



International Journal of Asian Social Science

journal homepage: <http://www.aessweb.com/journal-detail.php?id=5007>



ONLINE METACOGNITIVE READING STRATEGIES USED BY POSTGRADUATE ESL READERS OF ACADEMIC TEXTS

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ABSTRACT

Online learning environment is becoming more popular among learners because of its multiple information representation. Many researchers are interested to investigate online reading strategies and their effects on reading comprehension. Despite the growing importance of online reading strategies among adult learners, little attention has been given to postgraduate EFL learners. This study is a quantitative research designed and aimed at investigating metacognitive reading strategies used by the Iranian postgraduate learners to read online academic texts. Purposive sampling method was used to select 39 Iranian postgraduate students who were studying in different Universities in Malaysia. The questionnaires used in this study were the MARSII questionnaire developed by Mokhtari and Sheorey (2002). Findings of this study emphasized on metacognitive reading strategies used by adult learners of various age groups and fields of study. The results revealed that adult learners use Computer, internet and Web-based Reading strategies in solving their academic problems. It was further revealed that ages and fields of study have meaningful changes on the use of metacognitive reading strategies. This means that metacognitive reading strategies used by the respondents depend on their ages and fields of study. The results of the study provide confirmation of earlier studies that adult learners have learning abilities, are more exposed to online academic texts and use different metacognitive online reading strategies to improve their understanding of academic texts.

Key Words: Online reading strategies, Metacognitive strategies, Online learning, Independent students.

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INTRODUCTION

The increasing use of internet in teaching and learning has so far out placed our understanding of how learners' strategies affect online learning progress. Research conducted to investigate the use of online reading strategies by postgraduate ESL learners showed that students who use social skills develop their reading strategies thereby facilitating their problem-solving skills in an online reading environment (Yen and Radach, 2009). It was deemed necessary to study more about learners with strategic skills in online reading environment. In a web-based reading environment, learning occurs through navigations. Nonlinear context of this environment sometimes make students to experience disorientations which requires learners' attitude to complete the task. This type of disorientation can limit learners understanding of the texts they read online (Collins, 1994; Gay and Mazur, 1989).

Young and poor learners always face the problems of monitoring and managing their own reading tasks and the opposite point of adult learning system (Collins, 1994). In many cases, parents adopt new reading strategies to assist their children since they want to adjust themselves with the new curriculum (Knowles et al. 1984). Also, adults learn new information to use it as a tool to lead them to changes and the process of learning the already existing reading strategies which are needed even though the process is difficult. The process is assumed to take more time since learners need to learn and practice the new reading strategies. Another important issue is that adults are more likely to forget whatever they have learnt but children are able to remember for longer time. Then, it would be helpful for adult learners to adopt their experiences with learning process. The effective adaptations of adult's learning with their experience would be elaborated through role playing activities.

The development of some technologies in learning system makes adults to have more opportunities to learn through online systems. When they enter into the websites via internet they have access to online texts with different subjects and choose the topic which they want to read. Through online text reading, they are able to manage their own way of learning and improve their self-direction. Self-directed learning needs to take learning responsibility and navigate our own reading. In this case, adults need to change from teacher-center and rely on their own initiatives (Knowles et al. 1984). Adults' comprehension from the text is highly related to their capability to relate new information to the existing information they have learned through their life process and the experience of reading articles with different topics.

Metacognition is defined by Brown and Armbruster (1986, p.453) as "deliberate conscious control on cognitive actions". Vandergrift (2002) believes that readers of different age brackets should employ metacognitive strategies to regulate and direct their language learning activities during reading process and equally think about their learning process. Learners should be able to make connection with their cognitive strategies to achieve their goals through using metacognitive

strategies. Particularly, adult learners should perform specific tasks with conscious knowledge and be certain about the suitability of the performed tasks. Metacognition is needed as the readers want to judge about the task that should be done and the next step the readers should go with overcoming perceived shortcomings (Balajthy, 1990). Readers with high levels of metacognition and attitude show different metacognition skills such as flexible planning, continuous monitoring of reading process and critical evaluation of their own cognition (Herrington and Oliver, 1995). They can appropriately connect the given task to their own abilities and efforts to deal with the task and strategies that should be used to complete the online reading process.

