ADULT LEARNERS' PERCEPTIONS OF DESIGNED HYPERMEDIA IN A BLENDED LEARNING COURSE AT A PUBLIC UNIVERSITY IN MALAYSIA

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ABSTRACT

With the advent of the computer and the Internet, many higher institutions in Malaysia have begun to integrate conventional teaching with these two technologies. This approach in learning which is also called 'blended learning' offers significant benefits, namely time and location shifting. However, the principles applied to activities designed as a blended course must be taken into consideration especially when the students are off campus adult learners with minimal opportunity to attend conventional tutorials. A study was conducted to look into this issue by seeking feedback from adult learners regarding blended learning within an academic reading course at a Malaysian public university, National University of Malaysia (UKM). The study was aimed at finding ways to improve the course offered to off campus students who were scattered throughout the country. The method of inquiry of this study is qualitative in nature and which utilizes observation, Think-aloud Protocol and semi-structured interviews as the research instruments. The subjects of this study were selected off campus students who were attached to various hospitals. The focus of this paper is to discuss the students' feedback pertaining to the designed hypermedia and comprehension questions. This paper also explains some pedagogic implications. The implications drawn is of great value to the students; teachers as the facilitators; teachers as the course designers and the administrators in improving blended learning course offered to UKM off campus students.

Keywords: hypermedia; adult learners; blended course; off campus students

INTRODUCTION
Since the 1950's Computer Assisted Language Learning (Beatty, 2003) or CALL has been used as resource for language learning. Throughout the early years of CALL, students had to move to a computer lab or computer terminal for instruction, but CALL has progressed tremendously since then. Currently, with the advent of computer technology and the changes in government policy, English language lessons such as reading can now be conducted in virtual classrooms utilizing the computers and the Internet. Reading, as a skill, is an important component of language teaching and learning (Wallace, 2010). It is argued that when there is little reading especially in formal education, there would be little language learning taking place (Nuttall, 2005; Wallace, 2010). For that reason, many language programs incorporate reading lessons. In a conventional reading course, students obtain their input through lectures and tutorials in lecture halls and classrooms. If the students face any difficulties in their reading, they can always seek assistance from their respective teachers or their fellow classmates. With CALL, the traditional ways of learning has evolved to include the use of new technologies to enhance the teaching and learning, as well as the development of reading skills among learners. From 2008 to 2010 distance learners in the Allied Sciences Faculty at the National University of Malaysia (UKM) took English for Life Sciences which was a preparatory reading course to equip the students with relevant reading strategies for use in their coursework. The main objective is that by the end of the course, the students would be able to apply the appropriate reading strategies that can facilitate their reading of academic reading materials especially on Life Sciences. The course designers who were also the researchers, however, were aware that they should not be blinded with all the positive aspects of CALL as highlighted by various studies. Findings of studies suggested that students, particularly adult learners, faced many difficulties in comprehending hypermedia documents. Thus, the researchers felt that it was crucial to embark on a study to investigate the issue on local ground. The main objective of this study was to investigate the distance learners' perception of the reading materials in the course which is in the form of hypermedia documents. The major question for this study was: what are the learners' perceptions of the designed hypermedia? It is hoped that the findings of the study could guide and facilitate the course designers in designing better hypermedia documents especially for the teaching of English for Specific Purposes reading course.

LITERATURE REVIEW
Integrating ICT in English for Specific Purposes Courses in a Malaysian Setting
Technology in a language course is used to tailor to the needs of specific groups of users. Some educators (Ramesh & Sanjaya, 2007; Wallace, 2010) categorize the purposes for reading into several categories, namely survival, educational, environmental, informational, occupational, recreational and ritualistic. In general, higher institutions in Malaysia try to equip their students for using English for environmental, occupational and

informational purposes (Halimah, 1998). The educators also try to create contexts so that the students could fully function in these three main areas. To date, higher institutions in Malaysia normally offer one or all three types of English courses: English for Proficiency, English for Specific Purposes or English for the Workplace to equip the students for the abovementioned purposes (Radha, 2007). It is argued that local tertiary students encounter problems when reading academic texts (Radha, 2007). This problem is a serious problem in the Malaysian context because most of the references at the tertiary level are written in English. Furthermore, with the advent of the Internet, many students at the tertiary level read from websites to equip themselves with relevant knowledge in completing their assignments and preparing for tests and examinations.

