Can Cooperative Learning Maximize the Effectiveness of Webquest Used in Learning?

Issham Ismail, Azidah Abu Ziden, Robitah Spian
Universiti Sains Malaysia, Malysia

Abstract—The purpose of this study is to investigate whether cooperative learning can maximize the effectiveness of webQuest used as a medium in teaching and learning in Islamic education. The present study also examined the perception of students towards WebQuest and cooperative learning method. Muslim students were selected from a rural school in Penang, Malaysia. Quantitative and qualitative approaches were used in this study. The results showed that WebQuest used in teaching and learning in Islamic education had positive impact on students' learning'. However, cooperative learning method did not influence the students' learning outcome. Nevertheless, students were interested in the medium of instruction used. Integration of ICT in class lesson in Islamic subject enables the creation of interactive and fun learning among students. Therefore, the application of WebQuest in lessons is suitable and should be applied by all teachers in their learning activities to increase students' interest and performance in Islamic education.

Index Terms—WebQuest, Islamic education, teaching and learning, cooperative

I. INTRODUCTION

The Master Plan for Educational Development (2006-2010) was drafted by the Ministry of Education Malaysia as an implementation plan for the success of the education agenda under the Ninth Malaysia Plan (RMK-9). This plan outlines the six cores which are building of nation, developing of human capital, strengthen national schools, and reduce the education gap, elevate the teaching profession and accelerate excellent existing educational institutions. In order to improve the effectiveness of teaching, diversity of teaching methods and the use of teaching aids should be utilized by teachers in all subjects including Islamic subject. The use of ICT is not only limited to practical subjects like mathematics and science but had to be practiced in others subject like Islamic education. Therefore, the use of Web Quest applications tested in this study to look at its effectiveness in improving students' achievement. Islamic educational subject is a subject that must be taken by each of Muslim student. In the subjects of Islam there are several components that must be learned by students such as Tilawah al-Quran, Hadith, Beliefs, Seerah and Islamic Civilization and Islamic Manners and Morals. All components require students to learn based on annual syllabus, therefore, to attract students to study; a comprehensive approach needs to be done by teachers in their teaching. Therefore, teaching methods need to be constantly changing to enhance student creativity, as well as to encourage students' involvement in classes. The use of ICT, such as websites, interactive multimedia, internet, webquest, and courseware will be able to attract students' interest to study. According to Hasimah (1994) over 90% of students agreed the use of computers increased their motivation to learn and also improve teaching and learning. In addition they felt that ICT contributed to the efficient in learning and it also can be an effective reference material for them to study. Hence, the effectiveness should be tested Learning and teaching structure in Islamic education can be seen as an outdated and traditional method used.

A. Constructivism Theory in Cooperative Learning

According to the Jonhson, D. W et al.(1981) cooperative learning is a form of group which need students to work together to maximize learning with each other's. Cooperative learning is a learning base on student-centered learning and it's consistent with the constructivism principle. Constructivist principles are student-centered learning approach which allows students to correlate learning with experience and accept it from different perspectives. Constructivist learning assigns to a set of learning theories as an epistemological alternative to objectivist theories of knowledge. The constructivist approach is concerned with support for the construction of internal knowledge structures through active learning (Swan, 2005). Same goes to Cooperative learning encourages students to gain knowledge in form of group and, increased participation in group discussion. Each members of the group will discuss and assist team members in problem solving for example, team members will assist those who are less skilled reading the Quran. While, traditional teaching is different with cooperative teaching whereas the role of teacher is to give information to students (chafe, 1998). In other word it called as teacher centre learning that is can be seen more to chalk-and -talk style. In study by Nayereh Baghcheghi (2011) found that most students in that class are silent, inactive and just listen what was taught by lecturer. This method encourages students to work individually and compete against one another and normally concerned with the improvement of their own grade. (R. P. Manlunas, 2011). This situation is difference with cooperative learning method that required students to concentrate and pay attention to receive information from other friends and require communication among all members.

