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USING COMMUNITIES OF PRACTICE TO STUDY MALAYSIAN YOUTHS' USE OF NEW MEDIA

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Abstract
The integration of new media technologies into the school curriculum continues to be an important goal for Malaysia. However, despite continuous efforts to integrate digital technologies in schools, students' use of the media within the formal school context continues to be very limited. Malaysian students' use of digital technologies out of school also remains unclear. This is due to lack of studies being conducted in this area. Thus, this paper argues that an in-depthstudyshould be conducted during school and out of school in order to understand how Malaysian youths use digital media. Such a study can be carried out by using communities of practice (COP) theoretical perspective. COP enables thoroughanalysis to be conducted pertaining to young people's technological practices, the communities that they belong to and how practices move and influence one another across the boundary of during school and out of school communities.

Keywords*: New media; youths; during school; out of school; communities of practice*

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Penggunaan Amalan Komuniti untuk Mengkaji Penggunaan Media Baru Dalam Kalangan Remaja Malaysia

Abstrak
Integrasi teknologi media baru dalam kurikulum sekolah terus menjadi arah tuju yang penting bagi negara Malaysia. Namun, adanya usaha berterusan untuk menyepadukan teknologi digital di sekolah, penggunaan media oleh pelajar dalam konteks sekolah secara formal adalah terhad. Penggunaan teknologi digital oleh pelajar Malaysia diluar sekolah juga adalah tidak jelas.Hal ini sedemikian kerana kurang kajian yang dijalankan dalam bidang ini. Justeru, artikel ini menyarankan satu kajian mendalam dijalankan di dalam dan luar waktu sekolah untuk memahami bagaimana remaja Malaysia menggunakan media digital. Kajian ini boleh dijalankan dengan menggunakan perspektif teori communities of practice (COP). COP membolehkan analisis dilakukan mengenai amalan teknologi para remaja, komuniti kepunyaan mereka dan bagaimana amalan ini saling bergerak dan mempengaruhi antara mereka di luar dan di dalam sempadan komuniti sekolah.

***Kata Kunci**: media baru, belia, sesi persekolahan, di luar sesi persekolahan masyarakat pengamal*

INTRODUCTION

Governments and policy makers internationally strive to integrate new media technologies in education(DEEWR, 2010; MSC, 2010a). This is based on the belief thatdigital technologiesprovide opportunities within the educational context(Koc, 2005; Lim et al., 2003). According to Koc (2005), "There seems to be a common understanding that integration of technology has a productive impact on teaching and learning" (p. 72).At schools new technologies are being incorporated into the curriculum. The integration of the media into the classroom stimulates positive learning experiences among students(Shelly, Cashman, Gunter, & Gunter, 2004). Finger, Russell, Jamieson-Proctor and Russell (2007) added that digital technologies also enable students to engage in the learning process actively by becoming designers and at the same time developing critical, creative and complex thinking.However, it is important to note that despite the opportunities offered by digital media and continuous efforts to integrate new technologies in schools, its impact on students' learning remains relatively insignificant(Collins & Halverson, 2009; Downes, 2004; Hattie, 2009; Selwyn,

Potter, & Cranmer, 2009).Lewin (2004) and Somekh (2004) argued that this is largely due to the rigidity of the existing school practices.

In comparison to the youths' use of digital technologies during school, their use of new media out of school is seen as more engaging and creative (Gee & Hayes, 2010; Johnson, 2009).Lewin (2004) described that the "Use of ICT in the home to support school-related work is limited but valued by pupils, particularly the opportunities to use superior technology and engage in activities for extended periods of time" (p. 151). Even though young people's use of digital media out of school is often described as for leisure, it also offers informal learning opportunities for them to engage in(Johnson, 2009). This includes a broad range of skills and knowledge, including school curriculum (Lewin, 2004).