In Malaysia, the use of virtual classrooms in the teaching of English is quite new. Most virtual classrooms offered at higher institutions use the hybrid approach since most Malaysian educators as well as the students are still in the transition between traditional and e-learning mode (Rozhan & Helen, 2004). According to Keerti (2009), a hybrid program is a program which combines a myriad of methods namely face-to-face classroom (physical delivery), online programs and self-paced learning. Thus, the users, namely both the educators and the students, need to adapt to the new technology to gain the benefits that technology offers. As Dail (2004: 24) wrote in her doctoral thesis, "as the computer technology evolves to meet the demands of society, society must continue to adapt to changes in the technology". Further to this, teaching and learning styles have been altered due to the widespread use of the Internet and the World Wide Web (WWW) (Grabe & Stoller 2002; Wallace, 2010). The teaching and learning in higher institutions in Malaysia is also very much affected by these developments, in addition to the government policy to promote lifelong education. Online learning through the utilization of the Internet is seen as the right move toward fulfilling both the needs of new media as language learning resource, and addressing lifelong education as envisaged by the government. However, in the Malaysian setting, online learning is closely associated with, or rather restricted to, distance learning whereby students take a particular course off campus, therefore, may not be at the same place to learn the subject, and the learning takes place via online (Norlida, 2006).

The English for Life Sciences course focused in the study employed blended learning approach but utilized the use of virtual classrooms for its reading component. Blended learning, as mentioned previously, is a combined instructional method, namely face-to-face instruction with computer-mediated instruction. It has been argued that one of the benefits of blended learning is an increased access to knowledge (Lee & Chung Hyun, 2013). The course designers were interested to see how far the use of online materials (heretofore known as hypermedia documents) that they designed or adopted were an efficient and a good way to help students develop their reading skills, according to the perceptions of the students. According to Beatty (2003), hypermedia refers to hypertexts but the links are not just from text to text but they also involve links to various media such as sound, images, animation and/or video. By conducting research on the users' perceptions of the use of hypermedia, necessary improvements could be made to the designed hypermedia in order to tailor to the needs of many parties in their own institution namely the teachers, distance learners and the administrators.

ADULT LEARNERS AND READING

This study involved adult learners as research participants, thus, it is essential to describe the characteristics of adult learners since they have different characteristics in comparison to young learners. The participants in this study could be categorized as adult learners as they fulfill the definitions given by many scholars. Knowles and Holton (1998) defined adult learners as people who have arrived at self-concept. That is, they are able to be responsible and take charge of their own life particularly learning. They would tend to grow resentment to others who impose their wills on them. They prefer to be involved in the decision making process which involve their well-being. Carnine et al. (1997) emphasized that adult learners are capable of appraising, managing and regulating their own reading performance).Other scholars including Miller and Stine Morrow (1998) added that adults are able to conceptualize the content of what they have read. They could relate their prior knowledge to bring meaning and later to develop better understanding of the reading materials.

All the adult learners in the course offered at UKM possessed a Diploma in related fields of Life Sciences. Therefore, as far as reading is concerned, they could relate their academic knowledge and working experience toward enhancing their reading comprehension. Apparently, adults are capable of becoming self-directed learners as they possess the characteristics mentioned earlier and additionally, due to their greater sense of responsibility, are able to manage their time wisely in comparison to youths (Timarong et al., 2000).

Due to the above characteristics of adult learners, the course designers designed the course (English for Life Sciences) materials, activities and evaluations accordingly. This course which adopted a hybrid approach allowed the adult learners, as students of the course, to have more freedom in 'managing, regulating and appraising their own reading and performance' (Carnine et al. (1997), as mentioned earlier on in this article.

They were given ample time to navigate their own reading, and to complete their assignments. However, the adult learners were still provided with sufficient support with regard to resources, templates, guides and samples. The class instructor also served as a facilitator to guide them in reading the hypermedia documents, and in answering the reading comprehension questions. The class instructor also modeled the usage of hypermedia reading strategies (Corbel, 2004). They could also discuss with their classmates via online forum to complement each other's understanding of the reading materials and to provide social support. Social support is pivotal to create a sense of belonging among distance learners (Pica et al., 1989). The assistance of their peers through collaborative learning could help the students' maintain their motivation, attain/acquire new skills and reading strategies, check their understanding and share new ideas (Murphy & Gazi, 2003).

