c. Alignment – involves power as we intend to connect and coordinate the actions and practices of other members of COPs. Alignment enables the coordination of different perspectives and actions, to make it into a unified form of identity accepted by members of COPs.

According to Wenger (1998), 'engagement' is a very powerful process that involves relationships, interactions, sharing of practices, negotiation of meanings and learning among members of COPs. Our engagement in COPs has the power to influence the shaping of our identity. Nevertheless, due to limitations in time and space, and also our inability to engage in multiple practices at once, our engagement in COPs is bounded. This is considered as both a strength and also a weakness (Wenger, 1998). Engagement as a mode of belonging performed solely on its own is characterised as being narrow. Wenger (1998) elaborated:

    Through engagement, competence can become so transparent, locally ingrained, and socially efficacious that it becomes insular: nothing else, no other viewpoint, can even register, let alone create a disturbance or a discontinuity that would spur the history of practice onward. (p. 175)

In such instances, when engagement in a community is narrow and one dimensional, the opportunity for learning is hindered. Wenger (1998) argues that powerful resistance to maintain identity may prevent further learning from taking place in the community.
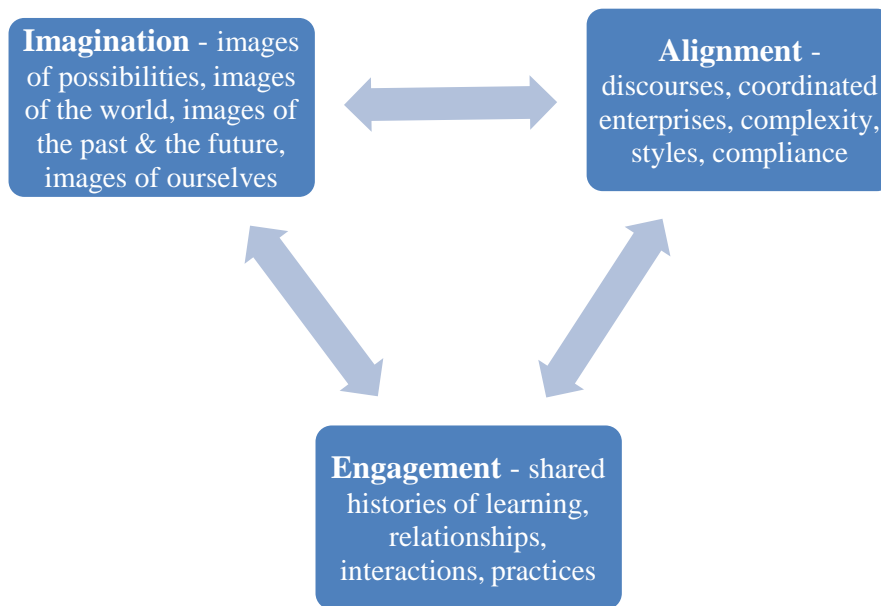
Figure 4. The modes of belonging (Wenger, 1998, p. 174)

In contrast to engagement that relates to the ongoing process that we go through within the context of our communities, 'imagination' refers to our experiences of living in the world (Wenger, 1998). As a potential source of identity and learning, Wenger (1998) describes imagination as a creative process in which we visualise ourselves and the world that we live in. Imagination includes our visualisation of the past, the present and the future. Our imagination also has the capacity to influence the way we engage in the shared practices of our communities. Even though we engage in similar practices with other members of our communities, we visualise ourselves differently and learn different things throughout the course of our engagement. However, as Wenger (1998) argues, we should be aware of the possibility of our imagination becoming disconnected from reality. Our imagination can be misleading, bringing us away completely from the reality that we live in (Wenger, 1998).

'Alignment' is another mode of belonging which coordinates practices and brings members of COPs together. Wenger (1998) states:

> The process of alignment bridges time and space to form broader enterprises so that participants become connected through the coordination of their energies, actions, and practices. Through alignment, we become part of something big because we do what it takes to play our part. (pp. 178-179)

Unlike the other two modes of belonging explained earlier, alignment provides coordination of our experiences, views and practices and also serves as a means of connection among members of COPs

(Wenger, 1998). However, as much as alignment is empowering to the community, it can also be disempowering. Alignment can make us blindly submit our allegiance and can lead to conflict which may separate COPs members instead of coordinating them (Wenger, 1998).

In my study, the modes of belonging were used to closely examine students' identity and understand their participation and non-participation in digital media practices in and out of school. I wanted to explore how, through engagement in the shared practices of their communities, students negotiate new media practices, learn from each other and form their identity. Based on Wenger's (1998) communities of practice, I speculated that students' formation of identity would not end in the engagement mode only. Their formation of identity would continue as they attempted to broaden their community's practices individually in the imagination mode, based on their own visualisations of the world, their competencies and in their projections of self. As students take with them different visualisations, competencies and experiences to their communities, I was keen to explore how they come together and align their views in order to ensure connection among COPs members and coordination in their practices (Wenger, 1998).

According to Wenger (1998), as learning is the process of becoming a certain individual, it also relates closely to formation of identities. Identity makes learning possible, making it meaningful to individuals. It is indeed a combination of our past and the future (Wenger, 1998). As we participate in shared practices of COPs, we bring together with us our past experiences. Our past contributes to our current practices within COPs. Our identities also constitute the future as we take with us our present experiences of participating in shared practices of COPs in the future.

3.6 COPs in Studies of New Media Technologies in Education

COPs are widely used as an analytic framework within the educational context (Correia & Davis, 2008; Fernando, 2008; Mitra, 2008; Mullen & Hutinger, 2008; Stein & Coburn, 2008). In the area of educational technology, COPs are applied as a theoretical framework to study teachers' professional development online (Cleaves & Toplis, 2008; Fernando, 2008; Nobles, 2003; Webb, Robertson, & Fluck, 2005) and teaching and learning with technology (Kajee, 2008; Thomas, 2005).

In their study conducted in the United Kingdom, Cleaves and Toplis (2008) looked at how pre-service science teachers (trainees) justified their usage of information communication technology (ICT)

during placements at secondary schools. ICT was adopted in order to display lesson objectives, to revise what was learnt previously, to explain and question, to provide visual stimuli and to encourage students' involvement (Cleaves & Toplis, 2008). Trainees' justifications for using ICT were grouped into (a) expediting and enhancing work production, (b) increasing the currency and scope of reference and experience, (c) supporting exploration and experimentation, (d) focusing on overarching issues accentuating important features, (e) fostering self-regulated and collaborated learning, (f) improving motivation and engagement and (g) trainee survival (Cleaves & Toplis, 2008).

The trainees who took part in this study had prior knowledge and experiences with ICT. In general, they employed ICT as a tool to assist them in the classroom. Cleaves and Toplis (2008) concluded that "the trainees in this study frequently used ICT…to increase efficiency, save time and improve pace…to accentuate the important points of a topic…to provide lesson starters and plenaries…as survival tools for the organization and management of lessons" (pp. 209-210). However, there were also trainees who used ICT to promote active collaboration and innovation among students during class sessions. Participation in COPs that involved mentors and trainees was highly recommended in order to improve technology based pedagogies and ICT in science teaching (Cleaves & Toplis, 2008). Even though Cleaves and Toplis (2008) recommended improved interaction between mentors and trainees in COPs, they did not describe in detail how this can be done. In order for COPs to occur, mentors and trainees should participate in shared practices of their community. A community should consist of the dimensions of practice that include mutual engagement, a joint enterprise and a shared repertoire.

Nobles (2003) indicates that intranet based COPs within educational settings could improve teaching and learning. This study shows the importance of connecting teachers through the intranet. They become participants in the intranet based COPs, get involved in the forums within the community, and share useful inputs with one another. This leads to better teaching and learning practices. Nobles (2003) adds that "new members are guided in correct practice until they become expert members" (p. 2). This explains how active participation in intranet based COPs can help new teachers progress from the state of peripheral participation to full participation.

In her study, Nobles (2003) illustrates the benefits of COPs and how learning can occur from such a positive environment. However, COPs are not always positive. A community of practice might be in the state of harmony or crisis. Wenger (1998) explains that "peace, happiness and harmony are

therefore not necessary properties of a community of practice" (p. 77). Learning occurs as participants become involved in the three dimensions of practice that consist of mutual engagement, a joint enterprise and a shared repertoire (Wenger, 1998). It is also important not to narrow our understanding of learning by indicating that it takes place only in positive and stable environments. Perhaps, learning involves both order and chaos. It is our adaptability to the situation that helps learning to occur (Wenger, 1998).

Webb, Robertson and Fluck (2005) explored how teachers' professional learning in ICT can be transferred to actual in-class practice. This project involved four primary schools in Tasmania, Australia. Except for the introductory workshop, which was organised by the Children Online Learning and Authentic Teaching Skills in Primary Education (COLAT) and attended by representatives of the four schools involved, minimal support was provided to them. In this study, Webb et al. (2005) showed that steady progress was reported even though none of the participating schools was able to accomplish the intended integration of ICT according to plan. Significant findings reported as School L and N used the project as a platform to design and apply professional learning among teachers with the aim to transfer it to in-class practices. These findings show how teachers shared inputs with one another in order to ensure their in-class practices pertaining to ICT integration were successful. Webb et al. (2005) explain that "co-learners met formally and informally to share their observations, to refine the design of their in-class activities and to solve problems that had arisen" (p. 629). With regard to COPs, participation leads to negotiation of meanings and learning among community members.

Kajee (2008) investigated university students' construction of identities in online COPs. Specifically, this study explored whether COPs exist in the online learning environment among those who were not native-English speakers and had minimal prior access to ICT. This study was conducted in the context of South African higher education in which the use of ICT was described as being inadequate compared to its usage in first world countries. Similar to many other developing countries, South Africa attempts to integrate ICT in education with the aim of producing knowledgeable human capital to compete in the era of globalisation. However, inadequate infrastructure was considered as a stumbling block which prevented the integration of ICT into education (Kajee, 2008).

In this study, Kajee (2008) showed that participants participated actively in online COPs. Facilitators and students became actively involved, interacted with and helped one another to become full

participants (Kajee, 2008). Participants formed their identities through the use of language, names and social cues. Kajee (2008) added that "they were able to construct their identities by positioning themselves as empowered when they had access to ICTs. Using discussion threads, participants…construct identities textually in relation to course theme" (p. 232). In this instance, participants constructed their identities based on their participation in the online COPs.

Kajee (2008) explains that students participate in diverse COPs. According to Kajee (2008), "participants established relationships and maintained social contact with lecturers, with one another, and with international students, thus diminishing boundaries, and narrowing social distance" (p. 213). They participated in the communities within, communities beyond and global communities. This shows the multi-membership dimensions of COPs. However, Kajee did not describe how these communities were connected. While it is noted that participants shared the virtual environment as their boundary object, it is unclear how they performed as brokers, sharing elements with one another based on their practices in different communities. In the multi-membership dimensions of COPs, brokering is important as it makes coordination between communities possible, thus opening possibilities for new meanings (Wenger, 1998).

Kajee (2008) claims that participants construct their identities as they participate in online COPs. There is evidence that they used language and social cues to construct identities in the virtual world. However, the construction of identities in Kajee's study is not directly related to COPs, but based on the studies of Hall (1992), Norton-Pierce (1995) and Castells (2004). Important dimensions of identities based on COPs perspectives such as identities in practice, participation and non-participation, modes of belonging and identification and negotiability were not discussed.

In their attempt to understand and support COPs based on the evolution of Wikipedia, Xiaoli and Bishop (2011) identified six interrelated elements that are important in the emergence of online COPs (see Figure 5). The six important and interrelated elements in Xiaoli and Bishop's framework are (a) individuals, (b) practice, (c) content, (d) interactions, (e) community and (f) technology.

The six elements are utilised in my thesis as follows:
   a. Individuals – this refers to the participants of my study and their associates who are with them as they participate in shared new media practices out of school. They include the participants' family members, friends and other individuals that belong to their social media

network and other gamers they play with on online gaming platforms. However, not everyone who uses similar technologies can be considered as members of COPs. At the start, one might only be participating at the periphery of a practice. In order to become a full-member of the community, one needs to be actively participating in the shared practices of COPs, sustaining participation, contributing to its existence, and expressing a sense of belonging with other members through mutual engagement, a joint enterprise and a shared repertoire (Wenger, 1998; Xiaoli & Bishop, 2011).
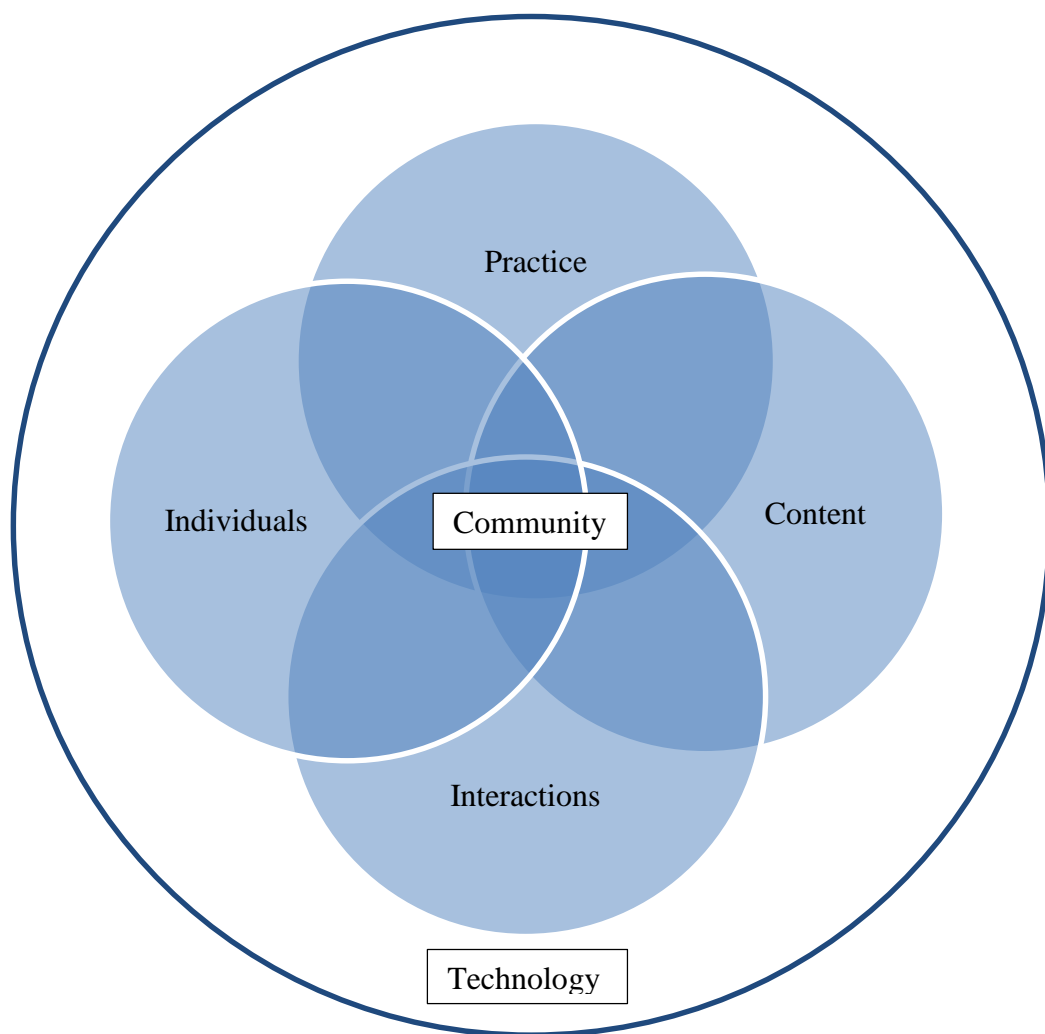
Figure 5. Visual representation of the relationship of the six elements that produce a COP (Xiaoli & Bishop, 2011, p. 729)

b. Practice – in relation to my study, practice refers to the new media practices that are shared by the participants and their associates. These include their practices in the use of social media, online gaming, online groups and forums. As Xiaoli and Bishop (2011) demonstrate,

it is through participation in shared practices of their community that COPs members come together and communicate with each other.

c. Content – refers to the repertoire that is developed and produced together by the participants and their associates based on their engagement with one another. It is the creation or product of their continuous commitment to negotiating practices together. With regard to my study, I decided to investigate whether the participants and their associates developed and shared with one another cheat codes, tips, moves and strategies to accomplish missions as they play computer games online.

d. Interactions – these are considered as an important element of a community. COPs members communicate with each other as they form relationships with one another and negotiate their practices together. Interactions are a means to socially connect one member to another. In my study, I investigated how the participants and their network of online friends interacted with each other as they used social media out of school. Their usage included chatting online, postings on friends' walls and commenting on friends' postings of statuses, videos and images.

e. Community – this is at the centre of all the elements described earlier. Participation in shared practices of the community brings COPs members together and creates a sense of mutuality among its members. However, COPs should not be simplified as collaboration or harmony, as they also involve diversity as well as partiality among members (Wenger, 1998). Regardless of the differences, COPs members still come together as they share similar interests, practices, aims and goals.

f. Technology – in regard to my study, new media technologies used by students were investigated to determine the most important element that enables all the other elements to occur. Technology brings the participants and their associates together and supports the existence of the community.

According to Xiaoli and Bishop (2011), the framework that shows the relationship between the six important elements of individuals, practice, content, interactions, community and technology, which was presented in their study, is not only applicable for them but it could also be applied in other studies to understand and support online communities of practice. In my study, Xiaoli and Bishop's (2011) framework was used to analyse young people's new media practices such as gaming and social networking, and the emergence of online COPs within these practices.

In a study of online learning, Thomas (2005) applied the COPs theoretical construct to look at how children learn in a virtual community. During the time when this study was conducted, 60 children of an average age of thirteen were actively involved in Middle Earth online role-playing activities. These children participated in role-playing, and were involved in forums and chat with one another virtually. Thomas (2005) states that, "as well as role-playing, they do poetry recitals and storytelling, sometimes combining the words and visuals with midi files they share to create musical atmosphere" (p. 27). This shows how they participated in a virtual community that was characterised by shared goals and practices. They also learnt from one another and developed identities based on their participation in the virtual community. In this study, Thomas (2005) showed that learning occurred as children participated in the virtual community. According to Thomas (2005):

> The opportunities for freedom of expression, for the exercise of power, and for the
> opportunities to create meaningful relationships with others, offer children a place where
> they can be themselves, and the motivation to belong is the drive for learning. (p. 37)

The research of Thomas (2005) indicates how children learn as they participate in COPs. In comparison to formal education that is often characterised as being rigid, COPs provide an opportunity for children to express themselves, collaborate and learn from one another in socially constructed environments.

Except for Thomas's (2005) study of children in an online community, all other studies highlighted here were based on the perspectives of pre-service teachers, in-service teachers, students at higher educational institutions and adult learners. However, as discussed earlier, COPs are everywhere and we all belong to different communities at work, school and home (Wenger, 1998). Lave and Wenger (1991) explain that:

> Even though we decided to set aside issues of schooling in this initial stage of our work,
> we are persuaded that rethinking schooling from the perspective afforded by legitimate
> peripheral participation will turn out to be a fruitful exercise. Such an analysis would
> raise questions about the place of schooling in the community at large in terms of
> possibilities for developing identities of mastery. (p. 41)

This type of approach is also explained by Freire, Carvalho, Freire, Azevedo and Oliveira (2009), who indicate that COPs provide a useful lens through which to understand how meanings and identity are constructed as students engage in various practices in school. Thus, instead of limiting our perception of what is formally learnt in school, it is important to understand that school is a place of socialisation in which COPs take place. In relation to my study, it is expected that students belong to

in and out of school COPs. They participate in shared practices of their communities, negotiate meanings, transform their identities and learn from one another.

3.6.1 Critical perspectives of communities of practice

In general, COPs theoretical perspectives are well received in various fields of specialisation, particularly in organisation, management and education (Fox, 1997; Mittendorff et al., 2006; Wallace, 2006; West, 2009). However, like other theories, COPs are also debated and criticised (Fuller, 2007; Fuller & Unwin, 2004; Wubbels, 2007). For instance, the concept of legitimate peripheral participation is challenged for narrowing learning from within and limiting the possibility of knowledge from the outside the community (Wubbels, 2007).

According to Jewson (2007), the concept of COPs is limited in its overall explanation and the theory fails to critically justify the notion of 'community'. Jewson (2007) argues that, "the concept of community remains relatively underdeveloped…the notion of communities of practice has, implicitly and uncritically, drawn on one particular theoretical tradition in the study of communities – that which focuses on the symbolic construction of imagined collective entities" (p. 68). Generally, 'community' indicates cooperation and harmonious relationships between members in a group of individuals. In this instance, the term 'community' is referred to as being undeveloped, loose, vague and confusing, especially in explaining social phenomena (Jewson, 2007). Jewson argues that Wenger recognises that participation in COPs involves positives as well as negatives and cooperation as well as conflict, but does not provide further justification pertaining to these matters.

While Jewson (2007) claims that the notion of 'communities' used in COPs is loose and undeveloped, it is important to note that, COPs are still being developed. This is acknowledged by Wenger, who explains that, as a theoretical term, COPs has been recently coined (Wenger, 2013). The term 'communities' in COPs should be regarded as a theoretical concept that consists of individuals who share similar interests, goals or objectives. These individuals participate in shared practices with one another, and learn and form identities through their active participation in COPs (1998). In his definition, Wenger (2013) characterises COPs as being based on three important characteristics: (a) the domain – different people come together as they share similar interests, (b) the community – they form a joint enterprise with each other and learn from one another, and (c) the practice – as practitioners, they develop a set of repertoire or a shared practice. Based on this characterisation, it is

important not to relate or compare COPs based on any other analytical assumption of 'community' but to regard them as a theory of social learning that concerns different individuals who come together to participate as members of a community of practice and informally learn from each other (Lave & Wenger, 1991; Wenger 1998; Wenger 2013).

Issues related to conflict, power and influence are often raised by scholars who critically examine communities of practice (James, 2007). But to indicate that COPs do not deal with these issues would be incorrect. In his work, Wenger (1998) clearly states that COPs are not always harmonious as they involve differences and conflicts among members who continuously negotiate their enterprise. It is to be expected that power among COPs members is not equally distributed, which is likely to be due to their membership status within the specified community. For instance, members of COPs can be categorised into 'newcomers' and 'old-timers', terms which also indicate their levels of competence, power and influence in the practice (Wenger, 1998). It is expected that new members have less competence, power and influence than more senior members of the community. With time, they will gradually become more competent and eventually progress to become old-timers with more power and influence.

Even though COPs are a debated and criticised concept, its social learning perspective is generally accepted (Clarke, 2008; Fernando, 2008; Hodgkinson-Williams, Slay, & Sieborger, 2008; Lamontagne, 2005). COPs also provide useful tools for explaining participants' interactions in settings that are socially structured and constructed (Oliver & Carr, 2009). In relation to my study, COPs provide tools to investigate young people's participation in and out of school communities with regard to their use of new media technologies. COPs also allow investigation into how relationships are established between school and out of school communities with regard to young people's use of digital technologies. Important COPs tools based on the works of Lave and Wenger (1991) and Wenger (1998), such as participation, multi-membership dimensions, negotiation of meaning, learning and formation of identities are employed throughout my study.

CHAPTER 4: RESEARCH METHODOLOGY

In this research, I investigated young people's use of new media technologies in and out of school using qualitative research methods. I aimed to contribute new knowledge to better understand the complexity of students' technological practices in school and out of school. For that purpose, the study attempted to answer the following research questions:

1. What are the new media practices that young people participate in and out of school?
2. How and why are they participating in these new media practices in and out of school?
3. How do young people's new media practices compare in and out of school?
4. How does young people's sense of identity develop as they participate in new media practices in and out of school?

These research questions were rigorously investigated in order to ensure the development of well-documented explanations for, and understanding of, young people's new media practices. According to McMillan (2008), research is considered to be scientific when it is performed systematically, can be tested and is objective. McMillan (2008) indicates that "the primary purpose of scientific inquiry is to explain natural phenomena and understand the underlying relationships and then, using this information, to predict and influence behaviour" (p. 6). This purpose is elaborated further in the subsequent parts of this chapter, and the research methodology for this study is discussed. This discussion includes the research approach, the research design, the research process, the context of the research and the selection of research participants, the ethical considerations and the methods of data collection and data analysis used in this study.

4.1 The Research Approach

According to Walter (2010), research methodology or the research approach is "the worldview lens through which the research question and the core concepts are viewed and translated into the research approach we take to the research" (p. 13). The research approach consists of three important and interrelated elements that form the researcher's standpoint or research position, the theoretical framework or paradigm, and the methods employed in the research (Walter, 2010). These elements are briefly discussed in the following sections in relation to this study.

4.1.1 Research standpoint

Based on foundationalist perspectives, the research standpoint may differ from one individual or group to another due to differences in worldviews, understanding and experiences (Jupp, 2006). This point is further explained by Walter (2010) who states:

> Our standpoint is usually our own position, who we are and how we see ourselves in relation to others and in relation to society…the position of the researcher is highly relevant to the way he or she approaches and understands the research. How we see the world is not a neutral, objective understanding, but it is inevitably influenced by filters and flames of our life experiences and our social, cultural, economic and personal identity location. (p. 13)

One inherent characteristic of the research standpoint is that it revolves around the politics of an individual or a group experience, in the way in which they take their stand pertaining to an issue (Jupp, 2006). Walter (2010) provides an example of how things or issues might be viewed differently by younger and older people, male and female colleagues, and indigenous and non-indigenous researchers consequently, influencing the stands they take. The notion of research standpoint can be further explained theoretically based on the frameworks of epistemology, axiology and ontology (Walter, 2010).

Epistemology

Epistemology is a study of knowledge that emphasises on the importance of justified beliefs and how knowledge is created and disseminated (Matthias, 2012). According to Wiersma and Jurs (2009), "epistemology is defined as a branch of philosophy that investigates the origin, methods, and limits of human knowledge" (p. 232). Epistemology is also referred to as the ways of knowing, a theory that specifically focuses on the conditions, sources, structure and limits of knowledge (Matthias, 2012; Walter, 2010). There are different approaches and theories that explain epistemology, but the most dominant are empiricism and rationalism, both of which are explained by Schwandt (2007) who indicates:

> Empiricist epistemology argues that knowledge is derived from sense experience. Genuine, legitimate knowledge consists of beliefs that can be justified by observation. Rationalist epistemology argues that reason is the sure path to knowledge. Rationalists may claim that sense experiences are an effect of external causes; that *a priori* ideas

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(concepts, theories, etc.) provide a structure for making sense of experience; and/or that reason provides a kind of certainty that the senses cannot provide. (p. 88)

Empiricists like Locke and Hume believed that knowledge is experiential, something that we experience and then generalise based on the kind of exposure that we have in our everyday lives (Bernard, 2013). In my study, it was important for me to gather empirical data in order to make sense of young people's experience of new media. However, there is no assurance that what we experience or what we are exposed to is definitely correct or can be considered as an absolute truth (Bernard, 2013). According to Bernard (2013), empiricism in modern science acknowledges that knowledge is continuously improved over time; it is a process in the sense that what was considered as a truth yesterday might no longer be considered correct or valid today because of new empirical findings. On the other hand, knowledge, according to rationalism, is based on *a priori* truths and our ability to reason (Bernard, 2013). Prominent philosophers like Plato, Socrates and Leibnitz believed that it is necessary for us to capitalise on our ability to perform deductive reasoning and to intellectualise in order to find truth or proposition which is already there (Bernard, 2013). With regard to my study, I developed a deeper understanding of young people's experience of new media through follow up interviews and through the comparison of student participants from the first case study school with those in the second case study school.

Kant synthesised rationalism by acknowledging the existence of *a priori* truth, but whether we see it or not, truth is very much influenced by what we construct in our minds (Bernard, 2013). This argument is manifested in Kant's Transcendental Idealism and Two-objects Interpretation in which he distinguished 'things' from 'appearance' (Rohlf, 2010). 'Things' are real and can be considered as *a priori* truth regardless of whether we are capable of finding the truth or not, whereas 'appearance' refers to what we depict in our mind, it is our mental representation (Rohlf, 2010). Bernard (2013) explains Kant's conception of human mind as follows:

> The human mind, said Kant, has a built in capacity for ordering and organising sensory experience. This was a powerful idea that led many scholars to look to the human mind itself for clues about how human behaviour is ordered. (p. 8)

In contrast to Kant's conception of the human mind and sensory experience, behaviourists such as Pavlov, Thorndike and Skinner proposed that knowledge is not in the mind but is in the behaviour of human beings (Graham, 2010). In this thesis I aim to make sense of the students' experiences through deep questioning and then an analysis of the findings through the theoretical lens of communities of practice (Wenger, 1998).

According to Skinner, even our thought is influenced by the sequence of events and the environment (Halpern, Donaghey, Lamon, & Brewer, 2002). In brief, according to Graham (2010), behaviourism can be understood based on its claims as follows:

a. Psychology is referred to as the science of our behaviour and it is not in our mind.

b. We should explain behaviour without referring to the faculty of the mind because its sources are external, or in the environment, and not in the mind.

c. Mental concepts that are used to explain behaviour should be changed with behavioural terms and explanations.

The claims stated above also provide a brief description of the three types of behaviourism: methodological, psychological, and analytical or philosophical (Graham, 2010). Known for his brand of radical behaviourism that combines methodology, psychology and philosophy, Skinner argued that knowledge is gained through the means of reinforced learning (Bernard, 2013; Graham, 2010). This is manifested in Skinner's operant conditioning in which it was indicated that learning is influenced by reinforcement (Halpern et al., 2002). Reinforcement is considered to be a consequence of behaviour and is arranged based on a certain schedule to reinforce learning and to strengthen and weaken behaviour (Halpern et al., 2002).

In relation to social research, the previously described dogmas of empiricism and rationalism present different epistemological beliefs to social researchers, influencing the way they look into an issue and conduct their research (Bernard, 2013). The gender issue, for example, might be viewed very differently from different angles and based on different perspectives depending on researchers' beliefs and worldviews (Walter, 2010). Despite the clash and differences in beliefs and worldviews, both the empiricist and rationalist epistemological approaches provide a foundation for scientific research to be conducted so that knowledge is free from bias, presumed beliefs and prejudice (Blaikie, 2008).

Instead of adopting either empiricism or realism approaches as epistemology, in this study I explored young people's use of new media based on my worldview as a social constructivist. Within social constructivism, evidence and knowledge pertaining to students' digital practices in and out of school, the relationship between practices and the formation of identity resulting from participation in digital practices in both contexts were gathered through understanding young people's personal, social,

cultural and historical experiences. This research approach is further elaborated in Section 4.1.2, *Paradigm and theoretical framework.*

Axiology

Axiology is embedded within our epistemology in the way that the worth of knowledge is justified by our broader cultural values (Carter & Little, 2007). Derived from the Greek words *axios*, which means worth and *logos*, which means reason (Hart, 1971), axiology is defined as the classification of worth or value of a thing or an approach (Schroeder, 2012). In relation to research, axiology refers to our value systems as researchers as well as the value systems embedded in the theories we apply, and in cultures, norms, research participants, and other entities that relate to our research (Creswell, 2007).

While past scholars in the field of social science endeavoured to promote and maintain objectivity in their work, it is very unlikely that social research can be value-neutral or value-free (Walter, 2010). Walter (2010) posits that:

> This link between a researcher's axiological position and his or her research raises the contested issue of values in research. A traditional perspective holds that researchers must aim to produce value-neutral knowledge based on observed objective facts. The feasibility and desirability of such an aim has been substantially challenged, and is mostly rejected by contemporary social researchers. The stronger argument in current social research debates is that social research cannot be value free. (p. 15)

Therefore, as our studies are conducted as part of the social world, it is necessary to take into consideration (a) the social world in which research is conducted and (b) the centrality of the social context in our research. As argued by Walter (2010) and Cresswell (2007), a certain degree of bias is expected when reporting on our research depending on where we position ourselves.

Ontology

In brief, our ontology is the way we see the world. It is concerned with the meanings that we create based on our experiences of living in the world (Crotty, 1998). In relation to research, ontology refers to the realities based on the study that we conduct (Creswell, 2007). Instead of focusing only on a sole reality, the studies that we perform offer multiple realities. As Creswell (2007) explains, different researchers, research participants and readers have different experiences, and these experiences offer

different perspectives on the phenomenon that is being studied. According to Walter (2010), reality, or the way we perceive the world, is different from one person to another depending on the experiences and cultural values that they hold. In her example, Walter (2010) points out that indigenous people in Australia and New Zealand differ in their ontological positions compared to Western people, partly due to their different beliefs and cultural aspirations.

In order to be able to provide a thorough understanding of the research being studied, it is necessary for social researchers to take into consideration the ontological positions of different people involved (Walter, 2010). Failure to recognise different perspectives and beliefs of the people involved may result in failure of the research (Walter, 2010). For instance, in the Australian Census Study, the indigenous participants were asked questions that were outside their ontological understanding (Walter, 2010). Thus, to avoid similar pitfalls, my study considered the perspectives of other scholars and researchers in the field based on earlier literature and participants' views, to ensure a comprehensive understanding of, and explanations for, young people's new media practices in and out of school.

4.1.2 Paradigm and theoretical framework

According to Walter (2010), in conducting social research, there are two essential elements to be considered. The two elements are (a) the empirical data that is collected through the use of research instruments such as interview and observation and (b) the social theory through which the findings of the study are described and explained (Walter, 2010). According to Walter (2010), even though the two elements have different roles, they complement each other in the sense that empirical data, when interpreted and explained using a social theory, may lead to important findings.

The theoretical framework of social research is guided by a paradigm or worldview (Creswell, 2007). It is in fact a larger theoretical categorisation than the theories used as frameworks for research (Walter, 2010). The research paradigm adopted relates to the theoretical framework used in the way that it offers the same perspectives but in a much broader sense (Walter, 2010). According to Creswell (2007), it is through the use of a paradigm that research is shaped. Among the theoretical paradigms or worldviews that are adopted in social research are social constructivism, post-positivism, feminism and pragmatism.

In my study, I adopted social constructivism as the appropriate paradigm to investigate young people's use of new media in and out of school. The fundamental idea of social constructivism is that we are what our society is (Crotty, 1998). It is we who are responsible for building and shaping our society to be in certain ways like how it is. Crotty (1998) also observes that the 'social' in the social constructivist worldview does not necessarily entail the presence of individuals or human beings. But what is social is within the meanings that we generate with other members of our society (Crotty, 1998). Social constructivist perspectives are inherent in learning and in the process of knowledge creation. It is through our active participation in learning with other learners that knowledge is socially constructed (Adams, 2006).

According to Kim (2001), there are three important assumptions underpinning social constructivism which are: (a) reality, (b) knowledge and (c) learning. These assumptions are socially constructed by members of the society as they come together and engage in conservations with each other and participate in social events (Kim, 2001). As a worldview for research, social constructivism is explained by Creswell (2007) as an approach where:

> Individuals seek understanding of the world in which they live and work. They develop subjective meanings of their experiences – meanings directed toward certain objects or things. These meanings are varied and multiple, leading the researcher to look for the complexity of views rather than narrow the meanings into a few categories or ideas. The goal of research, then, is to rely as much as possible on the participants' views of the situation. Often these subjective meanings are negotiated socially and historically. (pp. 20-21)

Researchers who adopt social constructivism focus their attention mainly on the interactions of the research participants as well as the participants' social, cultural and historical experiences (Creswell, 2007; Henderson, 2007). Not only is there an emphasis on the 'social' aspects of the participants but the researchers also consider their own experiences and backgrounds when interpreting their research findings (Creswell, 2007).

This social constructivist approach to research blends well with Lave and Wenger's (1991) Situated Learning concept and Wenger's (1998) Communities of Practice (COPs) utilised as the theoretical frameworks for my study. As discussed in Chapter 3, the main reason for choosing COPs as the theoretical framework for this study was that the theory's social perspectives enabled an in-depth investigation and analysis of young people's use of new media. The approach takes into account

several related aspects including young people's communities, cultures and histories with regard to technological practices both in and out of school (Selwyn, 2011).

4.1.3 Research method

According to Wimmer and Dominick (2000), there are different methods of inquiry for conducting research. These include (a) quantitative method, (b) qualitative method, (c) longitudinal method and (d) experimental method (Wimmer & Dominick, 2000). Each of these methods has its advantages as well as disadvantages depending on the nature of the research being conducted (Wimmer & Dominick, 2000). For instance, while the quantitative research approach is proven to be a successful method of inquiry for describing trends and explaining relationships among variables, it cannot describe a central phenomenon or explore a lesser known problem (Creswell, 2008). In such instances, qualitative research is a better alternative, providing an in-depth understanding of the central phenomenon (Berg, 1998; Creswell, 2008). In my study, the qualitative research method of inquiry was chosen as it fits the nature of the study by enabling a thorough analysis of the students' new media practices, the communities they participate in, and the identities they form based on their everyday use of digital technologies.

According to Yin (2003a), "the case study is the method of choice when the phenomenon under study is not readily distinguishable from its context" (p. 4). As posited in the preceding paragraph, a case study is conducted in order to understand the central phenomenon (Yin, 2003a, 2003b). It is an empirical form of inquiry that requires investigation to be conducted within its real-life context (Yin, 2003b). In conducting such investigation, different strategies are employed. Case study usually focuses on some specific individual, group, setting, program or event. In a case study, the main focus is to provide a holistic exploration of the actual case (Creswell, 2003, 2008). According to Berg (1998), "given the versatility of the case study method, they may be rather narrow in their focus, or they may take a broad view on life and society" (p. 212) . In my study, case study was employed providing a basis for an in-depth inquiry to be conducted pertaining to how students use digital technologies during in and out of school in two different schools, based on communities of practice (COPs) perspectives.

Numerous studies that employed case study in the past have been criticised for being sloppy, biased, difficult to summarise, and unable to be generalised (Wimmer & Dominick, 2000; Yin, 1989).

Nevertheless, case study enables a wealth of information to be obtained and it opens the means for new discoveries, allowing a deeper understanding of the particular area of research (Berg, 1998; Wimmer & Dominick, 2000). In the area of educational technology, case study has been used frequently in attempts to understand teachers' use of information communication and technology (ICT) (Bennett & Lockyer, 2008; Dawson, 2008), ICT integration in schools (Ainley et al., 2002; McMahon, 2009) and students' use of ICT at school and home (McNicol, Nankivell, & Ghelani, 2002; Wellington, 2001).

Generalisability

In brief, generalisability is defined as the extent to which a research finding can be replicated or deemed applicable to other research settings (Falk & Guenther, 2007). Generalisability is an issue on the basis of which the worth of case study is questioned and debated. This is explained further by Yin (2003b) and Henderson (2007) who ascertained that case study is often challenged and disputed for its inability to be applied to other samples or populations. In his explanation of the issue of generalisability of case study research, Henderson (2007) states:

> Conclusions drawn from one case study cannot be assumed to be true of another case study even if they appear to be similar. However, case studies can be generalised to theoretical propositions. In other words, case studies can be used to support an argument, hypothesis or theory. (p. 83)

Henderson (2007) and Burns (1997) argue that, instead of generalising the findings of a case study to other studies, generalisation based on the finding of case study should be decided by readers and not researchers. In a way, this form of generalisation involves a subjective process. Readers can decide on the worth of the study and how it can apply to their contexts and situations (Henderson, 2007).

To narrowly consider that knowledge produced from a case study is unreliable due to its inability to be replicated or applied in other settings or to other populations and samples is incorrect (Flyvbjerg, 2004). This is due to the fact that generalisation is not the only way to determine whether the research performed is legitimate. This point is explained further by Flyvbjerg (2004) who argues:

> In Germanic languages, the term 'science' (*Wissenschaft*) means literally 'to gain knowledge'. And formal generalisation is only one of many ways by which people gain and accumulate knowledge. That knowledge cannot be formally generalised does not mean that it cannot enter into the collective process of knowledge accumulation in a

given field or in a society. A purely descriptive, phenomenological case study without any attempt to generalise can certainly be of value in this process and has often helped cut a path towards scientific innovation. (p. 424)

While Flyvbjerg's (2004) explanation, as quoted above, sets case study free from the rigour of generalisability, it does not mean that the concept of generalisation should be completely ignored when performing case study research. Flyvbjerg (2004) indicates that the generalisability of an in-depth case study can contribute to the development of theories or 'theory-building'. Similar views are held by Burns (1997) and Henderson (2007).

The process of theory-building, using case study method, begins by presenting the research questions in an order which gives the study a specific focus (Eisenhardt, 1989). This is then followed by the selection of cases, which is based on the theoretical considerations (Eisenhardt & Bourgeois, 1988), designing methods of data collection in which multiple methods are used for the purpose of triangulation (Yin, 2003b), collecting data, analysing each case individually and performing cross-case analysis, building hypotheses and comparing these with earlier literature looking for specific patterns, similarities and differences (Eisenhardt, 1989). Eisenhardt (1989) added that, theory-building using case study can lead to the emergence of new concepts that could enrich the theory. Conversely, it may result in disappointing conclusions such as replication of earlier studies and, possibly, an end without any clear outcomes. The process of theory-building using case study is summarised in Figure 6.

My study was conducted to explore the use of new media in and out of school, students' practices and the formation of identity based on Lave and Wenger's (1991) Situated Learning and, Wenger's (1998) Communities of Practice (COPs) theoretical perspectives. Such a focus not only contributed to the process of theory-building (Eisenhardt, 1989; Burns, 1997), but it also helped to improve the study's analytical generalisability (Henderson, 2007). In order to ensure the credibility of this study, four important considerations were tested: (a) construct validity, (b) internal validity, (c) external validity and (d) reliability. These are discussed briefly in the following sections.

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┌─────────────────────────────────┐
│   Defining research questions   │
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┌─────────────────────────────────┐
│     Selecting cases based on    │
│    the theoretical considerations │
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                 ⬇
┌─────────────────────────────────┐
│     Designing methods of data   │
│            collection           │
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                 ⬇
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│      Data collection process    │
└─────────────────────────────────┘
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│  Data analysis - individual analysis │
│    as well as cross-case analysis │
└─────────────────────────────────┘
                 ⬇
┌─────────────────────────────────┐
│        Building hypothesis       │
└─────────────────────────────────┘
                 ⬇
┌─────────────────────────────────┐
│   Comparing hypothesis with the  │
│        earlier literatures       │
└─────────────────────────────────┘
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│             Closure              │
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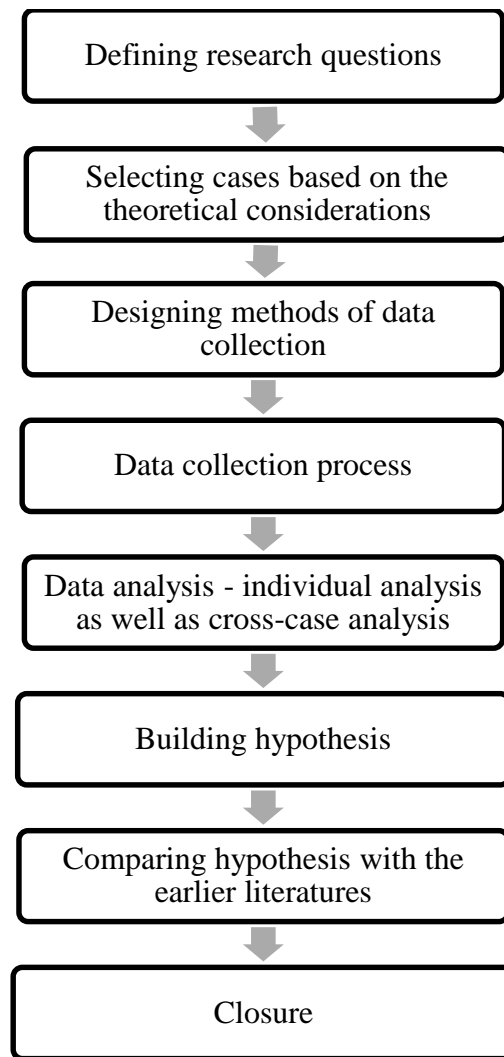
Figure 6. The process of theory-building using case study

Construct validity

In brief, construct validity is concerned with the question of whether the research explores what it is supposed to explore (Gibbert & Ruigrok, 2010). In his explanation of construct validity, Henderson (2007) states that:

> This test refers to whether the data collection tools and strategies employed are appropriate or valid for the kind of information required to answer the research questions. Furthermore, construct validity raises the question of researcher subjectivity in deciding what data is worth collecting and what data is unimportant. Construct validity is primarily concerned with strengthening the researcher's claim to having collected sufficient data to substantiate any findings. (p. 86)

According to Thies and Volland (2010), construct validity can be used as a way to ensure the quality of operations involved when conducting a study. One way this can be achieved is by employing different methods of data collection. This enables the data gathered to be analysed on the basis of the triangulation process and, more importantly, to strengthen the overall quality of the study (Thies & Volland, 2010; Yin, 2003b).

In my study, semi-structured interviews, observations and media diaries were used as methods of data collection. Multiple sources of data collection permitted triangulation to be performed. Each of these methods of data collection is discussed in Section 4.2.