As youths engage with new media in a variety of contexts every day, it is necessary to understand that their use of the media not only during school but also out of school(Kent & Facer, 2004). This is explained by Yelland (2007) who indicated that it is important to acknowledge and understand students' experiences with new media in different contexts that they are situated in. The young tend to bring with them their out of school experiences to school and at the same time share their schooling experiences out of school.In this regard, in-depth investigations should be made in order to understand how young people use digital media in different contexts during school and out of school. This is important to ensure thorough understanding of youths' use of new technologies and more importantly the kind of adjustments needed in order to improve the existing school practices related to technology integration(Lewin, 2004; Yelland, 2007). This is evidenced as in the last few years scholars in the area of new media integration in education strived to understand students' use of digital technologies during school and out of school and the possible relationship that might exist between both contexts *(Bulfin, 2009; Lewin & Luckin, 2010; Vekiri, 2010)*.

MALAYSIAN YOUTHS' USE OF NEW MEDIA

The implementation of the Multimedia Super Corridor (MSC) signifies Malaysia's vision to transform the nation into a knowledge based society which is empowered by the information communication and technology (ICT)(MSC, 2010b). One of the key MSC flagship applications is the Malaysian Smart Schools(MSC, 2010a).In the Malaysian Smart Schools, ICT isbeing incorporated into the curriculum with the aim of enhancing teaching and learning practices (Yen, Bakar, Roslan, Luan, & Rahman, 2005). However, studies conducted relating to the Malaysian Smart Schoolsindicate that there are numerous issues that need to be addressed in order to ensure its' success(Halim, Zain, Luan, & Atan, 2005; Wahab & Kaur, 2006; Zain, Atan, & Idrus, 2004).As for instance, in a study conducted pertaining to the usability of the courseware in Malaysian Smart Schools, a high percentage of 73 percent from a total of 609 students claimed that they rarely used the courseware during school (Jaafar, 2008).

Earlier studies pertaining to students' use of digital technologies in Malaysia

were mainly focusing on during school technological practices(Abd Mukti & Hwa, 2004; Leng, Wan Ali, Mahmud, & Baki, 2010). The researcher fails to find any study related to young people's use of new media out of school within the Malaysian context. Onlya brief insight was provided by Vighnarajah, Luan and Abu Bakar (2009) who indicated that 95% from a total of 102 secondary school students who participated in their study had access to computers and the internet at home. Another five percent of the students who participated in this study reported that they regularly access computers and the internet in cyber cafes. These youths frequently engaged in social networking activities such as blogging, MySpace and Friendster (Vighnarajah et al., 2009). However, this insight alone is inadequate to describe Malaysianyouths'use of digital technologies out of school. More in-depth studies should be conducted in order to further understand how young people in Malaysia use of new media in different contexts of during school and out of school.

Studies of young people's use of new media should be carried out based on the social perspectives toallow closer examination to be conducted on how new media technologies are actually used by youths for different purposeswithin the 'real-world' settings (Selwyn & Facer, 2010). To achieve this aim, the social theoretical foundation can be employed as it permits researchers to thoroughly investigate different societal aspects related to young people's use of new media including the political, economic, cultural and historical contexts (Selwyn, 2011; Selwyn & Facer, 2010). With regard to this study, it is proposed that research pertaining to the youths' use of new media to be conducted by utilizing on the communities of practice (COP) theoretical perspective. As a theory of social learning, COP allows a thorough examination to be conducted on young people's participation in digital practices, their belonging to communities in both contexts of in and out of school, learning and identity. This is further discussed in the following section.

USING COMMUNITIES OF PRACTICE TO UNDERSTAND YOUNG PEOPLE'S USE OF NEW MEDIA

The notions of situated learning and communities of practice (COP) that were introduced by Lave and Wenger (1991) and later by Wenger (1998)offer practicalframeworks inexplaining different aspects of human practices, learning, community and identity.It is widely used in different fields of specialization including in management(Chindgren, 2005; Conrad, 2008; Somerville & Abrahamsson, 2003) and education(Boylan, 2010; Hartnell-Young, 2006; Mitra, 2008). In brief, Wenger (1998) defined COP as a group of individuals with similar interest, shared practices and goals.According to the COP perspective, we engage in various practices every day, interact and learn with one another for our own survival and to accomplish tasks(Wenger, 1998). It is through our shared practices that we learn from one another and form our identities. In this instance, learning is social and it is situated in our participation of shared practices(Lave

& Wenger, 1991; Wenger, 1998).