B. Webquest as a teaching medium

A WebQuest is an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet (Dodge, B. 1995). Thus, cooperative learning is compatible with the combination of WebQuest application which is inquiry activity that requires students to obtain information from internet. Therefore, the study will unveil the effectiveness of the use of WebQuest in cooperative learning on Islamic education. Furthermore, in Islamic syllabus, there are some topics that need to demonstrate the methods such as prayers, performing ablution purified and etc. Teaching linearly only enable students to understand and memorize the information to be answered in the examination solely but it will be difficult for them to practice.

II.   METHODOLOGY

A.   Research design

This research adopted a quasi –experimental design in investigating the effectiveness of the use of WebQuest in cooperative learning on Islamic education. The effectiveness was tested for prayer topics in Islamic education syllabus for first secondary (form 1). Two classes who have a moderate students' achievement have been selected as treatment and control group. For the treatment group, the class lesson conducted with the used of WebQuest and has been taught through cooperative learning method. While, for control group the learning conducted with the use of WebQuest through conventional teaching and learning method. Pre-test and post test have been conducted for both groups

B.   Sample of study

The sample of the study consists of first secondary students from rural schools in Penang Malaysia. A total of 63 students participated in the study. The sample identified by using Cluster Random Sampling. Each class consist of 31 and 32 of female and male students with same academic achievement.

C.   Research instrument

The quantitative and qualitative approaches were used in the study to investigate the effectiveness of using WebQuest as a medium of teaching and cooperative learning in Islamic education. The questionnaire used was adaption from the study of Suraini (2000), Noraini (2001), Dodge (2001) and Au (2002) in NorAzah Mohd Nordin & Ngau Chai Hong(2000). Each item in questionnaire was base on likert scale which is scores of 1,2,3,4 and 5. While, for quantitative study, a total of 27 students participated in the interview in order to identify the perception towards cooperative learning and webquest use.

Pre Test has been carrying out for both groups to analyze the students' achievement. There were 30 objective questions from the Prayer topic in the pre test then the same questions have been answered by students in the post test after class finished. The time was allocated for 30 minutes. While, the Post test conducted after classes lesson end and time was allocated for 30 minutes. This test was also conducted for both groups .The purpose of the post test to identify the differences of students' achievement after receiving treatment class.

III.   RESULTS

A.   Quantitative findings

Table 1 report the mean, median, mode and standard deviation for both pre and post test. The data found that the maximum and minimum values of pre test were 20.00 and 6.00. For post test the min value was 22.0 and maximum value was 7.00. The mean scores for both pre and post test were 13.28 and 15.39. The mean differences between pre and pro test were 2.11 which showed that the WebQuest used gave positive impact on students' achievement in learns Islamic education.

TABLE I.
PRE AND POST TEST FOR WEBQUEST USED IN TEACHING AND LEARNING IS ISLAMIC EDUCATION

	Pre -test	Post-test
Mean	13.285	15.396
Median	14.000	16.000
Mode	14.00	17.00
Standard Deviation	2.761	3.485
Minimum	6.00	7.00
Maximum	20.00	22.00

As indicated in table II, the mean difference score was 0.5524, t value was 0.626 and p value was 0.535.The p value was too small to accept as a significant result. Therefore, there was no significant difference between the use of WebQuest on teaching Islamic education through cooperative learning and teaching using WebQuest through conventional teaching and learning. The average scores reported that cooperative learning did not influence the increment of student learning achievement.

Table III was aimed to evaluate the responses of students about the webquest layout. According to Table 3, the higher percentage of C1 (93.7%) and C2 (98.4%) showed that most of student agreed the graphic and picture used in Webquest were suitable and attractive. Otherwise, both results showed only 1.6% of them not sure with the suitability of graphic and picture used. While, both items mean score were 1.6032 and 1.4444 which concluded that students agreed the pictures and graphic were included in the WebQuest suitable and attractive.

TABLE II.
THE COMPARISON BETWEEN USED OF WEBQUEST IN TEACHING AND COOPERATIVE LEARNING METHOD WITH WEBQUEST USED IN TEACHING AND LEARNING THROUGH CONVENTIONAL LEARNING METHOD.

