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## Digital Literacy Competence for Academic Needs: An Analysis of Malaysian Students in Three Universities

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### Abstract

Educators in Malaysia tend to assume that most students today are digital natives (Prensky, 2001); they are considered naturally proficient with digital technologies and environments. However, studies indicate despite students' reliance on technology to collect information and communicate, "a significant number do not appear to use (or possess) the skills we expect digital natives to have" (Bennett, Maton and Kervin, 2008, p. 3). Hence, it is dangerous to over generalize the digital literacy ability and expectations of students. Without these skills, Malaysian students will not be able to cope with diverse ICT modes to access and process information for academic needs and, later on, employment purposes. The objective of this study is to analyse the digital literacy competence of Malaysian students which is needed in order to access and use digital contents for finding information required in academic tasks. The study was carried out as a qualitative focus group study in which three groups were selected, one from three universities in Malaysia, and interviews were conducted after each group had participated in a sequence of Internet based tasks. Using semi-structured questions, participants were asked to describe and reflect on their digital literacy practices during these tasks as well as in their everyday lives. The results of the study revealed that the digital literacy competence of students depended on several factors, including English language proficiency, and the design of multimodal forms in digital contents. To conclude, by analysing the digital literacy competence of students and identifying barriers that hamper them from attaining these skills, educators can find solutions to overcome the stated problem. Hence, the findings of this study will contribute to the development of a digital literacy education framework which will enhance Malaysian students' digital literacy competence.

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## 1. Introduction

After the rapid growth of the World Wide Web in the mid-1990s, transformation of countries from the industrial age towards the knowledge age in which the production, acquisition and flow of knowledge play an increasing and important role in generating and sustaining economic growth has become a hot topic on the policy agenda of most countries including Malaysia. Connectivity to the Internet and access to the information available on the web offer commercial opportunities, greater social participation and awareness, and enable informed decisions (Norris, 2001). Hence, the enthusiasm and motivation for Internet access and usage among youths in Malaysia is a positive step toward the creation of knowledgeable citizens in a nation where knowledge and technology drives the economy. However, mere access to digital contents and resources is not enough to guarantee that youths will use those contents and resources in productive and enriching ways.

Malaysian youths need to transform their beliefs about what it means to be literate in order to cope with the enormous changes of a technological and knowledge driven culture. In this culture, the exchange of information has been accelerated by the emergence of digital modes of information (Janks, 2010). According to Coiro, Knobel, Lankshear and Leu (2008), what it means to be literate has evolved from having the competence to access, evaluate and understand static printed texts to being able access, locate, evaluate, understand and utilize a dynamically rich variety of digital texts available via the Internet. Nonetheless, educators in Malaysia often assume that majority of youths today are digital natives (Prensky, 1998, 2001); a phrase coined by Prensky to identify youths who use technology easily like a naturalized and unthinking process (Bennett, Maton and Kervin, 2008) due to their constant exposure to digital technologies like computers, mobile phones, video games and the Internet. However, studies indicate despite students' reliance on technology to collect information and communicate, "a significant number do not appear to use (or possess) the skills we expect digital natives to have" (Bennett, Maton and Kervin, 2008, p. 3). Thus, while some Malaysian youths might be regarded as 'digital natives', these are by no means characteristics shared by all youths in Malaysia simply because of their exposure to digital technologies.

With increasing rapid knowledge transfer and technological diversity becoming a global phenomenon, it is essential to examine whether Malaysian youths have similar digital literacy skills, like those expected of digital natives, to perform tasks effectively in a knowledge based society with digital information and meanings represented in multimodal forms. From this perspective, the study was conducted to analyse the digital literacy competence of Malaysian youths, specifically students in universities, to effectively access and use digital texts for obtaining information needed for academic tasks. Students who possess higher education and digital literacy skills will most likely be able to retrieve more relevant and useful information, which will then be translated into academic, commercial, political and social advantages. Additionally, this issue has implications on employment opportunities since more and more employers demand that their employees have some digital literacy skills (Janks, 2010). Digital literacy skills enhance students' involvement in society; those who are excluded from such involvement will be left behind and are seriously disadvantaged in their ability to participate in future education and employment opportunities.