In many cases, adults relative to children can resist new reading strategies as they are already comfortable with their own reading strategies (Laird, 1985). Nevertheless, in the current scenario, adult learners do not have much choice but to adjust themselves to a new curriculum (Knowles & Holton, 1998). It is further explained that new information can also be perceived as a tool that leads to changes which some adults resist. In this instance, the process of unlearning the already existing reading strategies is a need even though the process is difficult. This process can also be lengthy because they need to learn new hypermedia reading strategies and unlearn the existing reading strategies at the same time. This could be problematic for some adult learners.

Another researcher, Tseng (2008) conducted an interesting research on learners' difficulties in reading websites. His participants were asked to do reading comprehension exercises on the Internet. His interviews show that readers faced some difficulties including eyestrain, the tendency to skip lines and getting lost on the computer screens. They also had difficulties in taking notes as well as in overcoming old reading habits, and had the tendency to get distracted by reading irrelevant websites. Based on his findings, he proposed some pedagogical suggestions accordingly. His suggestions included the need for the teacher to be cautiously selective in choosing educational websites for their students, and the need to train the students on how to adjust the computer screens and web pages on their own. His study also revealed that teachers should also teach their students how to read texts on the web.

It is safe to conclude that adult learners' ability to comprehend the hypermedia documents is heavily dependent on how they are capable of relating the information of the hypermedia documents to their existing knowledge and their capability of adapting themselves to the accompanying assignments given to them (Carrel,l 1987; Yahya, 2008). Their inability to do so will lead them to feel unmotivated and inhibited to read (Laird, 1985). Hence, they need to be given appropriate scaffolding instructions and assistance to ascertain their success in learning particularly in a course which integrates a lot of reading activities using hypermedia documents.

THEORETICAL BACKGROUND
Cognitive Theories
Cognitivism is a study of what happens in the brain or the study of mental processes namely sensation, perception, attention, encoding and memory which behaviorists do not examine in their theories (Jordan et al., 2008). Cognitivists believe that human learn in linear form (Jordan et al., 2008), involving mental processes such as mental planning, goal-setting and organizational strategies. In this regard, the use of meaningful feedback is important in order to facilitate and support crucial mental connections that aid comprehension (of certain subject materials). Learners' data processing mechanism identifies a particular (language) learning opportunity, processes and retrieves the information for the purpose of gaining understanding of the information, makes the necessary connections for creating new knowledge and assimilating new information. Cognitivists believe that if educators are able to understand how the learning process (such as organizing and processing of information) takes place, they are able to design learning activities to optimize learning.

Cognitive theories are also relevant to adult learners. Adult learners also learn in linear form. Humans go through a few stages when they develop their intellectual capacity but it does not stop when the learners reach a certain age (Rogers, 2002) or a certain stage (Lantolf & Thorne, 2006). Rogers (2002) states that a person is more intelligent at the age of 50 than 30 as his intelligence is more developed at this point of time. He adds that in order for a person to learn, he must first need to understand. With reference to hypermedia documents, a question worth asking is how these kinds of documents present difficulties for adult learners? Rogers (2002) and Lantolf and Thorne (2006) suggest that learning materials in the form of hypermedia documents necessitates the application of certain guiding principles. One is that hypermedia documents should be divided into meaningful units and then mastered. The hypermedia documents should then be developed from simple to complex. Moreover, there is a need for hypermedia documents for adult learners to include practice of intellectual exercises. It is because at this age they prefer activities which challenge their intellectual capabilities. One of the activities that promote higher degree of comprehension is exploration. Unlike in traditional reading lessons

where the answers or responses are delayed, prompt answers should accompany the multimedia exercises so as to enable the readers to evaluate their abilities quickly. After assessing their reading comprehension level, they would then adjust their hypermedia reading strategies to improve their reading comprehension.