Post-test		Levene's Test for equality of variances					T-test for equality of means	
	Equal	F	sig	t	df	Sig(2-tailed)	Mean difference	
	Variance Assumed	.149	.701	.626	61	.534	.55242	
	Equal variance Not assumed			.624	59.233	.535	.55242	

TABLE III.
EVALUATION ON THE WEBQUEST DESIGN

No statement		ab	(N=63)				Min&Sp	
			b	Tp	tb	atb	m	Sp
C1	Graphics used were suitable and attractive	52.4 (33)	41.3 (26)	1.6 (1)	3.2 (2)	1.6 (1)	1.6032	0.81398
C2	Pictures used is suitable and attractive	57.1 (36)	41.3 (26)	1.6 (1)			1.4444	0.53212
C3	Interface is user friendly	47.6 (30)	41.3 (26)	11.1 (7)			1.6349	0.67922
C4	Colours and icon used are appropriate and attractive	39.7 (25)	44.4 (28)	15.9 (10)			1.7619	0.71198
C5	Language used were appropriate and easy to understand	44.4 (28)	42.9 (27)	11.1 (7)		1.6 (1)	1.7143	0.79166
C6	Increase my motivation to study	63.5 (40)	25.4 (16)	11.1 (7)			1.4762	0.69229
C7	Easy for me to receive knowledge	60.3 (38)	36.5 (23)	3.2 (2)			1.4286	0.55979
C8	Give a chance to me to revise base on my own abilities	34.9 (22)	44.4 (28)	19.0 (12)	1.6 (1)		1.8730	0.77235
C9	Attract me to get extra information through link provided in webquest	38.1 (24)	49.2 (31)	1.1 (7)		1.6 (1)	1.7778	0.77135
C10	Easy for me to make reference	41.3 (26)	39.7 (25)	17.5 (11)	1.6 (1)		1.7937	0.78614
C11	Attract to study and not bored	46.0 (29)	38.1 (24)	12.7 (8)	1.6 (1)	1.6 (1)	1.7460	0.86076
C12	Overall webquest is suitable and interesting in teaching and learning for Islamic subject.	81.0 (51)	14.3 (9)	3.2 (2)	1.6 (1)		1.2540	0.59482

The percentage for both C3 and C4 ranged between 88.9% and 84.1%. These indicated that almost all students complied that the interface created was user friendly as well as icon and the colour used were compatible. Each item has low percentage of students who are not sure the compatibility of icon and colour including interface.

The mean scores ranged between 1.6349 and 1.7619 for item C3 and C4 exhibited students' positive viewed the items reconciliation. In term of language, 87.3 students agreed that the language used in WebQuest was appropriate and easy to understand. However, there are some students who do not agree and felt that the language used is difficult to understand, but it only accounted for a low percentage which was 1.6%. The Result in the item C6 showed 88.9% students agreed that WebQuest motivate them to study. 11.1 % of them stated that there are not sure whether the use of WebQuest increase their motivation towards study or otherwise.

Then, the item of C7 reported that majority of students agreed that WebQuest used enables them to receive instruction and information easily compared to only 3.2% of students who are not sure of receiving information by WebQuest used in teaching. While, more than half students(79.4%) stated that Webquest gave them the opportunity to revise Islamic Education lessons by their own ability. However, 1.6% of students did not agree with the statement.

The items C9 and C10 showed that majority of students indicated that WebQuest used attract them to obtain extra information about the lesson through link provided instead easier for them to make reference. Both results recorded the highest percentage of 87.3% and 81%. Whereas, 1.6% of students claimed that they were not interested to explore extra information by using WebQuest link and felt that it was difficult to make referral using that application. However, the mean scores range between 1.7778 and 1.7937 implicated that most students agreed the statement in C9 and C10.

The result in C11 explained that 84.1% students agreed that WebQuest was attractive and arrest attention to study instead which did not cause boredom for them. Just a few of them reported that they did not sure the statement and claimed that WebQuest was bored and unattractive. Whereas, the last item which is C12 reported that 95.3% of students agreed the used of WebQuest was compatible in learning and teaching Islamic education.There is 1.6% of students found that the WebQuest was not compatible at all. The mean scores range between 1.2540 and 1.8730 indicated that overall findings alluded the positive results which is WebQuest was compatible used for teaching and learning in Islamic education

B. Qualitative findings

Four perceptions of students towards teaching and learning by using WebQuest on Islamic education are summarized in table IV.