## 2. Theoretical background

Literacy practices mediated by digital technology involve interaction with resources in many different modes of representation which require multiple literacy skills. Users are engaged in "interpreting varied contexts of meaning and have to rely on different competences" (New London Group, 2000, p. 35). This means meaningful information is not presented in a single way, but instead presented in multimodal ways. Jewitt (2006, p.17) defines 'modality' as "an organized set of resources for making meaning with semiotic resources." The semiotic resources, also known as multimodal forms, represent meanings in a range of modes inherent in digital technologies, such as image, colour, speech and sound-effect, and movement (Jewitt, 2006; Jewitt and Kress, 2003; Kress, 2000). Lemke (2009) supported this theory because he said these semiotic resources or multimodal forms of language, that often

comprise visual display, sound and music, cinematic movement and abstract animation, usually intersect to create meanings. Digital technology with multimodal resources offer youths new potentials and multiple paths into content. As Jewitt (2006) points out, “each mode offers different potential for representation and communication of meanings” (p.30). As such, digital literacy refers to meaning-making that occur when students interact with, read, analyse, understand, and respond to multimodal forms of digital content. Walsh through her extensive research in the field of literacy (2006, 2008, 2010) reaffirmed this view of literacy in the current digital era as a set of abilities requiring individuals to recognize when information is needed, and to locate, evaluate and use effectively the information when they are engaging with multimodal forms of texts.

The theoretical underpinnings of the study were Luke and Freebody’s (2003) four resources model. The basic premise of the ‘four resources’ model is that the complex demands of literacy require a “broad and flexible repertoire of practices” (Freebody and Luke, 2003, p. 56) as users of information resources engage in reading and writing activities which include the following:

- Coding practice - break the code of written texts by recognizing and using the fundamental features and architecture, including alphabet, sounds in words, spelling, and structural conventions and patterns;
- Semantic practice - participate in understanding and composing meaningful written, visual and spoken texts taking into account of each text’s interior meaning systems in relation to their available knowledge and their experiences of other cultural discourses, texts, and meaning systems;
- Pragmatic practice - use texts functionally by knowing about and acting on the different functions that various texts perform, and understanding that these functions shape the way texts are structured, their tone, their degree of formality, and their sequence of components;
- Critical practice - critically analyze and transform texts by acting on knowledge that represent particular points of views while silencing others and influence people’s ideas—and that their designs and discourses can be critiqued and redesigned in novel and hybrid ways” (Freebody and Luke, 2000: pp. 51-52).

Then in 2007, Walsh, Asha and Sprainge (2007) expanded the four resources model to analyse reading, writing and other related activities of students while they engaged with visual, multimodal texts that are commonly digital. The framework based on Freebody and Luke’s four resources model, as explained in Table 1 below, is applied in this study.

**Table 1: Digital Literacy Practices**

<b>Types of Digital Literacy Practice</b>	<b>Digital Literacy Practices Observed</b>
<b>Coding Practices</b> Operational ICT skills, decoding text, images or diagrams, graphics, and identifying symbolic mode: e.g., icons, hyperlinks, use of colour, animation	Scanning, scrolling, searching – using menu bars and key words, using back and forward commands to navigate between screens, tracing on screen with finger or mouse to identify titles or words.
<b>Pragmatic Practices</b> Using digital web based content sites for related tasks	Using ‘Google’ or other search engines, online dictionaries, enlarging images, printing sections, using hyperlinks, video, animation and other semiotic resources (different modes), relating and comparing one digital content sites to other known digital content site, creating new texts: for example: Powerpoint with digital photos, movie clips, e-texts.
<b>Semantic Practices</b> Exploring digital web based content sites for a specific purpose	Using key words, interpreting symbolic meanings, locating information, acquiring information through visual and multimedia elements, identifying main ideas and background knowledge of digital content site, obtaining facts, understanding inter-textual links.

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**Critical Practice**

Critically evaluating digital web-based content sites

Evaluating authenticity, currency, reliability, and credibility, considering construction of digital content sites based on author, audience or purpose, detecting underlying bias, point of view or ideologies, understanding how visual codes (colour, framing, angles, salience, vectors, etc.) construct meaning.