Participation is considered as integral in COP. Itsignifies our social experiences and active involvement in different communities that we belong to(Wenger, 1998). It is through participation that we connect with other members of our communities. Wenger (1998) highlighted participation according to COP as below:

a. Participation involves a different kind of relations among members of COP – harmony, conflict, intimate, political, cooperation and even competitiveness.
b. Participation in COP shapes our experiences and also the experiences of those communities we belong to.
c. Meanings are continuously negotiated as we participate in shared practices of COP. This leads to the formation of identities.

In relation to the young's use of new technologies, participation takes place as theyuse digital media during school and out of school. Youths participate in various technological practices as they access computers and the internet in both contexts of in and out of school, play games online or offline and use the social media and instant messaging (Johnson, 2009; Thomas, 2005).

In COP, participation does not exist in isolation but it exists in duality with reification. Participation and reification complement one another and both are inherent in our everyday practices (Wenger, 1998). In brief, reification refers to forms and meanings that are derived from our participation. Wenger (1998) described reification as, "…the process of giving form to our experience by producing objects that congeal this experience into thingness" (p. 58). As for instance, in a study conducted pertaining to young people's use of the social media, the findingimplies that youthsuse social media sites such as Facebook and Instant Messaging (IM) for communication and socialization purposes (Quan-Haase & Young, 2010). Quan-Haase and Young (2010) explained, "Both tools are used as a pastime activity: To have fun, to kill time, to relax, and to provide a sense of escape from everyday pressures and responsibilities" (p. 358). This instance indicates howyouths give form to their experiences and reified their use of the social media as a mean to communicate and socialize.

Reification is a very powerful concept as it provides form to our understanding, making our experiences meaningful(Wenger, 1998). Nevertheless, it's also important to note that reification can also be misleading and potentially dangerous. According to Wenger (1998), "Reification as a constituent of meaning is always incomplete, ongoing, potentially enriching, and potentially misleading" (p. 62). Forexample, the belief that the social media is a useful tool to communicate and socialize as being highlighted earlier might be incomplete considering that it could also lead to the risk of sexual victimization, physical and psychological abuse (Luders, Brandtzaeg, & Dunkels, 2009). This signifies the double-edged nature of reification. It can provide a useful form to our understanding and at the same time it could also be incomplete and misleading (Wenger, 1998).

It is through participation and reification that we connect with other members of COP, negotiate meanings based on shared practices, learn from one another and form our identities (Wenger, 1998). In a study of women and gaming, Gee and Hayes (2010) explored how a young girl named Jade participated actively in the Sims community. She created her own range of clothing for the Sims game, uploaded and displayed her clothing designs and became a designer. Jade eventually became connected to other members of the Sims community. She received encouraging feedback from other members for her clothing designs. Her identity was transformed as she became actively involved in the community (Gee & Hayes, 2010).It was through her active participation in the Sims community that Jade developed her identity.

In this paper, the researcher only focuses on two important concepts of COP which appear to be particularlyrelevant in understanding Malaysian youths' use of new media. The two integral COP concepts that are discussedhere are the dimensions of practice and multi-membership perspectives.Related examples from earlier studies such as Gee and Hayes (2010), Johnson (2009), Kajee (2008), Luders, Brandtzaeg and Dunkels (2009), Oliver and Carr (2009), Quan-Haase and Young (2010)and Yelland (2007)are provided to explain bothconcepts better.