Adult learners with high positive attitudes are more likely to succeed in completion of online reading tasks (Dabbagh and Bannan-Ritland, 2005). Rotter (1990) believes that high positive attitudes can be supported by the abilities and efforts of learners towards task completion in an online reading environment. Likewise, postgraduate learners' reading behaviors proposed here can similarly support the readers' metacognitive strategies in an online reading environment. Adult learners learn things more consciously. They are able to conceptualize what they learnt. Since they engage their prior knowledge and their experiences with the text they read, they are able to construct meanings that have positive effects on their reading comprehension. Also, adult learners are capable of managing and regulating their own reading performances. These capabilities which the adult learners possess are referred to as "metacognitive strategies" (Duke and Pearson, 2002). Determining the characteristics of online learners would help teachers and instructional designers to understand the learners that are likely to participate in an online reading and which of the factors are used by these learners to contribute to the successful online reading experience. It should also help the teachers and instructional designers to understand the barriers which make the students to have poor understanding.

The findings in some studies revealed that technology characteristics support learning environment. Web-based or online reading environments particularly have influence on the interaction and learners' collaboration which were considered as multimodal environments that provide spaces for individual readers or group interactions. This characteristic of online reading environment would support and cater for variety of individual learning styles. Computer application in the learning environment showed significant influence on the performance of the students in vocabulary usage (Nader & Saeedeh, 2012). Brown and Pressley (1996) stated, "the Web affords the match we need between a medium and how a particular person learns" (p.12).

The online reading learners are more eager to participate in online activities and seminars to share their information through portals. Warschauer (1997) declares that adult learners recently use online environment study rather than traditional educational system as it is the only alternative for them. This increasing attraction to online environment and flexible course delivery shows that learners desire to be outside the educational mainstream. Online readers' collaborative and communication technology participation help them to understand and construct their learning

strategies. Readers should gain skills and orientation strategies to help them learn through reading and metacognitive reading strategies. This would help learners to meaningfully interact with others and read online texts.

Studies showed that most of the adult learners feel comfortable with new ways of learning but still more eager to have face to face learning programs. The study conducted by KizitoBada & Khazali (2006) revealed that the reason for the learners' eagerness towards face to face learning was based on the fact that learning strategies specifically give them the opportunity to interaction with other people. Eslami-Rasekh & Valizadeh (2004) maintained that the Iranian educational system requires the students to interact with English texts for at least 11 years. From these 11 years, the students should be able to gain beneficial experiences in reading texts in English. Although Iranian learners study in groups but learners' social role is rigidly down. Iranian learners do not participate in decision-making in classrooms. Interactional relations consist of sharing ideas and thoughts. On the other hand, sharing ideas and thoughts require collaborative environment to be prepared for learners. Online reading environment would be an appropriate environment for learners to provide a facilitator for the learners to share their ideas and thoughts.

Knowles et al. (1984) defined adult learners as responsible learners with self-concept who can experience feeling subconsciously of resistance and resentment. Adult learners still feel to depend on 'education' and 'training'. They depend on the instructions from the teachers but would not like to be treated like children. This implies that they want to have their voices in learning as well as teachers' instructions. They are eager to participate in decision making process which could be effective on their long life learning. So, it would be essential to be sensitive about adult learner's attitude to plan appropriate strategies to help them become self-directed learners.

Technology and online learning environments create a great opportunity for adult learners to have their own responsibility and self-direction on their learning through reading online materials. Adult learners feel more comfortable on their responsibility to navigate their reading, but learners encounter more challenges in adapting their reading strategies with changes in technology. Carrel and Floyd (1987) believed that adult learners' ability to adopt reading strategies with changes in technology depend on how they are relating new information with the existing information. The ways teachers behave would affect students on their reading behaviors within online environment. Teachers should give the students opportunity to decide on the navigations they have during their reading process. Therefore, teachers need to engage students in decision making rather than transmitting their own knowledge to students and then evaluate their learning process.

Collins (1994) found that adult learners employ different metacognitive reading strategies when they are reading academic texts rather than other text genres and this is due to the specific features of the text. Apart from understanding the written academic texts, the learners also need to understand visual materials which would come with written texts as further explanation to the text.