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Based on this view, digital literacy go beyond acquiring basic ICT skills on using the technology to include the “awareness, attitude and ability of individuals to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources and contents, construct new knowledge, create media expressions, and communicate with others in the context of specific life situations,” (Beetham and Sharpe, 2007, p.15).

In the local context, Kok Eng Tan, Melissa Ng, and Kim Guan Saw (2010) have looked into the online activities and writing practices of urban Malaysian youths. It is found that Malaysian youths do consider the Internet as an essential source of information, and the amount of information these adolescents are interested with is extensive; particularly information sourced from entertainment and social networking sites, like facebook and blogs. Through regular and frequent engagement with web based digital contents and resources, the researchers infer that urban Malaysian youths are proficient in computer and technological skills. On the other hand, they do not use these skills for critical reading, analysis and evaluation of digital contents. Instead, they simply access and download digital contents, if needed for school projects, without being critical of the acquired information. They are active in communicating and sharing messages with their peers on personal, entertaining and light hearted matters, but productive activities like writing longer messages on more serious matters are limited. Mohamad Jafre Zainol Abidin and Majid Pour-Mohammadi (2011) supported these findings when it is discovered in their research that the preferred digital contents accessed by Malaysian students are mainly pleasurable or humourous online reading materials such as movie reviews, comic strips, entertainment gossips or stories. They rarely read more serious digital contents like e-books, e-magazines, e-journals or online news. A comparable study by Samsudin Rahim and Latiffah Pawanteh (2011) confirmed that a higher percentage of the young generation frequently surf the entertainment websites (54 percent) compared to sports websites (27%), the educational websites (22%) or the science and technology websites (22%). It seemed that many youths regard the Internet more as an entertainment medium rather than a source of information to enhance their knowledge. These few studies carried out on Internet usage in Malaysia tell us little about how youths are using digital contents and resources, and their ability to critically use these contents and resources to meet their information needs. The primary objective of this study is analyse the digital literacy competence of students and identify the barriers that hamper them from attaining these necessary skills to effectively access and use digital contents. It is expected through this research that solutions can be proposed to overcome these barriers, and finally, the study will contribute to the development of a digital literacy education framework to enhance Malaysian students’ digital literacy competence.

### 3. Methods

The focus group study was part of a larger study in which a few methods, both quantitative and qualitative, were adopted and triangulated in the research to understand the various phenomena in digital literacy skills application and barriers among students in Malaysian universities. The researchers chose to use the focus group method to gather in-depth information about certain topics in the research, for instance, to analyse the perceptions of students on finding and acquiring information from digital contents and how they applied digital literacy skills to access and use digital contents.

#### Sample

Three focus groups of students were recruited voluntarily, one from three universities, with each group comprising of 8 to 10 participants each. Each focus group lasted approximately 4 hours – 2 hours for the Internet based activity and 2 hours for the interview. Socio-economic background is one important consideration for the sampling because youths who do not have the opportunity to gain benefits from ICT and the Internet usually belong to a marginalised community (Colley, Boetzelen, Hoskins, and Parveva, 2007). E-inclusion is the capacity of individuals and groups to access and use information and communication technologies and services, including access to the Internet,

availability of hardwares and softwares, relevant content and services, and training to develop digital literacy skills (Castells, 2007). Marginalisation occurs when individuals or groups are socially excluded from participating fully in society due to social, educational, economic or accessibility issues; for example, issues pertaining to technology .

Purposive sampling methods were used to ensure the sample met the criteria specified by the researchers as stated in table 2 below:

**Table 2: Criteria of Sample**

<b>Age</b>	Youths between ages of 19 - 23 years (First to Fourth year students)
<b>Gender and Race</b>	Mixed race groups which consist of Malays, Chinese and Indians.
<b>Current lifestyle</b>	Living in student housing and studying in universities which have excellent network and computer facilities for students' use.
<b>Socio-economic background</b>	Limited income due to family background that is considered poor (household income of RM3,000 and below for families with three or more children). All students have either Government study loans or scholarships to support their studies.
<b>English Language Proficiency</b>	Lack proficiency in the English Language; English is used as a foreign language.