The design of the reading component comprising hypermedia documents in the course offered to the Life Sciences students at UKM was based on the suggestions given by Rogers (2002) and Lantolf & Thorne (2006). Nevertheless, it is not possible for the course designers to speculate on the perceived usefulness of the documents, or the reasons behind any difficulties encountered in using the hypermedia documents among the relevant students. In this respect, although the principles behind its design were adhered to during the design stage, it was felt necessary to conduct a study that seek the adult learners' perceptions of the designed hypermedia in order to shed light on the issue that may arise in the use of the documents among adult learners. It is hoped that this study could provide some insights for the course designers to improve upon the designed hypermedia and ultimately enhance the students' reading comprehension of English for Life Sciences materials.

RESEARCH METHODOLOGY

The research design employed by the researcher in this study is a case study in order to conduct an intensive study of a specific group of people. Merriam (2009) defines a case study as a study which is aimed at gaining a comprehensive understanding of a situation and it is a process rather than the outcome or product of the phenomena. Under the umbrella of a case study, this study is known as an intrinsic case study which intends to catch the complexity of a single case. Thus, the findings could not be used to generalize to the general population (Stake, 1995). The findings could only be applicable to a group of people which possesses the same characteristics or traits (Miles & Huberman, 1994). This complies with the objective of the researchers whereby there was no intention to study this specific case to understand other cases.

Trochim (2006) and Merriam (2009) proposed that in a case study, a combination of research instruments should be used to corroborate the data evidence or to serve the purpose of triangulation. By adopting a few research tools, the findings of each research tool will at the end be able to cross-illuminate each other (Perakyla, 2000). The research tools employed in this study were observations, semi-structured interviews, and Think Aloud Protocol (TAP). If there are any discrepancies among these sources of data, the researcher asked the participant/s further questions in the following meeting so as to resolve the discrepancies. The researcher has taken some necessary measures to ascertain the validity and reliability of this study. The measures include expert validation of questions for the semi-structured interview questions, member checks/participant validation and audit trail. These measures are proposed by Uma Sekaran (2004:3) in that, "… the reliability measures indicate the extent to which it is without bias and hence ensures consistent measurement across time and across the various items in the instrument". The measures utilized are also recommended by Creswell (2003), in particular the need for researchers to be honest since the researcher is the main instrument. Yin (2009) notes that in a case study, all measures must be applied throughout the conduct of the case study.

In order to observe qualitative research etiquettes, the data was arranged according to the participants' pseudonyms. The participants were assured that their real names would not be revealed so as to not to breach their privacy (Angrosino, 2000). In addition, the researcher also sought consent from the participants. Only participants who volunteered were accepted as the participants of the study. The researcher made prior appointment according to the participants' convenience. The interview responses were transcribed verbatim.

DATA COLLECTION TOOLS

In order to obtain the answers to the research question posed in the study, observation, TAP and semi-structured interviews were utilized. The participants were observed individually for five times. The researcher went to the participants' workplace or homes in order to observe them reading the prescribed hypermedia documents. Each observation lasted between 60 to 80 minutes. While reading, the participants also employed Think Aloud Protocol to express their perceptions of the hypermedia documents uploaded earlier onto the UKM website. The TAP was then followed by semi-structured interviews which lasted about 30 minutes each participant.

PARTICIPANTS & SETTING

First year students registered in the Allied Sciences Faculty were required to enroll in an English course namely English for Life Sciences. The course focuses primarily on reading life sciences hypermedia documents from diverse sources namely books, journal, newspapers, websites and magazines. These hypermedia documents were adapted and uploaded as the prescribed reading for this course.

The designed hypermedia documents were used by the distance learners; all of whom were adult learners with at least a few years working experience in health related organizations. At the time of the study, the learners were

attached to hospitals, municipal councils and universities. Their ages ranged between 30 and 45 years old. The students had limited face-to-face meetings with their facilitators and fellow classmates, that is, they only saw one another during the initial two weeks. For the remaining twelve weeks of the semester, the students studied at home or workplace. They became 'self-directed learners' until Week 15 when they gathered at UKM to sit for the final exams. There were eight participants in this study.