In academic text reading, the learners should know the basic knowledge about the topic to be read as this knowledge is cumulative. Reading academic texts are beyond reading and understanding sentence meaning. Wallace and Wray (2011) studied the strategies employed by adult learners as they read arts and science texts. The findings of the study showed that science text readers display metacognitive strategies in a higher order and use questioning strategy based on their background knowledge. These readers also use integrating, interpreting, general knowledge, comprehension monitoring, and text structure recognition strategies. However, art students employed lower-order strategies such as word meaning questions and word meaning guess.

Linguists attempt to describe the significant pedagogical feature of academic texts particularly towards reading. Carrell and Floyd (1987) believed that reading academic texts need employing further strategies in order to comprehend the meaning of the texts. Since online reading environment is non-linear, it would require investigating the metacognitive strategies employed by adult learners when reading online academic texts. So, the researcher found it necessary to find out more about metacognitive reading strategies used by postgraduate learners within online reading environment towards reading academic texts.

Purpose

This study intends to investigate the online metacognitive reading strategies used by Iranian postgraduate learners to read online academic texts through answering the following research questions:

- a) Is there any significant difference between the respondents' age and the online meta-cognitive reading strategies which they used to read online academic texts?
- b) Is there any significant difference between the respondents' fields of study and the online meta-cognitive reading strategies which they used to read online academic texts?

MATERIALS AND METHODS

This study is a quantitative research in which questionnaires were used for data collection. The data were quantitatively analyzed to statistically answer the research questions and to further get a better understanding of the reading process practiced by the postgraduate students. The questionnaires consist of two parts which are the background information and MARS (Metacognitive Awareness of Reading Strategies Inventory). The background section of the questionnaire is used to know about the readers' age and field of study. The last part of the questionnaire is the MARS section which pointed to the metacognitive reading strategies used by the respondents in an online reading environment.

The questionnaires were distributed through the e-mails in a direct link of the Iranian students associations in the Malaysian universities. The researcher sent the e mails and the attached files to

the selected Iranian postgraduate students who registered with the associations. The researcher mentioned the particular Human Science postgraduate Iranian students who should answer the questionnaires. Respondents would be able to answer the questionnaire within 30 minutes and the researcher tried to accelerate their performance via translating the statements from L2 to L1. The statements were easy for the students as they may not need to translate the questionnaires into their first language (Farsi) as they possess appropriate level of English proficiency to accurately understand the statements. The examples of the statements in the MARSII questionnaire include; “I take an overall view of the online text to see what it is about before reading it”, “When reading online, I decide what to read closely and what to ignore”, “When online text becomes difficult, I re-read it to increase my understanding” and “When reading online, I look for sites that cover both sides of an issue”. The students ticked the Likert Scale provided for each statement.

The MARSII questionnaire which was developed by Anderson (1991) and adapted in the study conducted by Mokhtari and Sheorey (2002) was categorized into Computer Use (CU), Computer Access (CA), Internet (INT), Internet Use (INTU) and Computer and Web-based Reading (CWR). It was structured in five Likert scales such as “1” which means “never or almost never do this”, “2” means that ‘only occasionally do this’, ‘3’ means that ‘sometimes do this’, ‘4’ means that ‘usually do this’, and ‘5’ means that ‘always or almost always do this’. Students had to circle numbers between “never” and “always” scale to show their answer to the statements. This questionnaire was prepared in English Language and in a simple open-ended questions form.

Participants

In this study, 39 postgraduate students from UM (University Malaya), UPM (University Putra Malaysia), UKM (University Kebangsaan Malaysia), UTM (University Technology Malaysia) were purposely chosen as the respondents. These students were considered as good learners based on the fact that they were able to use many reading strategies (Hsieh & Dwyer, 2009). These students came from different ethnic groups but were on the same levels of proficiency in English language. They comprised both male and female students, between 27-35 years old, taking Linguistics, Psychology, History, Tourism, Law and Geography as their fields of study at either Masters or Doctorate degree programs.

During their first semesters, these students passed their proficiency courses which include the academic reading course in IELTS (International English Language Testing System) which is jointly managed by University of Cambridge (ESOL Examinations), the British Council and IDP Education Australia. The rationale for selecting these students is because they were considered to have the same level of English language proficiency through which it is easier for the researcher to categorize them.