The participating students were selected because they are affected by two specific categories of marginalization which are socio-economic background and proficiency in the English language which may exclude them from participating actively and effectively in the wider community; the criteria is adapted from the categories of marginalization as defined by OECD (2008). On the other hand, they do have access to the Internet and digital contents through the network facilities provided by the university. In fact, most of the students owned a computer laptop. Since they are university students, they are also more likely to use the computers and Internet for a variety of meaningful activities and purposes; especially for their academic needs.

#### **Data Collection**

Prior to the interview, all members of every group had participated in a sequence of Internet based digital literacy tasks. The two hour activity required the individual student to access and use digital contents for information gain in order to complete the tasks. The digital contents were carefully selected to represent the needs and preferences of Malaysian youths, based on the results of the survey questionnaire study which was conducted earlier to gather information on the kinds of content that meet the needs and preferences of Malaysian youths. The information in the digital contents was delivered using a variety of multimodal forms such as text, image, sound, animation or video clipping. After the activity, participants were interviewed and asked to describe and reflect on their digital literacy practices during these tasks as well as in their everyday lives. The focus group sessions were recorded and transcribed, then analysed using thematic analysis to identify themes and concepts across the entire data set as well as identify repeated patterns of meaning. The content of each theme were identified by codes which corresponded to the focus group transcripts from which they were taken. Two researchers, one the interviewer of the focus groups and another an advisory committee member, completed the process of identifying themes to ensure reliable and valid results. Each researcher independently coded the data initially, identifying themes and main ideas. Afterwards, the themes and categories coded by each researcher were compared to those of the other researcher and the final list of themes were agreed on.

#### **4. Results and Discussion**

Four major themes emerged from the content analysis in relation to the digital literacy practices which are language barrier, speed, motivation, and preference of multimodal forms. The first theme is the lack of proficiency in the English language. The predominant domain of students in the Internet relate to socializing, gaming and

entertainment. The participants acknowledged the need to have the literacy skills for viewing, reading, responding and developing critical understanding of diverse digital contents that contain multimodal elements for academic purposes, but their lack of English proficiency prohibited them from reading, responding, and understanding critically the information available in the digital contents. On the other hand, the presence of visuals and graphics make students want to navigate further into a digital content site. More than one participant said, “the video or images increased my interest to actually want to read more.” Therefore, the students tried to understand the meaning of images first in order to comprehend the texts. Besides, they are inclined to use digital resources like Google translator, on-line dictionaries, or Wikipedia to assist them in understanding the content better. These actions reflect students’ awareness of the significance of accessing and using digital contents to obtain necessary information.

The second theme is speed. Many students lack patience to navigate through a digital content to retrieve required information. They believe ‘faster is better’ and indicate a preference for immediate information like topics delivered via Youtube. They are not keen to spend a lot of time on the online processing involved in interacting with digital content; interaction with digital content includes responding to animated icons, hypertext, sound effects, and the continuous pathways between and within screens and other sites on the Internet (Lawless, Shrader, and Mayall, 2007). Moreover Rowlands et. al(2008) explained that youths often failed to take the time to read explanations or help screens, give up searches easily, and are not selective in choosing the most appropriate sources. As a result, they are not able to critically understand the overall text or find some of the intended meanings within the text. A majority of participants stated that their concentration decreased with long passages of text or with videos that had ran more than 10 minutes. This implies that youths have short attention span and they need visually stimulating content to maintain their attention

The third theme is motivation. The main motivation for students to access digital content is searching for information related to specialized and niche interests of various kinds, for example; martial arts, online gaming, photo or video editing, or fashion and beauty. All of the participants agreed that there is limited local content designed specifically for their target market. Currently they access foreign digital content sites to obtain information related to their interests or hobbies although they prefer local content which would be more relevant to life and culture. Local content is understood in this research as “the expression of the locally owned and adapted knowledge of a community – where the community is defined by its location, culture, language, or area of interest” (Ballantyne, 2002, p. 2). Khan (2010) reiterated this definition by stating that local content is “an expression and communication of a community’s locally generated, owned and adapted knowledge and experience that is relevant to the community’s situation (Khan, 2010). There obviously is a clear and growing need for more studies on the relevant local digital contents that fulfill the needs of youths. Norizan Abdul Razak, Zaini Amir, Mahamod Ismail, and Norhayati Shuja (2009) had conducted a needs analysis study in 2008 on the information needs of communities in Malaysia, including youths between the ages of 13-24 years, and the results clearly showed that there is a dire need for information based on local content to empower and serve the education and lifelong learning needs of youths.