Table V, summarized the interview results which were aimed to examine students' perception towards cooperative learning in Islamic education. Base on the results, there were two difference perceptions on cooperative learning that has been identified base on the negative and positive aspect. The results have been described in table V.

TABLE IV.
PERCEPTION STUDENTS TOWARDS WEBQUEST USED IN TEACHING AND LEARNING OF ISLAMIC EDUCATION.

Webquest avoid boredom in class.   "I am satisfied when a teacher used WebQuest in teaching and learning Islamic education. It made me easy to understand and I do not feel sleepy This is because teacher played religious songs during the classes."   "It is great! I do not bored when study."   The things that attract me in WebQuest are various colours used and the song played during the lesson eliminates boredom."   "WebQuest help me to understand the lesson and it is good."   "It is fun, very attractive and it is not boring.
WebQuest increase students' understanding   "Yes. I agree. WebQuest is applicable and help me to understand the subject such as instruction for solah which is can be downloaded in You tube."   "I agree. It is made me easy to learn because WebQuest help me to understand more and get more information."   "I agree because through WebQuest I can see and listen clearly. I can easily determine the time and schedule of solah with assist of attractive picture in web quest."   "I strongly agree. WebQuest make me easy to learn. This is because I can obtain new information."
Webquest motivate students to study   "I feel very happy and excited when teacher use WebQuest at the first time in Islamic education class."   "I feel very happy and feel more interested to learn by using WebQuest   "It is fun when there was a song during study in class."

TABLE V.
STUDENTS' PERCEPTION TOWARDS COOPERATIVE LEARNING

Perceptions	**Subjects**	
	Positive	*Negative*
It makes the study more fun	"It is fun when learning in group." " it is more enjoyable when learning in group" "I agree. Learning in group attracts my attention to study. This is because of WebQuest application help me to understand the topic."	
Easy to understand and share information	"... This is because of web quest in cooperative learning activity help me to understand the lesson." "..Learning in group attracts me to study. I can share opinion with each other." "Learning in group is suitable to practice in Islamic class in order to help me in problem solving activities." "It is suitable to implement learning in group in Islamic education because this subject required us to generate idea." It is compatible to practice in group because we can share information.	
Cooperation	"...some students who can't read Jawi. We can assist the weak students."	"Learning in groups can lead to fights because of argument." "There are group members that are unfair and selective in term of cooperation. They are some of them like to give instruction. I am not interested to learn in group." "Group members did not give cooperation, they did not want to discuss and just do the work themselves."
		"Leaning in group is not compatible to implement in Islamic subject because most student can't pay attention on teaching. They like to make noisy and chats." "Learning in group is too noisy and I can't concentrate what was taught by teacher." "Learning in a group is too crowded and noisy. They are always chatting with members group."
Differences in learning abilities		"Learning in group is not fun because of the imbalance group member which is cause the weak student feels down." "I am not confident and ashamed to give opinion. That why I don't like learn in group."

IV. DISCUSSION

A. The effectiveness of WebQuest used in teaching and cooperative learning on Islamic education towards students' achievement.

Difference scores between pre test and post test results clearly defined that there are positive achievement on students' learning. This improvement attributed to the method employed in teaching and learning. This means that the use of the WebQuest in teaching and learning on Islamic education has noticeably increased the students' achievement. This result supported by Gaskill M. et.a l (2006) which aimed to investigate about the comparison of learning outcomes between conventional versus WebQuest-based instruction. Data gathered reported that the mean scores of pre test and post test (m= 6.68; m= 7.77) which indicated that there was improvement of students learning outcomes in webquest activity. However, when comparison was made it showed that conventional learning gave greater result on student learning outcomes compared to WebQuest based-instruction result. The contradiction result was also shared by Strickland J (2005) who was investigating the comparison the use of Webquest with traditional instruction in teaching learning contents. It was found that, students scored higher on the end of unit exam than students completing the WebQuest activity. Past research done by L.S.Wui and Rohaida M.S (2007) was developed WebQuest instruction on Nutrition using WebQuest , known as NutriQuest found that nutrient websites facilitates science learning on nutrition for Form Two students in understanding of fundamental nutrition concepts.