Data Analysis

All the data collected through survey were analyzed with SPSS version 14 programmer. Descriptive statistics such as the mean and standard deviation were used to describe the main variables of the study. Kruskal Wallis test was also used to examine the age and fields of study differences in Computer Use (CU), Computer Access (CA), Internet (INT), Internet Use (INTU) and Computer and Web-based Reading (CWR). The scoring of the data in this study was done using the mean scores of the strategies used by learners and was interpreted using the guide in the studies conducted by Anderson -Inman and Homey (2004).

RESULTS AND DISCUSSION

The samples for this study (n=39) consist of UM (University Malaya), UPM (University Putra Malaysia), UKM (University Kebangsaan Malaysia), UTM (University Technology Malaysia) students who were in various fields of study such as Linguistics, Psychology, History, Tourism, Law and Geography in 2011-2012 academic year. The students were asked to provide the researcher with their demographic information which included ages and fields of study. Table 4.1 illustrates the respondent's background information. In this study, 19 respondents (48.7%) were between 27-32 years old, 14 (35.9%) were between 32-37 years old while 6 (15.4%) were more than 37 years old. It was further revealed on the table that majority of the respondents totaling 17 (43.6%) were studying Linguistic, Psychology and Law had 7 respondents (17.9%) each, Tourism had 4 respondents (10.3%) while Geography and History had only 2 respondents (5.7%) each (Table 1 for details).

Table-1. Summary of samples for the respondents' demographic variables (Age and fields of study)

Demographic Variables	Frequency	Percentage (%)
Age		
27-32 years old	19	48.7
32-37 years old	14	35.9
More than 37 years old	6	15.4
Fields of Study		
Linguistics	17	43.6
Psychology	7	18.0
History	2	5.1
Tourism	4	10.2
Law	7	18.0
Geography	2	5.1

Table 2 showed the percentage for each of the items in MARSII questionnaire. The percentage refers to the frequency in the use of the items which ranged from 1 (never) to 5 (always). It was shown in Table 2 that 79.5% of the respondents have a purpose in their mind when they read online while 46.1% of them take notes while reading online to help them understand what they read. However, 74.4% of the respondents think about what they know to help them understand what they read online while 69.3% of them take an overall view of the online text to see what it is about before reading it. The table reveals that the 38.4% of the respondents maintained that when online text becomes difficult, they read aloud to help them understand what they read.

It was clearly stated in Table 2 that 69.2% of the respondents think about whether the content of the online text fits their reading purpose while 64.1% of them read slowly and carefully to make sure they understand what they are reading online. The table shows that majority of respondents (53.8%) review the online text first by noting its characteristics like length and organization. It is clear from the table that 79.5% of the respondents try to get back on track when they lose concentration. The table reveals that only 74.4% of the respondents print out a hard copy of the online texts and underline or circle information to help them remember it. Moreover, the table reveals that the 69.2% of the respondents adjust their reading speed according to what they are reading online. More so, it was clearly indicated in the table that 74.3% of the respondents stated that when reading online, they decide what to read closely and what to ignore.

It was revealed that 61.6% of the respondents use reference materials (e.g., an online dictionary) to help them understand what they read online while 79.5% of them maintained that when online text becomes difficult, they pay closer attention to what they are reading (Table 2). The table showed that 69.3% of the respondents use tables, figures, and pictures in the online text to increase their understanding while 64.1% of the respondents stop from time to time and think about what they are reading online. It was further shown in Table 2 that 58.9% of the respondents use context clues to help them understand what they are reading online, 56.4% of the respondents paraphrase (restate ideas in their own words) to understand what they read online while 66.7% of them try to picture or visualize information to help them remember what they read online. However, it was shown that majority of the respondents (58.9%) use typographical features like bold face and italics to identify key information.

Table 2 revealed that 51.3% of the respondents critically analyzed and evaluated the information presented in the online text, 69.2% of them go back and forth in the online text to find relationships among ideas in it whereas 64.1% of the respondents check their understanding when they come across new information. It was clear from the table that 71.8% of the respondents try to guess what the content of the online text is about when they read while 89.7% of the respondents maintained that when online text becomes difficult, they re-read it to increase their understanding. The results on Table 2 showed that 56.4% of the respondents ask themselves questions they like to have answered in an online text, 53.9% of them check to see if their guesses about the online text are

right or wrong whereas 71.8% of the respondents read online and guess the meaning of the unknown words or phrases.