The final theme is preference of multimodal forms. All the students declared preference for content that included both visual and audio material. They believe video is the most suitable medium for presenting academic or learning content. Content should also be presented in an interesting and stimulating way to captivate their interest and engage them. For example, they suggested that digital content should incorporate game elements to encourage learning in a fun environment, social networking elements because students like to discuss information and new knowledge with each other, and more visual elements like using cartoons or animations to illustrate difficult and complex concepts. Music and sound effects that accompany content is considered another multimodal form that could be utilized to engage students.

## 5. Conclusion

Based on the four themes mentioned above, the researchers concluded although students prefer digital contents that present information in a stimulating way with a variety of multimodal forms, they are not able to go beyond the semantic practices of digital literacy due to language barrier, short attention span and low motivation or interest in the information or topics provided in the digital content sites. During the Internet-based tasks, the students demonstrated the ability to search, scan and scroll for information and navigate within and between digital content sites. They could use hyperlinks, interact with multimodal resources like video, animation, or exploit other web resources like Google translator, search engines, or online dictionaries for additional content that are related to the information they need to understand. However, the students still had poor web searching skills. They found it difficult to locate relevant and credible digital content sites that contained the relevant information they needed.

They quickly jumped from one site to another because they did not have patience to explore each website carefully because they wanted to locate the information quickly.

The students did attempt to explore the digital content sites to gain information for a specific purpose. In this study, for instance, they had to answer questions in a sequence of Internet-based tasks. They tried to locate and acquire information through multimodal forms (visual and multimedia elements) which led them to identify ideas and obtain facts. However, majority of participants could not infer the overall meanings embedded within the digital content sites and were able to identify only the surface knowledge and ideas. Hence, the students did not evaluate the digital content sites extensively; they could not evaluate the source's credibility, authenticity, reliability or currency of the digital contents. They only understood the information superficially, without understanding the digital content's purpose or point of view. As a result, they were not able to detect underlying biases and opinions.

This study highlights the on-going and growing concern among educators about the ability of youths to critically use digital contents to meet their information needs. However, the implications of the new digital technologies for redefining content and literacy have not yet been fully explored, especially in the context of youths and students in Malaysia. Therefore, both educators and student need to re-examine their perceptions of what it means to be literate in a digital, technological world. The findings from such research would further help educators and policymakers to ascertain the best approaches needed to improve the digital literacy competence of youths so they would be able to access and process information effectively for academic needs and, later on, for employment and career purposes. The study will provide a significant contribution to the development of a digital literacy education framework to enhance Malaysian students' digital literacy competence.

## References

- Ballantyne, P. (2002). *Collecting and Propagating Local Development Content: Synthesis and Conclusions. IICD Research Report No. 7*. The Hague: International Institute for Communication and Development
- Beetham, H. & Sharpe, R. (2007). An introduction to rethinking pedagogy for a digital age. In H. Beetham & R. Sharpe (eds.). *Rethinking pedagogy for a digital age: Designing and delivering e-learning*. London: Routledge.
- Bennett, S., Maton, K. and Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39, 775–786.
- Castells, Manuel. (2007). Communication, Power and Counterpower in the Network Society. *International Journal of Communication*. Vol. 1: 238-266.
- Coiro, J., Knobel, M., Lankshear, C. & Leu, D. (Eds). (2008). *Handbook of Research on New Literacies*. New York: Lawrence Erlbaum Associates.
- Colley, H., Hoskins, B., Parveva, T. and P. Boetzelen (Eds). (2007). *Social Inclusion for Young People: Breaking down the Barriers*. European Commission's Joint Research Centre on Lifelong Learning (CRELL).
- Freebody, P, Luke, A. (2003). Literacy as engaging with new forms of life: The 'four roles' model. In by Bull (Author), Geoff Bull (Editor), Michele Anstey (Editor) (Ed.), *The Literacy Lexicon*. Sydney/NewYork: Pearson Prentice Hall.
- Janks, H. (2010). Language, power and pedagogy. In N. Hornberger and S. McKay (Eds). *Sociolinguistics and Language Education*. Clevedon: Multilingual Matters.
- Jewitt, C. (2006). *Technology, literacy and learning: A multimodal approach*. London: Routledge.
- Jewitt, C. and Kress, G. (eds.). (2003). *Multimodal Literacy*. New York: Peter Lang.