FINDINGS AND DISCUSSION
In general, when the participants were asked about the contents of the hypermedia documents prepared by the course designers, the interview responses were varied. First, most of the participants viewed that the number of reading articles was sufficient. Second, two of the research participants regarded the contents as being good, relevant and beneficial for their studies and work. The participants INTAM and INTFA (pseudonyms) stated that: "*Some of the contents are good. I could obtain a lot of knowledge from the reading materials*" and "*I believe the hypermedia help me since they are related to medical science. They are also relevant because they discuss updated issues and general knowledge*". As adult learners, it is very essential for the learning materials to be relevant and directly applicable to their working environment (Akyel & Ercetin, 2007). Adult learners do not learn for the sake of learning but to perform a task, to solve a problem or to lead a more satisfying life (Laird, 1985).

The above participants also mentioned that the teacher should select credible websites as they had found a few inaccurate statements in the hypermedia documents. The participants in the study were adult learners who possessed a Diploma in health sciences and had a few years of working experience. There is, therefore, a good likelihood that they could identify credible sources and those which were not credible such as texts from the Wikipedia, newspaper articles and blogs whose writers are people who may or may not come from a medical background. It is also possible that the respondents were able to identify inaccurate information which appeared in some of the hypertexts using previous schemata.

With reference to contents, in contrary to INTAM and INTFA, many of the other participants commented that the contents of the hypermedia documents were uninteresting which caused them to read only 40% to 60% of the uploaded hypermedia documents on the UKM website. When probed further, the participants cited reasons such as the presence of a large number of unfamiliar words especially jargons and terminologies ("*some of the words are too high level for me as I regard my English as at moderate level. When the contents contain many unfamiliar words, I would feel bored).* However, for INTAM, the hypermedia documents were not difficult. This difference in opinion could be due to a few reasons. One is that INTAM was used to reading journal articles in the Life Science discipline, as expressed in the following statement: "*I'm used to reading journals so I don't have much problem thus far*". It could be said that participants would find the contents to be difficult unless they had experience reading journal articles written in the life sciences. Another reason for the difficulty can be said to be language related. Evidence of this comes from some participants' suggestion concerning the use of glossary to accompany the hypermedia documents. The participants expressed preference for a bi-lingual glossary, such as English and Bahasa Melayu to aid understanding. This evidence is taken from INTSA, "*I prefer to get the translation from English to Malay. Straightforward*".

In addition, the glossary should be in the form of hyperlink ("*I could easily use the hyperlinks to the glossary. It enables me to make quick reference on the words that I'm not familiar with*"). The glossary should consist of important words in the hypermedia documents. Acknowledging that there are terms in Malay that do not have one-to-one relationship with the terms in English, one participant suggested in the interview that the English teachers should work collaboratively with content lecturers to produce a glossary of terms. However, it is difficult to ascertain if this is a language problem or issues pertaining to accuracy of information since the participant was able to identify two wrong translations ("*There are translated words which are inaccurate like 'chronic' and 'acute'. I suggest that the English instructors seek assistance from the content lecturers to ascertain the accuracy of the translation*"). Related to the accuracy problem could be the credibility of the online sources as reading for adult learners who are professionals in their own field.

Moreover, individuals' attitude also affected their interest in reading as admitted by INTRA and INTLI, "*OK, by nature I feel lazy to read or refer to reading materials*" and "*It is because by nature I don't enjoy reading. I prefer the hypermedia but reading takes a long time*".

From the observations and participants' TAP, it is found that visual design and effect played a role in the participants (losing) interest in reading. The participants tend to skip the hypermedia documents which were regarded as being 'too long', and perhaps too taxing to read as the result of the size of the words being '*too small*' and the gaps between the lines as being 'narrow'. When enquired further, the participants stated that,

"*Sometimes, the website contents make me confuse lah. Some of the reasons are the arrangement is too compact, the words are too small, or the paragraphs are too long. I would prefer if the contents are in point forms and they are put into simple sentences*". It was also reported by the participants that when the hypermedia documents were too long, the size of the words too small and there existed narrow gap between the lines, the participants would experience eye and mental fatigue easily. INTLI stated, "*I could not concentrate for a long period of time*". Another participant, INTNI, gave similar view, "*As I mentioned earlier, my retention power is limited I could only read one or two paragraphs then I quit reading*". When they experienced eye and mental fatigue, they tend to skip lines and got lost on the computer screen.