THE DIMENSIONS OF PRACTICE

The ideas of participation and reification are inherent in the dimensions of practice. Instead of looking at participation or practices as properties of an individual, COP considers participation and practices to be shared among members of communities. As discussed earlier, we actively participate in shared practices of our communities in order to survive, to accomplish tasks and to achieve shared goals (Wenger, 1998). In the Communities of Practice: Learning, Meaning and Identity, Wenger (1998) attempted to relate practices with community through (a) mutual engagement, (b) a joint enterprise and (c) a shared repertoire. The dimensions of practice are essential in explaining how members participate in shared practices, negotiate meanings, form their identities and provide a context for learning to occur (Wenger, 1998). This is explained as follows:

a. Mutual engagementbringsCOP members together. COP members are engaged with one another through mutual engagement. Engagement is enabled as members participate in shared practices of COP. COP members might differ in ethnicity, gender or age but they come together to participate in shared practicesin their communities. Based on COP perspectives, diversity among members is acknowledged. However, it is also important to understand that this does not mean that the engagement among COP members is always harmonious. According to Wenger (1998),similarities, differences and conflictsalso occur between members. This is described by Oliver and Carr (2009) in their study of online gaming.There was a sense of responsibility and commitment

among gaming partners as they actively participate in the play. However, conflicts also occurred between partners due to clash in personalities and differences in preferences and priorities (Oliver & Carr, 2009).

b. Participating in shared practices involves a series of negotiations among COP members. Based on COP perspectives, the response to those negotiations is described as a joint enterprise. Wenger (1998) explained that joint enterprise is, "…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" (pp. 77-78). In a joint enterprise, COP membersshare a negotiated enterprise, an indigenous enterprise and a mutual accountability.For instance, in a study of children online learning, Thomas (2005)identified how a joint construction of an online learning community was performed. Children who participated in this study negotiated, collaborated and contributed to their community (Thomas, 2005).

c. Shared repertoire refers to artifacts, expression of membership and projection of identities that are shared by members of COP. 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" (p. 83). Artifacts are produced as COP members participate in shared practices of their communities. It signifiedCOP members' views of the world, their expression of membership and their projection of identities (Wenger, 1998).In a study pertaining to the students' formation of identities in online learning COP, Kajee (2008) explained how students use shared artifacts such as language, names and social cues to position themselves and form their identities.

In relation to young people's use of new media, mutual engagementoccurs as students participate in technological practices during school and out of school. This includes when they use computers and the internet during school to do class assignmentsand other related school tasks and out of school when they play games online, use social networks and participate in online forums and discussions. As students participate in shared technological practices during school and out of school, they involve in a continuous process of joint enterprise in which they negotiate their actions and ways of doing things together. This includes ways how to perform PowerPoint presentations and how to successfully accomplish missions in online games. Joint enterprise signifies their collaboration with one another and how they contribute actively to their COP(Thomas, 2005; Wenger, 1998).Continuous negotiations lead to the emergence of shared repertoire that includesartifacts, expression of membership and the projection of identities. This is evidenced as students use similar language online, express themselves with emoticons and use the same ways of doing things (See Figure 1).

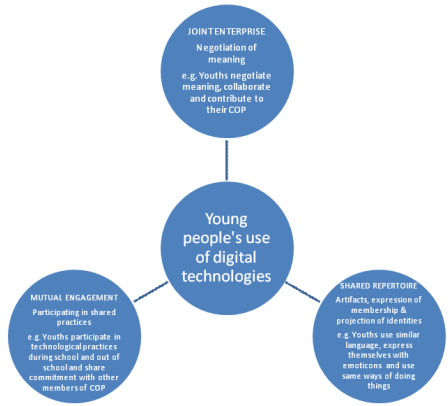

Figure 1: The dimensions of practice as the property of the community (Wenger, 1998, p. 73)

MULTI-MEMBERSHIP PERSPECTIVE

We belong to different COP throughout our life. Wenger (1998) explained that, "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). This situation in which we belong and participate in different communities at any given time is referred to as the multi-membership perspective of COP. Based on the multi-membership perspective, Wenger (1998) introduced the boundary concept. It indicates that even though we belong and participatein different COP, we still permit our form of experiences or reification to cross boundaries, entering different practices. We can be connected to other COP by (a) boundary objects, (b) brokers, (c) complementary connections and (d) boundary encounters and the negotiation of meaning (Wenger, 1998).