B. B. Attractive User Interface design

The study was investigating the effectiveness of Webquest used in teaching and learning Islamic education. The effectiveness of the WebQuest used was measured through students' assessment instead their perception towards WebQuest interface items and teaching and learning structure. In term of analysing WebQuest interface items the overall results indicated that the WebQuest was compatible and could be used as learning and teaching medium in Islamic education. Most of students agreed that the elements adapted in WebQuest such as graphic, picture, animation, colours, icons and language used were appropriate and suitable to use in Islamic subject. They commented that the various used colours were attractive and the graphic used were suitable and interesting. Students described the webquest as *"through Webquest I can add more knowledge about solah with attractive graphic."* This finding is congruent with L.S.Wui et al. (2007) who found that the students and teachers were satisfied with the Nutriquest wesite that provide them attractive and interesting interface in term of it colours, pictures and graphics.

C. Facilitate Islamic Education Learning

It was observed that the WebQuest used in learning activities enable to facilitate student to learn Islamic education. Qualitative and quantitative data collected clearly explained that WebQuest used in Islamic education enable to increase students' motivation to study. According to March (1998), WebQuests increase student motivation by encourage students to put more effort, to be more alert and ready to make connection with information

provided. In the present study, students described the WebQuest as "I feel very happy and excited when teacher use WebQuest at the first time in Islamic education class." and "I feel very happy and feel more interested to learn by using WebQuest." Similar study by Y.Y Chan (2007) also had found that WebQuest enable to increase motivation of students to complete the task and assist them to answer nontrivial problems with solution that constructed by their own.

Furthermore, the study indicated that WebQuest provides a lot of the information which help to improve students' understanding in Islamic topics. The links provided in WebQuest facilitated students to find extra information besides increase understanding. The students illustrated WebQuest as *"... make me easy to learn because WebQuest help me to understand more and get more information"*. This finding was agreed by L.S.Wui & R.M.Saat's (2007) who found that links on WebQuest was useful to help students to achieve information and easy to make revision. The same study summarized as WebQuest helping them to complete task, and enhance understanding and very convenient website to visit.

Other than that, applications used in WebQuest such as Youtube encourage students understanding. Through youtube the topic like solah (prayer), ablution etc. can be visualized easily. As described by student *"I was very impressed with you tube used in WebQuest which is show me the instruction of solat in the correct way. Besides, assist me on reading in solah."* Multimedia elements in the WebQuest enable to attract interest and students' attention in teaching which can influence students' achievement in learning. The effectiveness of multimedia used has been shown by previous study. According to the Ab.Halim & Zaradi (2007) reported that the multimedia applications such as voice card, audio, graphic, animation, slide presentation, 3D presentation software gave better impact towards students in learning and teaching activities. Pursuant to Ismail (2002) stated that a person can remember up to 90% of what they read, hear, say, and do at simultaneously. Therefore, to achieve that, multiple teaching pedagogies must be implemented by integrating the ICT tools in teaching and learning especially in Islamic education which required practical learning for more comprehension.

D. Generate interest and prevent boredom

According to Small Ruth V.et al. (1996) stimulating interest and prevent boredom was important goal for promoting new learning environment. The same study reported that the most effective way to generate interest was colourful instruction that incorporates a variety of attention. Thus, correspond with present study found that WebQuest used in learning reduced boredom among students and encouraged interest students to study Islamic education. Consistent with interview results, students described WebQuest as *"The things that attract me in WebQuest are various colours used and the song played during the lesson eliminates boredom."* As has been discussed before, the multimedia elements used during lesson attracted student attention and interest to study. Additionally, Small Ruth V.et al. (1996) also concluded that instructional material which unable to capture irrelevant with learning contents and goals of the instruction may possibly promote boredom. Similar, with present study reported that most students found WebQuest used in

Islamic learning increase understanding and learning becomes more enjoyable.