Internal validity

Internal validity in case study can be achieved through the use of a clear framework of research, pattern matching, explanation building, triangulation of data and logical model (Thies & Volland, 2010). These techniques, when applied in case study, can help researchers to establish cause and effect relationships and improve the credibility of the research (Thies & Volland, 2010). As Reige explains (2003):

> In particular, case study research intends to find generative mechanisms looking for the confidence with which inferences about real-life experiences can be made. That is, the researcher does not only highlight major patterns of similarities and differences between respondents' experiences or beliefs but also tries to identify what components are significant for those examined patterns and what mechanisms produced them. (pp. 80-81)

As indicated earlier, my study was conducted with the primary aim of understanding young people's use of new media including their practices and formation of identity, based on the COPs theoretical framework. Earlier studies have shown that, as a theory of social learning, COPs can be applied as a framework to examine participation in shared practice (Cleaves & Toplis, 2008), professional learning (Webb et al., 2005), online communities (Xiaoli & Bishop, 2011) and the construction of identity (Kajee, 2008). The triangulation of data also helps to improve a study's internal validity. The use of interviews, observations and media diary, as methods of data collection, not only helped me to arrive at the same conclusions (Yin, 2003b), but also to deepen my understanding of the rich data gathered from multiple sources (Silverman & Marvasti, 2008).

External validity

In comparison to internal validity, which is concerned with the credibility of the phenomena that are produced in a case study (Riege, 2003), external validity deals with the issue of whether a case study can be generalised to other contexts or situations (Thies & Volland, 2010). According to Thies and Volland (2010), even though generalisation through means of statistical measures cannot be achieved in case study, it can be attained through the use of analytical generalisation by using pattern-matching techniques. Pattern-matching in case study research is conducted by comparing the 'observed pattern' that derives from the study with the 'expected pattern' or the hypothesis that stems from the theory that informs the research (Hak & Dul, 2010). The main aim of the pattern-matching technique is to test the theory with regard to the study that is being conducted. According to Hak and Dul (2010), the two possible outcomes for pattern matching are that (a) the 'observed pattern' matches well with the 'expected pattern' or (b) the 'observed pattern' is different from the 'expected pattern'.

My study applied the pattern-matching technique. The 'observed patterns' that derived from the data of this study were analysed using communities of practice (COPs) as the main theoretical framework. Young people's use of new media in and out of school was analysed using COPs theoretical propositions such as participation, shared practice, multi-membership perspectives, learning and identity.

Reliability

Thies and Volland (2010) classified reliability in case study as the ability to perform research without having to deal with random errors. Reliability also indicates the capability to produce similar findings if the same research strategy is repeated. In case study research, reliability is also referred to as the 'degree of consistency' that arises when the same research strategy is repeated by the researcher or used by other researchers in their respective studies (Hammersly, 1992). In this instance, the reliability of a study can be used as evidence to indicate that a particular research strategy is valid and useful (Hammersly, 1992). In their explanation of reliability, Ward and Street (2010) assert that:

> Consistency and stability are two dimensions of reliability. Consistency refers to the degree to which the results can be independently re-created within an acceptable margin of error and is a form of measurement error. Consistency can be thought of as the level

of variability in the method or instrument of measurement. Stability refers to the degree

to which the results can be replicated independently at a later point in time. (p. 800)

In order to achieve reliability, researchers are expected to be transparent. This can be achieved by providing clear explanations and justifications of the strategies they adopt and the processes they employ in their research (Gibbert & Ruigrok, 2010). It is also necessary for researchers to document their research procedures accordingly (Gibbert & Ruigrok, 2010). In my study, the importance of reliability was acknowledged and a triangulation of data collection method was undertaken. This provided the opportunity to gather data pertaining to students' use of digital technologies by employing different sources of evidence such as semi-structured interviews, observations and media diaries.

Case study designs

There are four basic types of designs in conducting case study (Yin, 2003b). The four basic designs are (a) single-case (holistic), (b) single-case (embedded), (c) multiple-case (holistic) and (d) multiple-case (embedded). According to Yin (2003b), the single-case design can be ideally employed to test theoretical propositions, to conduct both unique and typical cases, to reveal a phenomenon that is yet to be properly explained by other scholars in the field and, also, when performing longitudinal studies. In this study I employed a single-case (embedded) design which involved a case study in secondary schools in Malaysia (Figure 7) with the participation of multiple participants (multiple units of analysis).

CONTEXT

Subunit 1   Subunit 2

Subunit 3   Subunit 4
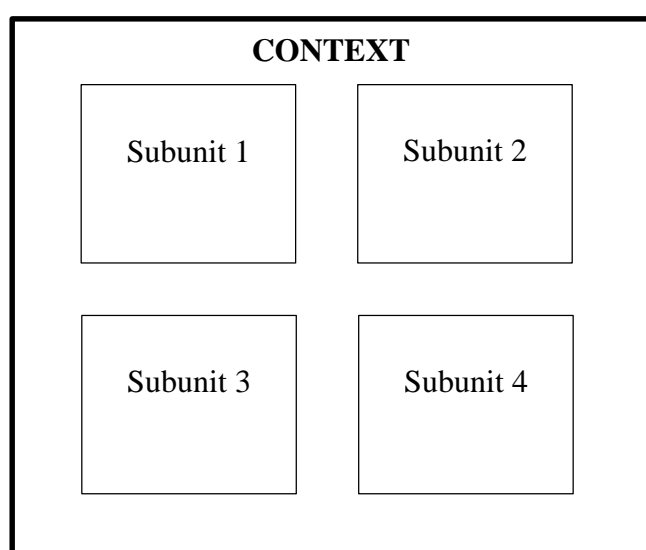
Figure 7. Single-case (embedded) design (Yin, 2003b, p. 40)

The single-case (embedded) design is further explained by Yin (2003b):

> The same case study may involve more than one unit of analysis. This occurs when, within a single case, attention is also given to a subunit or subunits…no matter how the units are selected, the resulting design would be called an embedded case study design.
>
> (p. 44)

The single-case (embedded) design enabled thorough investigation to be conducted pertaining to young people's use of new media in a secondary school. I examined the four subunits of analysis that consisted of the four student participants based on their technological practices in and out of school, the communities that they belong to and their formation of identities.

Yin (2003b) argues that a case study using a single-case design is sometimes vulnerable and may be misinterpreted. However, this danger can be minimised through an in-depth investigation and analysis (Yin, 2003b). For this reason, my study was conducted by not only considering the perspectives of the four student participants, who represented the subunits of the main case study analysis, but also the perspectives of other individuals such as parents, siblings and friends who were familiar with the students' digital practices. Data pertaining to young people's use of new media was also collected from a school leader and teachers at the school where this study was conducted. Additional data was also collected at a second school site which is categorised as being technologically rich. Data collection at the second school site also involved a school leader, teachers and students. Even though my study only involved a single-case study, it was conducted thoroughly by taking into consideration different perspectives and several layers of analysis and discussions. This was to ensure that the phenomena related to young people's use of new media were analysed and explained deliberately and the risk of misinterpretation was minimised.

4.2 Methods of Data Collection

In this study, three different methods of data collection were employed: (a) Semi-structured interviews, (b) direct observations and (c) media diaries. This enabled triangulation of the data to be conducted, with the aim of enhancing validity and to deepen understanding of young people's new media practices in and out of school. Yin (2003a) suggests that triangulation of data can be used as a strategy to strengthen the validity of research as different methods of data collection are employed to address the same phenomena. However, considering that each method of data collection can be different in its own way, it is important for researchers not to be rigid and to be open to the possibility

that the triangulation of data may not be able to help them to derive the same phenomena as expected (Silverman & Marvasti, 2008). This is due to the fact that the same source used in another research setting might yield a different outcome due to differences in the context in which the study is being conducted (Flick, 2004). Thus, instead of focusing only on the issue of validity, the use of triangulation in this study was twofold: it was employed not only to address the same phenomena and to strengthen validity, but also as a strategy to enrich the understanding of young people's new media practices in and out of school, based on different methods of data collection used (Flick, 2004; Silverman, 2010; Silverman & Marvasti, 2008). This is summarized in Figure 8.
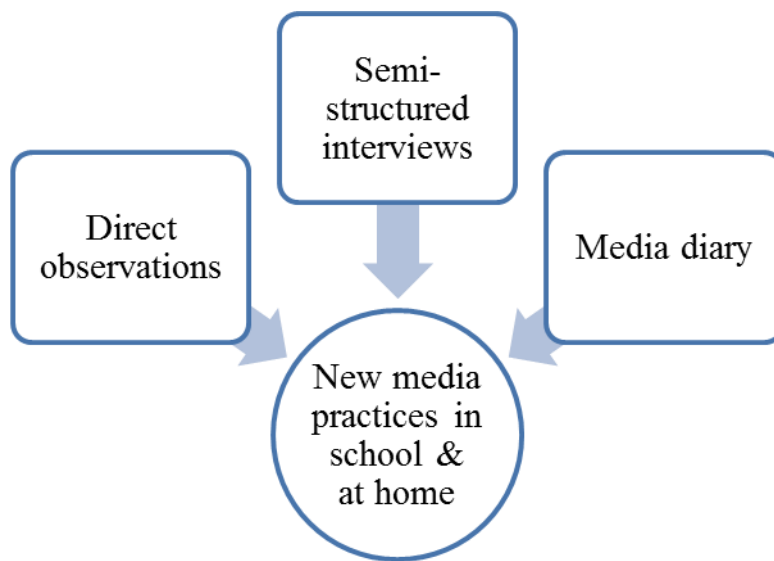
Figure 8. Data triangulation using different methods of data collection

Semi-structured interviews

In this study, semi-structured interview was utilised as an instrument to investigate participants' opinions, knowledge and experiences relating to their new media practices in and out of school. Unlike the structured interview in which everything is prearranged or the unstructured interview in which nothing is fixed, the semi-structured interview lies in between both interviewing categories (O'Hara, Carter, Dewis, Kay, & Wainwright, 2011). O'Hara et al. (2011) explain that "a semi-structured interview schedule is structured but not rigidly. It has initial categories and themes with room for the introduction of new ones within the parameters of the research questions overall" (p. 171). In this study, interview questions were categorised into different themes based on the research questions. The themes were (a) young people's new media practices in school, (b) young people's new media practices out of school, (c) communities in school, (d) communities out of school, (e) the

relationship between school and out of school and (f) identity (see Appendix 1). The interviews with participants were mainly conducted face to face, during school time, for a maximum duration of 30 minutes. These interviews were audio-recorded with the consent of the participants and their parents for those under the age of 18. Email interviews were conducted with other participants who were not in the school in which the study was conducted.

Direct observations

Another method used in the data collection process was direct observations. Yin (2003) contends that "observational evidence is often useful in providing additional information about the topic being studied" (p. 93). In this study, the student participants were observed twice over a two week period. Direct observations were conducted during the ICTL class period which was held in the computer lab. Each observation session lasted for a one hour period. During observations, I closely observed how the student participants used computers and the internet, how they performed tasks based on teacher's instructions and worked with one another to accomplish their tasks. The ICTL class teacher was informed and consent was sought from the students involved, their parents and the school prior to the observations. Minute-by-minute observational protocol (see Appendix 2) was used as a way to record the actions that were observed during the observations.

Media diary

A media diary was developed as another method of data collection in this study. It was conducted using a Facebook group and email. A private media diary Facebook group was created (Appendix 3) and the participants were invited to the group. In the media diary, the participants were asked to record their everyday use of new media technologies over a one week period. They were also encouraged to include relevant images related to their new media practices. One of the main challenges in conducting research with children and young people is to find ways of engaging them in the research process so that they become active participants and contribute knowledge based on their personal experiences (Mallan, Singh, & Giardina, 2010). In this study, the media diary Facebook group was mainly used as a tool to gain insights into the participants' new media practices out of school. It provided them with the opportunity to participate as active participants in this study. Instead of being passive participants, they were asked to post their new media practices on a daily basis and share

these with one another. They were also encouraged to upload images related to their use of digital media out of school to the media diary Facebook group.

4.3 Data Collection Process

Data collection for this study took place at the Valley National Secondary School (VNSS) (pseudonym); a secondary school in the state of Selangor, Malaysia. Four main student participants (Group 1) participated in this study. Five other participants (Group 2), who were closely related to Group 1 participants in their new media practices, also took part in this study (see Section 4.3.1). Interviews, direct observations and media diaries were used as three different methods of data collection. The initial phase of the data collection process took approximately one month to complete. Due to the need for more in-depth data relating to participants' new media practices in and out of school, follow-up interviews were conducted with Group 1 participants. These follow-up interviews were completed within one week.

A second phase of data collection was conducted pertaining to (a) teachers' insights on the use of new media by young people and (b) students' new media practices in a 'technology rich' school. Two additional groups of participants were included in this phase, namely Group 3 and Group 4. Group 3 participants were teachers at VNSS and the Kuala Lumpur Secondary School (KLSS), a 'technology rich' secondary school. They were interviewed once, during school, for 30 minutes. Group 4 participants were two Form 1 students at KLSS. They were interviewed once, during school, for 30 minutes. The second phase of the data collection process was conducted over a two week period. All the amendments to the original ethics application, required during the data collection process, were approved by the Monash University Human Ethics Research Committee (MUHREC). The recruitment of research participants, including students, their close associates, school leaders and teachers, is explained in detail in the following section.

4.3.1 Recruitment of the participants

After receiving ethics clearance and permission to conduct research from Monash University Human Ethics Research Committee (MUHREC), the Economic Planning Unit, Prime Minister's Department Malaysia, and relevant educational authorities in Kuala Lumpur and Selangor, I approached VNSS for permission to conduct research in the secondary school. Permission was granted.

The purposive sampling method was adopted as it provided the opportunity to choose participants based on specific criteria or characteristics that suited the purpose of my study (Silverman & Marvasti, 2008). Silverman (2010) explains that purposive sampling enables important features or processes in a study to be highlighted. For my study, Form 1 students who were at the age of 13 were chosen as the Group 1 participants. They were expected to have access to, and to be using, new media technologies regularly in school and at home. In another study of students' engagement in computer games and its effect on their academic achievement, which was conducted in a secondary school in Malaysia, the findings showed that 75.8% of 236 Form 1 students were gamers (Eow et al., 2009). The findings of this study indicate that, at the age of 13, young people are expected to have a certain level of experience with new media technologies. In another study, McQuillan and d'Haenens (2009) found that the number of children using new media, including going online, increases with age and reaches a ceiling at 10-11 years old. These findings assisted me in determining the age group for my study.

The research was advertised to students through posters (see Appendix 4). Students were also made aware of this research by an announcement made by the school's afternoon session Senior Assistant during the school assembly. The first four participants who responded were selected as the Group 1 participants. They were Amanda, Elisha, Donald and Diane (pseudonyms). Unfortunately, Diane decided to withdraw from the study after the first interview was conducted, citing personal reasons, so the study was then advertised for another week in an attempt to select another participant to replace Diane. Ali was selected. Except for Ali, who was studying in Class 1B, Amanda, Elisha and Donald were all classmates in Class 1A. This happened by chance as they were the first three participants who responded to the advertisement and fitted well to the characteristics of this study.

When asked to choose the Group 2 participants, who were their close new media associates in school, Amanda chose Elisha, Donald picked Amanda and Elisha selected Aida whom she claimed as her best friend in school. In this instance, Elisha and Amanda participated simultaneously as participants in Group 1 and Group 2. Ali's attempt to invite Joey, who was his close companion and classmate in Class 1B, with whom he regularly shared gaming experiences, was turned down; Joey was not interested in taking part in this study. When asked to invite associates who were closely related to them in their new media practices out of school, Amanda invited her mother, Sarah, while Elisha chose her sister, Anita. Donald's attempt to persuade his two friends, Paul and Matthew, was

unsuccessful as their parents were reluctant to let them participate in the study. Ali also failed to invite his father and cousin to take part due to their work commitments and lack of interest in participating. Table 1 shows the list of participants in Group 1 and their associates in Group 2.

Table 1

The students as the main research participants in Group 1 and their new media associates in Group 2

No.	Group 1: The main participants at VNSS		Group 2: The main participants' associates	
	Name	Age	Name	Relationship
1.	Amanda	13	Elisha	Close friend
			Sarah	Mother
2.	Elisha	13	Aida	Close friend
			Anita	Sister
3.	Donald	13	Amanda	Close friend
4.	Ali	13	Nil	

As indicated in the previous section, a second phase of data collection was conducted with teachers at VNSS and also with teachers and students at KLSS (technology rich school). The six teachers from VNSS and KLSS who were involved in this study were Mr. Kwok, Miss Maryam, Miss Jane, Miss Pamela, Miss Ruby and Miss Ashley, and they were considered as participants in Group 3 (Table 2).

Table 2

Teachers participating in the study as the Group 3 research participants

No.	The participating teachers at VNSS		The participating teachers at KLSS	
	Name	Specialisation	Name	Specialisation
1.	Mr. Kwok	Mathematics	Miss Ashley	ICT
2.	Miss Maryam	English	Miss Ruby	Mathematics
3.	Miss Jane	Science		
4.	Miss Pamela	Chemistry / ICT		

Group 4 comprised the two 13-year old student participants at KLSS, Suresh and Vincent (Table 3).

Table 3

The participating students in Group 4

No.	The participating students at KLSS	
	Name	Age
1.	Suresh	13
2.	Vincent	13

As previously stated, case study was adopted as the main method of inquiry for this study. It enables an in-depth investigation of young people's use of new media in different contexts in and out of

school. Research data was collected through (a) interviews conducted with the student participants, their new media associates and teachers, (b) observations of the ICT Literature (ICTL) classes and (c) media diary. In the following chapters, the collected research data is analysed and discussed.

CHAPTER 5: VALLEY NATIONAL SECONDARY SCHOOL (VNSS) STUDENTS' USE OF NEW MEDIA IN AND OUT OF SCHOOL

In this chapter, the research participants' use of new media in and out of school is documented and analysed. The chapter begins with an introduction to the main participants of this study (Group 1) as they made up the four sub-units of the case study analysis. This includes brief information relating to their personal background and everyday use of new media. The remaining sections of this chapter analyse the findings in relation to two research questions related to Group 1 participants' use of new media. This includes Group 1 participants' new media practices during the Information Communication Technology Literacy (ICTL) class and at other times in school, and their new media practices out of school. In addition, this chapter also analyses the data gathered from the Group 2 participants, who were closely associated with Group 1 participants in their use of new media in and out of school (see Section 5.1). Data gathered from the participating teachers (Group 3) and other student participants (Group 4) is analysed and discussed in the following chapter.

Specifically this chapter attempts to answer the following research questions:

1. What are the new media practices that young people participate in and out of school?
2. How and why are they participating in new media practices in and out of school?

The other two research questions relate to the relationship established between in and out of school practices with regard to young people's use of new media and their formation of identity. These are analysed and discussed in Chapter 7 and Chapter 8 respectively.

5.1 The Main Research Participants

As previously stated, the main research participants, Amanda, Elisha, Donald and Ali (Group 1), were four 13-year old students at the Valley National Secondary School (refer to Sections 4.1.3 and 4.3.1). Their profiles as the main participants of this study are discussed in the following sections.

5.1.1 Amanda

At the time of the interviews Amanda was thirteen. As a Form 1 student at the Valley National Secondary School (VNSS), she only uses computers and the internet during the ICT Literacy (ICTL) class once a week, on every Monday for a one hour period. At other times in school, Amanda enjoys sharing her technological knowledge with friends, which shows that students bring their technological experiences from home to school and share it with one another. Sharing of interest and new media practices in and out of school as students attend the ICTL class and as they engage in numerous technological practices at home indicates that Amanda and her peers in school belong to communities of practice (COPs). Students' engagement in COPs in and out of school with regard to their use of digital media is discussed further in the later part of this chapter. At home, Amanda spends most of her time reading novels and getting online using her laptop. Amanda engages in various online activities every day including using instant messaging and social media such as Yahoo Messenger, MSN, Facebook, Tumblr and Twitter. She also watches the latest music videos on YouTube, downloads songs using FrostWire and updates her iTunes library regularly. Amanda enjoys spending her free time playing online games, Habbo and Habboon in particular. She describes playing Habbo and Habboon as a way for her to relax and socialise. At times when Amanda is bored, she plays PlayStation Portable (PSP) and PlayStation 2 (PS2) gaming consoles. She uses Google to perform searches to feed her curiosities and to search for information and images for her homework and school assignments. Amanda says that she also watches TV and listens to radio for entertainment. Amanda has a Samsung mobile phone and believes that her mobile phone is very important to call and text friends and also to take pictures. When her elder brother is around, Amanda takes the opportunity to explore and play with his Blackberry smartphone.

Amanda has a very keen interest in digital media technologies. She keeps herself updated with the latest gadgets and software and learns new knowledge about technologies from her brother, uncle and online friends. This shows that learning is social and takes place as Amanda participates in shared digital practices with family members and friends. Learning that occurs socially through active participation in shared practice is a fundamental concept in COPs. This is discussed further in this chapter in relation to students' involvement in communities in and out of school. Amanda also has a genuine interest in photography. Amanda talks regularly about this with her friends during school, but she does not have the opportunity to study photography at school. Amanda hopes that she can have her own SLR camera in the future and is saving her pocket money to buy one. It is clear that

this would involve the knowledge and skills of capturing images as well as uploading captured images from the camera into the hard drive and to social media sites such as Facebook and Instagram. Photography also involves the skills needed to edit captured images using editing software including Adobe Photoshop and Photoscape.

5.1.2 Elisha

Elisha is a School Prefect at VNSS. According to Elisha, the only time she uses computers and the internet in school is during the ICTL class period. Even though her use of new media technologies in school is limited, she still talks about computers and other technologies, interesting videos on YouTube and "cool" internet sites that she accesses with her classmates and other friends every day, especially during recess and between classes. Elisha's hobbies at home are playing squash, ice-skating, reading books and using computers and the internet. Elisha feels deeply attached to her mobile phone and she believes that mobile technology is very important for her. She frequently communicates with Aida who is her best friend in school and out of school. They enrol in the same classes and frequently talk to one another during school. Out of school they spend hours calling and texting one another using mobile phones and chatting using Windows Live messenger. At times, Elisha plays video games with her sister as she has a Game Boy and PS2 consoles at home. Elisha also plays PlayStation 3 (PS3) at her cousins' place whenever she visits them. This shows the access to information and communication technologies and digital media that Elisha has at home and at other times out of school.

When asked about the importance of new media technologies, Elisha indicates that it makes her social life easy. Her use of digital media technologies out of school is very much influenced by her elder sister, Anita, 19, who is an undergraduate student at Monash University, Malaysia Campus. Anita helped her to set up an e-mail account and introduced her to different practices such as downloading songs and videos, Windows Live Messenger and Facebook. Elisha is a frequent user of Windows Live Messenger and she uses it to chat with her schoolmates, old friends, ice-skating friends and friends from her previous school. During the initial part of the data collection process, Elisha informed me that she didn't have a Facebook account yet, unlike many of her friends in school. However, in the follow-up interview conducted four months later, she told me that she had a Facebook account. Elisha explains that many of her friends are already on Facebook, so having a Facebook account helps

her to keep in touch with them. Elisha also uses the internet to look for interesting information and to look for materials related to her school assignments.

5.1.3 Donald

Donald was a Form 1 student at VNSS at the time of the interview. Similar to Amanda and Elisha, Donald explains that his use of new media technologies in school is limited. He uses computers and the internet in school only once a week, during the ICTL class period. He claims that students are "forced" to go to the ICTL class. If he had the choice, Donald would prefer not to attend the class. According to Donald, he does not find the ICTL class interesting and he dislikes the teacher. He doesn't think that the ICTL teacher is helpful to students. However, Donald finds it very useful to be with his classmates during the ICTL class especially when he has the opportunity to learn new knowledge about computers from his close friends, Amanda and Elaine. During other times in school, Donald talks to his friends about many things including the latest gadgets and tools such as iPad and MacBook and also about video games. At home, Donald enjoys reading and playing different musical instruments including piano, violin and flute. He has a different range of digital technologies at home including MacBook, iPhone, iPad, iPod, PSP, PlayStation 3, camcorder and DSLR camera. He admits to being an "Apple freak" and he loves using all his gadgets regularly. Being the only child in the family, Donald values his home use of new media technologies. His frequent use of new media technologies out of school helps him to overcome his loneliness when at home. Donald believes that communication is very important and technologies like mobile phone and social media are useful communication and socialisation tools that enable him to feel connected. Donald uses his iPhone to call and text friends. He also chats regularly with them using Facebook. After completing his homework, Donald enjoys playing Counter Strike, a tactical shooting video game. Donald claims that he engages in different new media practices such as using Facebook and playing video games "to kill time".

5.1.4 Ali

Ali was a thirteen-year-old student at VNSS at the time of the interviews. Like other students, Ali is required to attend the ICTL class session held on every Tuesday. However Ali missed the ICTL class on numerous occasions in the past and, eventually, he was warned and his parents were informed by the school that he was absent from the ICTL class. When asked about his absenteeism, Ali claims

that he feels the ICTL class session is boring so he prefers not to attend the class. According to Ali, most of the things that are taught in the ICTL class are very basic and he knows many of them already. At other times in school, Ali spends his time talking about computer and video games with Joey. Ali and Joey are best of friends and they share similar interests and a passion for computer and video games such as Defense of the Ancients (DotA), Heroes of Newerth (HON) and Blackshot. They share strategies and tips with one another to accomplish missions in DotA, HON and Blackshot. At home Ali spends most of his time playing DotA, HON and Blackshot online. On the Garena online gaming platform, Ali hones and tests his skills against other gamers from all over the world. He picks up many new skills as he plays and communicates with them. Ali also has a genuine interest in computers and networking. His father, whom he describes as an 'expert', teaches him many new things about computers. Ali is eager and excited to learn more advanced skills and knowledge about computers and networking from his father. Ali is also an active user of Facebook. He uses Facebook regularly to chat with friends and also to make new friends. When asked about his ambition, Ali says that he idolises Facebook's co-founder and CEO, Mark Zuckerberg, and he is inspired to be like him one day.

5.2 Young People's New Media Practices in School

Prior to the study, I assumed that Valley National Secondary School (VNSS) would have sufficient access to digital technologies and technological integration for teaching and learning purposes. This assumption was initially made based on the location of VNSS which is in the heart of Subang Jaya city in the state of Selangor, which is considered to be the premier education hub in Malaysia. It has many primary and secondary national schools, religious, boarding and private schools, and higher institutions such as Monash University Malaysia, Taylor's University, Inti University and Sunway University located in the same municipality. This assumption was also made based on the National Education Plan 2006-2010, in which it was stated that schools in Malaysia were to be better equipped with new technologies such as computers, televisions and DVDs to ensure greater access to new media and usage and, more importantly, to move schools forward toward achieving the 'Smart' status (MOE, 2007b). It was also indicated that in Wave 3 of the five-year implementation of the Malaysian Smart Schools initiative that took place in 2005-2010, all schools in Malaysia were expected to be transformed digitally and to achieve the 'Smart' status by 2010 (MSC, 2005).

However, the earlier expectation proved to be wrong as I found that VNSS only has two computer labs with 21 computers in each lab to cater for the needs of 1200 students in morning and afternoon sessions, making a total student to computer ratio of 28 students for each computer. The school's computer labs are used not only for ICTL classes, but also for other purposes, such as for school's magazine editing and in-service training programs for teachers. Consequently, some students are required to share computers during the ICTL class. Due to the limited access to new media technologies in the school, students are only allowed to use computers and the internet during the ICTL class period which is held once a week over a one hour period. They are not allowed to use the computer labs at other times without a teacher's permission. Based on the student participants' insights into their use of new technologies in school, it can be said that Form 1 students at VNSS have a relatively low usage of digital media in school. Their use of new media is limited to the ICTL class period only. As a result, the participants' technological use in school is restricted compared with when they are at home or at other times out of school. They are also not allowed to bring their mobile phones and other hand-held devices to school. When asked about their use of new media in school, Ali and Amanda indicate that they are not permitted to use Facebook. Donald claims that there is "nothing there" in school. Donald is negative about his use of new media in school as he says it does not provide similar experiences to his use of new media out of school. Ali, Amanda and Donald generally comment that their use of digital media in school does not reflect the experiences they have out of school.

Unlike Elisha, who understands the differences in the nature of technological use in and out of school, the other participants are upset about not being able to perform digital practices, in school, that they frequently engage in when they are out of school, such as performing random searches on the internet, downloading music and using social media during school. Elisha knows that the use of computers and the internet during school is mainly work-related and it is not meant for leisure or for personal use. In comparison to Elisha, Ali, Amanda and Donald said that their use of new media in school should be similar to out of school and they should be provided with better access, given enhanced opportunities to use digital technologies in school and the freedom to import out of school digital practices into school. This finding is similar to the findings of Selwyn, Boraschi, et al. (2009) whose study found that students were disappointed about limited opportunities to use new media in school. Despite young people's call for more liberty in their use of digital media technologies in school, it is important to note that just having access to technologies does not guarantee any educational value or relevance (Selwyn, Boraschi, et al., 2009). Instead, the authors recommend that more dialogue should

be held between students and schools in order to further understand their demands before deciding on the transformation and changes that need to be made with regard to the integration of new media technologies in teaching and learning in school (Selwyn, Boraschi, et al., 2009).

Even though access to new media in school is regarded as fundamental (Aduwa-Ogiegbaen & Iyamu, 2011), it does not guarantee greater usage of new media among young people and, more importantly, the success of its integration in teaching and learning practices (Almekhlafi & Almeqdadi, 2010; Gani, Siarap, & Mustafa, 2006). Apart from the issue of access, young people's use of new media in school is also influenced by other related factors such as school leadership, school policy and support, teachers' professional development and their willingness to incorporate technologies into the classroom (Cowie, Jones, & Harlow, 2010; Selwyn, Potter, et al., 2009). For example, the Valley National Secondary School's (VNSS) leadership decision to end the ICTL class midway through the year due to lack of ICT specialist teachers negatively impacted on students' use of new media technologies in school, as they no longer had the opportunity to use these technologies during school. This indicates how other related factors can either positively or negatively influence young people's use of new media in school. Factors that have a direct influence on students' use of digital technologies in school are addressed in more detail in the following subsections.

5.2.1 The ICTL class and mixed proficiency issues

At VNSS, the ICTL classes for Form 1 students are conducted before the school session begins in the afternoon. As previously explained, the main participants in this study, Amanda, Elisha and Donald, are classmates in Form 1A and their ICTL class lesson is conducted once a week. Computer Lab 1 and Computer Lab 2 which are used for the ICTL classes. The rooms are equipped with computers for students, a computer for the ICTL teacher, internet connection for all students and the ICTL teacher, scanner, printer, LCD projector, projector screen and a server / technician room.

During the ICTL class, students are taught basic skills and knowledge of computers. This includes knowledge about the hardware of computers and Microsoft Office applications such as Microsoft Word, Microsoft PowerPoint and Microsoft Publisher. The participants describe the ICTL class as:

Amanda:　　　*Basically…most of it is about Microsoft…how to make a video, Microsoft Word.*

Donald: *We learn about peripherals…CD-ROM, computer RAM…we learn about the motherboard, daughterboard and all. Yeah…the hard disk and all…which I don't really know because mine is a laptop…mine doesn't really have the same hard disk.*

Even though Donald's explanation of 'hard disk' is not accurate, since the technology of the hard disk drive for both the computer and laptop is the same, his description of the things that he learns involving knowledge about peripherals explains how students are taught basic knowledge of computers during the ICTL class. It was also observed that, in the ICTL class, students are taught how to search for images and information from the internet as part of their task to produce videos, slide presentations and arts such as producing cards and posters using applications including Windows Movie Maker, Microsoft PowerPoint and Microsoft Publisher.

As mentioned by Ali, students "learn the right ways to use computers", which indicates that students are taught to become ICT literate during the ICTL class. This is further explained in the ICTL course objectives (MOE, 2007a) which state that students are expected to:

- Acquire and apply ICT knowledge and skills creatively to assist them in their daily life.
- Share ideas and information among themselves, within and beyond school environment.
- Demonstrate responsibility and accountability towards ICT infrastructure and its use.

While it is important for young people to be ICT literate and to be able to apply ICT knowledge and skills in their everyday lives, it is necessary for schools to take into consideration students' prior knowledge and experiences with new media technologies before determining the entry point or the level of ICT proficiency at which they should be taught (MOE, 2007a). In my study, it was evident that Amanda, Ali, Elisha and Donald already had prior ICT knowledge and experience gained through their early exposure to media technologies and active engagement in digital practices out of school. This is further elaborated in the next subsection as students' new media proficiency is discussed.

Students' proficiency in new media

Instead of being placed in classes according to their level of new media proficiency, it was observed that students are grouped according to their grades (years of study) during the ICTL class. This is done without taking into consideration their prior knowledge and experiences with technologies such as computers and the internet. This 'one-size-fits-all' approach may undermine students' prior knowledge and experiences. Even though no specific test is conducted as part of this study to examine the participants' levels of new media proficiency, the school should take into consideration the fact

that many students in the case study school have access to a different range of digital media and they use these technologies regularly out of school. For instance, Amanda, Ali, Donald and Elisha have been exposed to technologies such as computers, video game consoles and the internet from a very young age which signifies their rich and diverse experiences with digital media. In addition, as Elisha pointed out, she was introduced to children's educational software by her mother and started playing computer games when she was six. Since then, she has learned many things about new media from her sister. She uses new media technologies regularly at home to help her in performing school related tasks, to communicate and socialise with friends and also for fun. Nevertheless, Elisha and the other participants of this study were still required to go through some of the things that they already know, in the ICTL class.

Clearly, ICTL lessons at VNSS are conducted without taking into account students' proficiency in new media which they may have acquired based on their prior knowledge and experiences out of school. This finding undermines the principle stated in the *ICTL for Secondary School Guidelines* prepared by the Ministry of Education Malaysia (MOE) that schools should be able to conduct the ICTL lesson flexibly, based on different levels of knowledge, skills and experiences of digital media that students demonstrate, in order to accommodate their needs (MOE, 2007a).

Elisha and Amanda do not mind attending the ICTL class and revisiting things they already know. They use the class as an opportunity to practice their knowledge and skills and to learn new things. As Elisha stated, "practice makes perfect". Instead of being critical about the ICTL lesson, Elisha and Amanda understand that the course syllabus is designed mainly for other students who do not know as much they do and, for those who do not have access to digital media technologies out of school. So, in a sense, Amanda and Elisha tolerate some degree of repetition. But for Ali, the ICTL class does not excite him at all as he believes that there is nothing new to be learned. Ali started using computers and the internet when he was six. Ali claims that he had already learned most of the things taught during the ICTL class from his father before when he was eight or nine. During interviews Ali commented that:

> Hahaha …it's quite boring actually. In school…it's like learning it all over again. They (the school) are doing it for others who do not have computers at home… that's why they (the school) are teaching it all over again.

When asked about the things that he prefers to learn in the ICTL class, Ali suggested that he is keen to learn something more advanced such as removing viruses and reformatting computers. For this

reason, Ali was frequently absent from the ICTL class. He missed the ICTL class three times in a row and was warned for that. His parents were also informed about his absenteeism. Since then, Ali has started to attend the ICTL class again. Another factor that needs to be considered is the time at which the ICTL class is conducted. As the ICTL lesson is held before the school session begins in the afternoon, students are required to come to school early on the day their ICTL class is conducted. For some, especially those living far away, coming to school early is difficult.

According to Miss Pamela, who is the ICTL teacher in-charge, one of the main problems is students' absenteeism from the ICTL class. While she reasoned that this is due to the timing of the ICTL class, the data from this study indicates that the main problem might be the school's failure to address students' needs and expectations based on their prior knowledge and experiences of digital media. While this observation might not hold true for the entire population of Form 1 students at VNSS, it would be a valuable exercise to reconsider the suitability of the curriculum content for the ICTL class based on the levels of proficiency and expectations of students such as Ali, Amanda, Donald and Elisha. Failure to meet students' expectations may result in a lack of interest, desire and motivation to attend the ICTL class. Based on the insights provided by Amanda, Ali and Donald, it is evident that, even if students attend the class, it may possibly because they are required to do so by the school.

As mentioned earlier, a possible solution to overcome this problem is by following the *ICTL Literacy for Secondary School Guidelines* (MOE, 2007) recommend grouping students based on their levels of knowledge, experience and proficiency regarding the new media. However, this is a daunting task for teachers due to a lack of explanation and clarity provided on ways to group students based on their digital media proficiency. Moreover, students' knowledge, experience and proficiency also vary from one to another. For example, even though all the participants in this study are considered frequent users of digital media, their knowledge and experiences differ as does their level of proficiency. While it is stated in the guidelines that students are able to begin their ICTL lesson at any level based on their proficiency, the way 'proficiency' can be determined and the way the whole process can be carried out are not clearly delineated.

Another way to determine students' prior knowledge, experiences and proficiency in using new media is by employing Yelland's (2007) C/ICT framework (see Section 2.3). This framework enables the ICTL teacher to explore students' knowledge, experiences and proficiency of digital media based on their use of digital technologies out of school, and to design a pedagogical approach that suits their

needs. Drawing on Donald and Elisha's out of school experiences with digital media, they would be described as (a) functional user, (b) meaning maker, (c) critical analyser and (d) transforming understanding (see Figure 9 and the elaboration below).

Functional user

Donald uses different ranges of new media technologies out of school - notebook, the internet, iPad, mobile phone and gaming consoles. As a frequent user of Facebook, Donald is capable to post, upload images and videos and comment on his friends' postings.

Elisha has access to computers, the internet and mobile phone at home. She performed online searches, email and connect with friends using the social networking sites.

Meaning maker

Donald appreciates the communication and socialisation functions of digital media. The social media such as Facebook and Skype enabled him to make new relationships and maintain the existing ones.

Elisha believes that new media made her life easy. Her frequent use of digital technologies enabled her to work, communicate, socialise and have fun.

C/ICT Framework

Critical analyser

Donald regards Facebook as a space for him to freely express himself. For this reason, he does not like his parents or teachers to be his Facebook friends as he regarded them as limiting.

Elisha believes that the internet is a powerful source of information. She frequently looks for new information on the internet in order to feed her curiosities.

Transforming understanding

Donald uses the social media for work and studies too. He uses the interactive function of the social media to communicate and discuss things with his friends.

Elisha uses the seach engines such as Google and Yahoo to help her find information related to her homework and assignments.

Figure 9. Donald and Elisha's technological use based on the C/ICT framework (Yelland, 2007, p. 69)

Donald's Proficiency:

Donald's description of his frequent use of technologies such as notebook, the internet, mobile phone, and gaming consoles when at home implies his position as a 'functional user' who is capable of performing basic new media operations. Taking the example of his use of Facebook, it is clear that Donald knows how to update his status, upload images and videos, tag his friends on status and images, create emoticons, chat with friends and comment on his friends' postings. As a 'meaning maker', Donald appreciates the communication and socialisation functions of new media as it enables him to connect to his grandmother who is living in a different state. Donald builds new relationships and maintains existing relationships with friends through his use of Facebook. As a 'critical analyser',

not only does he use Facebook as a medium for socialisation, but Donald also believes that Facebook is a medium for him to have fun and to freely express himself. For this reason, Donald is against the idea of having parents or teachers as friends on Facebook, which he describes as "not cool" and limiting. Donald is also critical about the new changes on Facebook. According to him, the new Facebook Chat Sidebar is confusing. For this reason, he downloads the Facebook Chat Sidebar disabler on Google Chrome and installs it to restore the old setting on his Facebook account. Donald is able to demonstrate his understanding of social media by not only making use of it as a medium of socialisation, but also for other purposes such as work and studies. For instance, in the past, Donald used social media to connect with his friends who helped him produce a video for a church program. According to Donald, at that time he and his friends used Skype to discuss ways to accomplish the task. He emailed his friends to inform them about the progress of his work and posted related images that were to be included in the video on Facebook.

Elisha's Proficiency:

Elisha stated in her media diary that she uses computers, the internet and mobile phone regularly out of school. This suggests her ability to perform basic technological operations as a 'functional user' of digital media. Elisha has sufficient knowledge and skills to work with computers and the internet, performs searches using search engines such as Google and Yahoo, sends email and connects with friends using Windows Live Messenger. As a 'meaning maker', Elisha acknowledges the importance of digital media technologies in her everyday life. Elisha claims that new media technologies make her "life easy". Technologies such as instant messaging and mobile phone enable Elisha to communicate with family and friends easily, while peer-to-peer software (P2P) and YouTube allow her to share files with other users and download movies, music and videos for fun. As a 'critical analyser', Elisha regards the internet as a powerful source of information. Elisha knows that she can use the internet as a medium to satisfy her curiosities. Elisha randomly browses the web during her free time and looks out for information that she is interested in. Elisha 'transformed' her understanding of the internet as she used it to find information that is related to her homework and other school related tasks.

Based on the description above, it is evident that both Donald and Elisha have access to new media and the ability to operate different technological devices out of school. Donald and Elisha are capable of creating meaning, critically analysing and transforming their understanding based on their everyday use of digital media. But, more importantly, such descriptions should serve as an indicator

to inform teachers of their students' experiences of new media and to convince them that students should be grouped according to their level of new media proficiency.

Lack of teachers specialising in ICT

Even if Valley National Secondary School (VNSS) is able to group its students based on their levels of new media proficiency, it is unlikely that the school would be able to cater for the needs of all students by conducting the ICTL class using 'self-paced' and the 'self-directed' learning approaches as suggested in the ICTL guidelines. This is due to the shortage of resources that the school is facing. Apart from the shortage of technological resources, as described earlier in this chapter, VNSS does not have enough teachers who specialise in ICT. During my personal communication with VNSS's Senior Afternoon Supervisor, he argued that this is the main reason for the school management deciding to withdraw the ICTL subject from its curriculum in June 2011.

While there is no related study found on teachers teaching the ICTL subject, or of teachers who specialise in ICT in Malaysia, a study on Malaysian teachers' ICT proficiency in general suggested that the majority of teachers only had average knowledge of ICT and showed moderate ICT proficiency (Mahmud & Ismail, 2010). This finding was based on the ICT Knowledge Test and ICT Skills Test which were carried out with teachers to evaluate their knowledge in ICT, and their ability to use different applications including word processing, spreadsheet, database, presentation, basic internet and e-mail (Mahmud & Ismail, 2010). Malaysian teachers' ICT proficiency was further investigated by Mahmud, Ismail and Ibrahim (2011) in a later study conducted among teachers in the Smart Schools. This study concluded that teachers showed excellent proficiency only in operating basic computer applications such as word processing, multimedia presentation and the internet. However, the findings of these studies only indicate Malaysian teachers' ICT proficiency in general and do not specifically focus on explaining the problem of the lack of teachers specialising in ICT, as evident at the VNSS. Even though the lack of teachers who specialise in ICT is not considered as part of this study, it is important to note that this problem can negatively impact on students' use of new technologies within the school context. Thus, it is necessary for future studies to focus on the lack of teachers specialising in ICT and its implications for students.

The lack of teachers who specialise in ICT is not only a problem within the Malaysian context, but also in other countries such as the United Kingdom (UK) and Turkey. In the UK, it was reported that

only 35% of ICT teachers were specialists in the field, negatively affecting the teaching of ICT (Service, 2012b). Similar findings were also reported by the European Commission's Education, Audio-visual and Culture Executive Agency (EACEA) based on their study of learning and innovation in ICT in schools in Europe. The findings of this study indicated that European countries, in particular the UK and Turkey, faced difficulties in recruiting ICT teachers due to the lack of teaching personnel who were specialised in the field (Eurydice, 2011). The problem lies in the difficulty of recruiting teachers who specialise in ICT. According to Eurydice (2011), it is more difficult to recruit ICT teachers than teachers who specialise in other areas. This is associated with several different factors including the labour market, work conditions and career prospects. While there is no study found specifically addressing this issue within the Malaysian context, it is possible that VNSS and other schools in Malaysia encounter the same problems.

In this section, as well as in the earlier part of this chapter, the research question regarding what new media practices students participate in while they are in school has been discussed. In the school in which this study was conducted, students are generally not allowed to bring their own technological or mobile devices to school. The student participants and their peers only use computers and the internet during the ICTL class period and not at other times in school. This is partly due to the school's lack of technological resources. Apart from needing access to new media technologies, schools also need specialised teachers and support staff in order to ensure that these technologies are fully integrated into teaching and learning practices (Eurydice, 2011; Mokhtar, Ahmad, Abdullah, & Asraf, 2010). Other factors such as school leadership, its adopted policy, teachers' knowledge and, attitudes towards the new media will be explored in the next section as young people's use of new media during school is discussed.

5.2.2 Communities of practice in the ICTL class

Despite limited access to new media technologies in school and, lack of teachers who specialise in ICT, Amanda, Elisha and Donald appreciate the opportunity that they have in the ICTL class; where they get to do things together with their peers and learn from one another. Only Ali indicates that he would rather not be in the ICTL class. Donald describes the ICTL class as follows:

> Like some of us, some of my friends are experts in using Windows XP. So…they will share with us…telling us how to do things with Microsoft Word. For the rest of us, we don't know. So like, they can tell us…which one…because if we ask the teacher, teacher

won't really like to teach us…you need to do it yourself. But, if my friends, they teach me like, oh, ok, you have to click this…and then they will explain to you step by step how.

According to Donald, he and his friends are forced to go to the ICTL class. He doesn't like the ICTL teacher and what he formally goes through in that class, but Donald appreciates the way his friends share their knowledge with him and help him to accomplish his tasks. Donald believes that he learns from his friends during the ICTL class and prefers to consult his friends rather than the teacher. Unlike many of his friends who share their knowledge with him and help him to understand things better by providing step-by-step explanations, Donald claims that he does not learn as much from the ICTL teacher. This indicates that learning takes place in a social context as Donald learns from his friends by participating in the shared practice of attending the ICTL class. As explained by Weinstein (1991), schooling is a form of social participation that requires students to socially adapt in their situation in order to succeed academically. This indicates the intertwined relationship between the social and academic aspects of schooling (Weinstein, 1991). This is also in line with the idea that schooling is a sociocultural process and students belong to social groups (Vygotsky, 1978). Donald's description also indicates the existence of a community among students in the ICTL class comprising students who are connected to one another and, come together to fulfil the needs of each other. This is supported by Akiba and Alkins (2010), who describe students' engagement with one another during school as an indication of their belonging to a learning community where they express their membership and connection with each other.