a. According to Wenger (1998), boundary objects refer to various forms of reification such as artifacts, documents and concepts. Boundary objects can be shared by different practices. Under such circumstance shared boundary objects connect a practice to another practice. In relation to this study, youths use digital media in different practices that they participate in. As for instance, during school students use ICT to perform school related tasks in the classroom and at the computer lab. Out of schoolthey use ICT to perform their homework and for leisure. In this instance, ICT is considered as a boundary object shared by during school and out of school practices (See Figure 2). This is explained by Kent and Facer (2004) who indicated that students use ICT at school and at home. Though, there were differences in young people'sdigital activities in both contexts and this was largely due to the nature of practices at school and home (Kent & Facer, 2004).

b. Brokering enables connection to be performed by any member of a practice to another practice (Wenger, 1998). A broker connects practices, opening new dimensions in negotiation of meaning and influencing COP practices. With regard to young people'suse of digital technologies, they can be considered as brokers. This takes place as youths use digital technologies during school and out of school. This is explained by Yelland (2007)who indicated thatyoung people usually bring their home experiences with digital technologies to school and share it with their friends during school. In this instance, young people's practices continue across boundaries of in and out of school with some youths capable of becoming brokers. However, it is also important to note that not everyone can become brokers. Brokers need to be highly influential in order to influence other COP members and its existing practices (Wenger, 1998).

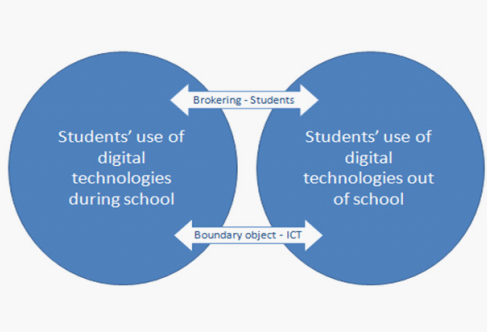

Figure 2: The multi-membership perspectives of students' use of digital technologies

c. Complementary connections refer to the roles of participation and reification in connecting practices across COP boundaries. As both participation and reification complement one another, they offer different forms of connection (Wenger, 1998). Wenger (1998) explained that, "Participative connections offer possibilities for negotiation that can give them the vivid character of a vicarious experience" (p. 111). This indicates how we know about other practices based on our negotiations with members from other communities. For example, an individual who has no prior experience with online gaming knows about it from a friend who is an active gamer(Oliver & Carr, 2009). However, this kind of connection is limited as it only offers partial knowledge and peripheral access to the actual practice (Wenger, 1998). On the other hand, reificative connections enable us to connect without having to mutually engage in the actual practice. For instance, it is possible for a student to learn about graphics through readings from books and other sources available on the internet. However, by relying only on artifacts and not

having mutually engaged, this kind of connection is ambiguous and it can be misleading (Wenger, 1998). Thus, it is important to make use of participation and reification together as both are complementary to one another (Wenger, 1998).

d. Boundary encounters and the negotiation of meaning also could connect practices. Boundary encounters take place in different ways such as through 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). In their study of learning through The Sims computer game, Gee and Hayes (2010) indicated that there were different types of The Sims communities available online. Many of these communities were built for learning. These communities offeredan unlimited source of knowledge including through various links to other communities, software and sites (Gee & Hayes, 2010). Boundary encounters occur as members of a community enter other sites and engage in conversations or sharing of ideas with members from different communities. Meanings are negotiated and two-way connections are formed.

CONCLUSIONS

In order to understand Malaysian youths' use of new media, it is important to look at the digital practicesthat they participate in during and out of school. This is due to the fact that technologies such as computers and the internet are used not only in school but also out of school. It is proposed that such a study to be carried out based on the social perspectives and take into considerations important societal aspects such as community, culture, history, politics and economy. Due to its versatility in understanding different aspects of human practices, learning, community and identity, the researcher suggests that COP to be used as the theoretical lens for research on young people's use of new media.