It was further shown that 61.5% of the respondents scan the online text to get a basic idea of whether it will serve their purposes before choosing to read it while 53.8% of the respondents stated that when reading online, they look for sites that cover both sides of an issue. Moreover, it was revealed that the 43.5% of the respondents stated that when reading online, they translate from English into their native language while 66.7% of them declared that when reading online, they think about the information in both English and their mother tongue (See Table 2 for more details).

Table-2. The percentages for each of the items in MARSI questionnaire

Questions	NEVER	SOMETIMES	ALWAYS
1. I have a purpose in my mind when I read online.	5.2	15.4	79.5
2. I take notes while reading online to help me understand what I read.	20.5	33.3	46.1
3. I think about what I know to help me understand what I read online.	10.3	15.4	74.4
4. I take an overall view of the online text to see what it is about before reading it.	2.6	28.2	69.3
5. When online text becomes difficult, I read aloud to help me understand what I read.	35.9	25.6	38.4
6. I think about whether the content of the online text fits my reading purpose.	7.7	23.1	69.2
7. I read slowly and carefully to make sure I understand what I am reading online.	5.1	30.8	64.1
8. I review the online text first by noting its characteristics like length and organization.	20.5	25.6	53.8
9. I try to get back on track when I lose concentration.	2.6	17.9	79.5
10. I print out a hard copy of the online text then underline or circle information to help me remember it.	30.8	15.4	53.8
11. I adjust my reading speed according to what I am reading online.	5.2	25.6	69.2
12. When reading online, I decide what to read closely and what to ignore.	5.1	20.5	74.3
13. I use reference materials (e.g., an online dictionary) to help me understand what I read online.	20.5	17.9	61.6

14. When online text becomes difficult, I pay closer attention to what I am reading.	5.1	15.4	79.5
15. I use tables, figures, and pictures in the online text to increase my understanding.	7.7	23.1	69.3
16. I stop from time to time and think about what I am reading online.	15.4	20.5	64.1
17. I use context clues to help me better understand what I am reading online.	2.6	38.5	58.9
18. I paraphrase (restate ideas in my own words) to better understand what I read online	12.9	30.8	56.4
19. I try to picture or visualize information to help remember what I read online.	12.9	20.5	66.7
20. I use typographical features like bold face and italics to identify key information.	15.4	25.6	58.9
21. I critically analyze and evaluate the information presented in the online text.	15.4	33.3	51.3
22. I go back and forth in the online text to find relationships among ideas in it.	7.7	23.1	69.2
23. I check my understanding when I come across new information.	5.1	30.8	64.1
24. I try to guess what the content of the online text is about when I read.	10.3	17.9	71.8
25. When online text becomes difficult, I re-read it to increase my understanding.	0	10.3	89.7
26. I ask myself questions I like to have answered in an online text.	23.1	20.5	56.4
27. I check to see if my guesses about the online text are right or wrong.	18.0	28.1	53.9
28. When I read online, I guess the meaning of unknown words or phrases.	12.8	15.4	71.8
29. I scan the online text to get a basic idea of whether it will serve my purposes before choosing to read it.	10.3	28.2	61.5
30. When reading online, I look for sites that cover both sides of an issue.	12.8	33.3	53.8

31. When reading online, I translate from English into my native language.	30.7	25.6	43.5
32. When reading online, I think about information in both English and my mother tongue.	17.9	15.4	66.7

Age and Metacognitive Reading Strategies Subscales

In this research, there are 3 age groups of the respondents which include 27-32 years old, 32-37 years old and more than 37 years old. The appropriate statistical method, Kruskal Wallis test was used to test the differences between the age brackets of the respondents and their metacognitive reading strategies. Table 3 presented the result of the Kruskal Wallis test of the differences between the mean of the respondents’ ages and the metacognitive reading strategies subscales.