Akiba and Alkin's (2010) conception of a learning community might relate to communities of practice (COPs) which are based on the earlier works of Lave and Wenger (1991) and Wenger (1998). However, some caution needs to be exercised before making a claim that a COP existed in the context in which this study was conducted solely based on the justification that Donald and the other participants attended the same school, were in the same grade, went to the same ICTL class, collaborated and learned from one another. But as Wenger (1998) said:

Over time, this collective learning results in practices that reflect both the pursuit of our enterprises and the attendant social relations. These practices are thus the property of a kind of a community created over time by the sustained pursuit of a shared enterprise. It makes sense therefore, to call these kinds of communities, *communities of practice*. (p. 45)

Donald's description of how he and the other participants attend the ICTL class, engage in discussions and learn from one another indicates participation in COPs. The data gathered in this study indicates that COPs existed. This is justified by the existence of the dimensions of practice which consist of (a) mutual engagement; (b) a joint enterprise; and (c) shared repertoire (see 3.2). The dimensions of practice (Figure 10) are considered as an integral element of COPs, associating practice and community together (Wenger, 1998).
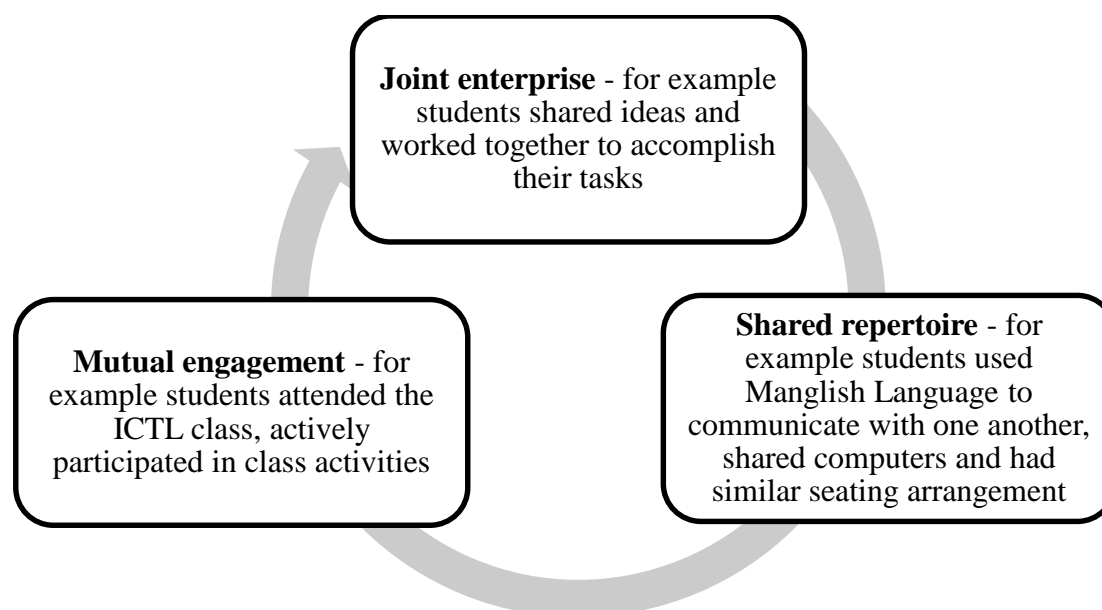
Figure 10. Students' dimensions of practice during the ICTL class (Wenger, 1998, p. 73)

In the following sections, the participants' participation in the communities of practice during the ICTL class is discussed, based on the dimensions of practice.

Mutual engagement

Despite different opinions and feelings that the participants and the other students have about the ICTL lessons, they still attend the class. Even though Ali would prefer not to attend the class, Donald does not like the ICTL teacher and Amanda wishes that she did not have to come to school early, they still attend the ICTL class as they are required by the school. As experienced by Ali, absenteeism from the ICTL lesson results in a warning and penalty. Thus, in order to avoid being warned or penalised, students attend the class regardless of whether they like it or not. In a sense, this suggests that the participants and the other Form 1 students at VNSS come together and share a practice of

attending the ICTL class only because they are required to. However, during the ICTL class, they are also observed to be doing things together as they perform their tasks as instructed by the ICTL teacher.

On the two occasions during which my observations were conducted, I observed that the ICTL class began with the teacher introducing students to Microsoft Publisher and Windows Movie Maker respectively and explaining how these applications can be used in the context of everyday life. Midway through the lesson, students were given assignments by the ICTL teacher based on the applications they learned. During the first observation, students were asked to produce 'new member invitation posters' for any club or society that they belong to in school using the Microsoft Publisher application. In the second observation a week later, students were instructed to produce slideshows based on the topics of their interest using the Windows Movie Maker software. During both observations, the students were observed working together to accomplish their tasks. They moved around the lab to look at the work of their friends, discussed their learning with one another and assisted their peers who needed help. As the ICTL class is held only over a one hour period, most of the students did not manage to complete their work on time at the end of the lesson. They were asked by the ICTL teacher to complete their work at home and submit the assignments in the next class.

Despite Donald and Ali's claims that they do not learn much from the formal ICTL lessons, the ICTL teacher's effort to provide students with hands-on experience in the very limited period of time available and her flexibility in allowing them to work together and to become mutually engaged with one another, as observed during the ICTL class, opens the possibility for COPs to occur. The ICTL teacher managed to open the possibility of social learning through students' participation during the ICTL class. Instead of relying only on textbook, course syllabus and class lecture, students were allowed to be engaged with one another, to discuss and work together. According to Ewing (2006), students' engagement with one another during class time provides them with the opportunity to practice and develop meaningful understanding of the subject learnt.

In the context of this study, the term 'mutual engagement' refers to the connection that is established between community members through their participation in shared practices of COPs (Wenger, 1998). Mutual engagement is considered to be an important dimension in which COPs are defined and built upon (Wenger, 1998). According to Wenger (1998), community members are mutually connected to one another through their 'engagement' in COPs. As observed in the ICTL class, the participants and their peers performed a shared practice of attending the ICTL class. During that class

they were allowed, by their teacher, to communicate and work with each other, which indicates that engagement took place. Connection is established as students share similar practice in attending the ICTL class and as they attempt to accomplish the tasks assigned to them during the class. In a separate study conducted among children in New Zealand, Duncan, Jones and Carr (2008) also suggest that children are mutually engaged with one another through their participation in classroom practices and also through the use of shared tools and resources are made available to them in the classroom.

A joint enterprise

In one of the ICTL class sessions, it was observed that Amanda, Elisha and Aida who sit next to each other during the ICTL class, worked together to produce slideshows. They shared their ideas with each other in order to accomplish the task that was assigned to them by their ICTL teacher. When asked, Amanda explained that in the ICTL class she and her peers share ideas and perform the tasks given to them to produce a "wonderful piece" of work together. According to Elisha, most of the tasks assigned by the ICTL teacher are individual assignments and each student's individual work is relatively different. Regardless, they still discuss, perform online searches for images together and help each other out as they accomplish their tasks as required by the ICTL teacher. It was also observed that Donald often walks around the class to look at the progress of his classmates and talks to them about it. During one of the ICTL class sessions, Donald was observed walking to Amanda and Elisha who were sitting at the front. Donald spent a few minutes looking at Amanda and Elisha's work on their computers and talked to them about it. After a brief conversation with them, Donald returned to his place and continued performing his task. Other students were also observed to be doing the same thing which suggests that they share knowledge and ideas and work with one another to accomplish their tasks during the ICTL class. In COPs, this is referred to as negotiations of a joint enterprise in which the participants and their peers come together to negotiate their responses based on their situation during the ICTL class (Wenger, 1998).

A joint enterprise is considered as a rhythm to practice (Wenger, 1998; Willis, 2010). The negotiations of a joint enterprise that the participants and their peers go through during the ICTL class are the outcome of their participation in COPs. A joint enterprise signifies the mutuality that students have with one another. It also indicates the sense of accountability that they have with each other as they participate in the shared practice of attending and participating in the ICTL class. A joint enterprise consists of the things that the participants and their peers consider important during the

ICTL class including sharing knowledge with one another and working together towards accomplishing the tasks assigned by the ICTL teacher. Similar to mutual engagement, joint enterprise is also described as being diverse and partial and may result in tensions and conflicts, which indicates that it does not necessarily entail agreement among COPs members (Wenger, 1998). This is further explained by Wenger (1998):

> Because mutual engagement does not require homogeneity, a joint enterprise does not mean agreement in any simple sense. In fact, in some communities, disagreement can be viewed as a productive part of the enterprise. The enterprise is joint not in that everybody believes the same thing or agrees with everything, but in that it is communally negotiated. (p. 78)

It is important to note that COPs evolve within larger historical, social, cultural and institutional contexts (Wenger, 1998). Factors such as the institution's condition, demand and resources influence the ways in which practices within the institution are negotiated. Some of these factors are openly articulated and expressed while others are more subtle. This is further explained by Wenger (1998) who indicates that a practice is negotiated and developed as a result of the response that COPs members provide based on their community's condition, demand and resources.

It was observed that the ICTL teacher does not encourage or prohibit students' collaboration during the ICTL class. However, on occasions when the noise level in the ICTL class was rising, the ICTL teacher intervened and asked students to maintain their discipline. This suggests that students are allowed to share ideas, discuss and work with each other as long as they maintain a reasonable noise level during the ICTL class. In response to this condition, students were observed to be discussing and working with each other in a minimum volume of voice in order ensure that the acceptable noise level is maintained or they might risk upsetting the ICTL teacher. It was also noted that due to the shortage of technological resources, not all students had the opportunity to access computers individually during the ICTL class. Students negotiated this situation by sharing computers with their friends. It was observed that students who arrived early to the ICTL class willingly offered to share their computers with their friends who were late. These instances indicate that students negotiate their practices during the ICTL class with one another based on the conditions they face, the demands imposed on them and the resources available to them.

A shared repertoire

Students' engagement with one another and their participation in a series of negotiations of a joint enterprise with each other during the ICTL class lead to the creation of a 'shared repertoire'. According to Wenger (1998):

> The repertoire of a community of practice includes routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practice. (p. 83)

With regard to this study, the repertoires that the student participants and their peers share are the tools made available during the ICTL class, which are computers and the internet, similar ways of doing things and similar classroom seating arrangements. Even though Amanda suggested that students' work during the ICTL class is relatively different from one another, it was observed that, when they were asked by their teacher to produce slideshows using the Windows Movie Maker, they tended to use the same style. Producing slideshows is considered to be an individual task, but during observations conducted in the ICTL class it was evident that most students came up with identical concepts, images and style. This is probably due to the engagement that they have with each other during the ICTL class. This similarity is referred to by Willis (2010) as the social standard setting in which students tend to look at how their friends are performing in the classroom. According to Willis (2010), students are also likely to be influenced by the work of others whom they regard as experts. It was also observed that the students were seated closely in their cliques and that they preferred to occupy the same seating arrangement every time during the ICTL class period. For example, it was observed that Amanda, Elisha and Aida, who are close friends, sat next to each other during the ICTL class. Their proximity to one another allowed them to discuss and work together. This is explained by Willis (2010) who indicates that students prefer to sit close to their friends in the classroom as they are more likely to interact with those who are closely related to them.

In this section, the research question of how students use new media in school has been addressed and discussed. They were observed using computers and the internet with their friends during the ICTL class, working with one another to accomplish tasks assigned to them by the ICTL teacher, sharing their interest in new media and, exhibiting similar practices in attending the ICTL class. These observations indicate that students have a sense of belonging to COPs. It is through their shared

interest and practices that students become mutually engaged with one another, negotiate enterprises and share tools and ways of doing things with each other.

5.2.3 Divide between students in term of access and proficiency in new media

As discussed earlier, the participants' experiences, knowledge and proficiency in new media differs from one person to another. Even though all of them have access to different ranges of technologies and are considered to be frequent users of digital media, their digital experiences, knowledge and proficiency vary based on the nature of technological exposure and use that they have out of school. Despite having access to a variety of technologies at home, Donald is not as proficient as Amanda, especially in performing basic computer skills such as computer processing, word processing and multimedia. This was noted by Donald himself during interviews as he admitted that he frequently asks for assistance from Amanda and his other classmates whenever he faces difficulty in performing a task during the ICTL class. On another note, not every Form 1 student at the Valley National Secondary School (VNSS) is similar to Ali, Amanda, Donald or Elisha in terms of the level of new media access and exposure that they had out of school. As Ali commented, some of his friends in school do not have access to, or only have limited exposure to new media out of school. According to Ali, due to the lack of technological access out of school, some of his friends are short on experience, knowledge and proficiency of new media and this is evidenced during the ICTL class as they struggle to keep up with the lesson. The evidence of this study suggests that there is a divide among Form 1 students at VNSS relating to their level of access and exposure to new media out of school. While this study does not focus on the issue of digital divide among students, it is assumed that this problem may be due to different reasons such as socio-economic factors, family, age and educational background (Selwyn & Facer, 2010).

Earlier studies on the issue of digital divide in Malaysia were focused on problems relating to the divide between urban and rural areas (Faziharudean et al., 2009; Judi et al., 2011) and concerned with bridging the divide throughout the country (ENPNewswire, Dec. 24, 2010; Genus & Mohamad Nor, 2007; Osman, 2007). However, no studies are found specifically addressing the issue of a digital divide among youths in the urban areas or the issue of a divide between youths who attend the same school in urban locations in Malaysia. Leaving aside the issue of the digital divide that exists between urban and rural areas in Malaysia; the problem might well be inherent among youths who are schooling in the same school in urban locations. For instance, in a study conducted in the United

States, it was reported that, in 2011, the digital divide was still considered to be a problem among youths even in California, in the Silicon Valley of the United States, due to factors relating to the lack of internet access, affordability, education and social equity (PRNewswire, July 22, 2011). This suggests that a digital divide can occur between youths who can afford to have digital access at home and their poorer peers who do not have access at home (Crawford, Dec. 4, 2011; Eamon, 2004). This problem refers to the social aspect of the digital divide in which there is an inequality in terms of digital access out of school between young people who enrol in the same school due to differences in their socio-economic status (Muller et al., 2009).

The issue pertaining to a digital divide is not the focus of this study. But the theme arises as the questions of, what are the new media practices that students participate in and, how and why students participate in new media practices in school are addressed. When the student participants were asked why the ICTL teacher only teaches basic ICT applications and not something more advanced, they indicated that there are students who do not know how to use technologies such as computers and the internet as they do not have new media access at home. Thus, beyond the geographical factor, it is also necessary for future studies that attempt to examine the digital divide between youths, to build on the evidence of this study and to investigate closely the issue of the digital divide among students in the same school, in urban locations, in Malaysia. Such studies should be performed by taking into account contributing factors such as the socio-economic profile, age, gender, education and family structure (Policy, Nov. 22, 2005; Selwyn & Facer, 2010).

5.2.4 School leadership and teaching and learning with digital technologies

In the earlier part of this chapter, two important factors were highlighted relating to students' limited use of new media technologies at the Valley National Secondary School (VNSS) – (a) the lack of technological infrastructure and (b) the lack of teachers who specialised in ICT. In addition, it is also useful to consider other related factors such as (c) school leadership, (d) school policy and (e) teachers' attitudes and knowledge of new media. Even though this study only focuses on young people's use of new media in and out of school and not on issues relating to school leadership, policy or teachers' attitudes and knowledge of new media, the above mentioned factors are often intertwined with one another, in research into young people's use of new media within the school context (Hadjithoma & Karagiorgi, 2009; McGarr & Kearney, 2009; Tondeur, Keer, Braak, & Valcke, 2008; Yunus, 2007).

Leaders at the school level play an important role in determining how new media is used in school, especially on the way in which new media technologies are integrated into teaching and learning (Anderson & Dexter, 2005). They are responsible for formulating and implementing policy relating to new media and determining how it is used in the curriculum (McGarr & Kearney, 2009). In this regard, school leaders can either champion the cause of promoting effective use of new media in school or fail to deliver what is expected from them, depending on the role they played and leadership attribute and attitude they showed toward new media (Hadjithoma, 2011).

While school leaders are responsible for formulating and implementing policy that could determine the success or failure of new media integration in teaching and learning in school, it is also important to understand that such responsibility is often influenced by different factors including school leaders' skills and knowledge of new media, the availability of technological resources, technical support and time. Such factors indicate the complexity involved in formulating and implementing a school's new media policy (McGarr & Kearney, 2009; Tondeur, Devos, Houtte, Braak, & Valcke, 2009). In order to formulate an effective new media policy, and more importantly, to champion the cause of promoting the use of new media in teaching and learning, it is necessary for school leaders to equip themselves with the right skills and knowledge of new media (Schrum, Galizio, & Ledesma, 2011). In a study conducted on leadership and new media integration in school involving sixty-three school leaders in Malaysia, it was found that due to the lack of skills and knowledge of new media, the school leaders' leadership and vision, teaching and learning with regard to new media integration in their respective schools were only at average level (Nordin et al., 2010). The same study also found that the school leaders' professionalism and productivity with new media were below average (Nordin et al., 2010). Such findings indicate the need for school leaders to acquire appropriate skills and knowledge to successfully promote and sustain the integration of new media technologies into schools (Nordin et al., 2010).

For some school leaders, new media skills and knowledge are acquired through their own learning initiatives enabling them to effectively lead, promote and sustain the integration of new media technologies into schools (Schrum et al., 2011). Nevertheless, for others, utilising the potential of new media in school can be a daunting task and the lack of required skills and knowledge may hinder their ability to effectively lead and support the integration of new media technologies into schools (McGarr & Kearney, 2009; Nordin et al., 2010). Under such circumstances, school leaders need

continuous opportunities for professional development and technical support that can be achieved through strategic ventures and collaboration with other schools (McGarr & Kearney, 2009).

As mentioned earlier, a school based new media policy that is well formulated and executed has the potential to positively impact on the way new media is used by teachers and students (Anderson & Dexter, 2005). This can be achieved through cooperation and active involvement of the school principal, coordinators and teachers as they work together to formulate and execute school policy on new media (Tondeur et al., 2008). In this regard, instead of putting the leadership responsibility for the school's integration of new media on the shoulders of the principal alone, the responsibility is shared by everyone involved (Vanderlinde, Braak, & Dexter, 2012). According to Dexter (2011), this leadership model requires the principal, coordinators and teachers to work as a team, to develop a shared vision and practices and to determine the responsibilities for each team member regarding the media's integration into the school. The integration of new media for teaching and learning is discussed further in Chapter 6.

Teacher attitudes and knowledge of new media is another important factor that influences young people's use of digital technologies in school (Anderson & Dexter, 2005; Parr & Ward, 2011; Peck, Mullen, Lashley, & Eldridge, 2011). Positive teacher attitudes resulting from excellent leadership, policy and support at school level is beneficial to students as it may lead them to better opportunities to engage with new media technologies in school (Parr & Ward, 2011; Yunus, 2007). In my study, despite limited use of digital media technologies experienced by the Form 1 students at VNSS, and the fact that some of them do not think that the ICTL lesson is beneficial, the ICTL teacher demonstrates her determination to provide students with an opportunity for hands on learning in limited class time and with restricted technological resources.

In a study conducted on Malaysian pre-service teachers' readiness to integrate new media technologies in the classroom, it was shown that pre-service teachers' attitudes towards new media integration in the classroom relate closely to their skills and knowledge of new media (Mohamed & Bakar, 2008). This indicates that teachers who possess skills and knowledge of new media are likely to demonstrate a more positive attitude and confidence in using new media technologies (Mohamed & Bakar, 2008). They are more likely to integrate these technologies into their classroom compared with teachers with inferior skills and knowledge of new media (Mohamed & Bakar, 2008). Therefore, it is necessary for school leaders to provide teachers with the support they need and, to assist them in

their continuing professional development through the implementation of in-service training in the new media (Tondeur et al., 2008; Vanderlinde et al., 2012).

Due to the Form 1 students' limited use of new media in school, it is impossible to assess the impact of teachers' knowledge on the students' usage. The Form 1 students' already limited use of new media in school ended after the ICTL class was discontinued midway through the year. However, according to Elisha, her Science teacher, Miss Jane, is different from the other teachers as she uses her own laptop to teach during the Science class. Elisha explained that Miss Jane introduces new topics and conducts quizzes for students during the Science class using her laptop and the LCD projector. She also encourages students to make use of the CD-ROM attached to the Science text book at home in order to get a better understanding of the topics learnt in school. Miss Jane's effort to integrate new media within the school context in which the technological infrastructure was limited indicates her personal initiative, knowledge and awareness of the possible benefits and values of new media in teaching and learning. It also shows that teachers' proficiency in the new media influences their use of digital technologies in school. Teachers who are technologically adept are more likely to utilise new media in their teaching and learning (Efe, 2011; Rahimi & Yadollahi, 2011).

The discussion presented in this section partly answers the research question pertaining to students' use of new media in school. It was found that students' use of digital technologies in school is determined by factors such as the availability of technological resources. In addition, it is influenced by other factors including school leadership and teachers' knowledge of, and attitudes towards, new media. For example, the Valley National Secondary School (VNSS) leaders' decision to end the ICTL class could be considered as an example of how a decision made at the school leadership level has implications for young people's use of new media in school. School leadership and its policies can either positively or negatively impact young people's use of new media in school. Factors related to students' use of new media within the school context, are further discussed in Chapter 6 based on the data collected from school leaders and teachers.

5.2.5 Students' use of new media at other times in school

In the context in which this study is conducted, the ICTL class is regarded as an effort to teach young people to use new media in order to ensure they are ICT literate (MOE, 2007a). A bigger challenge, however, lies beyond ICTL classes, regarding how the new media is integrated into teaching and

learning practices across the schools' curriculum (Adedokun-Shittu & Shittu, 2011). This is discussed in this section on young people's use of new media out of the ICTL class.

Although there was evidence of Miss Lenny using her laptop in class, when asked whether computers and the internet were used other than during the ICTL class, the student participants responded negatively. They indicate that computers and the internet were not available in their classrooms, and that the computer labs were only used during the ICTL class. Even though this data cannot be taken to represent young people's use of new media across schools in Malaysia, it shows that a lack of technological infrastructure can negatively affect students' use of digital media in school. More crucially, it can affect the use of digital technologies for teaching and learning purposes (Aduwa-Ogiegbaen & Iyamu, 2011; Oyaid, 2010).

Even though the Form 1 students' use of new media at VNSS is limited, they still talk about new media and share their out of school digital experiences with one another at different times in school. This was explained by Amanda:

> We talk about new technologies like the DSLR camera. We share experiences with one another and we compare which camera is better…and also how to use the features like focus and zoom. I'm trying to buy one…I'm saving for that. We also talk about mobile phones…the mobile phones that we have and all. Also about music…where we can hear it through radio and watch it in YouTube.

The other participants in this study also expressed similar views pertaining to their sharing of digital experiences with friends in school revealing that students have a shared interest in digital media. Their interest in new media is shaped by the frequent use of digital technologies at home and at other times out of school (Lahtinen, 2012; Vekiri, 2010). They talk about their out of school digital practices and share their digital experiences with each other at different times in school including before school sessions start, between classes and during recess. According to Amanda, whenever the opportunity arises in school, she and her friends engage in conversation about their out of school new media experiences. This shows how shared interests in new technologies, that are shaped by out of school practices such as downloading music, watching YouTube clips and using mobile phones, are embedded within young people's socialisation processes. This is evident as Elisha, Aida and their other friends share similar interest in watching videos on YouTube and also new songs that they recently downloaded. As Elisha said, she and her friends frequently share the videos they watch on YouTube with one another. In a related study conducted on mass media reception and social

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connection involving students from a higher learning institution who were users of YouTube, it was indicated that using media such as YouTube provides opportunities for during-viewing and post-viewing social engagement: users interact, share and discuss their use of mass media with others while watching YouTube videos and also after watching (Haridakis & Hanson, 2009).

Consequently, regarding the first research question related to new media practices students participate in during school, it is evident that VNSS students only use computers and the internet during the ICTL class period. This is due to the lack of opportunity presented to them during school. Nevertheless, this does not deter students from sharing their out of school media experiences with one another, at different times, in school. Despite their limited use of new media during school, students frequently share their experiences of playing computer games and watching YouTube videos with friends. This indicates that they bring their out of school new media experiences to school and share these with one another.

Communities of practice at other times in school

The social nature of schooling enables students to share their interest in digital media technologies and to be socially engaged with one another. In school, young people are engaged with each other as they interact about their use and experiences of new media (Dornbusch, Glasgow, & Lin, 1996). The social nature of schooling is explained by Weinstein (1991) who argues that:

> It is a social context in which students also learn social lessons-lessons about appropriate
> behaviour in various contexts, about one's self as a learner and one's position in a status
> hierarchy, about relationships with students from other ethnic and racial groups, about
> the relative value of competition and cooperation, and about friendship. (p. 520)

In my study, the engagement that the participants have with their peers in school, which is based on the shared interest in new media, also indicates their belonging to COPs. This is based on Wenger's (1998) conception that COPs are possible in a variety of contexts, including in school, and they are characterised by shared interests, goals or objectives that bind members together. Members of COPs show their belonging through their engagement with one another and active participation in shared practices of their communities (Wenger, 1998).

In the earlier part of this chapter (see Section 5.2.2), the student participants' engagement with the other students in COPs was discussed as they attend the ICTL class, negotiate their practices and

learn from one another. I found that not only do the participants and their peers participate in COPs during the ICTL class, but also at other times in school. This participation is based on their shared interest in new media. Students bring the practices, knowledge and experiences of new media that they have out of school to school, negotiate these practices with one another and learn from each other's experiences, which shows that they are mutually engaged with each other in school. This was explained by Elisha and Ali who said:

Elisha: *Yes sure…we do. Like when we say to one another…maybe we should check out this video on YouTube, or…tonight let's go online so that we can chat…so yeah!*

Ali: *Hmm…There are many gamers in my school. We talk a lot about DotA.*

Ali: *I learn many things from them…there are also Form 2 students there (in our group).*

Elisha's sharing of YouTube videos with her peers and Ali's engagement in a gaming community that includes senior students, indicates they belong to several communities during school. It also shows that some students' out of school new media practices continue across the boundary of school as they share their digital experiences with one another during school. In COPs, this is referred to as the multi-membership perspectives in which the participants and their peers belong to multiple communities in and out of school. The boundary relations between both contexts permit their out of school practice to continue across the boundary of school practice.

As members of multiple communities, young people's participation and reification in COPs enables out of school practice to continue across the boundary of school practice. Participation and reification in multiple communities are described by Wenger (1998):

> The products of reification can cross boundaries and enter different practices…It is appropriated and reified in different ways in each of these practices…We can participate in multiple communities of practice at once…Whether or not we are actively trying to sustain connections among the practices involved, our experience of multi-membership always has the potential of creating various forms of continuity among them. (p. 105)

While the multi-membership perspectives of COPs make it is possible for the participants to continue their out of school new media practice in school, it is also important to consider if the participants actually belong to the same COP, based on their new media practices, regardless of whether they are in school or out of school. For example, Elisha and Aida are best friends in and out of school. They frequently engage in practices such as texting and calling each other using mobile phone, chatting using social media, watching YouTube clips and downloading movies and songs. In school, they negotiate these practices together by setting the right time to be online and recommending the

YouTube clips that they recently watched, all of suggests that they are engaged in the same COP that is based on their new media practices instead of being in multiple COPs in and out of school. While friendship alone does not necessarily indicate participation in any specific community, shared digital practices that Elisha and Aida engage in shows they belong to the same COP.

As Elisha and Aida belong to the same COP based on their new media practices, school is considered only as a place where they learn and socialise and, at the same time, participate in the process of negotiation relating to their practices of new media. This view, however, is partial, considering that young people's use of new media in and out of school is very complex. It involves their participation in different new media practices in different contexts and their membership of multiple communities in and out of school. This will be elaborated further in Chapter 7.

Learning in the communities of practice

Wenger (1998) describes communities of practice as shared histories of learning. We learn through our participation in the shared practices of COPs as we become mutually engaged with each other, contribute in the process of defining and understanding the enterprise of our communities and develop the repertoire with other members of COPs (Wenger, 1998). Similar to the learning described in the earlier discussion (see Section 5.2.2), the participants and other students learn from one another in the shared practices they participate in during the ICTL class. Learning also takes place at other times in school as they interact with each other about their out of school use and experiences of new media. This takes place for example, as Ali and his peers in school learn from each other based on their gaming experiences out of school. In school, Ali is mutually engaged in conversations with Joey and other students who share a similar interest in gaming. They talk to each other about their out of school gaming experiences such as playing Defense of the Ancients (DotA), Blackshot, Counter Strike (CS) and other games. Taking DotA as an example, Ali says that many of his schoolmates play DotA at home, including his classmates, students from other classes and senior students. Ali claims that many of them have more experience playing DotA than he does and he takes this opportunity to learn from them about the strengths and weaknesses of DotA's heroes and the tactics to employ when playing DotA. According to Ali, he and his group of friends often meet up in the canteen during recess. They eat together and spend time sharing their gaming experiences with each other. They also share their gaming experiences with one another at other times whenever there is an opportunity to do so, including before school begins and after school ends. This instance shows that learning which is

inherent in the participation in COPs can take place as young people bring their out of school new media experiences to school, negotiate their practices and share it with one another during school context.

The learning that Ali experiences before school begins, during recess and at other times in school as he learns DotA tactics from his peers, suggests that young people like him have different levels of knowledge and expertise that they bring to school with regard to their use and experiences of new media out of school. In another instance, Amanda shows that she has more knowledge and expertise in new media compared with her peers. This is acknowledged by Donald, who regards Amanda as a 'Teacher' or a 'Master' due to her knowledge and expertise of new media. According to Donald, during the ICTL class and at other times in school, Amanda is happy to share her knowledge and expertise of new media with him and other peers.

Amanda's higher level of knowledge and expertise of new media compared with that of Donald and other students indicate that COPs members may differ from one another in terms of their knowledge and experience. My study found that, regardless of the knowledge and experience they have, COPs members tend to be mutually engaged with each other. They participate and learn from one another as they continuously negotiate the practices of their community (Wenger, 1998). For instance, mutuality is demonstrated as Amanda, Ali, Donald, Elisha and the other students share their new media experience and learn from one another. Students might not be similar or equal in term of their proficiency with new media, but they seem to recognise each other's experience. The more experienced members, or the 'old-timers', are often expected to help the less experienced members or the 'newcomers' progress through the shared practices of their community. The notions of 'old-timers' and 'newcomers' in COPs were introduced by Lave and Wenger (1991) to explain how learning takes place in a social context, as newcomers who are only capable of performing basic tasks at the beginning learn from the old-timers and progress further. Eventually, they become capable of performing more complex tasks. This is explained further in the Chapter 8 as young people's trajectory of identity and learning based on their use of new media in and out of school is discussed.

5.3 Young People's New Media Practices out of School

In comparison to their limited new media access in school, the participants in this study have access to a variety of new media technologies out of school including personal computers, laptops, the

internet, gaming consoles, mobile phones, cameras, video recorders and digital media players. This was explained by Donald:

Interviewer: *How about out of school? What are the technologies that you use out of school?*

Donald: *Woohoo (high voice)! Don't ask…I use laptop…I use my iPhone, iPad. PSP, iPod…iPod Shuffle, Nano…hmm (pausing)…PS3…my camcorder…I don't really use it, but camera…I use it most of the time.*

During interviews, Donald was very keen to share his use of new media out of school. This was shown through his positive facial expressions, engaged body position and high voice projection. Similar excitement was expressed by Ali, Amanda and Elisha when they described the rich selection of new media technologies they access out of school. According to Courtney and Anderson (2010), the availability of different ranges of new media out of school, with lesser or without any proper regulation in place, helps to increase young people's interest, motivation and proficiency in using digital media.

Students also have the opportunity to use these technologies outside school for a longer period of time than when they are in school (Ilomaki & Kankaanranta, 2009). Donald said he is online as soon as he reaches home from school in the evening until three or four in the morning. According to Donald, at home he frequently performs his homework with his laptop switched on and connected to the internet and, at the same time, engages in practices such as using social media and downloading music. Sometimes, he falls asleep in front of his laptop with the machine switched on until the following morning. Figure 11 below was uploaded by Donald into the media diary. It shows his practice of uploading music and movies using FrostWire peer-to-peer (P2P) platform.

Donald's description of his out of school new media practices suggests that he spends a long period of time engaging in various practices, including playing computer games, using social media and listening to music. In a study conducted to investigate the ICT competence of the young, Ilomaki and Kankaanranta (2009) reported that many young people's lives revolve around their out of school use of digital media technologies as they engage in different new media practices over long periods of time. Donald's practice of operating in different technological applications at one time is explained by Courtney and Anderson (2010) as one of the reasons young people prefer to use new media out of school compared with when they are in school. Unlike during school, where performing different technological applications is generally not permitted, out of school use of new media allows students to perform different activities simultaneously, for example, multitasking between performing school-

related tasks and engaging in practices such as listening to music, downloading movies, music and chatting (Courtney & Anderson, 2010).
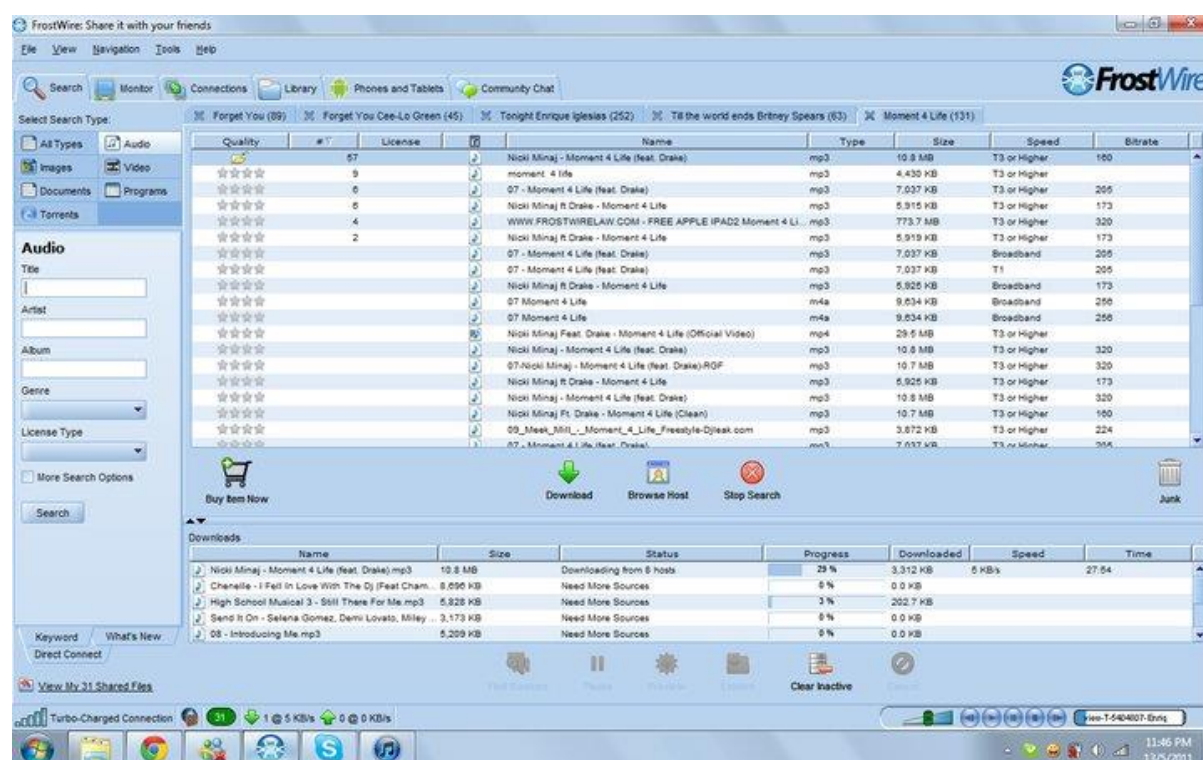
Figure 11. Image of music download using FrostWire posted by Donald in the media diary

Ali's parents only allow him to use new media technologies up to three hours every day during school days, but he still treasures the opportunity presented to him out of school. Ali claims that the opportunity to access new media out of school allows him 'freedom' to do things that he wants to do. In a related study, scholars indicated how out of school use of new media technologies is appreciated by young people as they have better opportunities to use these technologies for longer periods of time and to freely engage in new media practices without having to deal with the kind of restrictions they experience when in school (Kuhlemeier & Hemker, 2007; Oyaid, 2010).

As discussed earlier, even though new media is used in a variety of contexts in and out of school, young people have a better opportunity to engage in new media practices of their choice, out of school (Clark et al., 2009; Oyaid, 2010), if they have access to the resources. Earlier studies showed that youths with richer new media access out of school have better opportunities to engage in digital practices over an extended period of time with less supervision or restriction, and that they are keenly involved in such practices (Keating et al., 2009; Kuhlemeier & Hemker, 2007). For instance, Elisha

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uses Skype regularly to meet her friends in the virtual environment, to communicate and to maintain her relationships with them. On the other hand, Amanda has a lot of fun playing Habbo where she has the opportunity to play and socialise with her online friends as a form of relaxation out of school. These instances illustrate how young people's engagement in new media practices out of school serves different purposes, including communication, relaxation, to have fun, to socialise and to maintain relationships with family and friends.

5.3.1 Out of school engagement in online communities of practice

Ali, Amanda, Donald and Elisha's engagement in various new media practices out of school with their siblings, cousins, friends and other individuals, in both contexts, virtual and real life, suggests their participation in communities of practice. This is explained by Landri (2009), who asserts that to be participating in various new media practices together is to be mutually engaged with one another in a digital formation of networked socialities. Accordingly, the mutual engagement of participants in this study with their family members and friends through a shared interest in new media and active participation in digital practices, are part of their experiences of being in a COP.

Based on Xiaoli and Bishop's (2011) framework of six interrelated elements of online COPs, a similar examination is made to understand how COPs evolve in Ali and Amanda's online practices out of school (Figure 12):

a. Individuals – Ali spends several hours every day playing computer games such as DotA and Heroes of Newerth (HON) with his friends and other gamers he meets on Garena online gaming platform. Ali does not know everyone in Garena as there are millions of other gamers from elsewhere and there are plenty of 'gaming rooms' to choose from. Due to language proficiency reasons, Ali prefers to join Malaysian dedicated 'gaming rooms', and plays together with other fellow Malaysian gamers. In Garena, Ali is associated with other individuals whom he includes in his list of 'buddies' or friends. Amanda enjoys playing Habbo, a social networking site that provides her with the opportunity to make new friends with other players from all over the world and at the same time to maintain relationships with old friends from her previous school. Amanda enjoys equipping her personal space or 'room' in Habbo with furniture and decorations. She has bought a virtual pet of her choice, and she also has fun going to public spaces in Habbo such as restaurants, cinemas and dance clubs where she has the opportunity to meet and socialise with other players.

b. Practice – In Garena, Ali and his buddies play online games such as DotA and HON together. There are occasions when Ali becomes host and invites his buddies and other gamers to play. At other times, Ali accepts their invitations to play with them. There are also times when Ali combines with his buddies in two-on-two, three-on-three or five-on-five gaming formats against other groups of gamers. In Habbo, Amanda has her own space or a 'room' to furnish and decorate. With credits, she purchases new furniture, decorations and clothes for herself. Like living in the 'real world', Amanda and other players walk, go to places and socialise with one another in Habbo. There are also numerous Habbo groups or 'clubs' for her and other players to join.
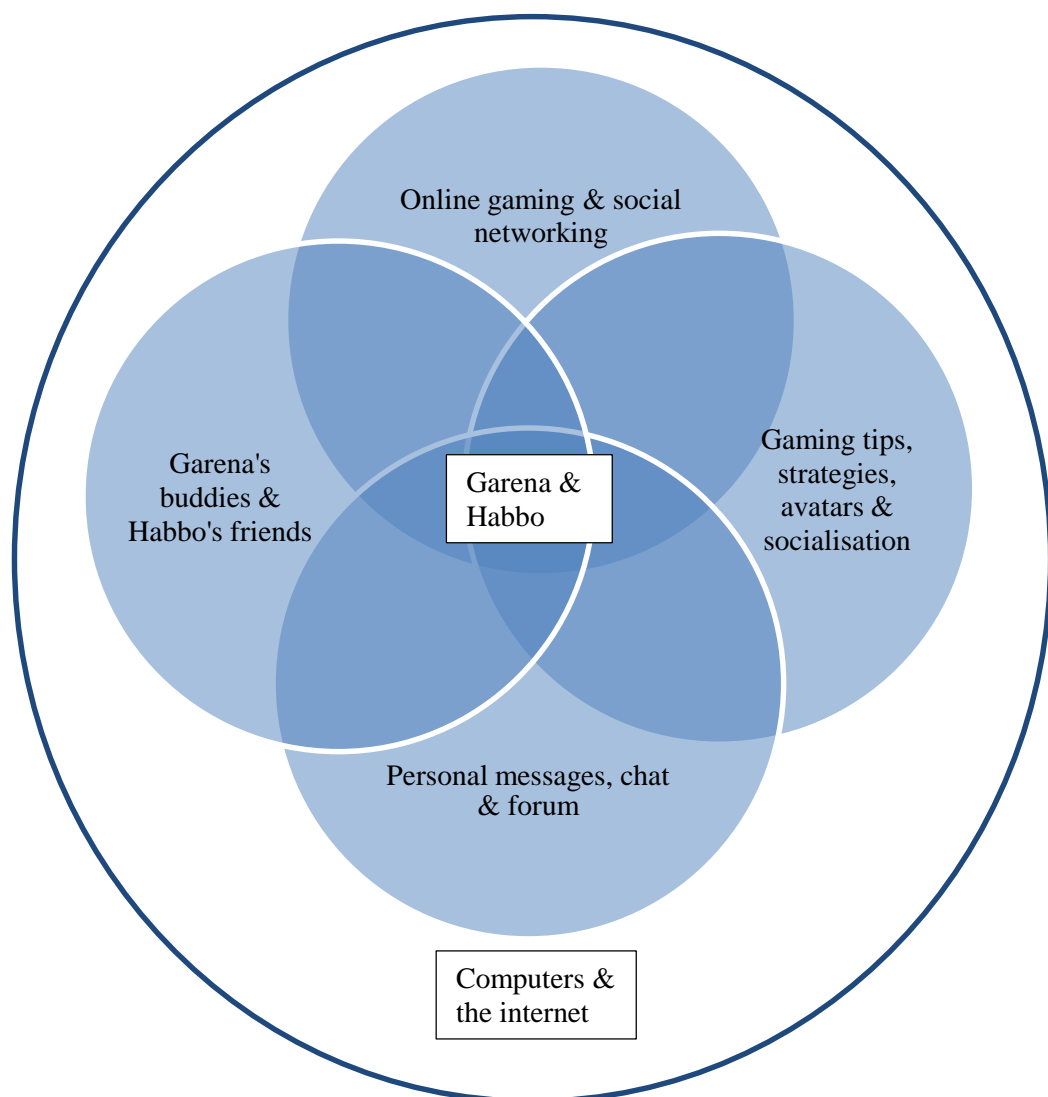
Figure 12. Visual representation of the relationship of the six elements that produce a COP based on Ali and Amanda's participation in Garena and Habbo (Xiaoli & Bishop, 2011, p. 729)

c. Content – It is through their engagement with one another in playing online games on Garena that Ali and his buddies develop gaming strategies including the way to defend and the right time to attack during the course of the game. They also share gaming tips and help each other when needed. According to Amanda, she and her friends play Habbo mainly for fun and to socialise with one another. Using unique avatars to represent themselves, Amanda and other players use Habbo as a virtual space to make new friends, mix and interact with each other.

d. Interactions – communication is essential when playing online games such as DotA, HON and Blackshot. Ali says, when playing DotA on two-on-two gaming format, he and his buddy work hand in hand and interact with each other in their bid to defeat their enemies. They interact to ask for support when on attacking mode and when defending against their enemies. Ali also interacts with other gamers to invite them to become his buddies, to play with them and to join their gaming rooms through personal messages and chat functions made available on Garena. When asked why she prefers to play Habbo rather than The Sims, Amanda indicates that it is Habbo's high level of interactivity that attracts her the most. In Habbo, Amanda talks to her friends using the Habbo chat function. They share their life stories including problems that they faced with each other on Habbo.

e. Community – Ali and Amanda's engagement with their associates in Garena and Habbo indicates the existence of community at the centre of new media practices that they participate in. As Wenger (1998) warns, a community of practice should not be simplified or assumed as collaboration and harmony. For example, Ali's experiences of being harshly called a 'noob' and 'kicked out' of the gaming room by other gamers on Garena, and, the swearing words and racism rows that Amanda has to tolerate on Habbo, indicate that COPs also involve conflict, diversity and partiality among its members. Despite their differences, the sense of mutuality with one another is developed as Ali, Amanda and their associates share interests as well as practices in online gaming and social networking.

f. Technology – computers and the internet are the technologies used by Ali, Amanda and their associates as they participate in online gaming activities and social networking on Garena and Habbo.