BIODATA

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REFERENCES

Abd Mukti, N., & Hwa, S. P. (2004). Malaysian Perspective: Designing Interactive Multimedia Learning Environment for Moral Values Education. Educational Technology & Society, 7 (4), 143-152.

Boylan, M. (2010). Ecologies of Participation in School Classroom. Teaching and Teacher Education, 26, 61-70.

Bulfin, S. (2009). Literacies, new technologies and young people: Negotiating the interface in secondary school. Doctor of Philosophy, Monash University, Monash.

Chindgren, T. M. (2005). An Exploration of Communities of Practice: From Lave and Wenger's Seminal Work to a U.S Government Agency's Knowledge Sharing Program Paper presented at the Academy of Human Resource Development International Conference (AHRD) Estes Park.

Collins, A., & Halverson, R. (2009). Rethinking education in the age of technology: The digital revolution and schooling in America. New York, NY: Teachers College Press.

Conrad, D. L. (2008). From Community to Community of Practice: Exploring the Connection of Online Learners to Informal Learning in the Workplace. American Journal of Distance Education, 22 (1), 3-23.

DEEWR. (2010). Digital education revolution Retrieved Mar. 25, 2010, from http://www.deewr.gov.au/schooling/DigitalEducationRevolution/

Downes, T. (2004). Playing and Learning with Digital Technologies - At Home and At School. In A. Brown & N. Davis (Eds.), World Yearbook of Education 2004: Digital Technology, Community and Education (pp. 115-130). Abington, Oxon: RoutledgeFalmer.

Finger, G., Russell, G., Jamieson-Proctor, R., & Russell, N. (2007). Transforming learning with ICT: Making IT happen. Frenchs Forest, NSW: Pearson Education Australia.

Gee, J. P., & Hayes, E. (2010). Women and gaming: The Sims and 21st century learning. New York: Palgrave Macmillan.

Halim, A. H., Zain, M. Z. M., Luan, W. S., & Atan, H. (2005). The taxonomical analysis of science educational software in Malaysian smart schools. Malaysian online journal of instructional technology, 2 (2), 106-

113.

Hartnell-Young, E. (2006). Teachers' roles and professional learning in communities of practice supported by technology in schools. Journal of technology and teacher education, 14 (3), 461-480.

Hattie, J. (2009). Visible learning: A synthesis of meta-analyses relating to achievement. Abingdon, Oxon: Routledge.

Jaafar, A. (2008). Malaysian smart school courseware usability study: The effectiveness of analytical evaluation technique compared to empirical study WSEAS transactions on information science & applications, 5(4), 342-348. Retrieved from

Johnson, N. (2009). The multiplicities of internet addiction: The misrecognition of leisure and learning. Surrey: Ashgate Publishing Limited.

Kajee, L. (2008). Constructing identities in online communities of practice: A case study of online learning. Bern: Peter Lang AG, International Academic Publishers.

Kent, N., & Facer, K. (2004). Different worlds? A comparison of young people's home and school ICT use. Journal of computer assisted learning, 20, 440-455.

Koc, M. (2005). Questioning technology use in educational reform: from ideological, theoretical and practical perspectives Malaysian online journal of instructional technology, 2(2), 72-81.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge: Cambridge University Press.

Leng, E. Y., Wan Ali, W. Z., Mahmud, R., & Baki, R. (2010). Computer Games Development Experience and Appreciative Learning Approach for Creative Process Enhancement. Computers & Education, 55, 1131-1144.

Lewin, C. (2004). Access and use of technologies in the home in the UK: Implications for the curriculum. The curriculum journal, 15 (2), 139-154.

Lewin, C., & Luckin, R. (2010). Technology to support parental engagement in elementary education: Lessons learnt from the UK. Computers & education, 54, 749-758.

Lim, C. P., Teo, Y. H., Wong, P., Khine, M. S., Chai, C. S., & Divaharan, S. (2003). Creating a Conducive Learning Environment for the Effective Integration of ICT: Classroom Management Issues. Journal of Interactive Learning Research, 14 (4), 405-423.