When discussing these 'on the screen' reading difficulties, all the participants admitted facing the same problem. The findings of this study are almost similar with Tseng's (2008) study. When reading printed texts, readers tend to move their eyes from left to right, in a straight line. However, when reading a hypermedia document, readers read information in scattered bits and pieces and not as a textual whole. Their eyes move in circular motion (Nelson, 1992). These difficulties progress with age. These participants, being adults, were used to reading printed materials during their schooling years unlike younger learners who are very exposed to the Internet at an early age, and therefore are very well accustomed to the digital print. Design issues come into play at this point. Rightly so, hypermedia documents are designed as they are because they are meant to be interactive and allow for links to other sources, as most other texts online. This particular issue calls for design considerations, on the part of website designers or those more specialized in IT, but as language teachers and designers of digital language learning materials, there is a need to be aware of potential challenges associated with physically reading hypermedia documents among adult learners. On that note it may be possible to engage in prior training for both teachers and learners in terms of dealing with new media and how that might conflict with using traditional texts. It is worth noting at this point that sufficient user training or preparation has been found to be very important toward ensuring success for an e-learning endeavor (Sami & Mohd Mudasir, 2013).

In addition to the situations surrounding most of the participants, one other issue is degree of familiarity. It was reported by the participants concerned that their working environment did not require them to access and use hypermedia documents. It took them a longer time to adapt to the 'new reading environment'. It could be possible that some degree of motivation was lost in the process because of the challenges associated with adapting themselves to the new environment (Laird, 1985). The participants' actual reading environment, as it was encountered at work, appears to be in contrast to the reading they were expected to do in the course. In this instance, there was a need for the participants to learn new reading strategies involving hypermedia documents.

With respect to retention power, Tseng (2008) stated that the retention power of adults is also lower than children's resulting in faster eye and mental fatigue). In many cases, adults relative to children resist new reading strategies as they are already comfortable with their own reading strategies (Laird, 1985). Nevertheless, in the current scenario, adult learners do not have many options but to adjust their reading strategies. It is important that the course designers make necessary improvements to the designed hypermedia documents to facilitate reading.

Some other issues require consideration as well. 'Dullness' of the contents of the hypermedia documents were mentioned, and this was attributed to the 'size of the words'; or font size; ("*The size of the words is too small therefore, it is less attractive*") and the lengthiness of the paragraphs, including aspect of color. ("*Limited colors on the pages*"). Three of the participants stated the font size should be 16. Being adult learners, they tend to shoulder multiple responsibilities (family, work and study), so it is possible that lengthy articles were viewed as 'cumbersome' because they faced the problem of time constraints. The participants further commented that when the selected article was too long, the participants lost interest in reading even at first glance ("*I quit reading immediately when I see the article is too long*"). Continuous forty-five minutes of reading was reported by the participants to be physically demanding as it put a strain on the eye, subsequently causing them to lose concentration. Added on to these challenges were issues such as not owning a laptop, not having Internet connection and having short retention power ("*At times we do not have sufficient time, do not have a laptop and others to access the website*").

The textual organization of hypermedia documents was also commented on. It seems that the participants preferred hypermedia documents with subheadings; citing constant disturbances from family members at home and work demands. In that respect, it could be said that they needed a text which was easier for them visually. According to the participants, the subheadings should be of different colors to enable them to distinguish between subheadings and paragraphs. This can be illustrated by a statement obtained from interview responses given by INTAM and INTLI,

"*The texts should be designed i* *n such a way that could ease our reading like putting in the subheadings and mark them in different color*"

And

courses in UKM have started to integrate IT and use its potential for academic or professional purposes". Currently, very few teachers in UKM are tech savvy in the area of learning management systems (LMS). They need to be more computer savvy before they could train the students. They need to be exposed to a different set of language pedagogy for hybrid teaching and to be trained on how to exploit the potential of course management systems before designing a course. She also wrote that the facilitators and course designers need to be trained on course management systems, ethics and conventions that govern the use of online information before designing the course. "The trainings must be conducted continuously, as attitude change would not occur overnight (Norizan 2003, p. 205)". The teachers who often are also the course designers must be knowledgeable and efficient to manage and deliver suitable course materials. Without sufficient knowledge and support, both parties, the teachers and the students, could easily become technophobic and frustrated as designing and using hypermedia documents, for instance, is a complicated and demanding task (Moras, 2001; Dudeney & Hockly, 2007).