Based on Ali and Amanda's active participation in Garena and Habbo, there is evidence that the six important elements of individuals, practice, content, interactions, community and technology relate closely to one another in constituting communities of practice. This observation is similar to Xiaoli and Bishop's (2011) findings. They conclude that the relationship between these six elements supports the evolution of online COPs (Xiaoli & Bishop, 2011). Xiaoli and Bishop (2011) emphasise

the need to have both practice and content together in order to turn the experiences of reification into 'thingness' or something concrete and to sustain online COPs. In my study however, it is necessary to look further into how communities evolve in different online and offline contexts in and out of school. This is due to the fact that not only do Ali, Amanda, Donald and Elisha participate in online practices, they also take part in offline practices as they share their digital experiences with their peers during school and with their relatives and friends out of school.

It is argued that COPs are likely to fail when engagement in the actual practice is not involved (Hung & Chen, 2002; Xiaoli & Bishop, 2011). Nevertheless, Form 1 students' shared interest in digital media, and their sharing of out of school new media experiences in school, suggests that the elements of COPs are possible even when they are not physically engaged in the actual practice of using digital technologies (see Section 5.3.2). At the very least, the experiences that the participants and their peers have as they share their out of school experiences in school may be referred to as boundary encounters and the negotiation of meaning in which students meet, share experiences and build boundary relations with one another. This is elaborated further in the following chapter as the relationship between young people's digital media practices in and out school is discussed.

In the following sections, different purposes of young people's use of new media out of school are discussed. These include their use of digital media for socialisation, as a medium to express problems, to mediate life and as an educational platform in which they learn socially from one another through their participation in shared new media practices.

5.3.2 Young people's use of new media to socialise

According to Ali and Amanda, many of their peers in school are also their friends on Facebook, which indicates that their relationship with the other students in school continues across the 'in school' and 'out of school' contexts. This allows them to be socially engaged with each other physically and virtually in and out of school. Ali suggests that his use of Facebook allows him to connect with other students in school including those whom he does not know well. This includes other students in school enrolled in different classes and grades. Ali does not know them well as he rarely meets them or talks to them in school, and some of them he never meets at all during school, but they are connected to his friends on Facebook and he adds them into his own network of friends through Facebook's 'mutual friend' connection. This observation suggests that social media can be used by young people

as a tool of socialisation. They are able to build new relationships as they make new friends and maintain their relationships with one another through the use of social media (Goodstein, 2007; Mori, 2009).

The results of my study also imply that instead of replacing their real-life social relationships with virtual relationships, as suggested by some scholars, young people can engage in both contexts of real-life and virtual relationships. This is explained by Donald who indicates that:

Donald: *We went to PD (Port Dickson). They were people from Malacca, KL…they came. I didn't really know them. When I came back on Thursday, I checked my Facebook…wow! I have many friend requests.*

Interviewer: *How many requests?*

Donald: *Fifteen after I came back from PD.*

Interviewer: *So you got fifteen new Facebook friends after the trip.*

Donald: *Yeah…usually it's like just one, two, three. But after that trip, there were fifteen.*

The exchange suggests that Donald makes new friends through his participation in the church-organised trip to Port Dickson. In the beginning, Donald did not know many of the other participants who were also on the trip as they came from different places. His relationship with them began as they mingled with each other during the course of the outing. The new relationships Donald built with others during the outing continued after the end of the trip and evolved in the virtual context as they added one another to their networks of friends on Facebook. This is an example of young people's socialising in offline and online contexts complement each other based on the situations in which they find themselves. These results suggest that instead of replacing their real-life social relationships with virtual relationships, young people can use social media as a means to socialise as they are able to build and maintain relationships with one another through their connections in the virtual environment (Quan-Haase & Young, 2010).

When probed further on their use of social media sites such as Facebook, Twitter, Skype and Tumblr, Ali, Amanda, Donald and Elisha stated that they socialise through interaction with friends on social media and that it occurs in various forms. These include chatting with one another on Facebook Chat, Skype and other instant messaging sites, posting on friends' Facebook walls, responding to friends' Facebook statuses, commenting on friends' postings of videos and images, private messaging, poking one another and playing featured games together. Figure 13, taken from one of Amanda's posts in the media diary is an example of her use of social media. In one of her postings in the media diary,

Amanda indicated that she uses different social media sites to communicate and socialise with friends. Amanda reported that she used social media everyday over a one week period when she and the other research participants were asked to post their use of new media on the media diary. The other research participants also reported their frequent use of social media on the media diary.

The way young people socialise through their use of social media is explained by Waite (2011), who reasons that social media provides different ranges of applications which enable young people to communicate and to be socially engaged with each other. This suggests that young people belong to communities based on the social engagement they build with one another and, the online practices they share through their use of different applications on social media sites (Svoen, 2007).
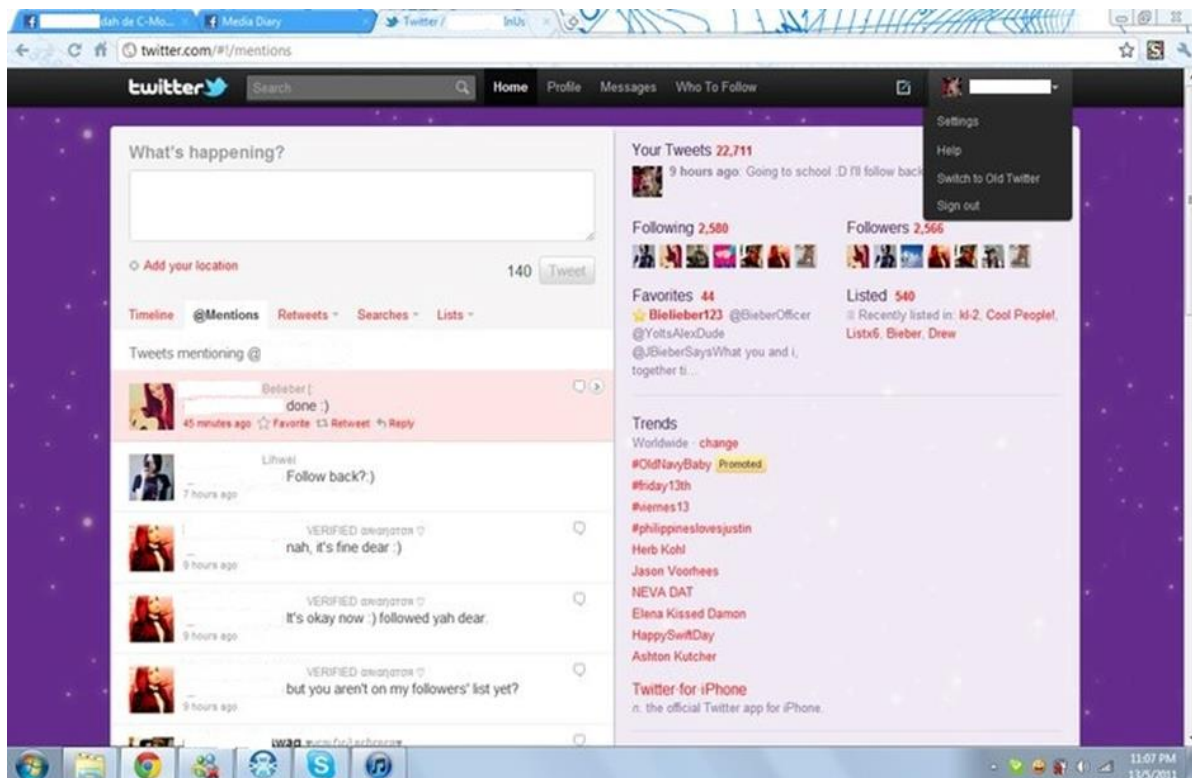
Figure 13. Image uploaded from Amanda's media diary

Not only do young people make new friends and maintain relationships with one another through their use of the social media, socialisation also takes place as they play computer and video games (Gee, 2005; Sarsar, 2008). According to Lenhart, Kahne, Middaugh, Macgill, Evans and Vitak (2008) in their report on teenagers' gaming experiences:

> For most teens, gaming is a social activity and a major component of their overall social
> experience. Teens play games in a variety of ways, including with others in person, with

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others online, and by themselves. Although most teens play games by themselves at least occasionally, just one-quarter (24%) of teens only play games alone, and the remaining three-quarters of teens play games with others at least some of the time. (p. iii)

As discussed earlier, Amanda and Ali make new friends and interact with other gamers as they play computer games online. As Amanda said, playing Habbo online enables her to build new relationships with others who are also playing the same game as she is. According to Ali, his membership in Garena allows him to connect with other gamers as he plays DotA, Heroes of Newerth (HON) and Blackshot with them, interact and share gaming strategies and experiences with one another.

Ali said that playing action real-time strategy games such as DotA, HON and Blackshot online requires him to interact with the other team members, to strategize and to collaborate with one another in order to win. When playing DotA on a 'three versus three' format, Ali collaborates with his team members as they take turns to attack the opposing team and try to reach the 'tower' which is the ultimate aim of the game. They are also responsible for backing up each other throughout the course of the game. This indicates the social engagement that Amanda and Ali form with other gamers as they interact and collaborate with one another in the computer games they play online (Nardi & Harris, 2006). Not only do Amanda and Ali interact and collaborate with gamers who are in the same age group as they are, but they also socialise with others including older youths and adults, which indicates that social engagement among online gamers is intergenerational as it involves gamers from different ages and generations. In a study conducted to explore intergenerational gaming practices, Voida and Greenberg (2012) reported that 75% of the youth research participants have adults as their gaming partners. There are times when Amanda and Ali play computer and video games offline. Even so, this often involves the presence of other individuals such as when they play video games on the PlayStation 2 (PS2) console at home with their siblings, cousins and friends. These findings counter the argument made by some scholars who claim that playing computer and video games contributes to some young people becoming anti-social and isolated (Sarsar, 2008; Taylor, 2006).

The discussion presented in this section has attempted to answer the research question related to how and why young people use new media out of school. Based on the data gathered, it is evident that the student participants and their peers use new media to socialise with one another, to establish new relationships and to maintain existing relationships. In addition, they build relationships through gaming practice. These relationships are often intergenerational, making gaming an inter-generational practice where youths play, interact and build relationships not only with their peers but also with

adults. In the following sections, young people's use of new media for other purposes, including to mediate life experiences and, for learning, are discussed.

5.3.3 Young people's use of new media to mediate life

The value of young people's use of new media out of school is often undermined by many who regard it as being primarily for leisure and of little relevance for their educational development. Nonetheless, young people also use digital technologies to help them to overcome loneliness and boredom, to build confidence and self-esteem, to feel a sense of belonging and to express problems they face in and out of school (Ahn, 2011; Gangadharbatla, 2009; Johnson, 2009c; Quan-Haase & Young, 2010). This is particularly true for Donald, who uses new media as a means to overcome his loneliness and boredom out of school. As the only child of two working parents, Donald treasures his use of new media as it helps him to stay connected to his family members and friends. It also helps him to 'kill time' at home. According to Donald, at home he uses social media sites such as Skype and Facebook regularly to meet virtually his grandmother and aunties, to chat with his friends, to 'stalk' on their latest images and to comment on their latest updates and postings. This suggests that the communication and convergence characteristics of social media that provide users with interactivity, creativity and excitement in different forms of digital activities such as chatting, messaging, posting of images, music and videos and gaming, are appreciated by young people (Livingstone, 2008). These communication and convergence characteristics of social media may help young people to overcome their loneliness and boredom (Livingstone, 2008).

As well as using new media to overcome loneliness and boredom, the participants in this study also use new media, social media in particular, for the betterment of their psychological wellbeing. This includes using social media to fulfil their needs for belonging and to boost their confidence and self-esteem. Unlike the other participants in this study and, many of her school friends at the Valley National Secondary School (VNSS), Elisha said during the first interview that she did not have a Facebook account. At that point in time, Elisha was relying on her mobile phone to call and text, and on Windows Live Messenger, Skype and email to communicate and socialise with her family members and friends. But, during the follow-up interview conducted five months later, Elisha said that she had recently started using Facebook. When asked about her rationale for using Facebook, Elisha answered:

Interviewer:	Oh Alright…for what reason do you use Facebook and other technologies at home? Is it for personal reasons or to overcome personal problem?
Elisha:	No…just for social networking. I mean…I don't want to be left out by my friends…hahaha (laugh).
Interviewer:	Do you feel that you belong to your friends when you use Facebook?
Elisha:	I think only at home when they are on the internet they use Facebook. Before…when I didn't have Facebook, I didn't feel so much of a problem. But now…I have Facebook and it makes life easier.

Elisha did not think that she had any need to have a Facebook account before. But after she started using it, Elisha realises the importance of Facebook and how it makes things easier for her. Elisha's response of not wanting to be left out by friends indicates the importance of having Facebook in order for her to feel accepted and to be included. Having a Facebook account might not mean anything significant to some, but to the group of participants in this study, it is considered important as it relates to the way in which they belong to one another. Those who do not have Facebook accounts might risk feeling left out by their friends. In a related study conducted to investigate young girls' use of social media, Dunne et al. (2010) reported that the main reasons they use social media include to feel accepted by peers and to maintain relationships.

The participants' use of social media as a way for them to be accepted, to be included and to belong to one another, was also evident during the follow up interviews with Amanda and Donald. Both expressed the importance of Facebook and showed their delight with the fact that Elisha had started using Facebook and had joined them as part of their class Facebook group. When asked to comment further about her use of Facebook, Elisha explained that most of her friends in and out of school use Facebook and, for that reason, she felt that it was necessary for her to start using it as well. Elisha also stated that Facebook makes it easy for her to keep herself informed on the latest updates and happenings of her friends. This is particularly important for Elisha as she does not want to be 'left behind' not knowing her friends' latest updates and happenings after her migration to Australia scheduled at the end of the year.

Another instance of how young people use new media to mediate life is inherent in Amanda's gaming practice. Amanda enjoys playing Habbo in her free time. The gaming experiences she has while playing the game online with other users, including friends from primary school and new friends whom she recently met on Habbo, are very valuable to her. They help to enhance her confidence and

self-esteem. Amanda feels accepted in the Habbo community. According to Amanda, playing Habbo online provides her with the perfect opportunity to be with friends and to make new friends from different nationalities and cultures in a community-like environment. Although there are a few users who demonstrate insulting and disturbing behaviour, Amanda believes that, in Habbo, she is able to express herself and to socialise freely and comfortably without having to deal with the shy feeling.

Unlike her socialisation in real life or even in Facebook, where her identity is visible and sometimes negatively judged, Amanda does not have to reveal her real name, image or other personal information on Habbo. Amanda's use of 'Fantastica' as a pseudonym and avatar in Habbo helps her to 'hide', to feel more confident about herself and to communicate openly with others without having to deal with the fear of being negatively judged or rejected. On the contrary, Elisha however, feels completely the opposite to Amanda regarding her use of Facebook. She might be new to Facebook, but Elisha believes that her use of Facebook allows her to express herself freely and confidently to others. Sharing personal information, status updates, images and other postings on Facebook with others helps Elisha to feel more confident.

Amanda's use of Habbo and Elisha's use of Facebook show how young people's engagement in practices of new media can help them to express themselves, to self-actualise and to feel more confident. This data is the opposite of that found by O'Dea and Campbell (2011), who conclude that the young people's use of new media might cause them psychological distress and negatively impact on their self-esteem. Even though young people's use of new media is often described as risky, the opportunity for young people to express themselves and to self-actualise through the new media should not be undermined. This is explained by Livingstone (2008) who contends that:

> Both the opportunities and risks arise because self-actualisation is a social process. Selves are constituted through interaction with others and, for today's teenagers, self-actualisation increasingly includes a careful negotiation between the opportunities (for identity, intimacy, sociability) and risks (regarding privacy, misunderstanding, abuse) afforded by internet- mediated communication. (p. 407)

Young people's use of new media to increase their confidence and self-esteem is also reported by Barker (2009), who states that higher collective self-esteem is experienced especially among teenage girls who frequently use new media for the purpose of socialisation. Socialisation through the use of digital media is also favoured by young people who have difficulty in maintaining real-life social

relationships. This suggests that an important role for the new media maybe to increase the confidence and self-esteem of young people who are socially isolated (Barker, 2009).

In my study, new media is also used by some of the participants to help them overcome personal problems, including those that are related to their experiences in and out of school. This suggests that the new media is used to mediate life in school and out of school. This is explained by Ali and Amanda:

Interviewer: *What did you tell them (your friends in Facebook) about? You talked about your problems?*

Ali: *Ha…problems in school…reasons why I tend to be emotional sometimes.*

Ali: *Sometimes my teachers scold me for no reason…haha (laugh).*

Amanda: *School life…like when I'm so stressed with a lot of school homework. The other day, we had portfolio and we had a test coming up. I was so messed up.*

The above quotes suggest that Ali and Amanda are able to use new media to share online, with their friends, problems and express feelings based on the things that happen to them in school. Ali admits that he is not an excellent student academically; he is just average. At times, Ali finds it difficult to focus during class and for that reason he is scolded by his teachers. But Ali does not like being scolded by his teachers in school especially when it happens without any reason that he considers acceptable. Ali takes his disappointment to Facebook where he is able to express his distress to friends. According to Ali, he talks about his school problems and expresses his feelings on Facebook only to close friends that is, to those that he personally knows and trusts. In a study conducted to examine issues related to trust and privacy in social media, scholars reported that many Facebook users are more inclined to share personal information and develop a sense of trust with each other compared with users of MySpace (Dwyer, Hiltz, & Passerini, 2007; Kennedy & Sakaguchi, 2009).

Amanda plays Habbo as a way to release her stress and to relax. Like many others who play Habbo, Amanda talks openly about her problems in and out of school with her circle of friends. According to Amanda, she doesn't have any concern talking openly about her problems in Habbo because none of her friends there are in the same school as she is. Some of them were friends when she was in primary school. Many others are new friends whom she recently met on Habbo but she does not know them personally. In a way, not only does Amanda's use of a pseudonym and avatar in Habbo allow her to protect her real identity, but it also enables her to be more open and expressive without having to fear being negatively judged. When asked if she would use Habbo as a medium to express problems

other than those that she experienced in school, Amanda said that she might consider that in the future, like some of her friends who talk about their families and relationships.

This data shows that Amanda and Ali differ in their preferences over the use of new media to mediate life in both contexts of in school and out of school. In comparison to Ali, who chooses only to trust close friends whom he really knows on Facebook, Amanda appreciates the practice of anonymity to protect her identity online. This is a personal choice to help her to feel safe and secure. In a way, it also helps her to openly express herself to new friends on Habbo (Dwyer, 2007). However, similar practice based on the use of pseudonyms and anonymity might not be welcomed by others, as it may create ambiguity and the feeling of discomfort, not knowing with whom the interaction and the relationship are taking place (Dwyer, 2007).

Amanda, Donald and Elisha's engagement in Class 1A Facebook group indicates that they use new media to participate in an online group or community and to collaborate with each other to mediate their school lives. Together with their other classmates, Amanda, Donald and Elisha regularly use the Facebook group, which has been created exclusively for students of Class 1A to interact and collaborate with one another about tasks assigned to them in school. They discuss stories and gossip involving students who are in different classes, upcoming or past events in school, homework and other school-related tasks that are assigned to them by their teachers. Amanda states that she and many of her classmates also use the Facebook group to wish one another happy birthday and to wish each other well prior to any festive celebration and school holiday. They use Facebook to inform each other about information, events and activities related to their community (Quan-Haase & Young, 2010). To some extent, these outcomes are similar to Johnson's (2009c) views, especially in the way in which the young use new media out of school to mediate interaction and schooling.

In this section, I reported that one of the reasons the student participants use new media out of school is to mediate their lives both in and out of school. The student participants used the new media for factors such as overcoming boredom and loneliness, developing a sense of belonging, expressing personal problems, releasing stress and relaxing. Out of school, they participate in their own class Facebook group to communicate and collaborate with their classmates. This collaboration is discussed further in the following section (see Section 5.3.4) as the student participants' use of new media for learning is analysed.

5.3.4 Learning with new media

This study reveals that the participants learn many new things through their use of digital media technologies out of school. Such learning takes place socially through their participation in COPs with or without them realising it. According to COPs perspectives, learning occurs through participation in communities of practice in which it is based on their shared interest in, and their practices of, the new media (see Section 5.3.3). Learning in COPs is explained by Lave and Wenger (1991) and Wenger (1998) as a social process situated in members' active participation in shared practices of their communities.

The types of learning that the participants of this study experience through their participation in shared new media practices out of school with family members, friends and other individuals are not only limited to learning about school. The learning encompasses different ranges of useful skills and knowledge including socialisation, thinking, literacy and digital media (Clark et al., 2009; Gee, 2003, 2007; Sarsar, 2008). It is through their engagement in new media practices, such as web browsing, using social media and playing computer and video games, that young people learn about the necessary skills and knowledge of life (Prensky, 2006). This is particularly true considering the learning that Amanda, Ali, Donald and Elisha go through with regard to their use of digital media technologies out of school. Such learning is social as it involves the joint participation of other individuals in online or virtual and, offline or real life contexts (Singh et al., 2008).

Online learning occurs as Amanda, Donald, Elisha and their classmates discuss and learn from one another in the Class 1A Facebook group, when Ali learns from other gamers online and, Amanda learns new things about digital technologies from her online friends. The participants also gain through their learning in offline contexts out of school as they learn about technologies from their relatives and friends. This is evident as Ali benefits from his learning about computers from his father including how to adjust the control panel and how to remove viruses. Elisha also benefits from learning about digital technologies at home. Elisha's sister, Anita, teaches her chatting using Windows Live Messenger and downloading YouTube videos, movies and music with peer-to-peer software applications (P2P).

When asked about learning through their use of digital media out of school, Amanda, Aida and Elisha say that they 'Google things,' which suggests that they regard web browsing activity using search engines such as Google and Yahoo as being educational. They consider web browsing as a leisure activity that is usually performed during their free time in order to look out information they are interested in and, also as an academic activity to find information for school-related tasks. Amanda and Elisha search the internet to help them in homework and assignments. Figure 14 below is taken from one of the postings in the media diary in which Elisha reported that she uses Google as a search engine to look for useful information. This type of person is referred to by Green and Hannon (2007) as an 'information gatherer', a categorisation which is based on young people's preference to surf the internet to look for information, to fulfil their curiosities and to perform school-related tasks.
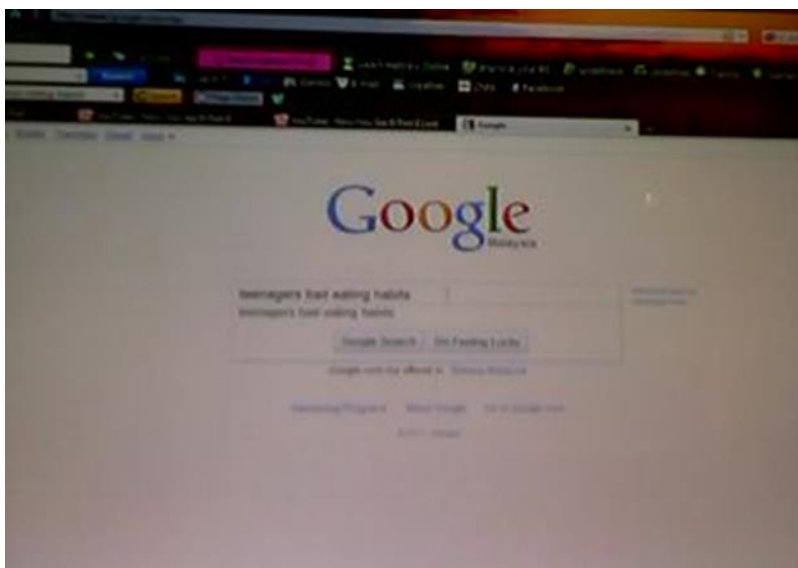
Figure 14. 'Google' screenshot image uploaded by Elisha in the media diary

Unlike Ali, who does not think that he learns anything valuable from web browsing activity, Aida believes that she benefits from her internet searches. This was evident during the interview with Aida as she spontaneously mentioned Google when asked about the educational potential of her use of new media out of school. Amanda browses the internet for fun, and she also uses the internet to find meanings and definitions of words in the online dictionary and to locate other information related to her homework and assignments. In response to the claim that information gathered by young people through their web browsing activity and used in performing school related tasks as being the products of plagiarism which are limited and uncritical, Green and Hannon (2007) argue that it is important

for parents and teachers to acknowledge that this is the main way in which the young work and look for information and answers to accomplish their school tasks. This is explained further by Singh, Mallan and Giardina (2008) who indicate that instead of being uncritical and limiting, young people critically negotiate the information they acquire from multiple sources on the internet, with one another, before deciding on the knowledge that is to be used in their homework and assignments.

Even though web browsing might be considered a self-directed activity, learning that occurs from this activity is social, as young people typically collaborate with one another through active participation in shared new media practices. These include interactions, forums, groups and communities in both virtual and real life contexts. This collaboration indicates that an individual activity such as internet surfing can become collective when young people come together to share and learn from each other (Singh et al., 2008). In relation to this study, not only do the participants and their peers collaborate and learn from one another in school (see Section 5.3) but also out of school as they join in various new media practices with other individuals and groups. Such collaborations, knowledge sharing and learning occur as the participants interact and socialise with their family members, peers and individuals in online groups and forums, social media and when playing computer and video games.

The 1A Facebook Group

Amanda, Donald and Elisha's participation in Class 1A Facebook group with their other classmates shows that they collaborate with one another in an online group, share their knowledge and learn from each other. Amanda and Donald describe their class Facebook group as follows:

Amanda: *Yeah…One A! That's where we get attached. When there's homework.*

Amanda: *And activities…like…if we have to read newspapers today, we can tell there.*

Donald: *Yes, yes…we can chat. Like our class…we have our own Facebook page. I mean, 1 A my class.*

Donald: *Yeah…we created that. We talk about our homework.*

Donald: *Yeah…they are (my classmates) in that group. We'll be asking like…eh, what's today homework ah? So…we'll comment.*

Besides using their class Facebook group as a virtual space to socialise with each other, Amanda, Donald and Elisha and their other classmates utilise the group as a space in which to keep everyone informed and reminded about homework and assignments. This includes important information

relating to homework and assignment submission such as teachers' requirements and deadlines for submission. The Class 1A Facebook group is useful for students especially when they are absent from school. According to Amanda, in cases of absenteeism, she and her classmates usually refer to their class Facebook group for information and the latest updates on homework, assignments and happenings in school.

Students who experience difficulty in accomplishing their school tasks sometimes utilise the Facebook group by asking questions and posting their problems on the group's wall. Students actively participate in the group by providing their responses to the questions and problems posted on the group's wall. This is explained by Amanda:

Amanda: *Yeah…I would just ask…yeah!*

Amanda: *Math, Science, BM (Malay language)…the karangan (Malay language essay). Like today…morning…hahaha (laugh)…I asked my friends in that group how to do the karangan (Malay language essay).*

Amanda: *Yeah…the format, the points…because I didn't come to school yesterday.*

The above quotes suggest that the Class 1A Facebook group becomes a trusted space for Amanda to refer to whenever she has problems and difficulties in accomplishing her school tasks. This implies the commitment of group members to provide assistance to each other when needed. According to Amanda, Class 1A Facebook group is the space for her and the other students to feel 'attached' to each other and to 'share knowledge' with one another.

Class 1A students' engagement with one another in their own Facebook group suggests that active participation in the shared practice of COPs may create feelings of attachment and mutuality among community members. Learning takes place as students negotiate the meanings of their participation in the Facebook group with each other. The 'reification' process that occurs in complementary with 'participation' suggests that the student participants negotiate meanings to provide concrete form to their experiences of participating in the shared practice of their community. It is through their experiences of participating in the Class 1A Facebook group that Amanda, Donald, Elisha and their other classmates continuously negotiate the meanings of their practice and learn from one another.

The discussion presented in this section partly answers the research question of how and why the student participants participate in new media practices out of school. Based on the data gathered in this study, I have shown that the student participants and other students participate in their own class

Facebook group. They use the online group to communicate about the happenings in school, to socialise and maintain their relationship with one another, to collaborate and learn. Students' participation in their own class Facebook group also shows their belonging to COPs. The sense of mutuality between students, at least in the case of Amanda, Donald and Elisha is projected through their participation in the Facebook group. Besides learning through web-browsing activity as well as participation in their own class Facebook group, the student participants of this study also learn through their gaming practice as discussed in the following section.

Gaming

Learning that occurs through young people's participation in shared new media practices with their family members, friends and other individuals is not limited to the knowledge considered viable in school, but may include different types of knowledge, skills and expertise (Green & Hannon, 2007; Johnson, 2009b). This was explained by Ali during interviews as he described his membership and participation in Garena. It is a virtual gaming community that connects gamers from different age groups, nationalities, gaming skills and abilities who come together to play computer games such as DotA, HON, Counter Strike and Call of Duty (COD) online. Ali admitted that playing online computer games on Garena with other gamers can be harsh. According to Ali, there are times when he is bullied by other gamers while playing with them. There are occasions when he is abused with bad words and harshly asked to leave the game by other gamers. Regardless of the insults and harsh treatment he gets from other gamers on Garena, Ali remains patient and always relishes the opportunity to test and to hone his own gaming ability with them. Ali looks forward to learning new things from the other gamers whom he highly regards as 'pros'. It is through his active participation in Garena that Ali learns new gaming strategies, moves and tips.

Based on Prensky's (2006) framework of five different learning levels developed through gaming practice, Ali's engagement in playing DotA is analysed as follows:

a. Learning level 1: How – in DotA, Ali has the choice to be in either 'Sentinel' team or 'Scourge' team. He has the opportunity to choose a 'hero' from a total of 108 'heroes' available in DotA. During interviews, Ali informs that one of his favourites DotA 'hero' is 'Tiny - The Stone Giant'. Ali knows Tiny's strengths as well as its weaknesses including its range of attack, move speed and attack speed.

b. Learning level 2: What – Ali knows that in order to win in DotA, he is required to destroy his enemy's 'Ancient' or the main base building. To do this, it is necessary for Ali to neutralise his enemy's defence towers and defeat the guarding units before he can reach the 'Ancient' and achieve the ultimate aim of destroying it.

c. Learning level 3: Why – when playing in two-on-two, three-on-three, four-on-four or five-on-five formats with his 'buddies', Ali knows that it is necessary for him to play according to his team's strategy, to attack and defend together and support one another when needed.

d. Learning level 4: Where – Ali plays DotA with different strategies depending on with whom he plays the game. For example, when playing DotA with other gamers online, Ali follows their strategies, to attack, defend and support accordingly. But when playing with his close buddies, Ali employs an all-attack strategy without giving much emphasis on defence.

e. Learning level 5: Whether – Ali admits that there are gamers who use harsh words, treat others badly and demonstrate disturbing attitudes and behaviour when playing DotA online. When asked how he reacts to it, Ali says that he refuses to be drawn into their provocations and prefers not to answer them. If Ali feels that they are overboard, he removes them from his list of 'buddies', sacks them from the gaming room, or reports their inappropriate behaviours.

The above analysis of Ali's gaming practice clearly implies that his learning occurs at the five different levels based on Prensky's (2006) framework. Unfortunately, Ali does not think that he learns anything valuable through his practice of playing DotA. His failure to recognise the informal learning prevents him from connecting the experience that he gains while playing computer games with the formal learning that he goes through in school. The lack of connection is explained by Abrams (2009), who indicates that, in order for young people to be able to benefit from the learning that they gain through gaming practice, they need to be able to connect and contextualise their gaming experience within the formal learning that they go through in school. This, however, is not an easy thing for students like Ali to perform considering that the potential of gaming practice is often dismissed by teachers in school (see Section 6.1).

Based on COPs perspectives, Ali's experiences on Garena indicate that his engagement in a particular community of practice does not always result in homogeneity and peaceful relations among members (Wenger, 1998). According to Wenger (1998), engagement in COPs' shared practices also results in competitions, constant struggles and pain, which is consistent with the experiences described by Ali on Garena. Through his participation in a series of negotiations of a joint enterprise, and his involvement in creating a shared repertoire, Ali benefits from being a member of a community of

practice. Ali's commitment and perseverance as a member of Garena, despite all the challenges and abuses he encounters, is a key to his own learning. This is explained by Wenger (1998), who describes learning in COPs as the ability to sustain engagement and to continuously participate in negotiating the enterprise of the communities.

Even though Ali does not think that playing computer and video games has any relevance to his learning in school, he admits that it helps him to organise, to strategise and to think better. Ali's gaming practice also helps him to improve his English language proficiency based on the interaction that he goes through with other gamers online. Similar to Ali, Elisha also believes that she benefits from the games she plays on Facebook. Playing Garden of Time on Facebook helps Elisha to learn new English words and to improve her vocabulary. Elisha describes her experiences of playing Garden of Time as follows:

Elisha: *Yeah…the main purpose is to find hidden objects and stuffs…through that we also know how those objects actually look like. Like maybe…they give you a word or something…if that word is so foreign to you, once you find that object you'll know what it is, how it actually looks like. So we know more things.*

Interviewer: *Like what? Can you provide me one example of a word or an object that you know after playing Gardens of Time?*

Elisha: *Yes…like…a mallet…hahaha (laugh). I didn't know before. It looks a bit like a hammer, a wooden hammer…and that's a mallet!*

Similar to the experiences of Ali and Elisha, the other participants in this study also benefit from their use of new media out of school. As discussed earlier, learning that is self-directed and social occurs with or without them realising it as they use digital media technologies with family members, friends and other individuals. Unfortunately, this kind of learning and the knowledge, skills and expertise that young people in general acquire, and develop through their use of new media out of school, are often not noticed or appreciated within the school context (Green & Hannon, 2007; Johnson, 2009b; Shaffer, Squire, Halverson, & Gee, 2008).

5.4 Chapter Closing

In this chapter, the two research questions (a) what are the new media practices that young people participate in and out of school and (b) why and how do they participate in these digital practices have been discussed and, to some extent, answered. In response to the first question, it was found that

the student participants' use of new media in school is limited to the ICT Literature (ICTL) class session. Due to inferior technological access at the Valley National Secondary School (VNSS), the student participants and their peers do not have the opportunity to use computers and the internet at other times during school. This, however, does not limit students from interacting using new media with one another. The student participants and their peers were found to have a shared interest in digital media. This is evident in participants' accounts of their frequent conversations about new media and their shared experiences of using digital technologies with each other during school. Compared to their use of new media during school, the student participants' use of digital technologies out of school is much more frequent. They have richer technological access and more freedom to engage in different technological practices out of school.

In response to the second research question; how and why young people participate in new media practices in and out of school, it is apparent that the participants use digital technologies during the ICTL class session together with their classmates. They provided examples of their engagement with one another during the ICTL class as they worked together to accomplish the tasks assigned to them by the teacher. As described above, their use of new media out of school is more frequent. They generally use digital technologies for extended periods of time for different purposes out of school, including for relaxation, to socialise, to mediate life and for learning. I found that most of the participants' digital practices out of school are performed with other individuals including their family members and friends. Their engagement with their peers during the ICTL class, as well as their shared interest in new media and their participation in out of school digital practices with other individuals, suggest that they can be regarded as belonging to communities of practice. It is through their belonging and participation in COPs that they negotiate their new media practices and learn from each other.

The findings of this study are similar to those of the earlier studies such as Somekh (2004), Selwyn, Potter, et al. (2009) and Selwyn, Boraschi, et al. (2009). All of these found that students' use of digital media is inferior in school compared with out of school. As discussed in the earlier part of this chapter (see Section 5.3), this data raises questions about the state of students' use of new media in school, and more importantly, about how the Ministry of Education's (MOE) policy and plan to integrate digital technologies in teaching and learning is being carried out in schools. This latter question could not be answered without considering teachers' insights, considering that they are directly involved in the integration of new media technologies in teaching and learning in schools. Realising the need to

gather teachers' opinions related to this issue, additional data was collected through interviews with teachers. Teachers' insights relating to the use of new media in teaching and learning are discussed in the following chapter.

As also explained in Section 5.3, even though VNSS is not considered a Smart School, it was initially assumed that the school had sufficient technological access to allow teachers and students to use digital technologies for the purposes of teaching and learning. This assumption was made based on the location of the school in the heart of the Subang Jaya education hub, and also the National Education plan 2006-2010 in which it was indicated that by 2010 all 10000 schools in Malaysia were expected to attain the 'Smart' status in term of access and integration of digital technologies in teaching and learning (MOE, 2007b). However this assumption proved to be wrong, as students' use of new media at VNSS is very limited due to a lack of technological resources. This raised questions related to the differences in the use of digital media amongst students who are in the Smart Schools or the technologically rich schools with those who are attending poorly resourced schools. A comparison of students' use of new media in the technologically rich schools with those who are attending ordinary schools may yield important findings related to the issue of digital divide between students based on the types of schools that they are attending. For this reason, additional data was collected through interviews with students and teachers at the Kuala Lumpur Secondary School (KLSS), a second school site which was known for its excellence in ICT. The additional data collected from students and teachers at the second school site is analysed and discussed in the next chapter.

CHAPTER 6: TEACHERS' INSIGHTS INTO NEW TECHNOLOGIES AND YOUNG PEOPLE'S USE OF NEW MEDIA IN A TECHNOLOGY RICH SCHOOL

As advised in the final comments in Chapter 5, this chapter, Chapter 6, adds to the discussion of the following research questions (a) what are the new media practices that young people participate in and out of school and (b) why and how do they participate in these digital practices. In exploring these questions, Chapter 6 takes into consideration (a) teachers' insights pertaining to students' use of new technologies within the school context at Valley National Secondary School (VNSS) and out of school and (b) the differences between students' use of new media in technologically rich schools, such as Kuala Lumpur Secondary School (KLSS) and, poorly resourced schools such as VNSS. These investigations are based on the need to understand how the Ministry of Education Malaysia's (MOE) policy on the use of new media in teaching and learning is carried out by teachers in school and how digital technologies are used by students in a technologically rich school.

6.1 Teachers' Insights of Students' Use of New Media

Four teachers at the Valley National Secondary School (VNSS) were invited to take part in this study: Mr. Kwok, Miss Maryam, Miss Jane and Miss Pamela. They were interviewed once, individually, with each interview being conducted over a 30 minute period, during school hours. The teachers' profiles are briefly described as follows:

Mr. Kwok

Mr. Kwok is the Afternoon Senior Assistant at VNSS. He has over thirty years of teaching experience at three different secondary schools in the states of Sabah and Selangor. As a teacher who specialises in Biology and Mathematics, Mr. Kwok teaches Modern Mathematics for Form 2 students. As one of the most experienced teachers who has been at VNSS for over 20 years, Mr. Kwok is trusted with the school's leadership role. He is in-charge of the school's operations in the afternoon sessions. According to Mr. Kwok, his role as the Afternoon Senior Assistant requires him to supervise the school's administration, curriculum, co-curriculum, students' affairs and other matters to ensure its smooth running in the afternoon. Together with the Principal, the Senior Assistant of Curriculum and the Senior Assistant of Co-curriculum and the Senior Assistant of Students' Affairs, Mr. Kwok is

involved in the planning and implementation of school policy. When asked about new media, Mr. Kwok admitted his deep interest in, and knowledge of, new technologies. He started using computers in the mid-80s when access to, and knowledge of, computers was still rare among teachers. Mr. Kwok's interest in computers led him to take his own initiative to attend a Computer Engineering Course at a private institution. As a frequent user of new media, Mr. Kwok uses technologies such as computers and the internet to perform his administrative duties, for teaching and also for entertainment. He is aware of the importance of being equipped and updated with the latest knowledge and skills of digital media for educational purposes as well as for his own personal interest. For this reason, Mr. Kwok continuously learns about new technologies, software and applications. His learning is mostly through self-discovery as he learns about new technologies, software and applications informally from videos and tips available online.

Miss Maryam

VNSS is the first posting for Miss Maryam as a teacher after she completed her studies in Teaching English as a Second Language (TESL) at a local institution. She has been teaching in the school for the last seventeen years. Miss Maryam teaches English and Civic Studies for Form 1 and Form 2 students. She is also an Advisor for three different clubs. Despite not knowing much about squash, she is appointed Advisor of the Squash Club. She is also in-charge of the School's Cooperative and the Environmental Club. When probed further about her roles and responsibilities in school, Miss Maryam said that, 'all teachers are required to become Jack of all trades and master of none'. When asked about her use of new media, Miss Maryam admits that she is a frequent user of digital technologies during school and out of school. She uses computers, a laptop, the internet, an iPad tablet and smartphone to search for information and materials for teaching, as well as to communicate and find materials for her own interest when at home. According to Miss Maryam, she benefits from the in-service ICT training courses organised by the school. It is through her participation in these training courses that she learns using essential applications such as Microsoft Excel and Microsoft PowerPoint and is exposed to how to incorporate ICT into teaching.

Miss Jane

Prior to teaching, Miss Jane Thomas, who studied Genetics during her undergraduate years, worked as a Research Officer and later on as a Food Technologist. Due to her passion to teach, Miss Jane

decided to quit her job in the food industry in order to pursue a career in teaching. During the time when this study was conducted, Miss Jane had been a teacher at VNSS for over thirteen years. As a teacher who specialises in Biology she is assigned to teach Biology and Mathematics in the morning session. Previously, Miss Jane had experiences in teaching Science and Mathematics in the afternoon session. Beside her primary teaching duties, Miss Jane is also entrusted with other responsibilities at VNSS. She is the Discipline Teacher at the school and the Secretary of the Teaching of Science and Mathematics in English (PPSMI) Committee. Miss Jane is also on the editorial board of the school's magazine and in-charge of the school's inventories. According to Miss Jane, her use of computers and the internet helps her to perform her teaching duties and other school-related tasks more efficiently. However, Miss Jane admits that she did not know much about computers and the internet before, as she was not widely exposed to these technologies during her time as an undergraduate. It is through her participation in the ICT training courses organised by the school that Miss Jane learns how to use computers, the internet, software and applications for teaching and the performance of other school-related tasks.

Miss Pamela

Miss Pamela graduated from a local university with a Bachelor Degree majoring in Chemistry and with a minor in Learning with Computers. Miss Pamela has 8 years of teaching experience. She was first posted to a secondary school in the state of Sarawak before coming to VNSS in 2009. Unlike other teachers in the school, Miss Pamela has only one subject to teach and lesser teaching periods to fulfil. She teaches Science for Form 4 and Form 5 students in the morning session. Previously, she was assigned the task of teaching the ICTL subject for Form 1 and Form 2 students in the afternoon. Miss Pamela has only one subject to teach because she has other responsibilities at VNSS. Besides teaching, she is assigned by the principal with the important task to be in-charge of the school's data system including the data of all teachers, infrastructures, teaching and learning and students' academic progress. As the school's ICT Coordinator, Miss Pamela is also responsible for the wellbeing of the two computer labs. She ensures that the labs are in excellent condition for teaching and learning. Like other teachers in the school, Miss Pamela has co-curricular duties to fulfil as well. She is the teacher in-charge of the Tamil Society and the Girl Guides Association. Unlike Miss Maryam and Miss Jane who admit that they had difficulties in adapting to the changes brought by ICT during its early stage, Miss Pamela did not experience such problems as she was exposed to the digital media during her pre-service years. A Bachelor degree with a minor in Learning with

Computers helped to expose her to new technologies and prepared her to teach and work using different software and applications such as Adobe Photoshop, online database and teaching and learning courseware. Miss Pamela uses technologies such as computers and the internet every day during school and out of school to manage the school's database, to teach and also for entertainment.

6.1.1 Factors influencing young people's use of new media during school

In Chapter 5, five interrelated factors were highlighted as contributing to the lack of new media use among young people during school: (a) The lack of technological infrastructure in school, (b) the lack of teachers who specialise in ICT, (c) the school leadership, (d) the school policy and (e) the teachers' attitudes and knowledge of new media. These factors were not explained in detail in the study conducted at the Valley National Secondary School (VNSS). The data gathered from students was insufficient particularly in matters pertaining to the school's leadership, policy and teachers' attitudes and knowledge of new media. To fill in this gap, Mr Kwok, Miss Maryam, Miss Jane and Miss Pamela were interviewed in order to gather relevant data related to the five interrelated factors stated above, that is, factors (a) to (e) inclusive.

Technological infrastructure and students' use of new media

The technologies available for teachers and students to use at VNSS are (a) two computer labs, (b) five science labs equipped with computers, LCD projectors and screens for teachers, (c) an access room with 5 computers and the internet connection for students to perform their homework and assignments, (d) three computers in the staff room for more than 60 teachers to share, (e) access to printers in the computer labs and in the staff room and (f) Wi-Fi internet connection available throughout the school vicinity. However, the school's Wi-Fi connection seems to be underutilised. This is due to the fact that students could not access the Wi-Fi connection as they are not allowed to bring their own laptop, mobile phone or other portable devices to school. For teachers, not every one of them is given a laptop. Only Science and Mathematics teachers are provided with laptops by the Ministry of Education Malaysia (MOE). For other teachers, they have to bring their own laptops and portable devices to school in order to utilise the school's Wi-Fi connection. When asked about the technological infrastructure at VNSS, the teachers who participated in this study provided mixed responses related to this matter. As the school's ICT Coordinator, Miss Pamela believes that there are enough computers to cater for the needs of students at VNSS. A similar opinion was voiced by Miss

Maryam who indicated that the technological access for students at VNSS is adequate. But according to her, it would be ideal if there are computers available for all students in the classrooms in the future. Based on her perspective as an English teacher, Miss Maryam believes that the school needs a language lab in order for students to learn English and Malay languages interactively, to enjoy learning and more importantly to benefit from the self-paced learning.