Luders, M. H., Brandtzaeg, P. B., & Dunkels, E. (2009). Risky Contacts. In S. Livingstone & L. Haddon (Eds.), Kids Online: Opportunities and Risks for Children (pp. 123-134). Bristol: The Policy press.

Mitra, D. L. (2008). Balancing Power in Communities of Practice: An Examination of Increasing Student Voice Through School-based Youth-Adult Partnerships Journal of Educational Change, 9, 221-242.

MSC. (2010a). MSC Malaysia smart school flagship application Retrieved Mar. 30, 2010, from http://www.mscmalaysia.my/smartschool/overview

MSC. (2010b). MSC Malaysia: National ICT initiative Retrieved Mar. 30, 2010, from http://www.mscmalaysia.my/

Oliver, M., & Carr, D. (2009). Learning in virtual worlds: Using communities of practice to explain how people learn from play. British journal of educational technology, 40 (3), 444-457.

Quan-Haase, A., & Young, A. L. (2010). Uses and Gratification of Social media: A Comparison of Facebook and Instant Messaging. Bulletin of Science, Technology and Society, 30 (5), 350-361.

Selwyn, N. (2011). Making sense of young people, education and digital technology: The role of sociological theory. Oxford review of education, 37 (1), 1-16.

Selwyn, N., & Facer, K. (2010). Beyond digital divide: Toward an agenda for change. In E. Ferro, Y. K. Dwivedi, J. R. Gil-Garcia & M. D. Williams (Eds.), Handbook of research on overcoming digital divides: Constructing an equitable and competitive information society (pp. 1-20).

Selwyn, N., Potter, J., & Cranmer, S. (2009). Primary pupils' use of information and communication technologies at school and home. British journal of educational technology, 40 (5), 919-932.

Shelly, G. B., Cashman, T. J., Gunter, R. E., & Gunter, G. A. (2004). Teachers Discovering Computers: Integrating Technology in the Classroom (3rd Ed.). Boston, Massachusetts: Thomson Learning, Inc

Somekh, B. (2004). Children's concept of ICT: Pointers to the impact of ICT on education within and beyond the classroom. In A. Brown & N. Davis (Eds.), World yearbook of education 2004: Digital technology, communities and education (pp. 57-73). Abingdon, Oxon: RoutledgeFalmer.

Somerville, M., & Abrahamsson, L. (2003). Trainers and Learners Constructing a Community of Practice: Musculine Work Cultures and Learning Safety in the Mining Industry. Studies in the Education of Adults, 35 (1), 19-34.

Thomas, A. (2005). Children online: Learning in a virtual community of practice. E-learning, 2 (1), 27-38.

Vekiri, I. (2010). Socioeconomic Differences in Elementary Students' ICT Beliefs and Out-of-school Experiences Computer & Education, 54, 941-950.

Vighnarajah, Luan, W. S., & Abu Bakar, K. (2009). Qualitative studies of students' perception on practice of self-regulated strategies in online community discussion. Computers & education, 53, 94-103.

Wahab, M., & Kaur, K. (2006). Towards a Better Understanding of the Need for a Digital School Resource Center in Malaysian Smart Schools. Paper presented at the Konvensyen Persatuan Teknologi Pendidikan Malaysia Ke-19, Langkawi.

Wenger, E. (1998). Communities of practice: Learning, meaning and identity. New York, NY: Cambridge University Press.

Yelland, N. (2007). Shift to the future: Rethinking learning with new technologies in education. New York, NY: Routledge Taylor & Francis Group.

Yen, N. L., Bakar, K. A., Roslan, S., Luan, W. S., & Rahman, P. Z. A. (2005). Predictors of self regulated learning in Malaysian smart schools. International education journal, 6 (3), 343-353.

Zain, M. Z. M., Atan, H., & Idrus, R. M. (2004). The impact of information and communication technology (ICT) on the management practices of Malaysian smart schools. International journal of educational development 24, 201-211.