Tables 3 and 4 showed that there were significant differences in the inspection of the means of the age brackets and various items of MARSII at $p \leq .041$ for the computer use (Mean=62.75, SD=27.95 for 27-32 years old; M=75.53, SD=13.09 for 32-37 years old; M=70.15, SD=10.45 for 37-44 years old), $p \leq .036$ for computer access (Mean=53.00, SD=26.68 for 27-32 years old; M=58.54, SD=27.80 for 32-37 years old; M=47.12, SD=24.12 for 37- 44 years old), $p \leq .013$ for internet (Mean=44.36, SD=30.55 for 27-32 years old; M=60.60, SD=32.78 for 32-37 years old; M=46.76, SD=31.88 for 37-44 years old), $p \leq .018$ for internet use (Mean=51.86, SD=30.14 for 27-32 years old; M=70.12, SD=26.14 for 32-37 years old; M=44.00, SD=26.43 for 37-44 years old) and $p \leq .020$ for Computer and Web-based Reading (Mean=58.47, SD=28.20 for 27-32 years old; M=53.68, SD=29.55 for 32-37 years old; M=55.21, SD=56.25 for 37- 44 years old).

Table-3. Summary information of Kruskal Wallis test for Age and metacognitive and reading strategies subscales

	CU	CA	INT	INTU	CWR
Chi- square	.778	.851	.150	.544	.270
df	2	2	2	2	2
Asymp. Sig	.041	.036	.013	.018	.020

Table-4. Descriptive analysis of Age and metacognitive and reading strategies subscales

Age		CU	CA	INT	INTU	CWR
27-32	Mean	62.71	53.00	44.36	51.86	58.47
	N	19	19	19	19	19
	Std. Deviation	27.95	26.68	30.55	30.14	28.20
32-37	Mean	75.53	58.54	60.60	70.12	53.68

	N	14	14	14	14	14
	Std. Deviation	13.09	27.80	32.78	26.14	29.55
37-44	Mean	70.15	47.12	46.76	44.00	55.21
	N	6	6	6	6	6
	Std. Deviation	10.45	24.12	31.88	26.43	25.46
Total	Mean	68.46	54.08	50.56	57.21	56.25
	N	39	39	39	39	39
	Std. Deviation	21.87	26.34	31.66	29.31	27.67

Research findings revealed that there are differences in the learners' age and their levels of Computer Use (CU), Computer Access (CA), Internet (INT), Internet Use (INTU) and Computer and Web-based Reading (CWR). The results in this study were supported by the study done by Dabbagh and Bannan-Ritland (2005) which stated that adult learners are more likely to succeed in completion of online reading tasks. Rotter (1990) added that high positive attitude in most cases can be supported by the abilities and efforts of the adult learners towards task completion in an online reading environment. However, adult learners are capable of managing and regulating their own reading performance. Duke and Pearson (2002) viewed the capabilities which the adult learners use to overcome the difficulties in reading performance as the metacognitive strategies. It was discovered that when the students use the appropriate strategies such as learning through computer, the more they develop their vocabulary and reading skills (Nader & Saeedeh, 2012).

Fields of Study and Metacognitive Reading Strategies Subscales

In this research, the six fields of study which were used include Linguistics, Psychology, History, Tourism, Law and Geography. Kruskal Wallis test was the appropriate statistical method which was used to test the differences between these fields of study and the metacognitive reading strategies used by the respondents. Table 4 presents the results of the Kruskal Wallis test for the differences between the mean of the fields of study and metacognitive reading strategies subscales.

It was revealed that there were significant differences between fields of study and various items of MARSII at $p \leq .032$ for the computer use (Mean=71.14, SD=23.37 for Linguistics; M=70.11, SD=9.97 for Psychology; M=67.98, SD=21.66 for History; Mean=72.35, SD=17.59 for Tourism; Mean=66.54, SD=25.39 for Law; Mean=39.29, SD=40.62 for Geography), $p \leq .049$ for computer access (Mean=53.32, SD=22.91 for Linguistics; M=59.51, SD=24.30 for Psychology; M=66.99, SD=46.69 for History; Mean=48.92, SD=16.53 for Tourism; Mean=51.94, SD=42.00 for Law; Mean=46.54, SD=6.42 for Geography), $p \leq .004$ for internet (Mean=53.69, SD=32.58 for Linguistics; M=57.73, SD=31.80 for Psychology; M=49.70, SD=59.34 for History; Mean=36.19, SD=24.84 for Tourism; Mean=54.61, SD=29.42 for Law; Mean=14.30, SD=19.21 for Geography), $p \leq .039$ for internet use (Mean=55.44, SD=30.90 for Linguistics; M=63.96, SD=15.64 for Psychology; M=39.36, SD=55.66 for History; Mean=62.94, SD=23.18 for Tourism; Mean=55.87,