In contrast, Miss Jane is more critical when asked about the access of new media at VNSS. Miss Jane reasons that she does not use new technologies in teaching and learning on a regular basis because there is no access available in the classrooms. According to her, teachers at VNSS are required to bring their students to the computer labs whenever they want to use computers and the internet for teaching and learning purposes. The computer labs can be used subject to their availability and for this reason prior booking is necessary. As there are only two computer labs at VNSS, most of the time these labs are fully occupied by other classes and they are rarely available. Miss Jane acknowledges the importance of new media technologies for teaching and learning and for this reason she hopes that the school can improve its technological infrastructure in the future. In her opinion, not only does VNSS need more computers for its students but also an adequate power supply to support the facilities in order to avoid the risk of short circuit and fire. This caution is based on a fire incident that occurred in 2011 caused by a short circuit in one of the computer labs.

Miss Jane's justification for not utilising new media for teaching and learning on a regular basis is shared by Mr. Kwok:

Interviewer: *You told me earlier that sometimes you bring your students to the lab to show them the courseware. How regularly do you do this?*

Kwok: *Err…it's not very often…maybe about…the maximum is twice a month. Yeah, twice a month because the computer lab is sometimes not available, and the other problem I find a hassle is it takes time for students to go down (to the computer lab). So we lose time sometimes there, sometimes computers don't work. That is the main deterrent, that's why I don't use it very often. If I go there, then computers are not working, it's a waste of time…haha (laugh).*

The above quote indicates that the lack of technological infrastructure proves to be a hindrance for teachers to utilise technologies, such as computers and the internet, for teaching and learning with their students. Unless new media access is made available in the classrooms, Miss Jane, Mr. Kwok and the other teachers at VNSS might not be keen to use computers and the internet with their

students, at the computer labs, on a frequent basis. This evidence is similar to the findings of the earlier study conducted by Bingimlas (2009) who indicates that the state of a school's technological infrastructure is a crucial consideration for teachers regarding utilising digital technologies in teaching and learning. Additionally, Mr. Kwok is concerned by the time that is consumed by his students when they make their way from the classroom to the computer lab. Mr. Kwok is also frustrated when his efforts to take students to the computer lab are sometimes futile when the internet connection at the computer labs is down or, when the facilities cannot be utilised for teaching and learning.

According to Miss Maryam, Miss Jane and Mr. Kwok, time is always an important consideration for teachers when deciding whether to integrate digital media in their classes or not. The inaccessibility of computers and the internet in the classrooms means that they need to bring their students to the computer labs each time they want to use the digital facilities for teaching and learning purposes. This is time-consuming and, if teachers at VNSS are to integrate new media technologies into their classes more frequently, they might not be able to finish their course syllabus on time. The issue pertaining to the demand for teachers to finish the course syllabus within the specified time period is elaborated in the following section, in which the relationship between school's leadership and policy and teachers and students use of new media in school is discussed.

School's leadership and policy and the use of new media

As one of the leaders at the Valley National Secondary School (VNSS), Mr. Kwok admits that the school is still unable to fully utilise digital media for teaching and learning purposes. He realises the importance of ICT in education but acknowledges the school's capability in term of its technological infrastructure and technical expertise is still below the standard required. This leads to making the desired integration of new media technologies in teaching and learning impossible to achieve at VNSS. Despite this limitation, the school's leadership strives to provide the best for its students in order to cater for their technological needs during school. In answer to a question about how Valley National Secondary School caters for students' technological needs, Mr. Kwok said:

> We try to maintain the computer labs, in tip-top condition as good as we can. We want to make sure that the labs are always available to students. Now we open up our computers and internet facilities to students, for them to use without any charge.

VNSS strives to maintain its digital media facilities in good condition at all times for formal class usage. In addition, the school tries to cater for the needs of its students by providing them with the opportunity to use computers and the internet in the computer labs outside of class time, for free. This is considered a substantial leap that the school has made compared with the previous year. At that time students generally were not allowed to use the facilities at the computer labs except during the ICTL class or during other classes with the presence of their teachers. This opportunity is still considered limited, as individual students are only allowed to use computers and the internet at the computer labs for a maximum duration of one hour period each week (students sign in the logbook each time before they use the computer labs). Nonetheless, Mr. Kwok explains that this is a great opportunity for students, especially to those who do not have computers and internet access at home. They can use the computer labs to perform educational research online and to accomplish their homework and assignments.

Realising the importance of digital media in teaching and learning and the need to keep up with the emerging trend of web-based learning, Mr. Kwok, Miss Maryam and Miss Jane argue that VNSS needs to improve on its state of technological infrastructure. They suggest that classrooms should be equipped with computers and the internet for teachers and students, and that a language lab should be built to aid students in their learning of English and Malay language. However, they admit that equipping VNSS with the necessary digital facilities is not an easy task to accomplish. As Miss Maryam pointed out, one way for the school to improve on its technological capability is by acquiring the 'Cluster School' status. In Malaysia, Cluster Schools are granted bigger budget allocations and they have greater administrative autonomy, which enables them to excel in both areas of academic and co-curricular activities (PMR, 2012). In order to be granted the Cluster School status, schools need to be able to demonstrate exemplary leadership and potential in the niche areas of their choice such as in Science, Mathematics, ICT and sports (PMR, 2012). For this reason, leaders and teachers at VNSS are working hard in order to realise the school's potential and to eventually achieve the aim of attaining Cluster School status in the future.

When asked about the possibility of seeking budget allocation from the Ministry of Education Malaysia (MOE) to improve the school's digital facilities, Mr. Kwok indicated this has never been done before. The budget allocation the school receives is fixed, based on the status and location of the school. Even if VNSS were to ask for additional budget for new technological facilities from the MOE, through its state education department, this attempt might not be successful. According to Mr.

Kwok, the MOE provides a bigger budget allocation and places a higher priority on new schools and schools that are located in rural areas. As a school in the suburban area of Subang Jaya, VNSS is expected to be more independent and self-sufficient. Mr. Kwok explained that VNSS has a Parents and Teachers Association to turn to should the school require additional funds, new computers or other facilities.

Putting the issues related to time constraints and heavy course syllabus aside, the data gathered from Mr. Kwok and the other teachers at VNSS also yields an important outcome for policy makers to consider as teachers seem to struggle to incorporate new media technologies in the classroom. Instead of taking advantage of the potential of digital technologies in teaching and learning, some teachers see using new media as a burden that hinders them from achieving their teaching goals and objectives. Mr. Kwok argues that the course syllabus should be revised in order to enable teachers to integrate digital technologies into teaching and learning, more successfully. According to him, the course syllabus should only consist of the fundamental concepts and ingredients and it should not be made too wide or too deep. This would allow teachers more time to use technologies such as computers and the internet for teaching and learning purposes with their students. Consequently, not only does the syllabus need to be revised to give more time to teachers and students to use new technologies, but the pedagogical approach also has to change.

Mr. Kwok's explanation indicates his particular understanding of the problems related to the heavy syllabus and the need to revise existing course content for teachers to be able to spend more time integrating new media technologies in teaching and learning. Based on a study conducted in eight schools in Singapore and Hong Kong, it was indicated that teachers should change their pedagogy from teacher-centred to student-centred approaches to successfully integrate ICT into the classroom (Wong, Li, Choi, & Lee, 2008). However, this requires strong support from the school leadership (Wong et al., 2008). Not only should school leaders be responsible for leading the change in pedagogical approaches, but they should also provide support to teachers and encourage them to collaborate and experiment with one another regarding their use of ICT for teaching and learning purposes (Wong et al., 2008).

The ideal integration of new media technologies in teaching and learning, according to Wong et al. (2008), may be impossible to implement at VNSS and other schools in Malaysia. This is due to the fact that schools in Malaysia aim to prepare students for an exam-oriented education system and put

their emphasis on the four major public examinations, which are the Primary School Achievement Test (UPSR), Lower Secondary Examination (PMR), Malaysian Certificate of Examination (SPM) and the Higher School Certificate Examination (STPM) or Higher Malaysian Certificate for Religious Education (STAM) (Nurul-Awanis, Hazlina, Yoke-May, & Zariyawati, 2011). Under such conditions, students' academic progress is judged solely on their performances in major public examinations (Ong, 2010). In order to prepare students for these examinations, the curriculum used in Malaysian schools is centralised (Nurul-Awanis et al., 2011). This was evident in this study as Mr. Kwok, Miss Maryam and Miss Jane said that they do not use new media much for teaching and learning as they are basically relying on the more traditional teacher-centred pedagogical approach since they are obligated to finish the syllabus on time. Teachers' failure to cover the course content within the specified period of time might result in their students not being thoroughly prepared for examinations.

It is unlikely that teachers and students will thrive in their use of new technologies in school, when schooling itself is very rigid and centralised (Collins & Halverson, 2009; Groundwater-Smith, 2007; Somekh, 2004). In the context of Valley National Secondary School (VNSS), and possibly other schools in Malaysia, it requires more than just good leadership and policy at the school level to successfully incorporate digital technologies into the classroom. As Collins and Halverson (2009) argue, it is the schooling system that requires reform in order to allow a more liberating use of digital media in teaching and learning. As of 2012, such a reform was still underway with the Ministry of Education Malaysia (MOE) attempting to transform the curriculum at all levels of schooling with the aim of producing a more holistic and balanced curriculum approach for students to be able to realise their individual potential as manifested in the MOE's Interim Strategic Plan 2011-2020 (MOE, 2012a). The MOE recognises the importance of new media in education and, for this reason, strives to improve the quality of the use of ICT in teaching and learning and to optimise its use in schools (MOE, 2012a). A new assessment system based on the National Education Assessment System (SPPK) was also included in the MOE's Interim Strategic Plan 2011-2020 to enable students to be assessed more holistically and equally at both school and central levels (MOE, 2012a).

As part of its attempt to reform the educational system in the country, MOE is considering a move to abolish the Primary School Achievement Test (UPSR) and the Lower Secondary Examination (PMR), a move which has been triggered by the need to change students from being too exam oriented to being more holistic (Nurul-Awanis et al., 2011). However, this move has not been well received

by all teachers. According to Nurul-Awanis et al. (2011) in their study of educational reform in Malaysia, the majority of teachers showed resistance against the Ministry's plan to abolish UPSR and PMR as they still believed that these examinations were an important determinant of students' academic progress. The educational reform that was manifested in the MOE's Interim Strategic Plan 2011-2020 could be regarded as a move forward towards an improved educational policy. Such a policy may positively contribute to a better policy at school level and may result in a more liberating use of digital media in teaching and learning.

The increased emphasis on the integration of new technologies in teaching and learning in school is also laid out in the Malaysia Education Blueprint 2013-2025 (MOE, 2012b), in which it states that:

> The Ministry will ensure that students not only learn how to use ICT but are able to leverage it effectively to enhance their learning. The Ministry will deliver this by strengthening the foundation of ICT-enabled schools while introducing proven ICT solutions into the education system. (p. 6-20)

However, the success of this educational reform, which consists of important elements such as curriculum, assessment, ICT use and co-curriculum, is yet to materialise. The intended educational reform is only in its second year of implementation and it is still too early to tell if the reform has succeeded or failed. However, taking into consideration the resistance shown by teachers towards the plan to make students become less exam-oriented by abolishing the UPSR and PMR examinations (Nurul-Awanis et al., 2011), the MOE should be prepared to face more stern challenges in years to come as they attempt to transform the curriculum, assessment and the use of ICT in teaching and learning.

Based on the data gathered from teachers who participated in my study, as well as the MOE's policies and earlier literature, it seems necessary to revise the course syllabus for schools and to change the education system to make it less exam oriented. Moreover, it is also important to educate teachers on the potential of new media in teaching and learning. Instead of appreciating the potential of new technologies, my study shows that there are teachers who consider the demand to integrate digital media into the classroom is a burden. Even if the course syllabuses are revised and the education system is revamped, there is no assurance that teachers will comfortably incorporate new media technologies into their classrooms. As Cowie, Jones and Harlow (2010) argue, the question of whether or not teachers are willing to utilise new media in teaching and learning is usually determined

by their attitudes and knowledge of digital technologies. This is further discussed in the subsequent section.

Teachers' attitudes and knowledge of new media

Another factor that is crucial in determining students' use of digital technologies during school is teachers' attitudes towards, and knowledge of, new media. As described in the last chapter, young people's use of digital media within the school context is influenced significantly by teachers' professional development, knowledge and willingness to incorporate technologies such as computers and the internet in the classroom (Cowie et al., 2010; Selwyn, Potter, et al., 2009). With regard to the participating teachers at VNSS, all of them shared similar opinions about the importance of new technologies in teaching and learning. As previously observed, the school's ICT Coordinator and the Science teacher for Form 4 and Form 5 students, Miss Pamela uses digital technologies and experiments in the Science lab as one of her main strategies for teaching and learning.

Unlike many other teachers who still rely on the more conventional 'chalk and talk' strategy due to the lack of new media access at VNSS, Miss Pamela has better opportunities to use new technologies for teaching and learning as there is access to computers and the internet in the Science lab. Miss Pamela mainly uses the Science CD courseware provided by the Ministry of Education Malaysia (MOE). According to her, the CD courseware is very useful for students as it is interactive and provides students with enhanced opportunities to learn and understand their subjects. Miss Pamela explains that she does not have the time to perform every experiment during class time. The CD courseware is useful because it includes videos and animations of all experiments for students to watch. At times, Miss Pamela also uses Microsoft PowerPoint to deliver her class notes and to show mind maps to the students. Miss Pamela's classroom practice, as described here, shows her positive attitude towards new media. She explains that the knowledge and exposure of new media that she had during her undergraduate days is significant as it has influenced her attitude towards the use of digital technologies in teaching and learning. This is evident in her frequent use of computers and the internet in the Science classes. Miss Pamela's frequent use of new media is also backed by the fact that she has technological access in the Science lab. In this instance, Miss Pamela is considered fortunate compared to the other teachers at VNSS who do not have access to digital technologies in their classrooms. This situation clearly indicates that different factors, including technological access as

well as attitudes and knowledge of new media, are crucial in determining the level of teachers' integration of new media in the classroom.

Even though Mr. Kwok does not use new technologies often in his Mathematics class, he has a very positive mindset and attitude towards the integration of new technologies in teaching and learning. He still uses direct lectures as the main teaching strategy simply because he does not have access to computers and the internet in his classroom. Similar to Miss Jane and Miss Maryam, Mr. Kwok believes that taking students to the computer labs is a hassle and is too time consuming. Like other teachers, he is obliged to finish the course syllabus on time and, for this reason, he decides to stick mainly with the 'chalk and talk' strategy. However, if there were better technological facilities at VNSS, Mr. Kwok says that he would not have any hesitation in making use of the new technologies more frequently with his students. Unlike many other senior teachers who have been in-service for more than 15 years, Mr. Kwok has better knowledge and skills of new media as he was exposed to the use of computers earlier. Mr. Kwok completed a Computer Engineering course in the 1980s and he always keeps himself updated with the latest technologies, software and applications through his own initiatives and explorations on the internet. These are indicative of his knowledge and positive attitude towards digital technologies.

Miss Jane and Miss Maryam were not exposed to the use of computers and the internet during their undergraduate years. They admit that, like many of their colleagues who are regarded as senior teachers, they struggled during the early period of the Teaching of Science and Mathematics in English (PPSMI). It was during this period that computers and the internet started to be widely used in teaching and learning and also in performing other duties in school. This is described by Miss Jane:

Interviewer: *As you did not have much exposure to the use of ICT during your pre-service training, so how did you find PSSMI at the early stage?*

Jane: *Oh…it was very difficult for us. In fact it was like…why do we have to learn? We preferred to write manually you know…we trusted our own work more than computers...haha (laugh). But, you have to change with time…so I think that we all succeeded…haha (laugh).*

According to Miss Maryam, it was through a series of ICT short courses organised by the school that she acquired the essential knowledge and skills required to be able to use computers and the internet effectively for teaching and learning, as well as for the performance of other school duties. Similar to Miss Jane, Miss Maryam feels that she had 'nil experience' of digital media before, but after attending

the ICT short courses over the years, she has become more adept in using computers and the internet and is capable of operating basic Microsoft applications such as Word, PowerPoint and Excel.

Unlike the early period of the PPSMI implementation when Miss Jane, Miss Maryam and many of their colleagues felt as though they were being forced to learn and use new media, their perceptions about digital technologies have changed with time. Regardless of whether they like it or not, the participating teachers at VNSS believe that they have to change, as technologies such as computers and the internet are becoming increasingly important in their everyday lives. Even though the lack of technological infrastructure at VNSS means they do not have the opportunity to use new technologies on a regular basis in the classroom, Miss Jane and Miss Maryam stated that they encourage their students to search for information related to the school syllabus and, to download past years' examination papers from the internet when they are at home. This shows that they recognise the potential of digital media for their students' learning.

Regardless of their knowledge and experience of new media, teachers who participated in this study were found to be very sceptical towards students' use of digital technologies out of school. When asked about young people's use of new technologies out of school, Mr. Kwok, Miss Pamela, Miss Maryam and Miss Jane asserted that mostly young people engage in new media practices for entertainment purposes. This perception is evident in the following quote based on the interview conducted with Miss Jane:

> Other than that…as I said, they use Facebook all the time, computer games…I heard now they have online games. The other day we went for the LDP course, they told us about habits of students. They told us about online gaming…they become addicted to it. First it comes free and then they need to pay. Oh…I think that's too much! I don't know why but I'm just against that. Maybe computer games…it's ok sometimes…but some students stay up late at night just to play because they are so interested in the games…you know there are many types of games. So I think parents need to control…certain times ok…for entertainment yes…but don't let it take control of you, your time. Then you have less time for family, to do work or to discuss…you don't have much time.

A similar explanation was provided by Miss Pamela, who indicates that most students use social media to chat with their friends and play online games when they are at home. According to Miss Pamela, students only search for related information on the internet when they are asked to by their teachers or when preparing their assignments and projects. Miss Pamela believes that students in

junior grades, like those who are in Form 1 and Form 2, mainly use new technologies for fun. In contrast, senior students who enrolled in higher grades are thought to be more mature in their use of new media. Miss Pamela observed that sometimes they use the internet to look for information and resources including online notes and past years' examination papers from other schools. A similar opinion is also voiced by Mr. Kwok, who contends that students' use of new media is influenced by their age and maturity. He believes that older students are wiser in their use of new media than those who are younger in age.

Undoubtedly, young people use new media for entertainment. Amanda, Ali, Donald and Elisha's use of technologies such as computers, the internet and gaming consoles to serve different purposes, including for example, relaxation, learning and overcoming personal problems, should not be underestimated. Miss Jane's negative perception about young people's active engagement in Facebook, quoted above, might indicate that she lacks understanding of the potential social media can offer. The educational potential of using Facebook was thoroughly explained by Phillips, Baird and Fogg (2012), who offer the following suggestions about what schools need to do to maximise its use:

 a. Develop and implement a school based policy on the use of Facebook.

 b. Educate students by encouraging them to use Facebook responsibly based on its guidelines.

 c. Alert students about the latest changes in Facebook's safety and privacy settings.

 d. Encourage students to become good users of digital technologies.

 e. Communicate actively with students and parents using Facebook pages and groups.

 f. Accept the changes brought by digital media and the changes in students' learning styles which are influenced by their use of these technologies.

 g. Utilise Facebook as a medium for professional development.

Unlike Miss Jane's negative perception towards Facebook and other teachers' beliefs that students use Facebook and other social media sites mainly for entertainment, Williams (2012) maintains that, based on his doctoral research conducted in Alabama, teachers recognise the positive impacts brought about by social media as students use it as a tool to collaborate with one another. According to Williams (2012), teachers who participated in his study believed that social media can improve relationships between educators and their students. Additionally, it can be used as a forum for students to communicate with each other.

Teachers at VNSS who participated in my study generally have different opinions about the use of Facebook and, other social media sites, when compared with those of their students. For instance, Miss Pamela claims that students only use social media to chat with their friends. In this regard, she does not think that it brings any educational benefit to them. This point of view is also reflected in Miss Jane's opinion about Facebook:

> Oh…I use email and not Facebook, because I don't agree, I don't like it. The thing is…maybe my thinking is like in those days. You spend so much time in front of computers then you want to use Facebook…I don't quite like it. In fact, my children use it and I always tell them not to do it because they can get addicted, spending hours. So I say to them, if you want to talk, get the phone, call, find out then finish, leave it. You know…don't go and sit in front of computers for hours. That's my way of thinking...email is very good, Facebook…I don't agree…haha (laugh).

In contrast to Miss Jane's opinion about Facebook just being a medium to 'talk', Ali, Amanda, Donald, Elisha and their friends consider Facebook as a very important means to socialise where new relationships are formed and existing relationships are maintained. The findings of this study reaffirm William's (2012) argument that teachers view socialising differently from their students. Even if teachers use social media, they usually only regard it as 'supplementary' and this is different from young people who overwhelmingly consider the medium as an important tool of communication (Williams, 2012).

Like Miss Pamela and Miss Jane, Mr. Kwok and Miss Maryam also do not regard students' use of digital media out of school as beneficial. According to them, except for using computers and the internet to perform school-related tasks, students engage in new media practices out of school mainly for leisure. This is explained by Miss Maryam as follows:

Interviewer: *What do you think they do with new media technologies out of school?*

Maryam: *Mostly for entertainment basis. They download movies, songs and also online games…social media as well.*

Interviewer: *Do you think they do things related to learning with new media when they are out of school?*

Maryam: *Err…only if you ask them to do it. Let's say we give them assignments, and then only they will do…they will find whatever websites that are suitable…to find information. Other than that, when I ask them, they say…no teacher…mostly we surf the internet to play games, to chat with friends…err…for networking.*

The fact that these teachers fail to recognise the importance of students' use of new technologies out of school, as previously detailed, indicates that they lack the knowledge and understanding of the potential of young people's new media practices. This data further strengthens Green and Hannon's (2007) claim that the potential of young people's digital practices out of school are often not recognised or properly valued by teachers within the formal school context.

Even though the teachers who participated in this study generally acknowledge the importance of new media in teaching and learning, none of them appear to believe that students will benefit if they are given the opportunity to bring their own portable devices to school and, to use them in the classroom. This is evident as none of the teachers agree with the Ministry of Education's (MOE) proposal to allow students to bring their own digital devices, such as smartphones, laptops and tablets to school in 2013. During the time when this study was conducted, the proposal to allow students to bring their gadgets to school was still being debated by policy makers, educators and the public. As has recently been highlighted in the Malaysian media, this proposal faced stern objection from the public, parent and teacher associations from all over the country, and the highly influential the National Union of Teaching Profession (NUTP) (Noorazam, 2012). Teachers and parents argued that this proposal would lead to more harm than good, if implemented. According to the teachers at VNSS, who participated in this study, teaching and learning processes in the classroom would be disturbed if students were allowed to bring their digital technologies to school and use them during classes. However, in my opinion, if the MOE's proposal is considered more positively, it may help schools to overcome the lack of technological infrastructure, which is a problem faced by VNSS and possibly other schools. Beyond the issue of the divide between students who can afford to bring their digital gadgets to school and their less fortunate peers who are not able to do so, students with access to portable devices would have the opportunity to utilise the potential of new media in their learning during school and to share the devices with their peers who do not own them.

Except for the ICTL class period where the students use computers and the internet in the computer labs, and during the Science lesson where their teachers use the Science courseware as a teaching aid, students do not have the opportunity to use computers in other classes they attend. While teachers at VNSS reason that they do not use digital technologies in the classroom because of the school's poor state of technological infrastructure, their attitudes and knowledge of new media also contribute to whether these technologies can be utilised effectively should they become available throughout the school. When asked about the possibility of students using computers and the internet individually

for learning during classes should the opportunity arise, Miss Pamela and Miss Jane responded negatively, indicating that it is not a suitable strategy to be implemented at VNSS. This is explained by Miss Jane:

> Students do not use computers on their own...in the science labs, we have computers for students. But then…the thing is, sometimes it is very difficult. Last time we used to go online, but then it's very difficult to control them. They sit in a circle (seating arrangement), they tend to do something else, go to different websites…haha (laugh)…so we don't encourage that. Now, we just use one computer, so they have to watch…we can control students and what they are doing.

Lack of access, large numbers of students in the classroom and time limitations are often cited by teachers in this study as the main barriers that hinder them from integrating digital technologies into teaching and learning. In reality, these barriers are only part of the issue. Limitations are also inherent in teachers' own perceptions, attitudes and knowledge of new media. For example, the issue of 'classroom control', as explained by Miss Jane indicates how she encounters difficulty in facilitating students' learning with new media.

Instead of making use of the potential of digital media in teaching and learning by presenting students with the opportunity to explore and learn individually with new technologies (ICT, 2010), the teachers appear to only use computers and the CD courseware provided as tools to help them perform their role to 'impart knowledge' in the classroom. This was evident during interviews with them as they explained how Microsoft PowerPoint is used as substitute to the whiteboard to deliver class lectures and the CD courseware is used as a medium to assist students in their learning. According to Mr. Kwok:

Interviewer: *Is it only you who is using computers or do you use it with students?*

Kwok: *It's me who is using it. I use it to show (to my students) as a teaching aid…students would just listen…they interact not by using computers but by answering my questions. I use it (computers) to attract their attention…in fact it is more effective for them. So whatever, like animations…it attracts them a lot.*

Mr. Kwok's use of new media as a teaching aid and to attract students' attention shows how the potential of new media for teaching and learning is underutilised. For the potential of new media to be fully utilised in schools, it is necessary for teachers to transform their traditional teaching approach into a knowledge construction approach where students are given more trust and provided with the opportunity to learn actively with new technologies (Ainley et al., 2002; ICT, 2010; Zain et al., 2004).

This requires teachers to change their traditional classroom role of teaching to becoming facilitators who are capable of facilitating students' learning with new media (ICT, 2010).

Even if VNSS is equipped with state of the art technological facilities, there is no guarantee that teachers would make full use of these technologies and integrate them into their classrooms. This was admitted by Mr. Kwok himself who explained, not only that the school requires better technological facilities to be able to utilise new media in the classroom, but VNSS also needs teachers who are technologically proficient, and capable of utilising the potential of new technologies in teaching and learning. In a way, this provides an explanation of why a very low percentage of students enrolled in the Malaysian Smart Schools frequently use the technologies and courseware provided for them (Jaafar, 2008). In a study conducted on the usability of the Malaysian Smart School courseware, Jaafar (2008) reported that, in a school setting in which high technological integration in teaching and learning is expected, only 12 percent of students used the courseware regularly in the classroom. Possibly, this low percentage may be due to the lack of new media proficiency among teachers (DETWA, 2006). As previously posited, the more proficient teachers are with new media, the more likely that they will integrate technologies such as computers and the internet into their classrooms (DETWA, 2006).

In another study conducted among Islamic Studies teachers in Malaysian Smart Schools, it was found that teachers struggled to incorporate new technologies into their classrooms because of their low technological proficiency, which was attributed to their lack of training (Hamzah, Ismail, & Embi, 2009). The issue of in-service training was also raised by the teachers at VNSS. The more senior teachers at VNSS admitted that they benefitted from the ICT short courses that they went through. The school's effort to organise a series of ICT training courses, especially during the early period of the implementation of the Teaching of Science and Mathematics in English (PPSMI) project, really helped Miss Maryam, Miss Jane and other senior teachers who did not have much knowledge about, or exposure to, digital media before. According to Miss Jane, most of the senior teachers struggled to adapt to the need to integrate new media technologies in teaching and learning, as they did not have much experience with computers and the internet. A similar explanation was provided by Miss Maryam in the following quotes:

Maryam: *Yeah, early 90s. Mostly, we used computers to do our assignments (only). Other than that…I think during that time internet was not widely used.*

Interviewer: *Do you think that you benefitted from these training courses?*

Maryam: *Ah…yes, indeed…because having nil experience on ICT before, now we can do our own slides, PowerPoint slides, and also can surf the internet. It's something like an achievement for us. Before this, we never used it.*

Because of their lack of exposure to new media, the more senior teachers at VNSS appreciated the opportunity to learn more about new media technologies in the ICT short courses organised for them by the school management. In these courses they learned applications such as Microsoft Word, Microsoft PowerPoint and Microsoft Excel and, the internet. This realisation indicates that ICT courses conducted effectively are important, especially to senior teachers who have little experience with new media. This data is supported by a study conducted by the Department of Education and Training in Western Australia to evaluate teachers' ICT skills (DETWA, 2006).

However, when asked about the most recent ICT-related training course that they went to, Miss Maryam and Miss Jane admitted that the last ICT course that they attended was more than five years ago where they were trained to use Microsoft Excel and PowerPoint. Such a long period without any training raises a concern about whether their knowledge and skills in the new media are sufficient. Even though Miss Maryam and Miss Jane claim they have adequate knowledge to operate basic applications like word processing, spreadsheets and, for presentations, and Miss Pamela believes that the ICT training she received during her undergraduate years was enough, they risk being left behind in terms of technological proficiency. Technologies are changing fast and one needs to keep up with the latest technological development, knowledge and skills to use in teaching and learning to remain competent.

Unlike the other teachers at VNSS who participated in this study, Mr. Kwok is different in the sense that he realises the importance of keeping himself updated with the latest developments and he always looks forward to gaining new knowledge about the applications and software available on the internet. However, Mr. Kwok is unfortunate because he does not have the opportunity to learn and develop himself formally through participation in any ICT-related training course. Apart from the Computer Engineering course that he enrolled in the 1980s, Mr. Kwok acquires most of his ICT knowledge through his exploration on the internet. Mr. Kwok recognises that he would have gained more knowledge if he had the opportunity to participate in ICT courses and learn the formal way.

In this section, the research question related to young people's new media practices in school has been analysed further. I found that there are three important factors that may influence young people's use of new media in school including (a) the school's state of technological infrastructure, (b) the

school's leadership and policy and (c) teachers' attitudes and knowledge of new media. These factors were discussed in the light of the educators' perspectives. With the exception of Miss Pamela, who frequently uses the Science CD courseware and PowerPoint slides as teaching aids, Mr. Kwok, Miss Maryam and Miss Jane advised that they rarely use new technologies in their classroom because of the school's lack of technological infrastructure. Other factors which constrained the teachers' use of these technologies included the limited number of computer labs and the need to book a lab when required and, the time-consuming relocation of students from classrooms to the computer labs, as perceived by the teachers.

In addition, Mr. Kwok, Miss Maryam and Miss Jane explained that teachers do not have the time to incorporate new media more regularly into their teaching as they have to finish the course syllabus within the specified time. They shoulder the responsibility for preparing students for examination. Consequently, to integrate new media technologies into teaching and learning, it is important that the focus is changed from an examination-based educational system to a more holistic and balanced approach which allows the effective inclusion of the new media (MOE, 2012).

Even if VNSS were to be equipped with state of the art digital facilities for teachers and students to use, there is no guarantee that teachers would be able to incorporate such technologies into their classrooms. The research data shows that Miss Pamela and Miss Jane perceive that, if each student is allowed to use new media in the classroom it would be difficult to control them. The issue of 'control', as mentioned by Miss Pamela and Miss Jane, indicates their inclination for a teacher-centred pedagogical approach at a time when the potential of new media for learning can only be realised if students are provided with greater freedom to explore and learn at their own pace.

Moreover, the integration of digital technologies into schools is influenced by teachers' knowledge of, and attitudes towards, the new media. The research data shows that the participating teachers at VNSS had different levels of knowledge, experience and attitudes. Miss Pamela, who had prior exposure to the new media during her undergraduate studies, was more comfortable using it compared with senior teachers like Miss Maryam and Miss Jane who participated in ICT training courses organised by the school. When asked about the need for more training and exposure to ICT, Miss Maryam and Miss Jane claimed they already had sufficient knowledge and experience of new media. However, the last ICT training course at VNSS was conducted more than five years ago.

Consequently, it is important to note that technology is fast changing and this requires teachers to keep updating their knowledge.

The discussion presented in this section indicates that students' use of new media in school is influenced by a number of different but interrelated factors. These factors include technological resource availability, school leadership and policies and, teachers' knowledge and attitudes. These interrelated factors are system issues which are beyond the students' control.

6.2 Comparing Students' Use of New Media in Technologically Rich and Poor Schools

As discussed in the previous chapter and also in the introductory part of this chapter, the state of the technological infrastructure at the Valley National Secondary School (VNSS) is relatively limited, affecting students' use of new technologies during school. Based on these findings, it was concluded that the VNSS is a 'technologically poor' school. As a result, additional data was collected at a second school site which is categorised by the Ministry of Education Malaysia (MOE) as 'technologically rich'. This supplementary investigation was undertaken to further understand young people's new media practices within a school context and to compare the similarities and differences in terms of new media usage in different types of schools. For this purpose, Kuala Lumpur Secondary School (KLSS) was selected as the second school site and two students and two teachers were invited to participate in this study. The school's background and the participants' profiles are briefly described in the following sub-sections.

Kuala Lumpur Secondary School

Located in the heart of Kuala Lumpur, the Kuala Lumpur Secondary School (KLSS) was granted the Cluster School of Excellence status by the Ministry of Education Malaysia (MOE) in 2008. The school is renowned for its excellence in three niche areas of academic and student activities; ICT, English and Chess. KLSS has two computer labs for students; computers, the internet, LCD projectors and projector screens are provided in all classrooms for teachers to use; and computers and the internet are available for all teachers in the staffroom. For its excellence in ICT, the school is rated as a five star Smart School based on the Smart School Qualification Standards (SSQS), a standard rating application developed by the MOE and the Multimedia Development Corporation (MDeC) to

measure the state of a school's ICT infrastructure and its integration into teaching and learning (SSQS, 2012).

Suresh

Suresh is a 13-year-old Form 1 student at KLSS. He uses new media frequently for learning and also for entertainment. In school, Suresh uses computers and the internet during the ICTL class period and also after school to search for related information for his homework and assignments. Even though students are generally not allowed to access social media sites or play computer games in the school's computer labs, Suresh and his friends treasure the opportunity to use the digital facilities in school. At times, Suresh and his friends use the internet at the school's computer labs for fun, to search for random information to fulfil their curiosity. At home, Suresh has access to computers, the internet and the PlayStation Portable (PSP) console. Unlike many other youths his age, Suresh claims that his parents do not allow him to use social media or play games every day. So Suresh and his siblings only use Facebook and play PSP on weekends. According to Suresh, his use of social media and computer games provide him with excitement and relaxation after a long week at school.

Vincent

Vincent is 13 years of age. Similar to Suresh, he is a Form 1 student at KLSS. Prior to attending KLSS, Vincent was schooling at a Chinese medium primary school near his home in the Petaling Jaya suburb. According to Vincent, during school he only uses new media in the ICTL class which is held once a week, on every Friday for a one hour 20 minute period. As a member of the school's photography club, he also uses computers, the internet and the Adobe Photoshop software during the club's meetings. Members of the school's photography club meet every fortnight, for a one hour period. At home, Vincent has a variety of technological gadgets that he can use. He has Nokia and Sony mobile phones, computers, internet access and a PlayStation 2 console. Vincent uses these technologies every day after school to relax and to entertain himself. Vincent said that he often uses Facebook and computer games to help him overcome his boredom when at home.

Miss Ashley

Miss Ashley has been at KLSS for the last 17 years. Prior to joining KLSS in 1995, she was teaching at a primary school in the state of Pahang. Miss Ashley did her Bachelor Degree at the University of Malaya specialising in History and Geography. In the year 2000, she graduated from the same university with a Master's Degree in Educational Technology. At KLSS, Miss Ashley is the ICT Coordinator. She teaches General Studies and ICTL for Form 6 students. She is also the Advisor for the IT Brigadier, a student organisation that has been established by the school to serve the school's ICT needs, to improve and to maintain its ICT facilities. As a new media enthusiast and the school's ICT Coordinator, Miss Ashley has a very positive attitude towards the use of digital technologies in everyday life. She uses digital media in a variety of contexts, during school and out of school, for teaching and learning purposes, to perform other school duties, to assist her children in their learning when at home and, also for entertainment.

Miss Ruby

Miss Ruby graduated with a Bachelor of Science in Education from a local institution. Her teaching major is Biology and her minor is Chemistry. She joined KLSS a year ago and prior to that she was teaching in the states of Selangor and Sarawak. At KLSS, Miss Ruby is assigned to teach Mathematics for Form 2 students and ICTL for Form 1 students. Compared to her previous schools, Miss Ruby is highly impressed by the state of technological infrastructure at KLSS. According to her, KLSS is well equipped with facilities like computers and the internet for teachers and students. Hence, a lack of digital access is not an issue in the school. Miss Ruby is a frequent media user as she uses her smartphone, computers, laptop and the internet every day when in school and also at home. In school, she uses the Microsoft PowerPoint application to deliver her class lectures. Like other teachers, she uses computers and the internet to perform other school-related duties. When at home, Miss Ruby frequently uses email, connects to family and friends using Facebook and, at times she watches movies online.

6.2.1 KLSS students' use of new media in school

A more frequent and extensive student use of new media was expected at the Kuala Lumpur Secondary School (KLSS) than at the Valley National Secondary School (VNSS). This assumption

was made based on the KLSS's elite status as a Cluster School that excelled in the area of ICT plus, its five star rating in technological infrastructure and integration in teaching and learning according to the Smart School Qualification Standards (SSQS). However, this assumption proved to be wrong as my research data suggests there is not much difference between KLSS and VNSS in terms of students' use of new media during school. This was evident during interviews conducted with Suresh and Vincent, as both students reported they only use computers and the internet during the ICTL class period which is held once a week over a one hour 20 minute period. This is similar to the experiences of Ali, Amanda, Donald and Elisha at VNSS.

KLSS students' use of new media during the ICTL class

Even though they only use computers and the internet during the ICTL class, Suresh and Vincent are generally more positive than the student participants at VNSS when asked about the ICTL class and the school's state of technological infrastructure, in general. This is illustrated in the following quotes:

Interviewer: *Do you know how to use Microsoft Word before?*

Suresh: *Yes…at home my aunt who is a lecturer at college, she teaches me.*

Interviewer: *So the things that you learn in school…is it a repetition of something that you already know?*

Suresh: *No, it's something new. Not much repetition…every time, teacher teaches us something new.*

Vincent: *No, no…some of the things are new. Sometimes we learn something new…like, teacher teaches us new things in Microsoft Word. There are many things there…sometimes we use PowerPoint and things like that.*

Similar to Amanda, Ali, Donald and Elisha at VNSS, Suresh and Vincent are frequent users of new media. They also have prior knowledge and experience of using technologies, including computers and the internet. However, unlike Donald who claimed that the ICTL class is not useful as it does not have anything new to offer, and Ali and Amanda, who would prefer not to attend the ICTL class, Suresh and Vincent appreciate the opportunities presented to them during the ICTL class. Even though they have had considerable experience in operating applications such as Microsoft Word and PowerPoint, Suresh and Vincent said they always have something new to learn in the ICTL class. This data shows differences of opinion and attitude of the participants, from the two schools, towards the ICTL class. These dissimilarities might be influenced by the availability of technological access

in their respective schools, the time that the ICTL class is conducted and the attitudes and knowledge of the ICTL teachers in the two schools.

Without doubt, the student participants in both schools demonstrate positive attitudes towards, and great interest in, new media. This is evident in their descriptions of how they use digital technologies to serve different purposes out of school. They also expressed their delight whenever they have the opportunity to use computers and the internet in school and to work with their peers and collaborate with one another. This data tallies with the study conducted as part of the Innovative Technologies for an Engaging Classroom's (iTEC) project, in which it was reported that young people treasure the chance to use new media technologies during school and, to work with their peers (Oldfield, 2012). This opportunity, however, is limited in VNSS compared with KLSS due to VNSS's poor state of technological infrastructure. The student participants at VNSS claim that they only use computers and the internet during the ICTL class. Due to the limited number of computers in the computer labs, some students need to share computers with their friends during the ICTL class. After a fire incident that damaged the computer labs in the middle of 2011, the ICTL class was cancelled and students no longer had any opportunity to use new technologies in the school. In comparison with VNSS, students at KLSS have better opportunities to use digital technologies in school. They have the chance to use these technologies during the ICTL class period and also after school as KLSS opens its ICT facilities for students' use. Students are encouraged to make use of these facilities after school to assist them in performing their homework and assignments and also for other educational purposes. A similar strategy to let students use the school's technological facilities was eventually adopted by VNSS in 2012 in order to provide its students with the opportunity to use the computer labs before or after school hours.

The research data suggests that there is possibly not much difference in terms of digital access for students in both schools. Both VNSS and KLSS have populations of over 1000 students, with two computer labs for the implementation of the ICTL class and for other school-related activities. Even though KLSS has computers and the internet available in all classrooms, these technologies are only available for teachers to access and not for students. However, in comparison to VNSS, the computer labs at KLSS appear to be well managed and maintained. This enables the facilities to be fully optimised for students' use during school and also after school. Based on UNESCO's study of ICT integration in education conducted in 6 different countries in Asia, namely Malaysia, Indonesia, Philippines, Singapore, South Korea and Thailand, a clear ICT vision and plan, at school level, are

required for schools in these countries to be able to utilise their technological infrastructure for teaching and learning (UNESCO, 2004). Digital resources also need to be carefully managed and analysed from time to time to ensure that schools are aware of their strengths and weaknesses in term of their technological capability (UNESCO, 2004). With regard to the research question related to young people's new media practices, my study suggests that technical support has a huge influence on students' use of digital technologies in school. For instance, even though there is not much difference in terms of technological access for students in both schools, students at KLSS seem to benefit from better technical support and well maintained technological facilities compared with their peers at VNSS.

Another factor that may contribute to the differences of opinion and attitudes between students at VNSS and KLSS relating to the ICTL class is the time at which the class is conducted. At VNSS, the ICTL class is conducted outside the schooling period whereas at KLSS it is conducted within specified schooling hours. As mentioned by Ali, Amanda, Donald and Elisha, VNSS students are required to come early to school on the day on which the ICTL class is held. As previously observed, coming to school early is difficult for some VNSS students because of distance and personal lifestyles (see Section 5.2). The ICTL class at VNSS is held outside the schooling period due to the school's two-session system. Unlike VNSS, KLSS operates a single-session school system. This system allows KLSS to function using an extended schooling period enabling better flexibility in its implementation of curriculum and co-curriculum or students' activities. The extra schooling hours available could be dedicated to the implementation of additional lessons in a wide range of subject areas including ICT (Lim, 2009). Based on a report submitted as part of the effort to introduce educational reform in Malaysia, it was suggested that the Ministry of Education Malaysia (MOE) implement the single-session school system for all schools in the country in the future (ASLI-CPPS, PROHAM, & KITA-UKM, 2012).

In response to the research question related to young people's new media practices in school, I found that the student participants at both schools use digital technologies mainly during the ICTL class period. This class provides a good opportunity for students to learn how to use both the new technology such as computers and important applications for example, word processing and desktop publishing. However, it was found that the time at which the ICTL class is conducted is crucial as it can either positively or negatively influence students' attitude towards the lessons. For instance, the ICTL lesson that is conducted outside schooling hour was not popular with the VNSS students.

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Furthermore, the study found that ICTL teachers' knowledge, attitudes and ability to integrate the new technologies into the classroom effectively, may also directly influence VNSS and KLSS students' opinions and attitudes about ICTL classes. The importance of effective integration is explained in detail in the UNESCO's (2011b) *Competency Framework for Teachers* as follows:

> The successful integration of ICT into the classroom will depend on the ability of teachers to structure the learning environment in new ways, to merge new technology with new pedagogy, to develop socially active classrooms, encouraging co-operative interaction, collaborative learning and group work. This requires a different set of classroom management skills. The teaching skills of the future will include the ability to develop innovative ways of using technology to enhance the learning environment, and to encourage technology literacy, knowledge deepening and knowledge creation. (p. 8)

The above quote underlines the needs for teachers to change their classroom teaching and learning approaches to be able to effectively incorporate digital technologies into teaching and learning. Without doubt, this also requires teachers to have positive attitudes towards digital media as well as the knowledge and skills to integrate new technologies in the classroom.

Based on the research data collected from the student participants, it is evident there is a significant difference between the ICTL classes at VNSS and KLSS, particularly in the way teachers in both schools conduct their lessons. During Donald's interview, he was negatively critical about his ICTL teacher and the ICTL class at VNSS. For example, he commented that the teacher was unapproachable and he described the ICTL class lesson as being unworthy. As a result, Donald and his classmates sought assistance from each other during ICTL classes rather than from the teacher. Conversely, when Suresh from KLSS was asked about the ICTL teacher and his experience in the ICTL class, he responded positively. He indicated that the teacher is technologically adept, welcoming and always willing to assist students during the class. Vincent added that the ICTL teacher at KLSS makes the class interesting. Also, according to Vincent, students value the opportunity to use the internet for their own personal usage after completing teacher-assigned tasks. The ICTL teacher's knowledge and skills of new media as well as the facilitative and flexible approach shown during the ICTL lessons at KLSS, are highly appreciated by Suresh, Vincent and their classmates.

Similarities between the student participants at VNSS and KLSS are demonstrated in their preference to collaborate with peers and in their participation in communities of practice during the ICTL class.