CONCLUSION

It is only through research that the details of the needs can be revealed. It is hoped that the findings of this study which are derived from the students' responses are able to provide some guidance especially for the course designers and also the teachers. These findings could facilitate the course designers to improve the designed hypermedia documents especially for use in English for Specific Purposes course, such as the one offered for Life Sciences students in the study. It is also hoped that efforts would be focused on developing more online materials to fulfill the needs of Malaysian distance learners. It is because with respect to language skills in the Malaysian scenario, the students considered reading as the most important skill (Radha, 2007).

REFERENCES

Akyel, A. & Ercetin, G. 2009. Hypermedia reading strategies employed by advanced learners. *System*, 37(1) (pp. 136-152).

Angrosino, M. V. (2000). Recontextualizing observation. In Norman, K. D. & Yvonna, L. (Eds.). *Handbook of Qualitative Research* (pp. 695-72). California: SAGE Publications.

Beatty, K. (2003). *Teaching and researching computer-assisted language learning*. London: Pearson Education Limited.

Bright, J.B & McGregor, G.P. (1979). *Teaching English as a Second Language*. London: Longman Group.

Carnine, D.W., Silbert, J. & Kameenui, E.J. 1997. *Direct Instruction Reading*. 3rd ed. London: Prentice Hall

Carrell, P.L. 1987. Content and formal schemata in ESL reading. *TESOL Quarterly*. 21 (pp. 461-481).

Corbel, C. & Gruba, P. 2004. *Teaching computer literacy*. Sydney: Macquarie University: AMEP Research Centre

Creswell, J.W. 2003. *Research design: Qualitative, Quantitative and Mixed Method Approaches*. California: SAGE Publications.

Dail, J.S. (2004). Reading in an online hypertext environment: a case study of tenth grade English students. Unpublished doctoral dissertation, Florida State University, Florida, United States.

Dudeney, G. & Hockly, N. (2007). *How to … Teach English with Technology*. Edinburgh: Pearson Longman.

Grabe, W. & Stoller, L.F. (2002). *Teaching and Researching Reading*. Great Britain: Pearson Education.

Halimah Badioze Zaman. 1998. Glimpses into Research on Literacy in Malaysia. http://www.readingonline.org/international/malaysia/article.html) [2 February 2012].

Inoue, Y. (2007). *Online Education for Lifelong Learning*. London: Information Science Publishing.

Jordan, A., Carlile, O. & Stack, A. 2008. *Approaches to Learning: A guide for teachers*. New York: McGraw Hill.

Keerti, M. 2009. Blended learning: the convergence. In Prasad, B.V. & Sushuma, G. (eds.). *Flexible Learning*. Hyderabad: The Icfai University Press.

Knowles, M.S., Holton III, E.F. 1998. *The Adult Learner*. Houston: Gulf Publishing Company.

Laird, D. 1985. *Approaches to Training and Development*. Reading: Addison-Wesley.

Lantolf, J.P. & Thorne, S.L. 2006. *Sociocultural theory and the genesis of second language development*. Oxford: Oxford University Press.

Lee, S. & Chung Hyun, L. (2013). A case study on the effects of an l2 writing instructional model for blended learning in higher education. *The Turkish Online Journal of Educational Technology* October 2013, Vol.12 (4).

Maslawati, M., Supyan, H. Zaini, A. (2010, July) Developing a blended course: Difficulties faced by the adult learners in reading hypertexts. Paper presented at the 5th International Conference On eLearning. Penang: Universiti Sains Malaysia.

Merriam, S.B. (2009). *Qualitative Research: A Guide to Design and Implementation.* San Francisco: Jossey-Bass.

Miles, M.B. & Huberman, A. M. 1994. *Qualitative data analysis (2nd ed.).* Thousand Oaks: Sage.

Miller, L.M.S. & Stine-Morrow, E.A.L. 1998. Aging and the effects of knowledge on online reading strategies. *Journal of Gerontology: Psychological Sciences*, 53B, 222-233.