SD=40.55 for Law; Mean=59.65, SD=12.77 for Geography) and $p \leq .012$ for Computer and Web-based Reading (Mean=56.97, SD=24.93 for Linguistics; M=53.41, SD=30.69 for Psychology; M=79.06, SD=18.61 for History; Mean=19.78, SD=23.65 for Tourism; Mean=66.91, SD=24.74 for Law; Mean=72.86, SD=5.76 for Geography).

The above results which showed that there were significant differences between fields of study and metacognitive reading strategies subscales were in line with the findings of some studies which revealed that science text readers display metacognitive strategies. Wallace and Wray (2011) studied the strategies employed by adult learners in reading Arts and Science texts. The findings of the study showed that Science text readers display metacognitive strategies in a higher order and use questioning strategy based on their background knowledge. These readers also use integrating, interpreting, general knowledge, comprehension monitoring, and text structure recognition strategies. However, Art students employed lower-order strategies such as word meaning questions, and word meaning guess through the use of computer and the internet sources. Linguists attempt to describe the significant pedagogical feature of academic texts particularly towards reading. Carrell and Floyd (1987) believed that reading academic texts need employing further strategies in order to comprehend the meaning of the texts.

CONCLUSION

Online reading environment encourages an interaction and sharing ideas among students. The findings of this study showed that there were significant differences between the ages and the respondents' metacognitive reading strategies. The results further showed that there were significant differences between the respondents' fields of study and their metacognitive reading strategies. Instruction of online materials should be introduced to adult learners and direct them toward self-direction of using metacognitive reading strategies. Particular attention should be paid to students' independency in strategy usage and motivate them to be more flexible with online environments. Also, instructors should guide readers in their interactional strategies they use in an online social interaction environment. Students need to develop and adopt their metacognitive reading skills and strategies to be successful online readers.

Some of the basic metacognitive reading strategies are how to use online dictionaries, how to use search engines, how to participate in online discussion rooms, how to share ideas and how to evaluate their understanding of reading texts. On the other hand, students internal purpose of reading should be identified by the students while teachers should encourage them to find their purpose of reading online to motivate them perform more flexible in reading online texts. More immersive pedagogical models needed to be developed for online readers as characteristics and skills continue to emerge across future online programs and technology.