This was discussed in the previous chapter (see Section 5.2.2). Amanda, Ali, Donald and Elisha described how they work together with their classmates during the ICTL class at VNSS. A similar description is provided by the student participants at KLSS when explaining how tasks are discussed, performed and accomplished between students in the ICTL class. According to Suresh and Vincent:

Suresh: *Yeah, yeah…how to do things…like in Microsoft Word, the teacher asks us to do something, if I don't know how to do it, I ask them (his classmates) and if they don't know how to do it, they ask me.*

Vincent: *Yes…like teacher asks us to make table, write something and maybe also edit something…some of my friends, they don't understand, so I just teach them. Sometimes, I don't understand too, so I just ask them laa. We teach each other, we learn from each other.*

The existence of student-based COPs, is demonstrated by the way in which student participants at VNSS and KLSS work together to accomplish their tasks during the ICTL class. The existence of COPs reaffirms the need for educators to acknowledge, and understand, the changes in the ways young people learn. These changes reflect UNESCO's (2011a) policy brief on *Digital Natives: How Do They Learn? How to Teach Them*?

According to UNESCO's policy brief, the three essential characteristics of young people's behaviour are: their inclination to access new knowledge, their preference to be in networks both online and offline and, to collaborate with one another where they work together, to share insights and learn collectively (UNESCO, 2011a). The change in the way young people learn 'collectively' with one another requires teachers to shift from the traditional way of instruction-based teaching to strategies that encourage collaboration among students (UNESCO, 2011a). One way this can be performed is by recognising the existence of students' COPs and allowing them to evolve within the school context. In regard to the research question of why and how young people use new media in school, it is evident that students who participated in this study mainly use digital technologies to perform the tasks assigned to them during the ICTL class. The research data collected from the student participants at KLSS further strengthen the earlier finding at VNSS that students belong to COPs in school. This is suggested in the way Suresh and Vincent work together with one another to accomplish their tasks during the ICTL class. A shared interest in new media, as well as similar goals to complete the tasks assigned by the ICTL teacher, are considered as starting points that bring students together in COPs.

Based on the data collected at VNSS and KLSS, it is mentioned by the student participants that most of the tasks assigned to them by the ICTL teacher during the ICTL class are individual tasks. However, this does not deter them from discussing with each other and assisting one another during the ICTL lesson (see Section 5.2.2). Similar to the ICTL teacher at VNSS, the ICTL teacher at KLSS also does not prohibit students from cooperating with one another during the ICTL class, nor do the teachers in both schools openly encourage their students to collaborate with each other. This is explained by Suresh and Vincent in the following quotes:

Interviewer: *Your teacher allows you to discuss and do things together with your friends during the ICTL class?*

Suresh: *Yes, she doesn't mind…but not very loud. If we are too loud then she'll be angry.*

Vincent: *As long as you know that you cannot be too loud. We can ask teacher too if we don't know things.*

Even though Suresh and Vincent agreed that there is no restriction imposed on students during the ICTL class, they and their other classmates at KLSS are expected to maintain an acceptable noise level and discipline or risked making the ICTL teacher upset. Similar to how the student participants at VNSS negotiate and respond to their situation, the same response, which is to maintain discipline, is also observed by the students at KLSS. This further strengthens the earlier evidence based on the research data collected at VNSS that students negotiate their practices in COPs by taking into consideration the conditions that they are facing and the demands that are imposed to them during the ICTL class.

As informed by the student participants at VNSS, their practices during the ICTL class, and in other classes and at other times in school, opens the possibility of learning. This type of learning is social and it is situated in students' participation in COPs. Like their peers at VNSS, the student participants at KLSS also benefit from their participation in COPs as they learn from one another during the ICTL class. This is explained by Suresh and Vincent in the following quotes:

Interviewer: *So you guys help one another to do things.*

Suresh: *Yeah, yeah.*

Vincent: *Yeah, we learn from each other.*

Interviewer: *Ok, so they learn from you too?*

Vincent: *Yeah, like sometimes teacher explains and we don't quite understand it, so we ask each other.*

The above quotes suggest that students are mutually engaged with each other in COPs and it is through their participation in shared practices during the ICTL class that they do things together, negotiate their enterprises and learn from one another. The research data gathered from the student participants at VNSS as well as at KLSS reaffirms the findings of the study conducted by Fearon, McLaughlin and Eng (2012) in which it was found that social learning and the development of transferable skills took place as learners worked together in communities of practice. For this reason, not only do teachers need to be able to recognise and acknowledge the potential of students' social learning resulting from their participation in communities of practice during class time (Fearon et al., 2012), but also they need to employ the right communication strategy that is to interact with students by combining both intellectual and social discourses in order to engage and to encourage them to actively participate in the COPs in the classroom (Grueber, 2012).

KLSS students' use of new media at other times in school

In the earlier part of this section (see Section 6.2.1), I discussed in detail how the student participants at KLSS benefit from a well maintained technological infrastructure, school-level organisation and management of digital resources, the single session school system and teachers' positive attitude towards new media. These factors lead to better opening for students to use new media technologies in school. However, similar to the experiences of the student participants at VNSS, students at KLSS also do not have the opportunity to use digital media technologies in other classes during school. However, unlike at VNSS where the technological facilities are only available in the school's computer labs and Science labs, at KLSS each classroom is equipped with a personal computer, internet connection, LCD projector and a projector screen. These facilities, however, are not meant for students' usage but for teachers to use in their teaching.

As a result, the teacher participants at KLSS utilise these technologies for their teaching more frequently than the teacher participants at VNSS. This is expected considering that all classrooms at KLSS have access to digital technologies. As Miss Ruby explained, she uses the Microsoft PowerPoint application to teach in all her classes. The Microsoft PowerPoint application is used as a direct substitute to the whiteboard as class notes are prepared and presented using the multimedia slides. As a Science teacher, Miss Ruby also uses the Science courseware provided to her to help students to understand the subject better. Sometimes she uses the internet to find related materials

like images and videos to show as examples to assist her students in their learning. Teachers' frequent use of new media for teaching at KLSS was also acknowledged by Vincent who said that:

> Yeah…other teachers, they use it to show us some slides…like in Seni (Visual Art), the teacher uses the search engine to find images and to show it to us and ask us to draw it. In other subjects like Math and Science, teachers show us slides (PowerPoint presentations).

Even though the teacher participants at KLSS appear to use computers, the internet and the CD courseware provided to them in the classroom more frequently than their counterparts at VNSS, these technologies are used in the same way as the conventional 'chalk and talk' teaching approach. In a way, this approach stills undermines students' opportunity to construct their knowledge and learn actively with the use of new media (ICT, 2010). In response to the research question related to young people's use of new media in school, I found that, except for during the ICTL class, the use of digital technologies in the classroom at KLSS is generally limited to use as a teaching aid where teachers only use computers, the internet and the CD courseware to help them deliver their lessons and to make teaching more interesting. In this instance, there is not much difference between VNSS and KLSS in term of optimising the potential of new media for students' learning.

However, compared to the student participants at VNSS, the student participants at KLSS have better opportunities to use computers and the internet in the computer labs after school. According to Miss Ashley who is the ICT Coordinator at KLSS, the school's computer labs are transformed to be cyber cafes after school hours to provide the opportunity for all students to make use of the digital facilities to perform their homework and assignments, and also for other educational purposes. This was illustrated by Suresh who indicated that he uses computers and the internet at the computer labs to perform online research and to look for related information to accomplish his homework and assignments. Suresh has access to digital technologies at home but he prefers to use the technological facilities in school because the internet connection at the computer labs is faster than at home. According to Suresh, he uses computers and the internet at the computer lab after school two or three days a week for a one hour period each time, depending on the homework and assignments that he has to do. Not only does Suresh use the facilities at the computer labs to perform school related tasks, but he also uses computers and the internet at the school's computer labs to look out for information on his interest such as religion and other things. Even though students are prohibited from accessing social media sites such as Facebook and Twitter, playing computer games and watching clip videos on YouTube at school, Suresh and his friends appreciate the opportunity to access the internet together at the computer labs.

Unlike Suresh, Vincent thinks that he has better access to digital technologies at home than at school, so he prefers to do his homework and assignments at home. As a member of the Photography Club, Vincent and the other members use the facilities at the computer labs during the club's sessions held every fortnight. Vincent's active involvement in the Photography Club enables him to learn more about photography including practical knowledge such as taking images during school events and editing. According to Vincent, he and the other members of the Photography Club are exposed to image editing as they are taught by the club's advising teacher, Mr. Mohammad to edit photos using the Adobe Photoshop software. Based on the interviews conducted with Suresh and Vincent, it appears that, even though KLSS students' use of new media technologies is limited to during the ICTL class period, students have the opportunity to access computers and the internet at other times after school, as they use the facilities at the computer labs to perform school related tasks, to do random research online and through participation in club activities such as the Photography Club and the IT Brigadier.

With regard to the research question related to young people's use of new media at other times in school, the data collected at VNSS and KLSS indicates that, except for during the ICTL lesson, student participants do not have much opportunity to use digital technologies in the other classes they attend. However, unlike at VNSS, KLSS manages its technological facilities better. This is demonstrated in the ability of KLSS to provide students with the opportunity to use computers and the internet after school for different purposes such as club activities, assignment preparation and conducting random searches on the internet. At a later stage in this study, I found that VNSS started to provide students with increased opportunity to use school's technological facilities, a similar initiative to the one being adopted at KLSS. While the school's intentions are good, its success is yet to be seen as the program is still in the early part of its implementation. If VNSS is to succeed, it is important for the school to maintain its technological infrastructure effectively, so that it could be fully optimised similar to how KLSS manages its digital resources to ensure that all the facilities are in good working condition. In the following section, KLSS's efforts to promote the use of new media in school are discussed.

Kuala Lumpur Secondary School's new media effort

As reported in the previous section, there is not much difference between Valley National Secondary School (VNSS) and Kuala Lumpur Secondary School (KLSS) in terms of how new media is being integrated in teaching and learning in the classroom. In both schools, students only use these technologies during the ICTL class. Nevertheless, KLSS is better than VNSS in term of new media access for students and teachers, management of technological resources and teachers' knowledge and attitude to the use of new technologies. Even though students' use of new technologies for learning is still very minimal, KLSS shows greater efforts to integrate new media into the classroom and provides better opportunities for its students to use the school's digital facilities after school hours. While this is largely because of KLSS's status as a Malaysian Cluster School in the niche area of ICT, it is important to acknowledge the school's continuous struggles to integrate new media technologies since the end of 1990s. Despite its status as a Malaysian Cluster School, KLSS's new media effort is still considered as a project in progress. It is still far from achieving the desired state of technological integration in the classroom as projected by Ainley et al. (2002), Zain et al. (2004) and ICT (2010), but the story of the school's determination to champion the cause for greater use of new technologies in teaching and learning should be an example for other Malaysian schools to follow.

Similar to VNSS, KLSS started as an ordinary school, operating on the two-session secondary school system. Recognising the rise of new media and its potential for teaching and learning, KLSS's leadership began integrating new technologies into the school at the end of 1990s. As Miss Ashley recalls, it was in 1997 that she was appointed as KLSS's ICT Coordinator and the school started to organise ICTL lessons for a small group of students. The ICTL lessons were eventually expanded to the whole school, becoming a subject taken by every student at KLSS.   Ten years after the school's initial effort to integrate new media into the school, all the classrooms were equipped with the technological facilities for teachers to use in their teaching. During the time of this study, the school had computers and internet access available to all its teachers in the staffroom. As of 2012, this is still considered a luxury not available to many schools in Malaysia. Miss Ruby acknowledged that KLSS is more advanced than many other schools in terms of its technological resources, including the facilities available for teachers to use in the classrooms and also in the staffroom. At VNSS, there are only three computers available in the staffroom for more than 40 teachers to share.

When Miss Ashley was asked if KLSS has better technological resources than other schools because of its five stars Smart School rating, she elaborated:

Interviewer: *Is it because the school is a Smart School?*

Ashley: *No… It's all (the efforts) of the PIBG (Parents and Teachers Association), OBA, the old boys, not from the Ministry.*

Interviewer: *This school is rated as a five stars Smart School right?*

Ashley: *Yes, we are. We are not a Smart School, but we are five stars in ICT among the non-Smart Schools.*

It took ten years before the school's initial effort to integrate new media technologies was rewarded with the Cluster School status. It was in 2008 that the school was granted RM200000 funding for its excellence in ICT from the Ministry of Education Malaysia (MOE). KLSS's courageous efforts to integrate the new media into teaching and learning is demonstrated by the early challenges the school encountered. These were mainly due to the deprived state of its technological infrastructure, lack of funds, shortage of technological expertise, and teachers' resistance to incorporate change with digital technologies. The school responded positively by taking proactive measures to work closely with the Parent and Teacher Association (PTA) and, the Old Boys Association (KLSSOBA) to overcome the issues related to the lack of funds and technological facilities. The PTA and the KLSSOBA continuously support the school by providing the funds and facilities required to incorporate new media technologies into teaching and learning. For example, in 2011, KLSSOBA donated 90 new computers to the school allowing it to replace the old computers in the computer labs with the new ones.

As Miss Ashley recalls, not only did the school experience resource-related difficulties during the early period of new media integration into the classroom, but KLSS also had to deal with the resistance shown by some teachers towards the integration. Some teachers decided to leave the school as they refused to embrace change with new media. Other teachers' resistance may have been due to personal factors such as the a of understanding of the potential of digital media, or inferior technological knowledge and skills (Jimoyiannis, 2009). Realising the need to educate teachers in the new media, Miss Ashley planned and organised numerous ICT- related training courses over the years dedicated to teachers at KLSS.

In comparison with the teacher participants at VNSS, who are exposed only to the use of basic Microsoft applications such as Word, PowerPoint and Excel and do not have the opportunity to attend

regular ICT-related training programmes, the teachers at KLSS have the chance to acquire a variety of knowledge and skills in a series of advanced ICT training courses organised by the school. These include iTeach, ThinkQuest, Drupal, 1BestariNet and Eduwebtv, which are necessary to enable teachers to optimise their use of digital technologies for teaching and learning. Some of the training programmes are conducted by Miss Ashley herself based on the knowledge and skills she has gained from the courses that she attended earlier. There are also occasions when she invites professionals to come to the school to train teachers at KLSS on more advanced applications such as the Adobe Photoshop and Drupal. Miss Ashley believes that most of the teachers benefit from their participation in the school-based ICT professional development programmes, particularly the more senior teachers who do not have much experience of new media. Opportunities to attend regular ICT training programmes at KLSS are also acknowledged by Miss Ruby, who said that she and the other teachers benefit from the ICT training courses that are organised regularly by KLSS. Furthermore, this data echoed the findings in DETWA's (2006) research which indicate that teachers benefit from professional development programmes that are strategically planned and carried out. Participation in ICT-related training courses provides teachers not only with the knowledge and skills required (Hamzah et al., 2009), but also with positive attitudes and the confidence necessary to incorporate new media technologies into their classrooms (Jimoyiannis, 2009).

In regard to the research question related to young people's use of digital media in school, KLSS's efforts to promote the use of new media among teachers and students provides a model for other schools aspiring to champion the integration of digital technologies into teaching and learning. Even though the integration of new media in teaching and learning at KLSS is still considered as a work in progress, its efforts to champion the use of new technologies provides useful lessons for other schools in Malaysia to follow, especially in terms of how to get funding for technological facilities, managing technological resources, and overcoming teachers' lack of knowledge and negative attitude towards digital technologies. Instead of relying only on the budget allocated by the Ministry of Education Malaysia (MOE), it is important for schools to be proactive in their approach to get additional funding for technological facilities. This can be done by forging close ties with the Parent and Teacher Association (PTA) and the alumni association. In managing technological resources, schools can get students involved by encouraging them to participate in the effort to ensure that the facilities are in good condition at all times. As in KLSS, the IT Brigadier was established as a student organisation that is in charge of the school's technological infrastructure. At KLSS, the IT Brigadier is entrusted with the responsibility to assist the school in managing and maintaining the digital infrastructure

including the computers in the computer labs and the facilities in the classrooms. While resistance to incorporating digital technologies in teaching and learning among some teachers is expected due to their lack of knowledge and experience, continuous opportunities to attend training courses can help them to improve their attitude towards new media.

Even though KLSS has not yet achieved the desired state of new media use in the classroom, Miss Ashley observes that the school is moving in the right direction. She seems confident that teachers in the school will adopt digital technologies more in their teaching and learning in the future. Miss Ashley acknowledges that her Form 6 students benefit from their engagement in learning with new media technologies during the General Studies class. According to her, the students are given the opportunity to learn with new media and they use search engines such as Google and Yahoo to help them find information related to the topics they learn in class. Moreover, Miss Ashley explains that teaching and learning approaches have changed from being teacher-centred to student-centred with students using new technologies, looking for information they require, sharing knowledge with their peers and, learning together.

When asked if similar approaches can be used with younger students in junior grades such as students in Form 1 and Form 2, Miss Ashley explains:

> Yeah because we have the ICTL class for Form 1 to Form 6. Even for Form 1 students, they use the lab, they learn…I give them tasks like…the latest technologies in the world…then they do presentations. They search (for information) on the internet, then they do PowerPoint presentations. Sometimes I feel that I also don't know some of the information…that means even for Form 1 and Form 2 students, they benefit from the use of new media. It is more of the responsibility of the teachers.

This implies that even younger students benefit if they are given the opportunity to optimise the use of new media in their learning in the classroom. The difficulty in controlling a large group of students should they be allowed to use digital technologies in their learning at VNSS can be overcome if students have the knowledge and skills to take full advantage of the potential of new media and integrate it within the classroom context (Sadik, 2008). This, however, requires teachers to be continuously trained and professionally enhanced in order to ensure that they are equipped with the proficiency and confidence to adopt digital technologies into their classrooms (ICT, 2010; Jimoyiannis, 2009).

6.2.2 KLSS students' use of new media out of school

In terms of their use of new media out of school, there is not much difference between the student participants at VNSS and KLSS. Similar to the experiences of Ali, Amanda, Donald and Elisha, Suresh and Vincent also use new media more frequently out of school than in school. Unlike in school, where they are generally not allowed to access social media sites such as Facebook and Twitter, watch videos on YouTube or to play online games, Suresh and Vincent have the opportunity to engage in these practices when they are at home. However, Suresh and Vincent differ from Ali, Amanda and Donald in terms of the amount of time they spend engaging with new technologies at home.

In comparison with Ali, Amanda and Donald who engage in various new media practices for an extended period of time before and after school hours, Suresh is only allowed by his parents to access Facebook and play games during weekend. During the week, Suresh only uses computers and the internet for learning, particularly when he has homework and assignments to accomplish. Vincent only engages in digital practices such as using social media and playing computer games in the afternoon. Vincent is only allowed by his parents to engage in these practices for two hours every day. This data shows the difference in terms of the amount of time between the student participants at VNSS and KLSS in their engagement with new media technologies out of school. Based on the *Norton Online Family Report 2010*, the average amount of time Malaysian youths, between the ages of 10 to 17 years, spend online, out of school, for entertainment is 19 hours per week (Symantec, 2010).

Similar to the participating teachers at VNSS, Miss Ruby and Miss Ashley also share similar perceptions about young people's use of new media at home for entertainment. When asked about her students' use of new technologies out of school, Miss Ruby said:

> I think kids these days, most of them get online at home. They play games, online games, they use Facebook, Twitter, chatting…I think they do all that. Also watch movies, anime online, download songs and all that. For education, I think it's very minimal.

Miss Ruby argued that students use digital media for learning only when they are asked to do so by their teachers or when performing their homework and assignments. According to Miss Ashley, it is the responsibility of parents to ensure that their children use new media at home wisely because children will benefit if they utilise the potential of these technologies. In response to the research

question related to young people's use of digital technologies, the data gathered at VNSS and KLSS suggests that the participating teachers are generally sceptical about their students' new media practices out of school. They seem to believe that students use digital technologies out of school mainly for leisure. In reality, as discussed in detail in the previous chapter (see Section 5.3), even though young people's use of new media out of school is often misunderstood by teachers and parents as only being for entertainment or leisure, they actually engage in new media practices to serve different purposes such as for socialising, relaxation and to build self-confidence (Barker, 2009; Johnson, 2009b). This was the case for Amanda, Ali, Donald, Elisha, Suresh and Vincent.

The student participants at VNSS and KLSS use new media as a tool to participate in communities of practice, both online and offline, to collaborate and learn from one another. Similar to the student participants at VNSS, Suresh and Vincent also use Facebook as a medium to build new relationships, maintain their existing relationships, and to collaborate with their peers from school through their use of Facebook group. Like the participants at VNSS, Suresh, Vincent claimed that they also have their own class Facebook group. The Form 1M Facebook group was created by Suresh in early 2012 as a platform for him and the other students of class 1M to socialise and to collaborate with one another. Suresh explained that the Facebook group is used as an online space for him and his classmates to interact about the happenings in school and to discuss homework and assignments. They also use the group to upload and share video clips and images of events that take place in school. This suggests that Suresh, Vincent and their other friends have become members of COPs and participate in the shared practices of their communities as they come together and collaborate towards achieving similar goals and objectives in online spaces.

Suresh, who started using Facebook when he was ten, enjoys the chat function the most as it enables to him to interact with his friends online. The same experience is shared by Vincent, who uses Facebook to interact and to maintain his relationship with friends from his primary school years. Similar to Donald's experiences, Vincent admits that he uses Facebook and plays computer games mainly because he is lonely and bored. Vincent engages in a variety of new media practices because, he says that, he has nothing else to do at home. Even though Vincent admits that Facebook is important to him as it allows him to socialise, he says he will not rely on his use of the social media as much in the future. In Leung's (2011) study, which examined loneliness, social support and preference for online interaction among young people, it was indicated that loneliness is considered the main factor for youths between the ages of 9 to 14 preferring to socially interact online with their

peers. According to Leung (2011), as these kids grow from adolescents to teenagers aged between 15 to 19, they are less likely to resort to online social interaction as the main way to overcome their loneliness or boredom. By then, they usually have more options for activities to indulge in which contributes to additional freedom they enjoy compared with when they were younger (Leung, 2011).

When asked about his friends on social media, Suresh revealed that he has more than 2000 friends on Facebook. They include his friends from primary school and his school mates at KLSS. However, most of his friends are strangers whom he randomly added based on the 'mutual friends' function available on Facebook. Vincent claims to have over 1000 friends on Facebook. The student participants at VNSS also have hundreds of friends on Facebook. Many of these 'friends' are basically strangers who are invited into their personal network via mutual friends. This raises the question of what it means for young people to have a huge number of friends on social media. In a study conducted to examine the relationship between the number of friends and interpersonal impressions on Facebook, it was indicated that individuals with a low number of friends on Facebook are regarded as less attractive than those who have more friends (Tong, Heide, & Langwell, 2008). However, as Tong, et al. (2008) explained, those who have too many friends on Facebook may also be perceived negatively by others as introverted. This view is shared by Donath and Boyd (2004) and Caplan (2003), who also consider that having too many friends on social media leads to negative perceptions including the view that such people are desperate for relationships and spend too much time on social media and other forms of digital media. Those who have an optimal number of friends on Facebook are considered as socially attractive. With regard to my study, the huge number of friends that the student participants have on their Facebook can probably be attributed to loneliness and boredom they experience, the lack of options for activities to engage in due to their young age (Leung, 2011), their preference to communicate using the digital media and, the long time they spend on social media sites and other technologies when at home (Caplan, 2003).

Similar to the student participants at VNSS, Suresh and Vincent are able to relate their use of digital technologies to learning, which indicates their knowledge of new media. This is demonstrated through the way they describe their new media use based on Yelland's (2007) C/ICT Framework categorisations of (a) functional user, (b) meaning maker, (c) critical analyser and (d) transforming understanding (see Section 2.3 and Section 5.2.1). Suresh and Vincent can be considered 'functional users' of new media technologies as they are capable of operating computers, the internet, gaming consoles and mobile phone. Suresh creates meaning (meaning maker) from his use of digital

technologies as a form of relaxation and entertainment. He enjoys playing Need for Speed Shift on his PlayStation Portable (PSP) gaming console during weekends because it provides him with the opportunity to relax and to have fun after a long, tiring week at school. Vincent's new media practices at home, such as chatting on Facebook and playing online games such as MapleStory and Mission Against Terror (MAT), help him to overcome his loneliness and boredom.

As 'critical analysers', Suresh and Vincent are capable of critically analysing their new media practices out of school. Suresh critically analyses the technological access that he has in both contexts of in and out of school. He appreciates the opportunity to use technologies such as computers and the internet in both contexts, but he knows his new media use during school is limited to educational use. Out of school he has more freedom to engage in both educational and leisure practices. Suresh also critically analyses the internet access he has in both contexts, by indicating that his school has better internet connection than at home and, for that reason, he prefers to do his homework and assignments at the school's computer labs after school. Vincent critically analyses the way to achieve the goals in the games that he plays. For instance, when engaging in playing MapleStory online, Vincent knows that, in order to reach level 200, which is the highest level in the game, he has to complete all the quests and also acquire *Mesos* or experience points (XP). Vincent claims that he is at level 70 and needs more training in order to continue his progression in MapleStory.

Like Donald and Elisha, who show their knowledge and experiences by transforming their understanding based on their practices of new media, Suresh and Vincent are also able to generate new understandings of their use of digital technologies. Suresh transforms his understanding of new media as being not only for leisure, but also as a tool to help him in his learning. He compares the differences between looking for information in the library and using the internet, and says that it takes him longer to get the information he needs in the library. By contrast, it is very easy for him to gather the information required for his homework and assignments by using internet search engines such as Google and Yahoo. This suggests that Suresh is transforming his understanding of the use of new media technologies for learning. In another instance, Vincent transforms his understanding of the use of new media as not only for communication, socialising, learning and entertainment, but also as a tool to make life easier. Vincent knows that new technologies can also be used for online shopping as well as for surveillance and security. This is based on his experiences of operating the closed-circuit television (CCTV) at his home which is connected to the computer. According to Vincent, the CCTV, which is connected to the computer, allows him to perform surveillance on behalf of his

parents, to record and playback any footage as needed. From his observation, Vincent also knows that he can use the internet to purchase things on the internet just as his mother shops online.

The risks young people encounter in their use of new media

Without doubt, the students who participated in this study have better opportunities to use new media out of school than when they are in school. But, as indicated earlier, the amount of time they engage in media practices differed from one to another. This is influenced by the way their parents regulate their use of digital technologies at home. Instead of worrying about young people's new media practices by monitoring the sites or software that they access, the things that they do online and if these kids are exposed to risks such as pornography, cyber bullying and disclosure of personal information (Livingstone & Bober, 2004), parents of some of the student participants of this study are more concerned with the duration that their children spend using digital technologies at home. For instance, when Donald was asked about his new media practices at home, he said that his mother is concerned that excessive use might affect his academic progress. Donald claimed that his mother did not mind about his technological practices at home as long as he managed to maintain satisfying academic results in examinations.

Rather than worrying only about the amount of time that the young spend on new media at home that may negatively impact on their academic performances in school, parents should place more importance on issues related to their children's security as they engage in different forms of digital practices (Symantec, 2010). This raises a concern of whether parents in the Malaysian context in which my study was conducted are aware of the risks that their children are exposed to as they engage in different forms of digital practices.

To assume that Malaysian youths' safety is under threat as they freely engage in numerous new media practices at home without being regulated by their parents might be an exaggeration. Nevertheless, considering that young people's security related to their home use of digital technologies is a serious issue that may lead to a huge implication if it is not dealt with in the right way, it is recommended that future studies of Malaysian youths' new media practices at home attempt to look closer at this matter, in particular the parental regulation that guides the young when they are at home. Based on a study conducted at the Oxford Internet Institute, it was indicated that Malaysia was in the top six countries in the world with the largest amount of information production on Twitter (Graham &

Stephens, 2012). In separate data gathered by the Socialbakers, a global company that specialises in social media and digital analytics, the statistics of Facebook users worldwide in 2012 showed that Malaysia had 12,953,400 users of Facebook with a population penetration of 49.52%, a higher population penetration rate than the likes of Japan (11.69%), South Korea (19.14%), Germany (29.74%), France (38.54%) and Netherlands (42.97%) (Socialbakers, 2012). Meanwhile, the penetration of online population in the country in 2012 was at 76.64 percent (Socialbakers, 2012).

An alarming report conducted by Symantec (2010) revealed that, a very high percentage of 87 percent, or 9 out of 10 youths in Malaysia aged between 10 to 17, had encountered the experiences of being bullied online, being exposed to pornography, or had downloaded applications containing viruses to their computers, and had disclosed their personal information to strangers. An example of how Suresh is opening himself to risks by disclosing personal information to strangers is presented in the following excerpts from his interview:

Interviewer: *How do you know Antonio?*

Suresh: *From my friend (mutual friend).*

Interviewer: *He's your age?*

Suresh: *No, no…he's 24 or 25.*

Interviewer: *Why do you find Antonio interesting to talk to?*

Suresh: *Because he always talks to me about his place, his surroundings…also about his work as a bull rider.*

Even though he does not consider Antonio as a risk, and even if Antonio is innocent, the way Suresh easily adds random people and discloses his personal information to friends who he does not know on Facebook is worrying. Similar to Suresh, Amanda also seems inclined to add strangers to her personal network of social media. This implies a lack of awareness or ignorance among some youths who do not realise that they are putting themselves at risks as they engage in new media practices such as using social media and playing computer games online. This is demonstrated in Amanda and Ali's reports that they experienced being abused by racist comments and were intimidated on Habbo and Garena gaming platform.

Parents' lack of awareness or sensitivity towards the security of their children's digital practices could be seen as being a factor related to the 130 percent increase in online crime rate in Malaysia in 2011 (Ismail, 2011). This was evident in a study conducted as part of the Norton Online Family Report 2010, which stated that only 4 out of 10 Malaysian parents knew what their children were doing

online (Symantec, 2010). These figures suggest that parents in Malaysia are failing to recognise the potential dangers that their children are facing as they are exposed to an average of 19 hours a week online (Symantec, 2010). Taking into account these facts, and the high possibility of young people in Malaysia involved in internet exchanges being at risk, it is necessary for future studies to be carried out on issues related to the security of young people's technological practices, and of parents' awareness of the kind of mediation that they impose at home.

There are not many studies on the issue of the security of young people's engagement in new media practices in Malaysia. I found only one study related to the safety issue of young people's new media practices within the Malaysian context which concentrated on youths' information privacy and disclosure on social media (Salleh, Aditiawarman, & Hussein, 2011). There has also been a comparative study that compared the regulatory framework related to social media and protection of children in Malaysia, Spain and Australia (Sarabdeen & De-Miguel-Molina, 2010). I found no study specifically focusing on parents' awareness of their children's safety in Malaysia and the kind of parental mediation that is necessary in order to ensure the security of children as they use new media technologies at home.

6.3 Chapter Closing

Based on the additional data gathered from teachers at VNSS, as well as from teachers and students at KLSS, this chapter has further discussed the two research questions; (a) what are the new media practices that young people participate in and out of school and (b) why and how do they participate in these digital practices. Based on the interviews conducted with teachers, I found that VNSS students use new media mostly during the ICTL lesson only. At other times during school, students' opportunity to use digital technologies is very limited. This is attributed to several relating factors including the availability of technological resources at VNSS, existing school policy, educational policy and teachers' knowledge and attitudes to new media. As computers and the internet are only available at the computer labs, teachers are required to make prior arrangements if they intend to use the facilities with their students. Mr. Kwok, Miss Jane and Miss Maryam rarely use the computer labs because of the hassles involved. Mr. Kwok reasoned that a lot of time is wasted to mobilise students from their classroom to the computer labs. As result of improper maintenance, the facilities at the computer labs are sometimes not functioning properly. According to Mr. Kwok, when this happens, the whole class period is wasted.

The examination-oriented education system that is still in practice in Malaysia is seen as another hindrance that limits the usage of digital media in teaching and learning. As reported by teachers at VNSS, they are entrusted with the responsibility to finish the heavy course syllabus within the specified time and to prepare students for examinations. Under this circumstance, teachers argue that they do not have the luxury of sufficient time to integrate digital technologies in teaching and learning on a regular basis. However, it is important to note that a reform in the existing education system in Malaysia is already on the way. Even though the Malaysian Education Blueprint 2013-2025 (MOE, 2013) is still at an early stage of implementation and its success is yet to be realised, the Ministry of Education Malaysia's (MOE) move to abolish two national examinations as well as the plan to promote the integration of new media in teaching and learning can be regarded as a move forward towards realising a more liberating use of digital technologies in school.

Teachers' knowledge and attitudes towards new media is regarded as another major factor that can positively or negatively influence their use of digital technologies in teaching and learning. Teachers who have higher proficiency in new media are generally more positive towards the use of digital technologies in education. In order to improve teachers' proficiency of digital technologies, it is important that they are provided with continuous opportunity to learn through their participation in new media training courses. Unfortunately, I found that there is a lack of opportunity for teachers to attend new media related training courses at VNSS. When asked, the participating teachers said that the last new media training course that they attended was five years ago. This seems to negatively impact teachers' professional development and attitude towards new media. This is evident in the way some teachers at VNSS disregard the potential of new media for teaching and learning. Even if VNSS becomes equipped with digital technologies for learners to use in all classrooms, there is no guarantee that these facilities will be fully optimised for teaching and learning purposes. This is due to the fact that none of the participating teachers at VNSS think that their students will benefit from individual use of computers and the internet in the classroom.

In order to gain deeper insight into young people's use of new media, additional data was collected at KLSS. Despite its status as a Cluster School of Excellence in the area of ICT, I found that there is not much difference between KLSS and VNSS in term of technological facilities available for students. Similar to VNSS, KLSS also only has two computer labs for students' usage. However, unlike in VNSS, where the facilities are not always in good condition, the computer labs at KLSS are carefully managed and maintained. As result, students at KLSS have better openings to use new media

technologies compared to their peers at VNSS. Students at KLSS have the opportunity to use computers and the internet at the computer labs after school for different purposes, including for club related activities and to perform their assignments. The findings at VNSS and KLSS indicate not only that schools need to be equipped with sufficient technological access for teachers and students, but that it is also essential for institutions to carefully manage their digital resources in order to ensure that the facilities can be fully utilised for teaching and learning.

In term of young people's use of new media during school, there is not much difference between KLSS and VNSS as students in both schools use digital technologies mainly during the ICTL lesson. There is not much opportunity for students in either school to use new media technologies in other classes that they attend. However, I found that the student participants at KLSS to be more positive towards the ICTL class than their peers at VNSS. This may possibly relates to (a) the ICTL teachers' knowledge and teaching approaches and (b) the time in which the ICTL class is conducted. Unlike Ali and Donald, the student participants at KLSS enjoy attending the ICTL class. According to Vincent, even though he was exposed to different applications including word processing and multimedia presentation before, he still considers the ICTL class very useful. Vincent acknowledged that his teacher has a lot to offer and that he learns many new things during the class which indicate how Vincent thinks highly of the teacher and the ICTL lesson. Another factor that can positively or negatively affect students' perceptions and attitudes towards the ICTL lesson is the time at which the class in conducted. Unlike in VNSS, where the ICTL class is conducted before the school starts (outside school hours), the ICTL lesson at KLSS is conducted during school hours. In comparison to VNSS's two sessions schooling system, the single session school that is in practice at KLSS provides the institution with longer hours and better flexibility to organise additional classes and activities without having to ask students to come early or to stay back after school.

Similar to their peers at VNSS, I found that the student participants at KLSS also belong to COPs. A shared interest in digital media and the same goal, which is to accomplish the tasks assigned to them during the ICTL class, are considered as an entry point that engages students together in a COP. It is through students' active participation as members of a COP during the ICTL class that they become mutually engaged with one another, negotiate enterprises and develop their set of repertoires. It is also through their active participation in the COPs during the ICTL class that students learn from one another. This kind of learning is social; it occurs as students work together towards accomplishing their tasks, communicate with one another, and continuously negotiate the meanings of their practice

during the ICTL class. While teachers interviewed at VNSS and KLSS generally allow learners to work with one another during the ICTL lesson as long students maintain an acceptable noise level and discipline, it is uncertain if they actually realise the existence of COPs in their classes and the learning potentials. Taking into consideration young people's preference to work together with one another and the learning that they can potentially gain from such collaboration (UNESCO, 2011a), it is important for teachers to be aware of the existence of COPs in their classrooms and to take full advantage of students' belonging to communities of practice by encouraging them to actively participate in the shared practices of their communities.

Like their peers at VNSS, the student participants at KLSS have richer new media access out of school than in school. However, unlike Amanda, Ali and Donald, who use digital technologies for longer periods when they are out of school, Suresh and Vincent engage in new media practices including using social media and playing computer games for shorter periods of time as allowed by their parents. Suresh and Vincent's use of new media out of school not limited to entertainment; they also engage in other digital practices to serve different functions such as performing homework and assignments, overcoming boredom, socialising as well as collaborating and learning from their friends. When asked about their students' new media practices out of school, I found the participating teachers at VNSS and KLSS to be sceptical, as they seem to believe that young people mainly use digital technologies for leisure purposes.

CHAPTER 7: THE RELATIONSHIP BETWEEN IN AND OUT OF SCHOOL USE OF NEW MEDIA

In the last two chapters, Chapter 5 and Chapter 6, the student participants' use of new media in and out of school was analysed and discussed. The data indicated that, in school, the students primarily used the new media for school-related activities while, out of school, they used it for a broader and richer range of activities. As young people use digital media technologies in and out of school, it is necessary to understand the relationships between their media practices in both contexts. This is an area which scholars in the field of the new media and education are keen to explore (Bulfin, 2009; Yelland, 2007). The focus of this chapter is on these relationships.

Earlier studies show that scholars are divided in their opinions and, are inconclusive in their findings relating to the relationship between young people's use of new technologies in and out of school. Some argue that young people's use of new media in both contexts is disconnected (Levin & Arafeh, 2002), while others believe that the relationship is blurred and unclear (Kent & Facer, 2004). In investigating this relationship, this study utilises the communities of practice's (COPs) framework of multi-membership perspectives which, its advocates argue, enables continuities or discontinuities between boundaries of practice to be analysed (Wenger, 1998). Based on his example of the supervisor at the claim processing unit, Wenger argues that:

> We can participate in multiple communities at once. Among claims processors, the unit supervisor belongs both to local management and to her own unit. Spanning that boundary is one of her main functions. Whether or not we are trying to sustain connections among practices involved, our experience of multi-membership always has the potential of creating various forms of continuity among them. (p.105)

I have already shown that the student participants in my study participate in various COPs as they engage in a variety of new media practices in and out of school. Amanda's engagement with her classmates during the ICTL class, for instance, where she collaborates with her peers to accomplish the tasks assigned by the ICTL teacher, her active participation in Habbo and also in the Form 1A Facebook group, are examples of young people's participation in COPs based on their new media practices in and out of school. Whether or not a relationship between in and out of school use of new media exists is analysed and discussed, in the later part of this chapter, with reference to COPs' multi-membership perspectives.

By applying COPs' multi-membership perspectives, this chapter attempts to answer the third research question:

- How do young people's new media practices compare and out of school?

7.1 The Boundary Relations between Young People's New Media Practices in School and out of School

It was explained in Chapter 5 that the duality of 'participation' and 'reification' is considered as one of the central elements in describing the student participants' belonging to communities in school and out of school (see Section 5.2 and Section 5.3). Drawing on the example of Ali's new media practices in and out of school, it is clear that he actively participates in a community of gaming enthusiasts. These gamers are his friends in school where he and his peers talk about the computer games they play such as the Defense of the Ancients (DotA), Blackshot, and Heroes of Newerth (HON) before school starts, between classes, during recess and after school. Ali and his friends in school reify their gaming practice as they discuss the strategies involved and share gaming tips with one another. Out of school, Ali participates in the community of online gamers as he plays online games at the Garena online gaming platform. The practice of online gaming is reified as gamers project certain acceptable actions or behaviours throughout the course of the games. This includes helping other team members who need assistance while playing the games. Gamers at Garena also reify their gaming practice by demonstrating high levels of competitiveness to win against one another, which sometimes results in bullying and intimidation.

With regard to the relationship between young people's new media practices, participation and reification can be used as tools to indicate if continuities or discontinuities exist between the boundaries of in and out of school. As Wenger (1998) explained, participation and reification can be the sources of continuities as well as discontinuities between boundaries of different practices. Continuities between practices may occur through the use of boundary objects, the act of brokering, complementary connections, boundary encounters and, the negotiation of meaning (Wenger, 1998) as discussed in the following sections.

7.2 Boundary Objects

As explained in Section 3.3.2, boundary objects generally constitute similar objects that are used by different COPs, enabling connections to be made between communities (Akkerman & Bakker, 2011). Wenger (1998) defines boundary objects as "artefacts, documents, terms, concepts and other forms of reification around which communities of practice can organise their interconnections" (p. 105). In relation to my study, all the student participants share new media technologies as objects that connect their practices in and out of school. The student participants at Valley National Secondary School (VNSS) and Kuala Lumpur Secondary School (KLSS) use digital technologies in school as well as out of school. Although out of school the students have better access to the new media and, are able to engage with it for longer periods of time, connections across the boundaries of both contexts are established as the student participants share their new media experiences.

Student participants' sharing of new media experience that takes place at different times during school at VNSS is explained by Elisha and Ali as follows:

Interviewer: *Ok...so basically during school that's how the relationship evolves? Even when you are outside of the ICTL class and when you are not using computers?*

Elisha: *Yeah...we still communicate about it (our out of school new media experience). Since I think...our lives resolve around technologies.*

Interviewer: *You told me earlier that you talk to your friends about your gaming practice...about DotA, about COD when you are in school. When exactly does this conversation take place?*

Ali: *Err...before school, during recess...also after school.*

The above quotes show that even though the students' use of new media in school is limited to the ICTL class, this limitation does not restrict them from sharing their digital experiences with each other at other times in school. The fact that digital technologies are used and talked about 'in school' and 'out of school' indicates that new media should be considered as a boundary object that connects the two contexts together.

According to Wenger (1998), because a boundary object is used by numerous communities of practice, it might lead to several different interpretations. This is further explained by Wenger who writes:

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When a boundary object serves multiple constituencies, each has only partial control over the interpretations of the object. For instance, an author has jurisdiction over what is written, but readers have jurisdiction over what it comes to mean to them. Jurisdiction over various aspects of a boundary object is thus distributed among the constituencies involved, and using an artefact as a boundary object requires processes of coordination and translation between each form of partial jurisdiction. (p. 108)

In relation to my study, the student participants' interpretations of new media as a boundary object is partial and they differ depending on the context that they are situated in. For instance, Ali, Elisha and their peers at VNSS interpret their use of new media as a boundary object in school for educational purposes only. A similar interpretation is also provided by Suresh and Vincent at KLSS. Even though Suresh and Vincent have the opportunity to use computers and the internet after school hours, such as when Suresh utilises the internet facility at the school's computer lab to look for information related to his assignments, and Vincent uses the Adobe Photoshop application to learn image editing during the Photography Club meetings, both students still regard their technological practices during school as mainly for educational reasons.

The student participants' interpretations of the use of new media out of school differ as they regard it as being not only for work or learning, but also to serve a variety of important functions such as for communication, relaxation, overcoming problems, and for entertainment. For instance, Elisha's use of new media technologies at home is varied; she uses her mobile phone, computers and the internet for various reasons. Elisha uses her mobile phone to communicate with family members and friends, such as Aida, in particular, with whom she talks and texts every day. Elisha uses Facebook to maintain relationships with friends from primary school, friends at VNSS and friends at the ice skating rink, and also to make new friends. Elisha also plays Gardens of Time and Zombie Lane on Facebook. This level of activity is consistent with the findings of an earlier study conducted on young people's use of new technologies in and out of school (Green & Hannon, 2007). This study concludes that young people generally view their use of digital media in school as limited compared with their usage out of school as they have greater autonomy and better opportunities at home to engage in various practices of their choice (Green & Hannon, 2007).

Beyond the issue of young people's actual use of digital media in and out of school, which some scholars have branded as being disconnected from each other due to the differences in accessibility, nature of use and period of engagement (Johnson, 2009b), the evidence of my study suggests that

the boundaries of both 'in school' and 'out of school' are connected by the work of reification performed by the student participants. The student participants and their peers appear to reify new media as a necessity in their everyday lives. As Elisha explains, many young people's lives 'revolve' around their use of new technologies as they frequently engage in a variety of digital media practices for different reasons, including socialising, and overcoming loneliness, as well as learning and collaborating with each other.

The student participants' different interpretations of the use of new media as a boundary object in and out of school do not necessarily mean that both sets of practices are disconnected. For instance, even though they do not have the opportunity to use computers and the internet other than during the ICTL class, Amanda, Donald and their peers at VNSS still talk to one another about their digital media practices at home, including about social media and new technologies. This is explained by Amanda:

Interviewer: *But do you still talk to your friends in school about technological stuff like the internet, chat, downloading songs, games?*

Amanda: *Yes...we do. When we have something similar like...blogging. So we can share what we post or anything.*

Interviewer: *Sharing knowledge?*

Amanda: *Yeah...tips...like how to manage the themes and all.*

Amanda: *During school...we talk about something new, like Samsung Galaxy.*

Amanda: *Mobile phones, laptops, PSP or anything else.*

Instead of limiting perception by looking only at the actual use of new media in both contexts of in and out of school, we should also consider the new media experience that students bring to school. While it is true that digital access and the nature of the technological use in school are relatively different from student participants' access and usage out of school, this does not indicate disconnection between their practices in and out of school. Even though Amanda and Donald rue the lack of opportunity to use new media in school, this does not limit them and the other student participants in this study from conversing and sharing their out of school new media experiences with each other during school. This is consistent with Yelland's (2007) finding that youths are inclined to bring their new media experiences at home to school and share them with their friends during school.