Moras, S. (2001). *Computer-assisted language learning* (CALL) *and the Internet*. http://www3.telus.net/linguisticsissues/CALL.html. [November 10, 2009]

Murphy, K. & Gazi, Y. 2003. Collaboration and community through simulation/role play. In Naidu, S. (ed.). *Learning & teaching with technology: Principles and practices* (pp. 177-192). London: Kogan Page.

Nelson, T.H. 1992. *Literary machine*. Sausalito: Mindful.

Pica, T. Holliday, L. Lewis, N. & Morgenthaler, L. 1989. Comprehensible output as outcome of linguistic demands on the learner. *Studies in second language acquisition*, 11, 63-90.

Norizan Abdul .Razak. (2003). IT Training for ESP Practitioners. Paper presented at the Language for Specific Purposes 4th International Seminar 2003. Skudai: Universiti Teknologi Malaysia.

Norlida Alias. (2006). A study of network-based learning in a writing course: perceptions of usefulness. Unpublished doctoral dissertation, Universiti Kebangsaan Malaysia, Bangi, Malaysia.

Nuttall, C. (2005). *Teaching Reading Skills.* Oxford: Macmillan Publishers.

Radha, M. K.N. 2007. Enhancing academic literacy among tertiary learners: A Malaysian experience. *3L Journal of Language Teaching, Linguistics and Literature 13* http://ukm.academia.edu/RadhaMKNambiar/Papers /[17 March 2012].

Ramesh, C.S., & Sanjaya, M. (2007). Global E-Learning Practices: An Introduction. In Ramesh, C.S. & Sanjaya (Eds.) *Cases on Global E-Learning Practices: Successes and Pitfalls*, (pp. 1-12). United Kingdom: Ideagroup Inc.

Rogers, A. 2002. *Teaching adults*. London: Oxford University Press.

Rozhan M. I. & Helen Khoo Chooi Sim. 2004. A study of quality assurance practices in the Universiti Sains Malaysia. *Turkish Online Journal of Distance Education,* 5(1) http://tojde.anadolu.edu.tr.tojde13/articles/idrus.html / [17 March 2012].

Sami, A. & Mohd Mudasir, S. (2013). Success factors of E-learning projects: A technical perspective. The Turkish *Online Journal of Educational Technology,* April 2013, Vol. 12 (2).

Searle, J. 2011. A Lens on Literacy: Workplace competence and professional practice. In C. Kanes (eds.) Elaborating Professionalism. Studies in Practice and Theory, Volume 5 (pp. 35-57). Springer Publication.

Shahizan, S. (2000). The acceptability of students' written business reports based on acceptability standards of reports in the workplace. Unpublished Masters thesis, University Malaya, Kuala Lumpur.

Stake, R.E. 1995. *The art of case research.* California: SAGE Publications.

Timarong, A., Temanguil, M. & Sukrad, W. 2000. *Adult learning and learners. Pacific Resources for Education and Learning.* http://www.prel.org/products/pr_/adult learners.htm. [12 July 2008].

Trochim, W.M.K. (2006). The qualitative debate. Research methods knowledge base. http://www. social research methods.net/kb/qualmeth.php. [February 10, 2009]

Tseng Min-chen. 1998. Subjective and objective evaluation of hypertext reading performance: In depth Analysis of Contributing Factors. J*ournal of Educational Multimedia and Hypermedia,* 19 (2) (pp.221-232).

Uma Sekaran. 2004. *Research methods for business: A skill building approach.* 4th Ed. India: John Wiley & Sons Inc.

Wallace, C. (2010). *Reading*. London: Oxford University Press.

Weight, B. & Bishop, T. (2000). Epilogue: The Human Promise. In White, K.W & Weight, B.H. (Eds.). *The Online Teaching Guide: A Handbook of Attitudes, Strategies, and Techniques for The Virtual Classroom* (pp. 183-188).Boston: Allyn and Bacon.

Yahya Othman. 2008. *Proses & strategi: Membaca berkesan*. Serdang: Penerbit Universiti Putra Malaysia.

Yin, R.K. 2009. *Case study research: Design and methods*. 4th Ed. Los Angeles: SAGE Publications.