REFERENCES

- Anderson, N. (1991)** "Individual differences in strategy use in second language reading and testing" *Modern Language Journal*, pp.460-472.
- Anderson-Inman, L., and Homey, M. A. (2004)** "HYPERTEXT LITERACY" *Literacy: New literacy and the impact of technology*, Vol.4, pp.78.
- Balajthy, E. (1990)** "Hypertext, hypermedia, and metacognition: Research and instructional implications for disabled readers" *Journal of Reading, Writing, and Learning Disabilities International*, Vol.6, No.2, pp.183-202.
- Brown, A., and Armbruster, B. (1986)** "The role of metacognition in reading and studying" *Reading comprehension: From research to practice*, pp.49-75.
- Brown, R. and Pressley, M. (1996)** "A quasi-experimental validation of transactional strategies instruction with low-achieving second-grade readers" *Journal of Educational Psychology; Journal of Educational Psychology*, Vol.88, No.1, pp.18.
- Carrell, P. and Floyd, P. (1987)** "Effects on ESL reading of teaching cultural content schemata" *Language Learning*, No.37, pp. 89-108.
- Collins, N. D. (1994)** "Metacognition and to learn reading" *Eric Digest*, Vol. 96.
- Dabbagh, N., and Bannan-Ritland, B. (2005)** "Online learning: Concepts, strategies, and application" Prentice Hall.
- Duke, N. K., and Pearson, P. D. (2002)** "Effective practices for developing reading comprehension: What research has to say about reading instruction", Vol.3, pp. 205-242.
- Eslami-Rasekh, Z., and Valizadeh, K. (2004)** "Classroom activities viewed from different perspectives: Learners' voice and teachers' voice" *TESL-EJ*, Vol.8, No.2, pp. 1-2.
- Gay, G., and Mazur, J. (1989)** "Conceptualizing a Hypermedia Design for Language Learning" *Journal of Research on Computing in Education*, Vol.22, No.2, pp.119-126.
- Herrington, J., and Oliver, R. (1995)** "Critical characteristics of situated learning: Implications for the instructional design of multimedia" *Learning with technology*, pp.235-262.
- Hsieh, P., and Dwyer, F. (2009)** "The Instructional Effect of Online Reading Strategies and Learning Styles on Student Academic Achievement" *Educational Technology & Society*, Vol. 12, No.2, pp. 15.
- KizitoBada, J., and Khazali, B. (2006)** "An Empirical Study on Education Strategy to E-learning in a Developing Country" In *Proceedings of the 4th IEEE International Workshop on Technology for Education in Developing Countries (TEDC'06)*.
- Knowles, M. S., and Bard, R. (1984)** "Andragogy in action: Applying modern principles of adult learning", Jossey-Bass.
- Mokhtari, K., and Sheorey, R. (2002)** "Measuring ESL students reading strategies" *Journal of Developmental Education*, Vol. 25, No. 3, pp. 2-10.
- Nader, A., and Saeedeh, M. (2012)** "Investigating the impact of computer-assisted teaching on Iranian EFL vocabulary learning", *International Journal of Asian Social Science*, Vol. 2, No. 6, pp. 881-889.

Rotter, J. (1990) "Internal versus external control of reinforcement" American psychologist, Vol.45, No.4, pp. 489–493.

Vandergrift, L. (2002) "It Was Nice to See That Our Predictions Were Right': Developing Metacognition in L2 Listening Comprehension" Canadian Modern Language Review, No. 4, pp. 555-575.

Wallace, M., and Wray, A. (2011) "Critical reading and writing for postgraduates" Sage Publications Ltd.

Warschauer, M. (1997) "Computer-mediated collaborative learning: Theory and practice" Journal Modern Language, Vol. 81, No.4, pp. 470-481.

Yen, M. H., and Radach, R. (2009) "Early parafoveal processing in reading Chinese sentences" Actapsychologica, Vol. 131, No. 1, pp. 24-33.

Table-5. Summary information of Kruskal Wallis test for Fields of study and metacognitive and reading strategies subscales

	CU	CA	INT	INTU	CWR
Chi-Square	.475	.774	.250	.747	.733
df	5 5	5	5	5	
Asymp. Sig.	.032	.049	.004	.039	.012

Table-6. Descriptive analysis of Fields of study and metacognitive and reading strategies subscales

Fields of Study		CU	CA	INT	INTU	CWR
Linguistics	Mean	71.14	53.32	53.69	55.44	56.97
	N	17	17	17	17	17
	Std. Deviation	23.37	22.91	32.58	30.90	24.93
Psychology	Mean	70.11	59.51	57.73	63.96	53.41
	N	7	7	7	7	7
	Std. Deviation	9.97	24.30	31.80	15.64	30.69
History	Mean	67.98	66.99	49.70	39.36	79.06
	N	2	2	2	2	2
	Std. Deviation	21.66	46.69	59.34	55.66	18.61
Tourism	Mean	72.35	48.92	36.19	62.94	19.78
	N	4	4	4	4	4
	Std. Deviation	17.59	16.53	24.84	23.18	23.65
Law	Mean	66.54	51.94	54.61	55.87	66.91

	N	7	7	7	7	7
	Std. Deviation	25.39	42.00	29.42	40.55	24.74
Geography	Mean	39.29	46.54	14.30	59.65	72.86
	N	2	2	2	2	2
	Std. Deviation	40.62	6.42	19.21	12.77	5.76
Total	Mean	68.46	54.08	50.56	57.25	56.62
	N	39	39	39	39	39
	Std. Deviation	21.87	26.34	31.66	27.67	26.81