It is also worth noting that there is a difference between the way students reify their use of new media during the ICTL class and the way they regard their digital practices at other times in school, as well as out of school. The practice that they engage in during the ICTL class is reified by the student

participants as mainly for work and not for leisure. But they have the opportunity to talk about their out of school digital practices, as well as sharing knowledge and experience with each other, at other times in school. This is explained by Vincent, Ali, Amanda and Donald in the following interview quotes:

Interviewer: *What do you learn in the ICTL class?*

Vincent: *It's computer literacy. We learn about computers, the Microsoft (applications) and everything.*

Ali: *I just learn how to do cards, write essay…how to use Microsoft Word.*

Amanda: *Same things…just work, work and work!*

Donald: *We talk about games out of that ICTL class. We don't talk about it during the ICTL class because the teacher doesn't like that. Err (pausing)…I don't like the teacher!*

The fact that these students reify their use of new technologies differently during the ICTL class compared to at other times in school as well as out of school indicates a 'disconnect' between these practices. In this instance, instead of suggesting a 'disconnect' between school and out of school, it would appear, at least for these students, that the boundary actually exists between students' new media practices during the ICTL class and their practices at other times, both in school as well as out of school.

7.3 Brokering

According to the COPs perspectives, not only can practices be shared by different communities through boundary objects but, in addition, they can be shared through brokering (Wenger, 1998). Similarly, connections between communities can be established through the use of a boundary object as well as through the act of brokering.

Brokering based on the COPs perspectives generally refers to the coordination and connection roles performed by members of COPs to link different practices (Wenger, 1998). In his explanation of how brokering is performed, Wenger (1998) provides an example of a supervisor who, when he was transferred to a new unit, managed to influence the practices of his new unit and persuaded the members of the unit to accept the practices of his old unit. Wenger elaborates the roles of brokers claiming that:

> Brokers are able to make new connections across communities of practice, enable coordination, and − if they are good brokers − open new possibilities for meaning.

> Although we all do some brokering, my experience is that certain individuals seem to thrive on being brokers: they love to create connections and engage in "import-export," and so would rather stay at the boundaries of many practices than move to the core of any one practice. (p. 109)

The students in my study belong to several different communities of practice in and out of school, which opens the possibility for them to become brokers and influence practices and connect different communities together.

This kind of brokering is explained by Ali and Amanda in the following quotes:

Ali: *Sometimes when we are in group (in school)…we chat (about computer games) with each other, we share strategy.*

Ali: *I learn a lot from them…there are also Form 2 (senior) students.*

Ali: *HON is similar to DotA…but I'm more familiar with DotA, I'm used to playing the game. But there are not many (of my friends) in this school who play DotA…so I play with my other friends…friends out of school…in this school, only two or three (friends) who are playing it.*

Interviewer: *How do you do things with your friends during the ICTL class?*

Amanda: *Well…like if we need to do a video (during the ICTL class)…I would choose the music, my other friend would choose pictures.*

Amanda: *Oh…obviously I would play it (Habbo)! To meet my friends there…they are far...so yeah!*

Interviewer: *Who are your friends in Habbo? Are they your school friends?*

Amanda: *No…they are from other places, other countries.*

As discussed in Chapter 5, the student participants express their belonging to COPs during the ICTL class and at other times in school, and in their use of social media as well as in gaming communities. However, not all of them are able to perform as brokers. Despite the fact that the student participants bring to school their out of school new media experiences to share with their peers, and the fact that some of them also take home from school new media experiences to share with their relatives and friends out of school, not all of them are capable of influencing the practices that they belong to.

As Wenger (1998) explains, everyone has some experience of brokering. However, it is not easy to become a broker and influence practices as this involves translation, coordination and alignment among members of COPs. During the process of brokering, a broker should be able not only to

influence the practices but also the development of the practices and to overcome conflicting views and demands that may arise (Wenger, 1998). For this reason, brokers are usually individuals who are highly regarded by others for their experience as members in different COPs. They also have the capability to influence others and to facilitate change from within their communities (Wenger, 1998).

Based on my study at VNSS, I found that Amanda is highly regarded by Donald and her other classmates for her knowledge of new media during the ICTL class and also at other times in school. According to Donald, he and many of his classmates in Class 1A regard Amanda as their *Master* for her expertise in new media. Donald added that Amanda is always willing to help him and the other students who are in need of assistance especially during the ICTL class. Out of school, Amanda actively participates in various online communities as she frequently engages in Habbo and Habboon and uses social media sites such as Facebook and Tumblr. According to Amanda, her networks of friends on these sites consist of friends from primary school, her schoolmates at VNSS and other friends from all over the world whom she knows online. It is through her active participation in these online communities that Amanda learns new things about technologies. Amanda also learns about new gadgets such as tablets and cameras offline from her relatives and her uncle, whom she claims is a technology enthusiast. She helps her mother and aunties to find solutions each time they experience difficulties with their technological gadgets, applications and software. It is Amanda's keen interest in digital technologies that inspires her to explore new knowledge and to learn the latest in technological development from her online friends, uncle and relatives.

As mentioned earlier, Ali and the other student participants also bring out of school new media experiences to school to share with their friends. But what differentiates Amanda from Ali and the others is her ability to influence practices. For example, it is through the knowledge and experience of new media that she gains from her participation in other COPs that Amanda influences her classmates' choice of file sharing software and peer-to-peer (P2P) practice. This is explained by Amanda in the following quotes:

Interviewer: *And…do you share it with your friends…your classmates?*

Amanda: *Yeah, yeah…like…what kind of software that we can use. Like…Donald…he use 4shared, I use FrostWire.*

Interviewer: *Oh…ok. As Donald is using 4shared and you use FrostWire…do you share your knowledge with him?*

Amanda: *Yeah! For me…4shared is a little bit slower because…if you use FrostWire…when you want to download, you can just click and the song will appear…you can just download it. But 4shared…you need to choose one song…then you need to see the information and things like that.*

Interviewer: *So that's how you share your knowledge with Donald and other friends?*

Amanda: *Yeah.*

Even though Amanda's explanation in the above quotes might not be accurate, as her reason for using FrostWire and not 4shared is possibly due to personal preference, her ability to introduce a new element (FrostWire) and, to influence other friends in school to include it as part of their practice, shows that brokering takes place and connection is established across the boundaries of communities of practice.

In response to the third research question, 'how do young people's use of new media compare in and out of school', I found that, except for the ICTL class where students mainly use computers and the internet for work related activities, the digital practices of the student participants at other times continue across both contexts. This is evident in the way the student participants bring their out of school practices to share with peers in school and vice versa. While young people's inclination to bring their new media experience to school to share with their peers during school is expected (Yelland 2007), the evidence of my study indicates that, in the cases of the student participants, digital practices, including gaming and social media, continue across the boundaries of different communities in and out of school. This is because of the use of 'boundary object' and 'brokers' who are capable of influencing practices. In this instance, instead of seeing young people's new media practices in and out of school as being totally disconnected, I found that the student participants belong to multiple communities of practice in both in and out of school contexts. This adds to the knowledge pertaining to the new media practices that young people engage in when they are in or out of school.

7.3.1 Complementary connections

The relationship that is established between boundaries of communities involving boundary objects and brokering provides a source for reificative connections and offers the possibility for participative connections to occur (Kwon, Pardo, & Burke, 2008). According to the COPs perspectives, participation and reification can provide different kinds of connections, characteristics, advantages

and disadvantages across practices (Wenger, 1998). Reificative connections can be performed through shared artefacts, tools, concepts and other objects, while participative connections take place as members of a COP enter another COP and influence practices of that community (Kwon et al., 2008). Reificative and participative connections are further explained by Wenger (1998) as follows:

> Reificative connections can transcend the spatiotemporal limitations inherent in participation. We cannot be all over the world, but we can read the newspaper. We cannot live in the past, but we can wonder at momentums left behind by long-gone practices…Participative connections offer possibilities for negotiation that can give them the vivid character of a vicarious experience. We know all about rock climbing because our best friend is a fanatic; we have a personal sense of Sudanese culture because our neighbours are from there…But our knowledge of these practices inherits the partiality of those who give us peripheral access to them. (pp. 110-111)

Despite its potential, the notion of reificative connections however is limited in the sense that it is ambiguous. It may lead to contradictory interpretations and misunderstandings (Wenger, 1998). On the other hand, participative connections are incomplete in the way that any individual member of a COP is incapable of representing the practices exclusively, as his or her view of the practices is isolated. Such a view may not be accepted as the actual interpretation of the entire community (Wenger, 1998).

With regard to young people's use of new media, reificative connections may occur when students attempt to connect on the basis of partial information about digital technologies gained from their reading of forums or reviews on the internet. However, in this study I found that some of the student participants not only connect to another practice by the means of reification but they also connect through participation. In this instance they complement reificative connection with participative connection. In comparison to reificative connections, participative connections refer to the access that we have, which enables us to acquire partial knowledge of a practice (Wenger, 1998). An example of participative connection taking place is demonstrated in the following quotes, based on the interviews conducted with Amanda:

Interviewer: *Which one do you prefer? Do you prefer iPad or Samsung Galaxy tablet?*

Amanda: *Samsung!*

Interviewer: *Why?*

Amanda: *I have no idea. I don't know why but I think…if I buy iPad, there will always be new ones.*

Interviewer:	So…
Amanda:	Like…maybe iPad 3, then iPad 4 to iPad 5.
Interviewer:	Aha…
Amanda:	Samsung Galaxy is just like that, not changing.
Interviewer:	So for that reason you think that it's better to get a Samsung Galaxy Tab than iPad?
Amanda:	Yeah…they say it has better quality than iPad.
Interviewer:	Really?
Amanda:	My uncle said so.

While Amanda's opinion about Samsung Galaxy Tab and iPad might not be accurate, it represents her opinion of the two technological devices based on what was told to her by her uncle. Amanda also gains information about different technological gadgets from Donald. As one of his close friends during school, Amanda admits that she likes to talk to Donald about his new media experiences out of school. Amanda does not have some of the technological gadgets that Donald has at home such as iPhone and iPad and this triggers her interest in asking him more about his use of these technologies. The examples above of Amanda gathering information about technological devices from her uncle, as well as with Donald during school, indicate connections that are performed by means of participation. However, as Amanda does not have access to some of the technological devices, the information that she has gained is based on what was told to her by her uncle and Donald, and it appears to be partial or incomplete. In this instance, the connections that she makes do not represent a complete view of the whole technological practice. Unless Amanda owns her own iPad, iPhone and Samsung tablet and uses these devices together with her uncle and Donald, she will be unable to fully participate in the technological practice. As Wenger (1998) indicates, an individual member is not capable of fully representing a COP without the presence of the actual practice and its entire community.

For Elisha, who was yet to use Facebook at the start of this study, her initial knowledge about the social network site as a medium of communication and socialisation was also incomplete. She understood it solely based on the information she had from her sister, relatives and friends who are frequent users of Facebook. The limited knowledge about Facebook that Elisha had was mainly based on the complementary nature of reificative and participative connections. The knowledge of Facebook practice that Elisha gained from her relatives and friends was partial as it only allowed her to be at the periphery of the practice. This situation was transformed to more complete information when she eventually subscribed as a user of a social media site, as described later in this study. Instead

of relying on the incomplete information gained from her own reification as well as from what was told to her by others, Elisha experienced the actual use of Facebook as she participated in practices such as updating her personal status, chatting, uploading images and videos, commenting on friends' postings and playing games available in the social networking site.

The observations above indicate that connections between different practices can be performed through both reificative and participative connections. However, as this study reveals, the knowledge that one has about a new practice through such connections is usually incomplete. This is due to the fact that connection that is performed through reification is often subjected to one's own interpretation and understanding which can be misleading. On the other hand, the participative connection only allows one to experience certain information about a practice. As indicated in the above examples involving Amanda and Elisha, the information they gained about their respective technological practices, through conversation with family members and friends, was limited considering that they did not have full access to the practices as members of the communities of practice.

7.3.2 Boundary encounters

Connections between communities can also be performed through boundary encounters such as meetings, conversations and visits (Wenger, 1998). In their study of communities of practice in different groups involved in technology development projects, Garrety, Robertson and Badham (2004) explained boundary encounters as exchanges of information that took place through meetings, telephone calls, workshops and other forms of communication between all the participating groups. In his explanation, Wenger (1998) divided boundary encounters into (a) one on one – involving two individual members of different COPs who come together, communicate and share insights about their practices, (b) immersion – when members of a COP visit another community and engage with one another, and (c) delegation – when members from different COPs meet with each other and negotiate meaning based on their own practices.

In relation to my study, interactions that the student participants have with other individuals as they engage in out of school new media practices, such as when they use social media sites or when they participate in online gaming forums as guests, can be considered as boundary encounters. They also negotiate meanings of their practices based on the series of online boundary encounters that they go through. Boundary encounters also take place offline as the student participants interact with each

other during school about their new media practices. Despite the fact that the student participants are involved in similar technological practices, including using social media and gaming, they may belong to different COPs. This is due to the fact that there are several social media and gaming communities in and out of school.

An example of how boundary encounters take place in both online and offline forms is inherent in Ali's digital media practices in and out of school. As a gaming enthusiast, Ali regularly plays games such as Defence of the Ancients (DotA), Heroes of Newerth (HON), Blackshot and Counter-strike (CS) on online platforms when at home. When playing these games, Ali experiences numerous encounters with other gamers who play with him and others who also use the Garena gaming platform to which he belongs. To claim that all gamers in Garena are members belonging to the same COP would be an exaggeration, because like other online gaming platforms, Garena has millions of members from all over the world. Gamers on online gaming platforms like Garena and Steam belong to smaller communities and this is demonstrated by the large number of groups, gaming rooms and forums available online. Even though Ali does not belong to all of these communities, his subscription to Garena enables him to engage with other gamers from different COPs. The chat function, groups, gaming rooms and forums on Garena enable Ali to meet and communicate with other gamers online as well as to participate at the periphery of different practices as a guest. This is explained by Ali in the following quotes:

Interviewer:　　*Do you make friends with any of the strangers (other gamers)?*

Ali:　　　　　*Yes I do…with some of them. If they are better than me, I want to learn from them.*

Interviewer:　　*Oh…so you learn from them. Do they want to share their knowledge with you?*

Ali:　　　　　*Ha…some of them say that I have to learn by myself…but there are also nice people who would teach me the way…show me how.*

It is through his encounters with other gamers on Garena that Ali learns about their practices which include their online behaviour and communication as well as tips and gaming strategies that they use.

In Chapter 5, and again in the earlier sections of this chapter, I highlighted how students bring their out of school new media experiences to school and share these experiences with peers during school. I also indicated that sharing of media experiences is considered as part of the practices performed by students in their communities. This was demonstrated by Amanda, Ali, Donald, Elisha and their peers during the ICTL class and at other times in school. Based on the example of COPs in class Form 1A and class Form 1B, which the student participants belong to, it is assumed that there are also other

COPs based on shared interest in new media at VNSS. Instead of belonging to a particular COP, the sharing of new media experiences that students take part in at different times in school, such as before school starts, at canteen during recess and after school ends, might also indicate boundary encounters involving members from different COPs. This is shown in the interactions that Ali goes through with his peers from other classes and also senior students as they talk about their mutual interest in computer games and the gaming experiences that they have out of school. Ali admits that he does not know many of the other students well, but sometimes they randomly meet at different times during school and talk about their gaming experiences at home with one another. Drawing on this example, it is evident that Ali and the other students have a similar interest in gaming, but they belong to different COPs. The interactions that they have with one another are boundary encounters involving members from different gaming communities.

7.4 New Media as the Source of Connections

As well as being the boundary that differentiates members of a COP with non-members, shared practice is considered as a way to connect individuals with similar interests, tasks and goals (Wenger, 1998). According to Wenger (1998), connections that are performed by members of different COPs through shared practice can develop beyond boundary encounters and have the potential to eventually become a new COP of its own. Based on COPs perspectives, there are three ways in which a practice can provide connections: (a) boundary practices, (b) overlaps and (c) peripheries (Wenger, 1998). However, with regard to my study, only boundary practices and peripheries were found to be directly relevant. Boundary practices and peripheries, as ways of making connections, are explained in the following discussions based on the context in which my study was conducted.
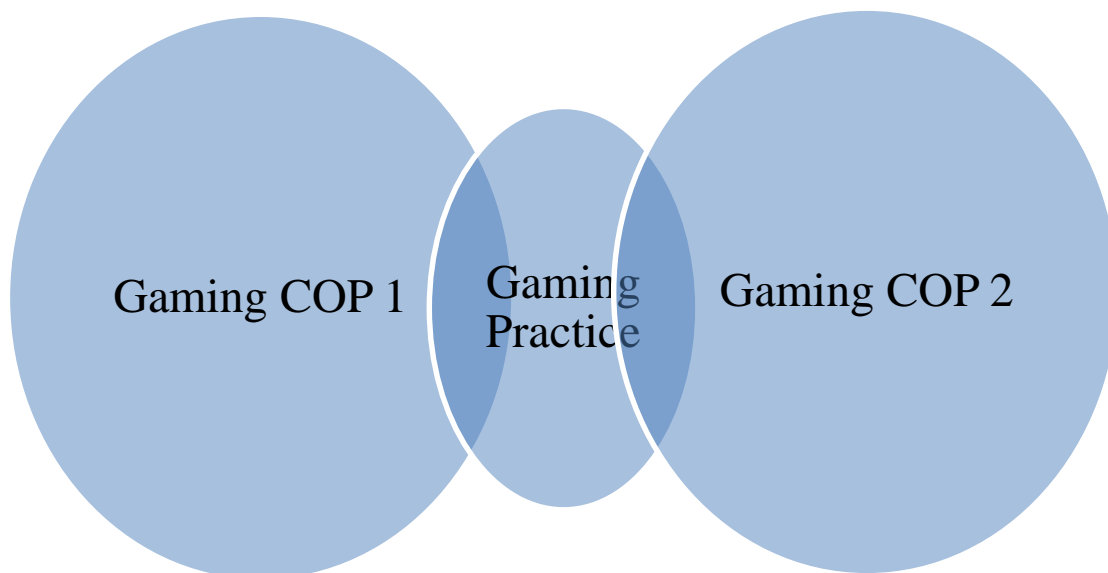
7.4.1 Boundary practices

Boundary encounters that take place continuously between members of different COPs may result in the emergence of a new COP. Wenger (1998) indicated:

> If a boundary encounter – especially of the delegation variety – becomes established and provides an ongoing forum for mutual engagement, then a practice is likely to start emerging. Its enterprise is to deal with boundaries and sustain a connection between a number of other practices by addressing conflicts, reconciling perspectives, and finding

resolutions. The resulting boundary practice becomes a form of collective brokering. (p. 114)

Based on the example taken from the encounters that Ali goes through with students who are in other classes and senior students as they talk about their out of school gaming practices during recess and at other times in school (see Section 7.3.2), it is clear that these students share a similar practice in gaming which can regarded as a starting point for a connection to be established between them. Even though their conversations about computer games are only considered as boundary encounters, due to the fact that they do not know one another well enough and they only meet each other by chance, these encounters have the potential to develop from 'boundary encounters' to becoming 'boundary practices', and eventually developing into a new community of practice.

Figure 15. Boundary practices as source to connect gamers from different COPs together (Wenger, 1998, p. 114)

The sharing of out of school gaming experiences between students who belong to different gaming communities during school, as described by Ali, can also be considered as brokering. If these encounters in which students who are members of different COPs (these students belong to different gaming groups out of school) share their gaming experiences together with one another take place regularly on an ongoing basis, it may result in 'collective brokering' and the emergence of a new COP that consists of students who share similar practice in gaming. This, however, would require Ali and the other students to continue to share insights and experiences with each other, to be able to sustain their relationships and to be mutually engaged with one another. In his explanation of the

potential for the formation of a new COP resulting from ongoing encounters between members of different COPs, Wenger (1998) explained that aside from connecting different COPs, boundary practices can also be a catalyst for the formation of a new community of practice of its own by bringing practices of different COPs together. The possibility of connections being established between different COPs that share similar practice and the prospect of the emergence of a new COP as these communities are brought together by boundary practices is visualised in Figure 15 based on the example of Ali and the other students at VNSS who are connected by their gaming practice.

7.4.2 Peripheries

Peripheries are considered to be a COP's open access. They provide opportunities for non-members to experience some levels of participation in a community without having to become full members of a particular COP. According to Wenger (1998):

> Communities of practice can connect with the rest of the world by providing peripheral experiences – of the kind I argued newcomers need – to people who are not on a trajectory to become full members. The idea is to offer them various forms of casual but legitimate access to a practice without subjecting them to the demands of full membership. This kind of peripherality can include observation, but it can also go beyond mere observation and involve actual forms of engagement. (p. 117)

Participation at the periphery of a practice provides opportunity for connections to be performed between members of a COP and non-members, as well as an opening for both parties to learn from each other's practices (Wenger, 1998).

Elisha's experiences on Facebook provide an example of how participation at the periphery of a practice can lead to connections being made between different communities, learning may occur and, full membership may result. Early in this study, Elisha did not have a Facebook account, so I asked her:

*Interviewer:* *So…basically why are you using these technologies?*

Elisha: *Hmm (pausing)…it certainly makes life easier, social life…Hmm (pausing)…yeah! It's easier to communicate with everybody else when you use your mobile phone or when you use the internet to chat. Some people even use Facebook.*

This shows that even though Elisha did not have a Facebook account, she had some knowledge about the social media site based on information from her sister and friends in school. It was through her

participation at the periphery of the practice that Elisha knew that Facebook can be used as a medium of communication and also as a way to connect with friends. Through her observation of her sister, Elisha had a basic idea of what Facebook was about and the opportunities that the site had to offer. According to Elisha, Facebook enabled her sister to keep in touch with friends regardless of their locations. Elisha also believed that Facebook made life easier for her sister.

The knowledge that Elisha had about Facebook illustrates how COPs may provide opportunities for non-members to experience some legitimate access to the practices of the communities as well as connecting its members to the world. However, due to the legitimate but restricted access afforded to her as a non-member, the information that Elisha had about Facebook was still very limited in comparison to the knowledge of her sister and friends who were actual users of the social media site. When Elisha became a user of Facebook, her knowledge about the social network site improved. This was evident in the final interview conducted with her where Elisha was able to describe her practices on Facebook, including using Facebook for maintaining relationship with friends from primary school, playing games such as Zombieland, the Sims Social and Gardens of Time, and utilising her own class Facebook group for the purpose of socialising and studies.

This data indicates that initial participation at the periphery of a practice can connect members of a COP with non-members and the COP as a whole with the world, and provide them with the chance for learning. Elisha's peripheral access to Facebook practice, based on her observation of her sister and information gathered from friends, enabled her to understand about the practice better. This eventually led to full participation as she started her own Facebook account. This indicates the possibility and potential of peripheries as non-members progress through the stage of legitimate peripheral participation to a more central involvement and finally becoming full functioning members of a community of practice. As Wenger (1998) explained it, there are several layers of participation involved in a community of practice, ranging from participation at the core of a practice as a full functioning member to a very loose participation at the periphery of a COP. Each of these layers provides the prospects for learning. Based on the example of Elisha's Facebook practice, Figure 16 illustrates Elisha's progression from being a non-member of a COP participating at the periphery of a practice to becoming a full functioning member of a COP.
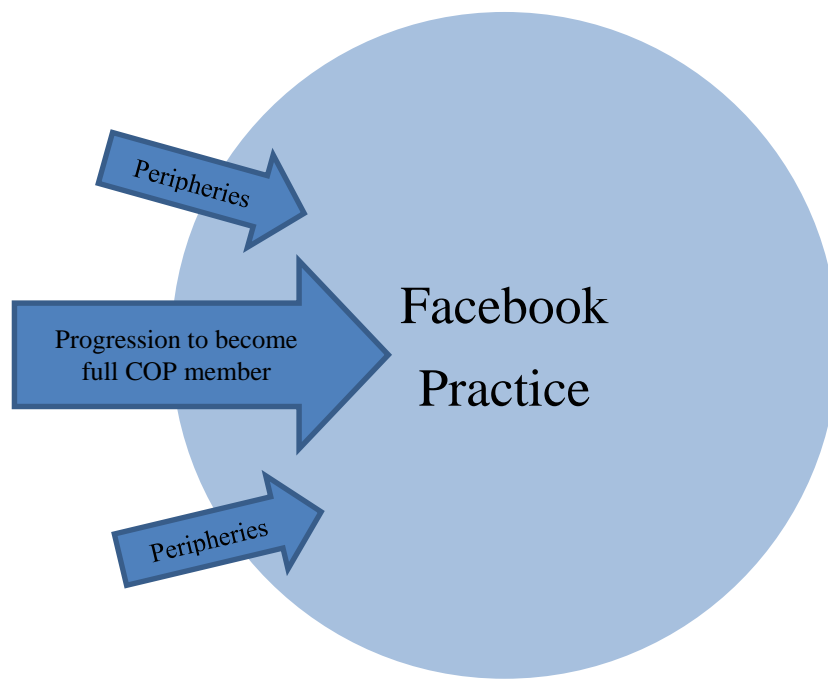
Figure 16. Connections formed based on the participation at the periphery of a practice (Wenger, 1998, p. 114)

7.5 The Continuity of New Media Practices across in School and out of School Contexts

Based on the evidence of the student participants at VNSS and KLSS, there are numerous COPs that exist within the school context alone. 'New media' itself is a huge categorisation in which student-based communities can include those based on the classes that students enrol in, such as class 1A, 1B and 1M, the Photography Club, gaming groups, the social media communities and technology enthusiast communities. As shown by the student participants, even in school, they belong to different COPs based on their shared interest and practices in new media. Students' belonging to more than one COP indicates their multi-membership of different COPs during school. For instance, Amanda is part of the class Form 1A student community, who work together during the ICTL class and in other classes. She also belongs to the Sims Social community with students from different classes who regularly meet at the canteen during recess to share their progress and experiences of playing Sims Social with each other. Similar to Amanda, Ali participates in the class Form 1B community with his fellow classmates and he is also a member of the gaming community, together with Joey and other close associates who regularly meet to share their online gaming experiences with each other during school.
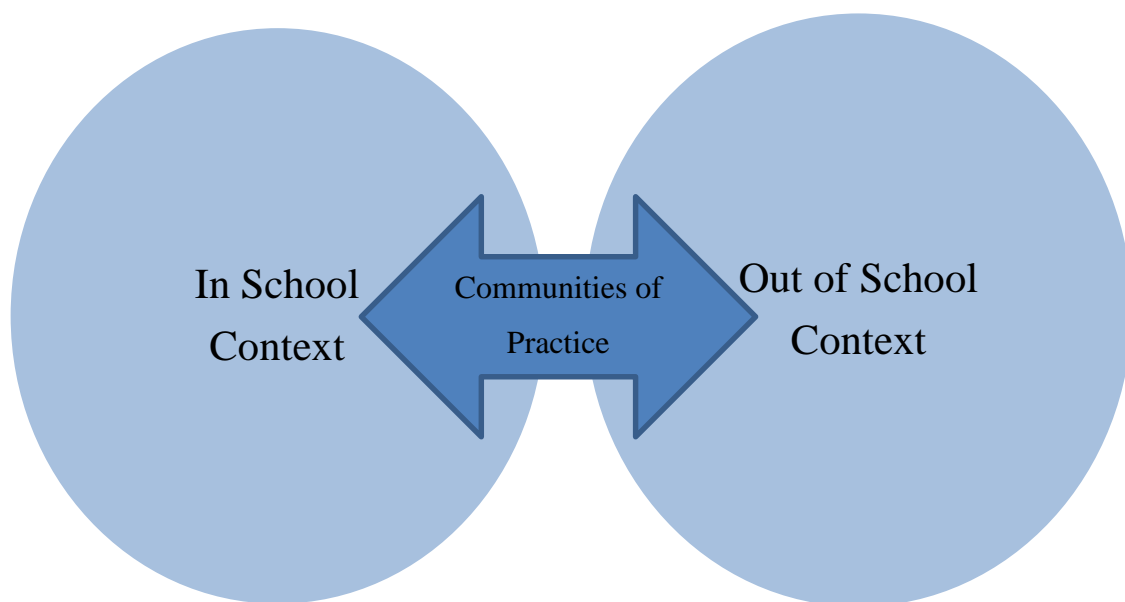
Out of school, the student participants are members of several other COPs as they participate in different digital media practices. This is evident in Donald's belonging to his church COP as well as his own class COP on Facebook. It is important to note, however, that some of the practices that students engage in when out of school are actually a continuation of the same practices that they participate in during school. For example, students in class Form 1A at VNSS and students in class Form 1M at KLSS are members of their respective class COPs during school. They engage in a variety of practices with each other during the ICTL class and during other classes as they work together to accomplish their tasks. According to the student participants, many of their friends also share a similar interest in new media technologies. These class-based communities that exist during school are sustained and continue out of school as students participate in their own class Facebook groups. As discussed in Section 5.3.4 and Section 6.2, the student participants at VNSS and KLSSS use their class Facebook groups to socialise, to discuss their homework, to talk about happenings in school and to share information, images and videos with each other.

I found that some of the practices that the student participants participate in during school are sustained and they continue across the out of school context. However, the forms and ways in which the practices are carried out by the student participants and their peers during the ICTL class, and possibly in other lessons, are different from their out of school practices. During school, the interactions they have with each other are face to face. Students come to school, they study in the same class and work together with one another to complete the tasks assigned to them by their teachers. As observed, the discussions they have during the ICTL class are cautiously performed as students are expected to observe their discipline or risk upsetting the ICTL teacher.

Between classes, or while waiting for their teachers to arrive, the student participants and their peers talk with one another about new media and other subjects. But the opportunity to socialise and to talk about their interest in new technologies is limited to the period before school begins, between classes, during recess and after school ends. At other times during school, students have to go through the rigour of school's practices which include attending different class lessons and performing tasks assigned by teachers. In contrast to school, most of the interactions that the student participants and their classmates go through with each other out of school are in technologically mediated form. They communicate through the use of mobile phone to call and text each other, and use email and social media. They have considerable autonomy to engage in practices such as discussing school assignments and socialising with one another using their class Facebook group. Out of school,

students also have better opportunity to engage with one another over an extended period of time compared to when they are in school.

The findings, based on the case studies conducted with the student participants at VNSS and KLSS, are consistent with Wenger's (1998) argument pertaining to the 'indigenous enterprise' which the student participants found themselves in. According to the COPs perspectives, the development of a community is contextual since it progresses within broader historical, social, cultural and institutional contexts (Wenger, 1998). Taking into account these contextual considerations, we should understand that a COP's practices and the ways they are performed are very much influenced by the community's conditions, resources and constraints (Wenger, 1998). For example, as highlighted in Chapter 5 when discussing VNSS students' COP during the ICTL class, students respond to the class conditions and the demands imposed to them by the ICTL teacher by maintaining the accepted noise level and discipline, or else they risk making the teacher upset. Amanda, Elisha, Donald and their classmates also deal with the shortage of technological resources at the computer lab by willingly sharing computers with each other during the ICTL lesson.

In School Context — Communities of Practice — Out of School Context

Figure 17. Students' community of practice is sustained and continued across the in School and out of school contexts

Similarly, the student participants are aware of their situation and try to suit the school conditions that they find themselves in. The student participants at VNSS accept the fact that, other than during the ICTL class, they do not have the opportunity to use digital technologies at other times during school. In contrast, students at KLSS have better technological access during school, but they have to abide by the school's rules and regulations which prohibit them from using computers and the internet at the computer labs to access social networking sites, play computer games or use other forms of digital entertainment.

The conditions that the student participants experience in school are completely different from the conditions out of school. They have greater technological access and enjoy more freedom to engage in a variety of technological practices when at home and during other times out of school. However, differences in the way practices are performed in and out of school do not limit the COPs to continue across both contexts. This evidence suggests that as members of COPs, the student participants and their peers are able to adjust themselves to the situation and negotiate their enterprises based on resources and restraints that they need to deal with. This enables them to sustain their practices across in and out of school contexts. Based on the example of class Form 1A COP, Figure 17 shows how a COP is sustained and continues across the in and out of school contexts.

CHAPTER 8: YOUNG PEOPLE'S FORMATION OF IDENTITY

Young people's formation of identity resulting from their use of digital technologies in and out of school is another focus of this study. Identity is considered to be an integral part of a COP. It is derived from one's belonging to, and participating in, a community's shared practices (Wenger, 1998). In COPs, identity is both individual as well as collective, resulting from everyday encounters which include our experiences as members of communities of practice. Formation of identity, according to Wenger:

> It is shaped by belonging to a community, but with a unique identity. It depends on engaging in practice, but with a unique experience. In other words, it is as misleading to view identities as abstractly collective as it is to view them as narrowly individual. (Wenger, 1998, p. 146)

Not only are our experiences of identity based on participation, but also on our non-participation (see Section 3.5). According to Wenger, as well as being actively involved as participants, we are also non-participants in numerous encounters in our everyday lives. Yet these experiences of non-participation are influential in shaping us as individuals (Wenger, 1998). In this chapter, the students' identity based on their everyday experiences as participants, as well as non-participants, in new media practices in and out of school is closely examined.

8.1 Young People's Use of New Media in School and out of School and Their Formation of Identity

In Chapter 7, issues pertaining to the multi-memberships of COPs that the student participants of this study belong to were discussed. These multiple memberships raise a question about the students' sense of identity. The following research question is concerned with this issue of identity:

- How does young people's sense of identity develop as they participate in new media practices in and out of school?

According to the COPs perspective, being in a COP means that the formation of self-identity is based on belonging to that community and engaging in its associated practices (Wenger, 1998). Wenger (1998) explains:

> There is a profound connection between identity and practice. Developing a practice requires the formation of a community whose members can engage with one another and thus acknowledge each other as participants. As a consequence, practice entails the negotiation of ways of being a person in that context. This negotiation may be silent; participants may not necessarily talk directly about that issue. But whether or not they

address the question directly, they deal with it through the way they engage in action

with one another and relate to one another. (p. 149)

The formation of identity is ingrained in one's participation in communities of practice and is characterised through (a) negotiated experience, (b) community membership, (c) learning trajectory, (d) nexus of multi-membership and (e) relation between local and global (Wenger, 1998). Each characterisation is discussed in the following sections based on the data collected from the student participants of my study.

8.1.1 Identity as negotiated experiences

Identity as negotiated experiences refers to how we see ourselves, as well as how the communities regard us based on our living experiences as members of COPs (Wenger, 1998). It is through our participation and reification in the practices of COPs that we develop our identity. In his example, Wenger explained that through their experiences as members in the claim processing COP, the claim processors were able to identify what was important to them and what was not, who to refer to in case of any arising matter and each other's competencies and characters. This instance implies that identity is not formed only through one's image projection or solely based on the work of reification, but it also comprises the experiences of participation in communities of practice. This signifies the intertwined relationship of the experiences of participation and reification in COPs that provides the basis for the formation of identity (Wenger, 1998).

In relation to my study, the experiences that the student participants have with regard to their use of new media technologies in and out of school influence the shaping of their identities. It is through their engagement with each other in the ICTL class and in other classes during school that they develop values such as trust and cooperation. This is evident in the way the student participants perform their tasks during the ICTL class. Despite most of the tasks assigned to them being individual tasks, students prefer to work together in groups. The student participants share ideas, advise one another and perform their tasks together. Instead of being dependent on the ICTL teacher, the student participants at the Valley National Secondary School (VNSS) are more inclined to turn to their peers if they need any assistance. This is evident in the way Donald always turns to Amanda and Elaine for help when experiencing difficulties during the class.

It is through their experiences of participating in shared practices during the ICTL class that students establish understanding of each other's competencies. Based on their experiences, the student participants and their peers develop a sense of mutuality and trust for one another. The students know who to trust and who to turn to when in need of assistance or advice. The highly competent and trusted individual is placed at the centre of the practice during the ICTL class and is made a point of reference by the other students. This is evident in the way Amanda is highly regarded by other students in class Form 1A for her knowledge and proficiency with new media. Amanda's approachable and helpful nature also makes her a trusted friend. As Donald described during the interviews conducted with him, Amanda is regarded as a 'Master' and the right person to turn to if he or the other students encounter problems during the ICTL class. This instance signifies Amanda's importance in the Form 1A students' COP and her position at the centre of the practice. This suggests that the student participants and their peers negotiate their identities based on their experiences as members of COPs.

One striking difference between the student participants at VNSS and the Kuala Lumpur Secondary School (KLSS) is in the identity that is shaped based on their experiences of attending the ICTL class. Except for Elisha, who is positive about the ICTL class, the other student participants at VNSS are sceptical and negative when asked about the lesson. For instance, even though Amanda admits that the ICTL lesson is useful, she prefers not to attend the class if she has the choice to do so. On a more extreme stance, Ali and Donald claim that they do not like the ICTL class and argue that they do not benefit from the lessons attended. In contrast to the student participants at VNSS, Suresh and Vincent, and presumably many of their peers at KLSS, are more positive towards the implementation of the ICTL class. Suresh and Vincent strongly believe that they benefit from attending ICTL lesson. Even though they are familiar with new media, as they have been exposed to technologies such as computers, the internet, mobile phone and video games since an early age, Suresh and Vincent still consider that they have something new to learn during the ICTL class. This is totally different to the claim made by Ali and Donald, who state that the ICTL class that they attend is mostly a mere repetition of the knowledge that they already have based on their experiences of using new technologies.

The contradicting identities and attitudes shown by the student participants at VNSS and KLSS are possibly partly influenced by their experiences of attending the ICTL class in their respective schools. In a way, the student participants' identities and attitudes depend on how the ICTL lesson is taught and implemented at their respective school. As revealed by the students in this study, and discussed

in Chapters 5 and 6, students' experiences during the ICTL class are very much influenced by the teachers' knowledge and attitudes towards new media, the pedagogical approaches used during the ICTL lesson, and the time at which the class is conducted. It is through their experiences that the student participants at VNSS and KLSS negotiate identities and develop either positive or negative attitudes towards the ICTL class. This finding serves as a reminder to policy makers and schools of the need to focus on important factors related to the implementation of the ICTL lesson in order to ensure the success of the class. This includes the need to continuously enhance teachers' knowledge and proficiency with new media through the organisation of in-service training programmes and to effectively implement the ICTL lesson by taking into consideration learners' needs, in order to ensure positive learning experiences among students. Such engaging learning experiences may positively affect students' identities and attitudes during the ICTL lesson.

Another instance in which the student participants negotiate their experiences and develop their identity is inherent in the ways they create meaning based on the use of new media technologies in their daily lives. It is through their negotiated experiences of participating in COPs in and out of school, that they make sense of the importance of new media technologies in their everyday life:

Donald: *Oh…it's like…we are all modern…so everyone has computers, everyone has cars, everyone has bungalows…so it's normal for us to have technologies in our daily life…and…yeah!*

Elisha: *Hmm (pausing)…let's say even if we are far away we can still talk to one another…we can actually see each other through Skype. I mean like…even though the distance between us is far…it can bring everyone closer to each other.*

Donald, Elisha and the other students create meaning of new media that is significant in their process of identity formation based on their experiences of using digital media technologies. In and out of school, computers, the internet, mobile phones, gaming consoles and other technologies are considered as important tools for them. The students use these technologies to serve different purposes including for learning, communication and entertainment.

8.1.2 Identity as community membership

Wenger (1998) argues that the identity we project based on our belonging to COPs not only consists of reified markers or artefacts that involve processes and products such as similar ways of doing

things and symbols. More crucially, identity is expressed in the competencies and experiences that we demonstrate as members of COPs. This is further explained by Wenger (1998) who said:

> When we are with a community of practice of which we are a full member, we are in a familiar territory. We can handle ourselves competently. We experience competence and we are recognised as competent. We know how to engage with others. We understand why they do what they do because we understand the enterprise to which participants are accountable. (p. 152)

The identity that we project through our competence as members of COPs can be further understood based on the three core dimensions of identity which are the (a) mutuality of engagement, (b) the accountability to an enterprise and (c) the negotiability of a repertoire (Wenger, 1998). Each of these dimensions is discussed below based on the cases involving the student participants in this study.

It is through their engagement with each other during the ICTL class and at other times in school that the students and their peers learn more about one another. As Wenger (1998) indicated, the mutuality of engagement includes knowing about each other's attitude and learning how to communicate and work together. The fact that the students learn more about other members of their communities as they engage in shared practices of their COPs is explained by Amanda as she describes her relationship with Elisha. Amanda admitted that she had only known Elisha since the beginning of the year and she eventually became a close friend after they were placed together in Form 1A and sat next to each other in class. Amanda said that she frequently talks to Elisha about different topics including about the subjects they learn in school, assignments and also about their interest in new media technologies. Elisha explained how she and Amanda regularly share knowledge and insights with each other about the tasks assigned to them by their teachers, as well as about the latest songs they download and the video clips they watch on YouTube. This implies that the engagement that Amanda and Elisha have as they enrol in the same class, work together to accomplish school tasks and assignments and share interest in digital technologies, provides them with the opportunity to learn more about one another and to eventually bring them closer to each other. According to the COPs perspectives, knowing how to engage with other members of the community, like in the relationship between Amanda and Elisha, is considered as a form of competency which is directly related to identity. The way we engage with one another indicates our belonging to COPs (Wenger, 1998).

According to Wenger (1998), it is through the experiences of participating in the shared practices of our communities that we are inclined to interpret, engage in, make decisions and take into account

the experiences that we consider as useful to us. The student participants at VNSS and KLSS consider the ICTL lesson very differently, based on their experiences of attending the class. In this instance, different participating experiences, as indicated by the students at VNSS and KLSS, lead to two differing perspectives of the ICTL class, which implies that their experiences play a role in shaping them to be the way they are.

As members of COPs, we interpret and utilise the repertoire of our practice which consists of artefacts, symbols, processes and products in our everyday life (Wenger, 1998). This brings us to the negotiability of the repertoire as the third dimension of identity. Wenger (1998) explained that the history of COPs that we develop together with other members of our communities becomes not only a significant part of the practice, but, on a more personal sense, it also becomes an important part of ourselves and our identity. In relation to this study, an example of how the negotiability of repertoire becomes a dimension of identity is inherent in Donald and Vincent's history of participation in new media practices in and out of school. In both contexts, Donald and Vincent are exposed to technologies such as computers, the internet, mobile phones and gaming consoles and use these technologies for a variety of purposes, including for education, communication and leisure. A frequent use of digital media technologies with relatives and friends seems to have a substantial influence on their identity. This is evident in the way they regard themselves as 'geeks' or as digital technology enthusiasts, based on their everyday use of new media.

With regard to the research question related to the identity that young people develop as they participate in new media practices in and out of school, it is evident that experiences as members of COPs are crucial in their negotiation of identity. It is through their experiences of participating in COPs that students are able to project their identities through their competence.

8.1.3 Identity as learning trajectory

Identity based on the COPs perspectives is not an object or an end product, but it is an ongoing work which revolves around our participation and reification as members of communities of practice (Wenger, 1998). In explaining identity, Wenger (1998) used the notion 'trajectory' to specifically describe the temporal nature and the ongoing work of identity. According to Wenger:

In using the term 'trajectory' I do not want to imply a fixed course or a fixed destination.
To me, the term trajectory suggests not a path that can be foreseen or charted but a

continuous notion – one that has a momentum of its own in addition to a field of influences. It has a coherence through time that connects the past, the present and the future. (p. 154)

The trajectories of identity could be further divided into (a) peripheral trajectories – which refer to the participation at the periphery of a practice that does not result in full membership but provides certain insights to a community and influences identity; (b) inbound trajectories – which refer to the ongoing identity of new members who will eventually progress to become full members of COPs in the future; (c) insider trajectories – which refer to fully participating members of a community continuing to negotiate identity based on the new situations they experience in their COPs; (d) boundary trajectories – which refer to sustaining identity across different boundaries of COPs; and (e) outbound trajectories – which refer to new perspectives and identity formed as we move out of our existing COPs (Wenger, 1998).

According to Wenger (1998), we have different understandings of our membership and participation in communities of practice, which are very much influenced and shaped by the trajectory in which we find ourselves. It is in the trajectory of practice, which is temporal, that we continuously negotiate our identity throughout different phases of our life (Wenger, 1998). Wenger (1998) added that we always take into consideration our past experiences and the future when negotiating our present identity. It is through the process of negotiating identity based on our respective trajectory that we determine what is important to us and what is not, which provides the basis for learning. In a way, learning indicates identity. Regardless of the trajectory that we may find ourselves in, we are constantly learning to become the individuals that we ought to be (Wenger, 1998).

With regard to the students in this study, learning occurs as they participate in new media practices in both contexts of in and out of school. Not only do the students learn as they negotiate their enterprises, as discussed in Chapter 5, the participants also learn as they negotiate their identities based on their participation in new media practices in and out of school. The students experience different kinds of learning depending on the 'trajectory' or the temporal context that they find themselves in. Taking an example from Ali's participation in the Garena gaming platform, it is obvious that he does not participate as a member in every forum, room and group that exists there. But the peripheral participation that Ali experiences as he interacts with other gamers at Garena is significant in the sense that it directly shapes his identity. It is through his online interaction with other gamers that Ali learns not to be influenced by the offensive online behaviour showed by some

of them on Garena. This instance signifies that, even though Ali's experience in the peripheral trajectory of many COPs on Garena would not grant him complete access as a full member, Ali benefits from the peripheral access he experiences as he learns how to behave online.