- Khan, A.W. *Promoting local content*. Web World- UNESCO and World Summit on the Information Society. Retrieved August 30, 2011, from <http://www.itu.int/wiss/docs/pc2/roundtables/rt2/khan.pdf>
- Kress, G. (2003). *Literacy in the New Media Age*. London: Routledge.
- Lawless, K. A., Schrader, P. G., & Mayall, H. J. (2007). Acquisition of Information Online: Knowledge, Navigational Strategy and Learning Outcomes. *Journal of Literacy Research*, 30 (3), 289-306.
- Lemke, J. (2009). Multimodality, identity and time. In C. Jewitt (Ed), *The Routledge handbook of multimodal analysis*. Abingdon: Routledge.
- Luke, A., Freebody, P. & Land, R. (2000). *Literate futures: Review of literacy education*. Brisbane, Qld: Education Queensland.
- Mohamad Jafre Zainol Abidin, Majid Pour-Mohammadi, Anita Jesmin. (2010). A Survey of Online Reading Habits of Rural Secondary School Students in Malaysia. *International Journal of Linguistics*, Vol. 3, No. 1: E33.
- New London Group. (2000). A pedagogy of multiliteracies: Designing Social Futures. In B. Cope & M. Kalantzis (Eds.) *Multiliteracies: Literacy Learning and the Design of Social Futures*. Melbourne: MacMillan: 9-37.
- Norizan Abdul Razak, Zaini Amir, Mahamod Ismail, and Norhayati Shuja. (2009). The impact of wireless technology among Malaysian society. *Proceedings of the 9th WSEAS International conference on Electronics, hardware, wireless and optical communications*, EHAC'10.
- OECD. (2008). *Education at a Glance*. Paris: Organisation of Economic Cooperation and Development.
- Prensky, M. (2008). Turning On the Lights. *Educational Leadership*, 65 (6), 40-45. Alexandria: ASCD.
- Prensky, M. (2001). Digital Natives, Digital Immigrants. In *On the Horizon*, October 2001, 9 (5). Lincoln: NCB University Press.
- Rowlands, Ian, David Nicholas, Peter Williams, Paul Huntington, Maggie Fieldhouse, Barrie Gunter, Richard Withey, Hamid R. Jamali, Tom Dobrowolski, Carol Tenopir. (2008). *The Google generation: the information behaviour of the researchers of the future*. *The Association for Information Management Proceedings*, (Aslib), Vol. 60 Iss: 4 :290 – 310
- Samsudin A Rahim, and Latiffah Pawanteh. (2011). *Asian Social Science*, Vol 7, No.2.
- Tan, Kok Eng, Melissa L.Y. Nga, and Kim Guan Saw. (2010). Online activities and writing practices of urban Malaysian adolescents. *System*, 38(4): 548-559.
- Walsh, M (2006). Literacy and learning with multimodal texts: classroom glimpses. *Synergy*, 4 (1), pp. 43–9.
- Walsh, M., Asha, J., and Spranger, N. Reading Digital Texts. *The Australian Journal of Language and Literacy*, Vol. 30, No. 1, Feb 2007: 40-53.
- Walsh, M. (2008), Worlds have collided and modes have merged: classroom evidence of changed literacy practices. *Literacy*, 42: 101–108.
- Walsh, M. (2010). Multimodal literacy: What does it mean for classroom practice? *Australian Journal of Language and Literacy*, 33(3): 211–239