An example of learning that takes place in the insider trajectory can be drawn from Vincent's participation in the COP that consists of members of the KLSS's Photography Club. It is through his participation in the Photography Club with other students, including seniors that Vincent learns to cooperate with others during the club's meeting sessions. According to Vincent, the Photography Club members perform activities such as capturing images and editing them together. They help other members who have difficulty during the club meeting sessions. Aside from learning about photography, Vincent's participation as an insider in the Photography Club teaches him the value of cooperation with others in order to accomplish tasks. Even though COPs do not necessarily promise cooperation among members, being in the insider trajectory indicates one's commitment as a full member of the community. In a way, the interest or commitment that we share with other members of our COPs brings us together. As indicated by Vincent, being in the insider trajectory as a full member of the Photography Club COP teaches him how to work together and cooperate with other members of the club.

Learning also occurs in the outbound trajectory, as we move out from our existing practices. For instance, when asked about how he imagines himself in the future, Vincent indicates that he does not think that he will use new media as much in the future. Vincent states that he depends largely on the use of new media and considers himself a 'geek' mainly because of boredom and lack of opportunities to engage in other activities out of school. Nevertheless, based on his learning from older siblings, relatives and friends, Vincent knows that, besides spending his time using social media or playing computer games, there are other practices that he can engage in, in the future. Vincent believes that he will have better opportunities to engage in other practices, such as going for outings and spending more time with friends as he gets older, which will lessen his dependence on the use of new media. This implies the outbound perspectives that Vincent has over his existing practices and what the future will be as he expects to move out from his existing practices such as socialising through the use of the social media and online gaming to other practices in years to come.

In his explanation of identity based on the example of claim processors, Wenger (1998) stresses the importance of a paradigmatic trajectory that consists of models for new COPs members. The models

that Wenger refers to are those of more senior members of COPs and their history of participation and reification in the practice (Wenger, 1998). He observes that:

> These 'paradigmatic' trajectories are not simply reified milestones, such as those provided by a career ladder or even by communal rituals. Rather, they embody the history of the community through the very participation and identities of practitioners. They include actual people as well as composite stories. Exposure to this field of paradigmatic trajectories is likely to be the most influential factor shaping the learning of newcomers. (p. 156)

In relation to my study, the role of a paradigmatic trajectory in shaping the learning and identity of new members of COPs is inherent in Donald's early use of Facebook. Donald admits that, at first, he found it difficult to understand different functions available on the site. It was through the assistance of his friends, whom he regarded as more experienced Facebook users than him, that Donald learned many new things including ways to upload images and to use the chat function on the social media site. A similar conclusion can also be drawn from Vines (2010), whose study found that new Law faculty undergraduates at a university in Norway benefitted from the learning that they had in the paradigmatic trajectory based on their participation in students' informal colloquiums. The new undergraduate students admitted that they did not know what to expect during the early stage of their engagement in the informal colloquia groups, but they benefitted from the knowledge and experiences of the more experienced students who guided them in their learning (Vines, 2010).

Donald's learning about Facebook from his more experienced peers in the paradigmatic trajectory leads us to a related discussion pertaining to the role of generational encounters in COPs in learning and the formation of identity. According to Wenger (1998), as a COP comprises newcomers and old-timers who come from different generations, they bring with them their own perspectives and identities that vary from one generation to another based on their own history in the practice. The encounters that newcomers and old-timers go through as they negotiate their identities in practice involve a very complex process as it consists of the past and the future and possibly tensions between generations (Wenger, 1998). This point is illustrated by Smith (2006) in an ethnographic study of learning through participation that a novice teacher went through with the assistance of a more experienced colleague. Tensions existed between the student teacher (newcomer) and the more experienced cooperating teacher (old-timer), as they negotiated their practices (Smith, 2006). According to Smith (2006), this was due to the differences in experiences and perspectives that they had related to the teaching discourse.

In my study, a series of generational encounters took place as students with more experiences and competency of new media, and their peers who were less competent continuously negotiated their enterprises and identities during the ICTL class and at other times in school. However, unlike Smith's (2006) finding of the tension that took place between generations due to the differences of perspectives between newcomers and old-timers and the complexity of the encounters, I observed that, the encounters that Donald (newcomer) had with Amanda (old-timer) took place without any indication of tension or conflict between them. This suggests that Donald has a high level of respect for Amanda's knowledge and experiences of new media. This influences the way he accepts Amanda's advice during the ICTL class and at other times in school. However, tension or conflict among the student participants was not observed. It might possibly be due to the friendship that Amanda, Donald, Elisha and the other student participants have.

In a way, this evidence tallies with the findings of the study conducted by Ardichvili (2008), in which it was explained how personal trust that was developed through social interactions between members of a practice turned out to be one of the enablers of COPs. Under such circumstances when generational encounters involving COPs members who are close associates to one another, as in my study, I found that there is no conflict or possibly only a low level of tension arises from the discourse. The encounters that take place between COPs members who are close associates also are simple and straight forward, not complex as indicated by Wenger (1998) in his example of claim processors. However, these observations require further examination to be able to thoroughly explain the influence of relationships between members of COPs on generational encounters and other processes in communities of practice.

8.1.4 Identity as nexus of multi-membership

With regard to my study, it was described in the first part of this chapter that the student participants belong to different communities of practice in and out of school with regard to their use of new media, which indicates their multi-membership of COPs. In this section, the student participants' formation of identities based on their experiences of multi-membership is discussed. The question of how these identities are maintained across the boundaries of practice is also analysed and discussed.

Instead of considering participation in a single COP as an identity, we should regard our multi-membership of several COPs throughout our lives as a more complete form of identity as each and every practice that we participate in contributes to the formation of self (Wenger, 1998). Even though we are inclined to act differently and to suit ourselves to the situation and practice that we are in, this does not mean that we develop multiple identities based on our belonging to COPs (Wenger, 1998). Instead, it signifies the coordination of identity in which our experiences of participation in different COPs interact and influence one another. Wenger (1998) describes our participation in various COPs and the formation of identity as a nexus contending that:

> This notion of nexus adds multiplicity to the notion of trajectory. A nexus does not merge the specific trajectories we form in our various communities of practice into one; but neither does it decompose our identity into distinct trajectories in each community. In a nexus, multiple trajectories become part of each other, whether they clash or reinforce each other. They are, at the same time, one and multiple. (p. 159)

The students in this study participate in various new media practices in and out of school such as during the ICTL class and at other times during school, when using digital technologies at home with their family, playing games online and using the social media plays a huge role in shaping their individuality. For instance, Amanda's facilitating role at home as she assists her mother and aunties whenever they face difficulty with new technologies, and the similar role that she plays in school as she helps her peers at the computer lab during the ICTL class and at other times in school, seemed to shape her identity as an expert in new media technologies.

As our participation in different communities of practice often leads to different kinds of participating experiences, it is necessary for us to coordinate and reconcile these experiences into an identity. According to Wenger (1998), it is a huge challenge to reconcile an identity based on our participation in COPs because of the conflicting demands that these COPs place upon us. In order to reconcile our identity, we are required to continuously strive to look for ways to facilitate the conflicting demands of all the COPs that we participate in and to find the meeting point of these COPs that is integral to our formation of identity (Wenger, 1998). Drawing on the previously mentioned example of Amanda's practices at home and in school, it would seem that she incorporates and reconciles the experiences of participating in both practices into an identity as an expert in digital technologies in both contexts.

Without doubt, there are differences in the practices that Amanda engages in as she does not have the same access to new technologies in and out of school. For instance, at home, Amanda has the opportunity to perform online research for an extended period of time to find solutions to the problems faced by her mother and aunties in their everyday use of new technologies. This is expressed in the following interview excerpts:

Amanda: *And…when other people buy new things, I'll be like the first person to check it, go inside it and stuffs. So they'll be like…how to do this, how to do that.*

Interviewer: *You help them explore their new gadgets…is that what you mean?*

Amanda: *Yeah…like my aunty, she bought e-book…*

Amanda: *She doesn't know how to delete things. So I explore, explore and explore…and yeah…I got it!*

Amanda does not have the same opportunity in school as she only uses computers and the internet for a one hour period, once a week during the ICTL class. However, this does not limit Amanda from assisting her peers during the ICTL class and at other times in school. Lack of opportunity in school leads to some tensions but, it does not deter Amanda's effort to maintain her identity as an expert of new media. This instance implies that Amanda's identity as a technological expert, who is always adept at assisting others in their use of new media, is the meeting point for her membership of different COPs. Her identity as a technological expert allows the coexistence of these multiple memberships and their meaningful reconciliation.

8.1.5 Identity as a relation between the local and the global

While our formation of identity is very much influenced by the practices that COPs members participate in, they should not disregard the role of broader matters in which these practices are located (Wenger, 1998). According to Wenger (1998), even though topics such as the sporting events that we watch, our political allegiances and social standings are global matters that are much broader than our practices, they are also considered as part of the practices that we participate in. We frequently communicate about these global topics with other members of our communities and such discourses have an impact on our formation of identity. This signifies the important role of the interplay between the practices of COPs that we engage in (the local) with broader matters (the global) in the formation of our identity that shapes us to be certain individuals.

In my study, the identity formed through an interplay between the local and the global is inherent in the students' participation in new media practices in and out of school, as well as in the more global topics that they communicate about with other members of their communities of practice. This is evident in the following interview excerpts conducted with Amanda:

Interviewer: *So what do you chat to with your friends between classes or during recess?*

Amanda: *Mostly it's about school stuff.*

Amanda: *Yeah…gossip, homework…like panicking what homework to do, what we have tomorrow.*

Amanda: *Yeah, yeah…I also talk about new songs. I was not really a fan of Korean music. But my friend from class Form 1B is a big fan. So she asked me to listen…and I really like it!*

This excerpt illustrates that not only do Amanda and her peers negotiate about the enterprises that are central to their school practice but also about music. This is a topic that is considered global, but which might mistakenly be regarded as unrelated or not as important to the local school practice. In reality, the conversations that the students have with their peers on broad topics such as music and the latest development in digital technologies during school also have a significant impact on their identity. The formation of self is not limited to what is local to the particular practice but it also involves elements which are broader. As Wenger (1998) explains, not only do we narrowly negotiate the enterprises that we consider as central to our communities, but in a broader sense, we also negotiate other things that are not directly related to our practice, which signifies the interplay of the local and the global in COPs.

8.2 Identity in the Modes of Belonging

The idea of identity based on COPs' modes of belonging was introduced and discussed in Chapter 3 (see Section 3.5.1). In brief, the modes of belonging refer to the work of alignment that we perform in the formation of our identity (Wenger, 1998). It consists of our participation as members of COPs as well as our non-participation. As Wenger (1998) indicated, not only do we take into consideration the practices that we directly engage in, but we also take into account other COPs that we do not belong to. It is through imagination, that we align and extend our own practice by connecting these with the practices of other COPs. This relates to the formation of identity as the way we regard ourselves is not only limited to the things that are within the boundary of our practices, but it also encompasses our imagination of the world (Wenger, 1998).

In this section, the three modes of belonging of (a) engagement, (b) imagination and (c) alignment are further discussed in relation to the identity that the student participants formed based on their participation in new media practices in and out of school. With regard to my study, it is important to analyse students' formation of identity based on the modes of belonging, considering that students negotiate their identities not only through experiences of participating in COPs but also through the experiences of non-participation.

8.2.1 Engagement, imagination and alignment

Besides being an important source of identity, engagement is characterised as being physically and physiologically limited. According to Wenger (1998), our engagement is limited in the sense that there is a physical restriction to the practices or activities that we can engage in. Similarly, our engagement is also physiologically limited because we can only deal with practices, individuals and artefacts that we directly engage with (Wenger, 1998). Based on COPs perspectives, engagement has its own strength as well as its weakness. The strength of engagement is inherent in its power and ability to transform COPs, practices, individuals and artefacts (Wenger, 1998). It is through our engagement with other members of COPs that we are able to negotiate the enterprises of our communities and form identities. On the other hand, engagement on its own is considered a weakness due to its narrowness that limits our capability to relate with the outside. In a way, engagement on its own confines learning and identity to practices, people and artefacts that are within our COPs only (Wenger, 1998).

In Chapter 5, 6 and 7, the student participants' engagement in various new media practices in both contexts of in and out of school was discussed. This include their engagement in COPs during the ICTL class and at other times in school, as well as in online and offline practices out of school, such as playing computer games online, socialising through the use of social media sites and using new technologies together with their relatives at home. It is through their engagement in the new media practices in and out of school that the student participants learn and form their identities. For instance, Elisha learns about the usefulness of social media as she engages with her sister and friends using the MSN Messenger and Facebook in the later stage of this study. She learns that social media can be used as a way to communicate, to make new relationships, to maintain relationships and also for leisure. Elisha's engagement in using social media influences her identity in the way that it makes

life easier for her. She believes that social media enables her to connect with family and friends easily, and also to do other things, including discussing school assignments with classmates online.

Despite its power to transform COPs as evident in the examples involving the student participants of this study, engagement on its own can be physically and physiologically limited. We can be trapped in its narrowness, which may limit our learning and formation of identity if it is our sole source of engagement (Wenger, 1998). However, this limitation could be overcome if we make use of the capability and potential of our imagination, which enables us to expand and connect with other practices beyond our actual engagement in COPs. Wenger (1998) noted that:

> Imagination is an important component of our experience of the world and our sense of place in it. It can make a big difference for our experience of identity and the potential for learning inherent in our activities…My use of the term…emphasises the creative process of producing new "images" and of generating new relations through time and space that become constitutive of the self. (pp. 176-177)

Even though imagination consists largely of the way we regard the world based on our living experience, it should not be mistakenly regarded as being unreal or insignificant (Wenger, 1998). In a way, as a process imagination offers what engagement fails to provide which is expanding learning and identity beyond the limited sphere of our practices (Wenger, 1998). When imagination is performed collectively by members of COPs, it helps to further develop practices and enriches learning and identity.

An example of how learning and identity is transformed through the utilisation of the faculty of the mind can be derived from the way Vincent expands his own new media practices by connecting them with his imagination. Despite being a frequent user of digital technologies and participant in various new media practices, there are many other practices that Vincent does not engage in:

Interviewer: What else can you do with it? (New media technologies)

Vincent: Yeah…e-payment. Like my mom, she's using it for shopping, paying things, buying things online.

Interviewer: Do you shop online?

Vincent: No, no…I don't like shopping…haha (laugh).

This shows that, even though Vincent does not have any prior experience of using new media technologies for the purpose of online payment or purchasing, he knows, based on his observation of his mother and also his imagination, that he can make purchases over the internet. Such imagination

helps him to learn beyond his own engagement in new media practices in and out of school. It is through his imagination that Vincent learns that not only can technologies such as computers and the internet be used for communication, socialising, learning and leisure, but they can also be used for the performance of other practices, including online payment and shopping.

When asked what they think their new media practices will be in the future, the students provided mixed responses to the question. Amanda, Ali, Elisha and Suresh state that new media will be more important to them in the future as they will use these technologies more frequently in their everyday life. Conversely, Donald and Vincent claim that they will not be using new media technologies as much in the future as they will be spending more time engaging in other activities such as being with friends and going for outings with them. Regardless of the answers, their responses suggest the kinds of imagination that they have about their future. Without the ability to imagine, the student participants would not be able to predict or speculate beyond their present engagement in new media practices. Such imagination influences the way the student participants regard new media and more importantly their identities.

Despite its potential for learning and formation of identity, we should note that imagination also has limitations. As Wenger (1998) posits, our imagination may possibly lead to false assumptions that can derail us completely from reality. When our imagination becomes disconnected from actual practices, it is no longer able to contribute to our learning and identity (Wenger, 1998). This brings us to 'alignment' as the third mode of belonging. Alignment generally refers to our capacity to coordinate and organise actions. It is concerned with the way we coordinate different perspectives and actions towards a specific purpose (Wenger, 1998). It is through alignment that we are able to coordinate different experiences, perspectives and actions of COPs members by finding the points of similarity to empower the practice forward (Wenger, 1998).

In my study, an example of how alignment works can be drawn from the way Amanda, Elisha and their peers at VNSS, as well as the student participants at KLSS, coordinate their knowledge and experiences in order to work together on the tasks assigned to them during the ICTL class. Most of the tasks assigned to them during the ICTL class are individual assignments. But this does not stop them from working together with their peers during the ICTL lesson. Students share their knowledge and insights with one another during ICTL class time. This doesn't mean that they copy each other or end up producing identical pieces of work. As Elisha and Suresh suggest, students help one another

to get things done based on what is required from them by their teachers. The student participants share their knowledge with each other, and coordinate different perspectives together in order to align them with the requirement imposed by the ICTL teachers. Suresh said:

Suresh: *The teacher gives us a piece of paper, with instruction and text on it...then we must type it all using Microsoft Word. Sometimes, she asks us to draw tables too.*

Interviewer: *Do you share similarities with your friends when you do things together during the ICTL class?*

Suresh: *Yes...very similar, based on the instructions (given by the teacher).*

Interviewer: *If you are unclear about the instruction, then you would refer to your friends.*

Suresh: *Yes, yes...like that...or ask teacher.*

This indicates how the students align their knowledge, ideas and experiences in order to produce tasks that are similar in style according to what is expected from them. In a way, the style that students adopt during the ICTL lesson becomes part of the identity that they develop based on their participation in the class. Without doubt alignment is highly valued for its power to coordinate multiple perspectives into an action that empowers a community as a whole (Wenger, 1998). Despite its potential, alignment can also be disempowering if it is used in a blatant way such as when forcing others to comply. In such an instance, alignment is considered as a violent power that may separate members of a COP rather than a powerful source for bringing them together (Wenger, 1998).

Considering that each and every mode of belonging has its own strengths and weaknesses, Wenger (1998) suggested that engagement, imagination and alignment be effectively combined and used together.

Based on the example of the student participants' participation in COPs during the ICTL class, Figure 18 indicates how engagement, imagination and alignment work in combination to create a learning community that is integral in the formation of identity. 'Engagement' takes place as the student participants and their peers attend the ICTL class, learn and work together during the class. 'Imagination' is activated as students share their knowledge and experiences of new media with one another during class time. This includes their experiences of participating in other new media practices as well as their experiences of non-participation. 'Alignment' occurs as students coordinate different perspectives in order to comply with the requirement imposed on them by their teachers. As result, they produce tasks that are similar in style, as expected of them by the ICTL teachers. Students

benefit as they learn from their experiences of engagement, imagination and alignment during the ICTL class. These experiences are also significant to their formation of identity.
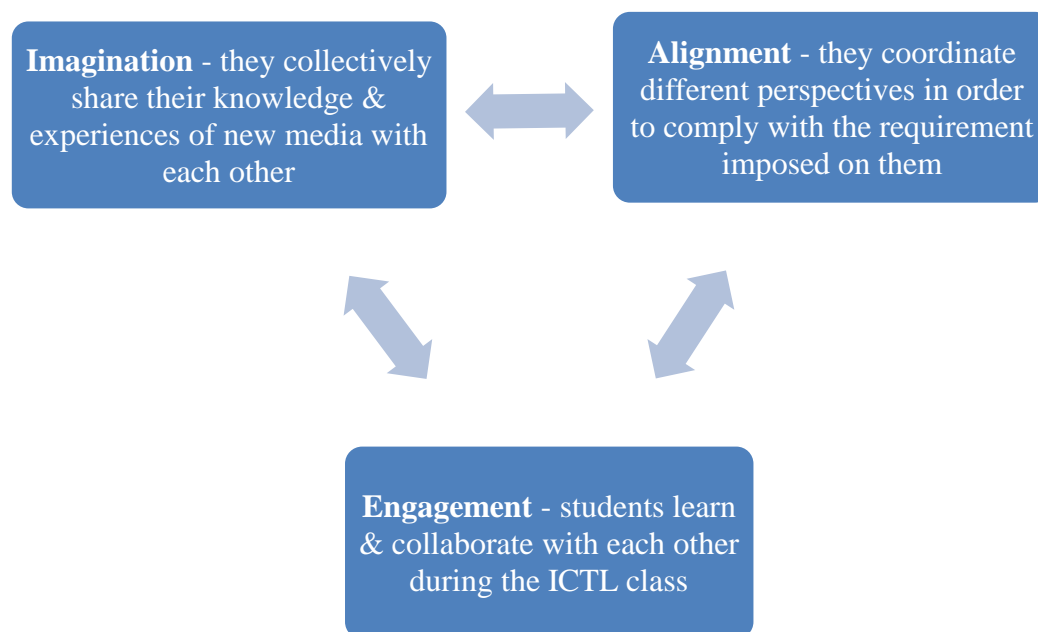
Figure 18. The modes of belonging based on students' participation in COPs during the ICTL class (Wenger, 1998, p. 174)

8.3 Chapter Closing

In this chapter, how young people develop their sense of identity through participation in new media practices, in and out of school, has been discussed. I found that the student participants negotiate their identities through participation in new media practices, and they acknowledge the importance of new media in their everyday lives. They frequently use new media technologies to serve different purposes, including for communication, education and relaxation. The data also implies that learning takes place as students negotiate their identities based on participation in new media practices in and out of school. Similar to identity formation, learning also is an ongoing process.

As the student participants belong to multiple COPs in and out of school, I found that they coordinate and reconcile their participating experiences in these practices into identities. This is apparent in the way Amanda regards herself as a proficient user of new media. Even though her use of digital media in school is relatively different from her usage compared to out of school, Amanda still projects herself as an expert who is always willing to help others who need her assistance. This instance suggests that Amanda reconciles her identity as an expert in the new media both in and out of school.

CHAPTER 9: CONCLUSION

This study was based on my keen interest in the use of new media in everyday life. This interest was largely influenced by my undergraduate background and working experience as an academic who utilises social media to interact with students outside the class setting. Malaysian youths' increased use of new media and the government's continuous efforts to integrate information and communication technologies in their diverse forms into teaching and learning in schools shaped my interest further. In addition, the rapid changes and innovations in the use of technologies in education and in young peoples' lives motivated me to investigate how students use technologies, including computers, the internet and gaming consoles, in both in and out of school contexts. This study has involved very detailed investigations of the digital practices that the student participants participate in, the new media groups or communities that they belong to in and out of school, and the relationships that they establish between both contexts. In addition, my study explored the identities that young people develop, resulting from their use of new technologies.

My study utilised the communities of practice (COPs) theoretical perspectives to analyse young people's use of new media. As a theory of social learning, the COPs theoretical lens has allowed in-depth investigation and analysis of the new media practices of the student participants.

9.1 Young People's New Media Practices

In this study I found that the student participants' use of digital technologies at the Valley National Secondary School (VNSS) was very limited. They only used computers and the internet during the Information Communication Technology Literacy (ICTL) class lesson, which was held once a week over a one hour period. This limited usage was mainly due to the school's poor technological resources. Additionally, the ICTL lessons were conducted without considering students' prior knowledge and experiences of new media. Students were grouped according to their grades or levels of studies (Form 1-5) and not based on their proficiency with the new media. This practice was against the expected ICTL class implementation procedures proposed in the ICTL Guidelines prepared by the Ministry of Education Malaysia (MOE, 2007a). As a result, some of the student participants regarded the ICTL class as a repetition of their prior knowledge and claimed they did not gain anything valuable from the class. Reference to theories about learning indicated that the ICTL class pedagogical content should be built upon students' prior experiences and their ability to

conceptualise, analyse and apply the existing knowledge that they have in different ways and to extend it. According to Yelland et al. (2008), the 'learning by design' framework allows students to learn actively and critically with the use of digital technologies and my findings are in agreement with this view.

Besides technological resources, students' use of new media is also influenced by other related factors such as a school leadership, school policy and support, teachers' professional development and their willingness to incorporate technologies into the classroom (Cowie et al., 2010). In my study, I found that these factors are crucial and can either positively or negatively impact on student participants' use of new technologies in school. For example, the implementation of the ICTL class at VNSS ended due to the lack of specialised teachers. Teachers at VNSS also did not have the opportunity to attend regular ICT training courses. This negatively influenced the way they regarded the use of new media technologies for teaching and learning. In comparison, the participating teachers at the Kuala Lumpur Secondary School (KLSS), who were exposed to regular professional development programs, were more positive towards the integration of digital technologies into the classroom. As a result of positive teachers' attitude and willingness to incorporate digital media in teaching and learning, the student participants at KLSS were also more positive compared with their peers at VNSS when asked about the ICTL class and their use of new technologies at other times in school. Based on such evidence, it would seem necessary for the Ministry of Education Malaysia to provide schools with an adequate number of ICT teachers in order to successfully implement ICTL classes and other new media related programs with students. It is also essential for school leaders to continually provide teachers with the right opportunities to attend professional development programs in order for them to learn new knowledge of digital media and be able to incorporate these technologies in the classroom.

Through observations conducted during the ICTL lessons and interviews with the participants, I found that COPs exist among students in school. During the ICTL class, in other classes and at different times in school, the students involved in this research participate in multiple COPs as they attend the ICTL class and share the same interest in new media. As observed during the ICTL class, the participants enjoyed working together with their peers as they performed the tasks that were assigned to them. When asked, the participants said that they appreciated the opportunity to work with each other, share knowledge and learn from one another during class time. Instead of consulting their teacher, the students prefer to consult their friends whenever they encounter difficulties in the classroom. This signifies the trust that they have with one another as members of COPs (see Section

5.2.2). Therefore, increased recognition of, and use of, peer learning could become a key strategy in improving the use of ICT in schools.

COPs also exist at other times during school as the student participants share similar interest in new media with their classmates and also with friends enrolled in different classes (see Section 5.2.5). According to Wenger (1998), COPs exist everywhere including in school settings, as community members share the same tasks and objectives, interests and hobbies. It is important for teachers to acknowledge the emergence of student-based communities of practice in the classroom and at other times during school. Rather than limiting students' participation in COPs, teachers should provide opportunities for COPs to thrive and facilitate these communities in order to reach their potential. It is important to note that students' participation in COPs in school opens the possibility for social learning to occur. In my study, I found that the student participants and their peers learn from one another as they participate in the shared practices of their communities in the classroom and at other times during school (see Section 5.2.2 and 5.2.5).

However, unlike their limited use of digital media during school, the student participants enjoy more frequent use of new technologies when they are out of school. Not only do they have better technological access and increased opportunities to use technologies such as computers, the internet and gaming consoles, for an extended period of time at home, the students also have the chance to engage in various digital practices of their choice out of school. In some ways, the evidence of my study is similar to the findings of Johnson (2009a), Clark et al. (2009) and Keating et al. (2009), who described young people's use of new media at home and at other times out of school as being more frequent and richer compared with when they are in school. Students also participate in COPs as they use new media technologies with family members and friends out of school. However, unlike the real life engagement that takes place as students participate in school COPs, their participation in out of school COPs occurs in real life as well as through online or virtually. The student participants' engagement in online practices such as playing games and using social media opens possibilities for them to engage with other individuals and in other communities in online spaces. Such engagement illustrates the complexity of young people's digital practices, especially in terms of how new media is used in both contexts of in and out of school. This also shows how COPs theoretical perspectives can be utilised as the basis to thoroughly understand students' use of new media. As Bulfin (2009) and Yelland (2007) argue, such understanding is essential, especially in informing policy makers,

schools, teachers and parents of the digital practices that students participate in and the knowledge they bring to in school and out of school activities.

When asked about their opinion regarding students' use of new media, all the teachers who participated in this study indicated that they believe most of the digital practices that their students engage in out of school are for entertainment purposes. Clark et al. (2009) and Grant (2011) indicated that young people's use of digital media out of school is seen as mainly for leisure. However, in my study, I found that all the student participants engage in new media practices not only for entertainment, but also for socialising and communication purposes, to overcome loneliness and boredom, to build confidence and self-esteem, and to learn. Based on the evidence of my study, and also the findings of earlier studies such as Nardi and Harris (2006), Gangadharbatla (2009), Ahn (2011), Goodstein, (2007) and Barker (2009), it is useful for teachers to acknowledge the potential of young people's use of new media and to build upon their out of school practices in the school curriculum as well as in the teachers' own pedagogical approach in the classroom (Yelland, 2007). It is necessary for teachers to be more open towards their students' digital practices out of school. They should recognise the importance of new media in the lives of young people, understand the technological practices that their students participate in and, more importantly, make necessary changes to utilise new media in the existing school curriculum.

9.2 Young People's Participation in Communities of Practice and Formation of Identity

The student participants belong to several COPs in and out of school. In school, they participate in COPs as they undergo the same routines and perform the same tasks like attending the ICTL class and having to accomplish the assignments assigned by the ICTL teacher. They also express their belonging to COPs based on their shared interest in new media such as gaming communities and technology enthusiast communities. Out of school, these students participate as members of several other communities based on their use of new media technologies.

I found that students' use of new media in and out of school is connected, at least for the student participants in my study, and there is a relationship between both contexts. This data contradicts Levin and Arafeh's (2002) earlier claim that there is a digital disconnect between in and out of school media use. While digital practices that students experience in school are relatively different to their digital practices out of school, it does not mean that these contexts are disconnected. As Yelland (2007) has

pointed out, and as my study suggests, students are inclined to bring their out of school new media experiences to school and share them with their peers during school. Students also bring home the knowledge and experiences that they gain in school to share with their family members and friends. COPs' multi-membership perspectives (see Section 3.3.2) were used to closely examine the relationship between young people's new media practices in and out of school. By taking boundary relations that consist of participation and reification as ways to connect different practices, I found that the students' new media practices in and out of school are connected through: (a) boundary objects – new media technologies are the objects used in both contexts, (b) brokering – some students are capable of performing the role of brokers who connect different new media practices together, (c) complementary connections – students perform connection based on their reificative and participative digital experiences and (d) boundary encounters – conversations and meetings that take place between students who belong to different new media practices (see Section 7.3).

Based on the evidence of this study, it is important for policy makers, schools and teachers to recognise the connections that take place between students' technological practices in and out of school. Teachers should be aware of how connections between both contexts occur. This includes information about the technologies and practices that students participate in when out of school and the kind of knowledge and experiences that they bring to school. Such information is essential, as it provides useful insights for teachers to perform the necessary adjustments to their classroom teaching based on students' prior knowledge and experiences of new media.

In this research, it is also worth noting that some of the COPs that the students participate in when they are in and out of school exhibit the same practices. For example, I found that the student participants are members of their class COP. During school, the student participants and their peers are mutually engaged with one another as they attend the same class, negotiate their enterprise and share repertoire as they attempt to accomplish tasks assigned to them by their teacher. The encounters take place face to face within the real life school context. The class-based community is not limited to within the school context only, but continues in different forms across the out of school context, for example, as the students participate in their class Facebook group. In contrast to during school, students have more freedom to engage with each other out of school. They use the online group to communicate and socialise, share knowledge and experiences and collaborate with one another to accomplish their homework and assignments. In this regard, continuity of students' new media practice takes place across the school and out of school context.

These findings further underline the need for teachers in schools to acknowledge their students' practices of new media including gaming and social media. Instead of limiting their views about students' use of digital technologies as being only for leisure, teachers should encourage their students to participate in new media practices and relate them to learning. For instance, by participating in the same social media group together with their students, teachers have the opportunity to get to know their students better, and more importantly, to facilitate their learning. In this regard, instead of confining learning to only during school, teachers should be aware that participation in social media groups also enables students to learn from one another out of school.

Students' participation in COPs relates to the formation of identity. As the work of identity is ongoing, students continuously negotiate their identities as they participate in various digital media practices in and out of school. These include when they attend the ICTL classes and at other times during school, and also when out of school as they play online games and socialise with friends through the use of social media. As young people participate in multiple COPs with regard to their use of new technologies in and out of school, they reconcile their participating experiences in these communities to project certain identities. For instance, based on their participating experiences in new media practices in and out of school, the student participants agree that digital technologies are integral to their everyday lives. Some regard themselves as geeks who find it difficult to live without their technological gadgets while others see themselves as new media experts who show how experiences are reconciled and identities are formed as students participate in various new media practices across the contexts of in and out of school. It is also worth noting that not only are these particular young people's identities shaped and formed by their direct participation in COPs considered local to them, but their identities are also influenced by the happenings that take place globally, such as the recent development in new media technologies and the latest online trends and music sensations (see Section 8.1).

9.3 Final Remarks

By relying on the critical lens of COPs, in this study, I have investigated the student participants' use of new technologies in different contexts in and out of school. Similar to Prensky (2006), Green and Hannon (2007) and Gee (2007), I found that these young people participate in various digital practices for different purposes in and out of school, which signifies the importance of new media in young people's everyday lives. However, despite efforts to integrate technologies such as computers and the

internet into Malaysian schools (MSC, 2010a), the use of new media for teaching and learning continues to be very limited in the two schools in which I conducted this research.

In the first school site, the technological infrastructure available for students was inadequate. The school also faced problems related to the shortage of teachers who specialised in ICT. The lack of opportunities for ICT professional development is likely to negatively affect teachers' attitudes towards the new media and their use of digital technologies for teaching and learning purposes. Except for teachers' access to computers, LCD projectors, projector screens and the internet connection available in the classrooms, there is not much difference in terms of the technological access for students between the first and the second school. But what is more important is the way in which the second school appeared to effectively manage and optimise its technological resources for the use of teachers and students. Even though computers and the internet were only used by teachers to aid their teaching and to make the classes more interesting, teachers and students in the second school site are generally more positive towards new media. This is probably because of teachers' confidence and increased knowledge of new media resulting from continuous opportunities for ICT professional development programs. The implications for the Malaysian government are clear. There needs to be a national strategy for the development of teacher professional learning in the use of ICT in schools, and this must include the development of their understanding of the ways that students learn through the use of ICT in multiple ways in and out of school.

Putting the issue of availability of technological resources aside, I found that the students' use of computers and the internet in both schools is mainly limited to the ICT Literacy (ICTL) class period, since students are only taught basic knowledge and skills of new media. In addition, in other classes such as Mathematics and Science, new media technologies appeared to be used by teachers merely as teaching aids to help them deliver their class lessons. Even if classes are equipped with computers and an internet connection for every individual learner, it is still difficult for teachers to facilitate students' learning with these technologies, since they seem to lack the knowledge of the pedagogical possibilities for using new media in innovative and engaging ways. UNESCO's (2011b) call for teachers to fully optimise on the potential of new media to help students deepen their learning and to able to create new knowledge seems to be an uphill task, considering that teachers are burdened with the responsibility of accomplishing the learning of heavy course content and preparing students for examinations. Thus, a major overhaul of the existing school curriculum and examination system is required, to provide teachers with the opportunity to facilitate students' learning in a technologically

rich classroom environment. In 2012, an education system 'overhaul' commenced in Malaysia (MOE, 2012). It will be vital for there to be changes in the existing school curriculum and examination system that can benefit students in terms of their use of new media for learning within the school context in the future, otherwise the Malaysian education system risks falling behind other nations in the world who are using ICT in ways that maximise student learning.

Similar to Johnson (2009b), I found that the student participants' use of new media out of school to be more frequent, rich and engaging than their usage in school. All of the student participants in this study have new media access at home and they use different ranges of digital technologies for various purposes, including for leisure, communication, to overcome loneliness and problems and for learning. Unfortunately, the potential for young people's use of new media out of school is often undermined by their teachers who think it is only for entertainment. This means that teachers lose opportunities to build upon the knowledge and experiences their students gain out of school. As Yelland (2007) indicated, in order for schools to stay relevant, it is vital for educators to thoroughly understand the new media practices that young people engage in daily. Teachers should be able to make use of the knowledge and experiences that students acquire out of school, the COPs they participate in, and relate this with the teaching and learning that takes place during school.

While some earlier studies were very critical of ICT use and indicated that students' use of new media in and out of school was disconnected (Levin & Arafeh, 2002; Johnson, 2009c), my study found, that for the students involved in this research, relationships do exist between both contexts, despite differences in digital access and the nature of practices that students engage in. By employing the critical lens of COPs, I found that a relationship is established through boundary objects, as students use technologies such as computers and the internet in both contexts of in and out of school. Also, students are capable of becoming brokers who connect boundaries by influencing practices in and out of school. This is evident as the students bring their out of school new media knowledge and experiences to school to share with their peers. They also take home what is learned during school to share with family and friends.

It is also worth noting that some practices that students engage in continue across the boundaries of in and out of school. As shown in this study, the students' participation in their class COPs at VNSS and KLSS takes place not only in school, but also out of school. In school, the students' participation occurs face to face as they assist one another, discuss works assigned to them by their teachers, and

chat about topics of interest. Out of school, their participation is different, as they use the social media sphere to connect with each other. The students actually participate in the same class COPs that are sustained across the boundaries of in and out of school. It is important for educators to acknowledge such communities and to be able to take advantage of them in order to be connected with their students, not only in school but also through online space out of school. Teachers may well need to use social media to connect with their students and ensure that they use online learning sites and the internet more often.

According to UNESCO's (2011a) global research on young people's learning, the way young people learn today is different from the past and changing rapidly. Students prefer to learn socially by collaborating with one another regardless of the context that they find themselves in whether in or out of school. This appears to be the case of the student participants involved, as I found that, their learning is situated and occurs socially as they participate in COPs in and out of school. For instance, in the ICTL class, students prefer to turn to their peers for assistance whenever they face difficulty, rather than seeking advice from a teacher. They were also observed to enjoy working with one another in groups as they try to accomplish learning tasks. Similarly, the students also participate in their class Facebook groups, online forums and other virtual communities when they are out of school. This indicates their belonging as members of COPs in and out of school. As explained by Wenger (1998), in COPs, learning is social and it is situated in one's active participation in shared practices of the communities.

In my study, I found that some teachers were simply not aware of the existence of student based COPs in their classes and at other times in school. Even if they are aware of the existence of these communities, they do not actually realise the unlimited potential of COP as an untapped resource for social learning. In their communities, the students collaborate with each other, share resources, email, chat, Skype, Google and learn. Thus, not only should educators acknowledge the existence of student based communities, but more importantly, they should provide opportunities for learners to thrive through active participation in shared practices of COPs in and out of school. The challenge for educators in the future is for them to maximise the learning opportunities for the use of new media that will continue to evolve. As new media forms continue to excite and engage young learners, teachers in schools will need to shift their practices to recognise that young people's use of new media in and out of school is strongly connected and has untapped and rich potential for the future.

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APPENDIX 1: INTERVIEW QUESTIONS

Interview 1: The Main Participants (Group 1)

1. Tell me about yourself.
2. Describe the technological practices that you participate in during school and out of school.
   a. What are the technologies that you use during school and out of school? (i.e. computer, internet, mobile phone, video games etc.)
   b. Why are you using these technologies during school and out of school?
   c. How digital technologies are used during school and out of school?
3. Describe the communities that you belong to with regard to during school and out of school technological practices.
   a. Who else are involved as you participate in these technological practices? (i.e. Identify friends, groups or communities that you relate to as you use digital technologies)
   b. Describe the nature of your relationship with other members of the communities with regard to during school and out of school technological practices. (i.e. mutual engagement, joint enterprise and shared repertoire)
4. How do you express your memberships and identities as you participate in during school and out of school technological practices?
   a. What it means to be with each other in during school and out of school technological practices?
   b. What are the practices / beliefs that you share with each other as you participate in during school and out of school technological practices?

Interview 2: The Main Participants (Group 1)

1. How during school and out of school technological practices are similar and / or different to each other?
   a. What are the similarities between during school and out of school technological practices? (i.e. Nature, purpose, time etc.)
   b. What are the differences between during school and out of school technological practices? (i.e. Nature, purpose, time etc.)
2. How during school and out of school technological practices are connected?

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a. How continuities are created across boundaries of during school and out of school technological practices?

b. What are the elements that connect during school and out of school technological practices? (i.e. Boundary objects, brokering etc.)

3. How do you reconcile during school and out of school technological practices into an identity?

a. How do you see yourself as you participate in during school and out of school technological practices?

b. How are your past and present experiences in during school and out of school technological practices shape the way you will be in the future?

Follow up Interview for Participants in Group 1

1. What are the new media technological practices that you participate in during school?

a. What are the new media technologies that you use during school?
   - Computer, the internet etc.

b. Why do you use these technologies? (For what purpose?)
   - Classroom activities – performing class related activities, learning etc.
   - Individual activities – doing own things.

c. How do you use these technologies?

   Rules and time of engagement – when do you use it and for how long?
   - Functional use – what can you do with it and how do you do it?
   - Meaning maker – what meanings or understandings that you create from your use of new media technologies?
   - Critical analysis – how do your new media practices in school support learning?
   - Transforming understanding – What have you learned based on your new media practices in school and how do you extend that learning?

d. With whom do you use these technologies?
   - Classmates, teachers, friends from different classes, seniors etc.

e. Describe the nature of your relationship with them with regard to your new media practices in school.
   - Mutual engagement – How do you do things with one another?
   - Joint enterprise – How practices are negotiated with one another?

- Shared repertoire – What are the artefacts, actions, concepts or tools that are shared with one another?

2. What are the new media practices that you participate in at home?

a. What are the new media technologies that you use at home?
   - Computer, the internet, video games, social media etc.

b. Why do you use these technologies? (For what purpose?)
   - Personal – overcoming social problems, relaxation, sense of belonging etc.
   - Socialisation – making new friends, maintaining relationships, sharing life experiences, being in communities etc.
   - Education – Studying, doing homework / assignments, group discussions etc.

c. How do you use these technologies?
   - Rules and time of engagement – when do you use it and for how long?
   - Functional use – what can you do with it and how do you do it?
   - Meaning maker – what meanings or understandings that you create from your use of new media technologies?
   - Critical analysis – how do your new media practices at home support learning?
   - Transforming understanding – What have you learned based on your new media practices at home and how do you extend that learning?

d. With whom do you use these technologies?
   - Family members, neighbourhood friends, online friends etc.

e. Describe the nature of your relationship with them with regard to your new media practices at home.
   - Mutual engagement – How do you do things with one another?
   - Joint enterprise – How practices are negotiated with one another?
   - Shared repertoire – What are the artefacts, actions, concepts or tools that are shared with one another?

3. How do your new media technological practices in school and at home relate?

a. What are the similarities and differences in your new media technological practices in school and at home?
   - Technologies used, purpose, rules and time of engagement etc.

b. Is continuity exists between your new media technological practices in school and at home?

- The elements that might connect during school and out of school practices – boundary objects, brokering, complementary connections, boundary encounters and practice-based connection.

4. How do you see yourself as you participate in new media technological practices in school and at home?
    a. How do you express yourself as you participate in new media technological practices in school?
        - How do you regard yourself as you use new media technologies in school? I.e. Identity as negotiated experience and identity as a member of a community.
    b. How do you express yourself as you participate in new media technological practices at home?
        - How do you regard yourself as you use new media technologies at home? I.e. Identity as negotiated experience and identity as a member of a community.
    c. How do you reconcile your identity into one or more as you participate in new media technological practices in school and at home?
        - How do you regard yourself in the future based on your past and present experiences with new media technologies? I.e. Identity as trajectories and identity as nexus of multi-membership.

Interview: Other Participants (Group 2)

1. Tell me about yourself.
2. Describe the technological practices that you participate in.
    a. What are the technologies that you use regularly? (i.e. Computer, internet, mobile phone, video games etc.)
    b. Why are you using these technologies?
    c. How these technologies are used?
3. How do you relate with (name of the main participant) with regard to his / her technological practices?
    a. What are the technological practices that both of you participate in?
    b. Describe the nature of your relationship with (name of the main participant) with regard to technological practices. (i.e. mutual engagement, joint enterprise and shared repertoire)

Interview: Group 3 Participants

1. Teacher's profile:
   a. Please introduce yourself.
   b. Where were you qualified from?
   c. How long you have been teaching?
   d. How long you have been at the current school?
   e. What is / are the subject(s) that you teach?

2. Knowledge and experiences of new media:
   a. What are the new media technologies that you use at home?
   b. How do you use these technologies at home? How regular and for what purpose?
   c. Have you been to any in-service ICT training course before? If you do, how many ICT training courses have you attended? When was the last ICT training course that you attended?
   d. Do you think that you benefit from the ICT training courses that you've attended? Why?

3. New media use in school:
   a. What are the new media technologies that you use in school?
   b. How do use these technologies in school? How regular and for what purpose?

4. New media in teaching and learning in school:
   a. What is the main teaching and learning strategy that you currently employ in school?
   b. If you are provided with technological access such as laptop and the internet broadband, would you use them in your teaching? Why? How would you use these technologies?
   c. Do you think your students will learn better with new media technologies? Why?
   d. In term of technological integration in teaching and learning, what do you think will happen in the next 5 years?
   e. In term of technological integration in teaching and learning, what is the change that you hope for?

APPENDIX 2: OBSERVATIONAL PROTOCOL

Observation Protocol – Young People's Use of New Media through Communities of Practice

1. Background information

a. Observer

i.   Name:

ii.   Institution Name:

iii.   Date of Observation:

iv.   Length of observation:

v.   Was the teacher informed about this observation prior to the visit?

2. Classroom Demographics

i.   What is the total number of students in the class at the time of the observation?

ii.   Subject Observed/Descriptive Course Title:

iii.   Scheduled length of class:

3. Observer's reflection / note:

Participant / Minute by minute activity	1-10	11-20	21-30	31-40	41-50	51-60
Ali						
Amanda						

			249			
Donald						
Elisha						

APPENDIX 3: MEDIA DIARY (FACEBOOK GROUP)

APPENDIX 4: INVITATION POSTER

If you are form 1 students who love computer and the internet, gaming or mobile technology... You are invited to participate in a research entitled "Students' Use of Digital Technologies: Practices and Identity"

Express your interest by 14 February 2011 to:
Nurzali Ismail
Contact: 0122092994
Email: nurzali.ismail@monash.education.edu.au
Attractive rewards await. Express your interest today