E. Does cooperative learning can maximize the effectiveness of WebQuest used in learning?

The main objective of the study was to examine whether cooperative learning can maximize the effectiveness of WebQuest used in learning especially in Islamic education. The effectiveness was measured base on academic achievement. Unexpected result was found in this study which showed that cooperative learning did not influence students' learning outcomes. The study compared between both of cooperative learning and conventional learning in teaching by using WebQuest. The results reported that there were no significant different for both learning methods. It concluded that cooperative learning did not contribute to the effectiveness of WebQuest used in Islamic education learning. On the other hand, study by L.S.Wui and Rohaida M. S (2007) who found that WebQuest helps to facilitate cooperative learning. The researchers reported that students learned how to lead the group, be more responsible to their members group, help to understand the learning content, leaned to cooperate with friends, and enable to discuss and share information. The same study also revealed that students preferred working in groups (cooperative learning) in WebQuest instruction contrast to individual class work. Positive result was also reported in study by Lara S. and Repáraz, (2005), which concluded that integration between cooperative learning and the use of WebQuest in classroom were able to produce solid learning among students.

Although in this study showed that cooperative learning did not show positive influence yet, WebQuest used alone still shows improvement on students' learning outcomes.

F. Attitudes towards Cooperative learning

It was found that cooperative learning did not promote or assist to the effectiveness of WebQuest used in teaching and learning on Islamic education. Related to that result, students' attitudes towards cooperative learning have been investigated and it measured base on students' perception. The findings will be discussed from the positive and negative aspects of students' attitudes and as the results of this study were more likely to the negative perception. Similar study by Weinburgh, M. (1995), who has been studying the correlation between attitudes and achievement, indicated that positive attitude toward cooperative learning contributed to the greater achievement. Therefore, it can be formulated that more negative attitudes was leading to the less achievement. The present study itself showed the negative attitudes appeared more than positive attitudes.

G. Fun and enhance understanding

The students claimed that cooperative learning made the assignment or task more fun. It can be associated due to its ability to enhance students' understanding the subject and its characteristic which required them to working in group then encouraged enjoyable in class. Students believe that working in group made the task much easier, everyone can discuss and share information together in order to complete the task. Therefore, It can be summarized that cooperative learning was fun because its ability to increase students understanding towards course. These findings were supported by D. W. Johnson et all.

(2000), who found that learning together gave a greatest effect on students' achievement compared to other variables.

H. Cooperation vs. Less interactivity

According to the V.Battistich et al. (1993), good interaction among team members was important to determine the effectiveness of cooperative learning. Good interactions characteristics such as group members were friendly, willing to help one another, showed concern for one another welfare and work collaboratively. While, less group interaction contributed to the negative students' outcomes. Hence, in present study some students described the collaborative learning enables them to assist weak students in team. However, more negative responds has been reported resulting from lack of cooperation among team members. Negative attitudes were causes from arguing with group members, dominating or dictatorship, unfair and selective team members' attitude. Students also reported that they were not able to pay attention in study due to the lack of concentration among team members. It found that students like to talk each other in group and made noise. While, similar study by Robyn M. Gillies (2004) who reported that students in structure cooperative learning group were less likely try to dominate and control unstructured cooperative learning group. The same study also revealed that, this group was more likely to listen to each other, ask each other to expand on points they were making, share ideas, and help each other compared to unstructured groups. Related to the research by V.Battistich et al. (1993), that group can be considered to have a good interaction, work cooperatively and finally, will be contributed to the positive outcomes.

I. Isolation

Negative perception towards cooperative learning was cause from isolated students due to the differences learning abilities among members team. Students reported that they felt unconfident and shy because they're weak in a class. According to David W. Johnson et al. (2008) the feeling of isolation was related with high anxiety, low self-esteem, poor interpersonal skills emotional handicaps, and psychological pathology. These causes might be contributed to the isolation feeling among weak students. The same study added that the more cooperative learning was used in classroom, the more positive relationships among students and further will reduce the rejected feeling among isolated students.

V. CONCLUSION

The study showed a significant improvement in the performance of the students in Islamic Education. The results showed that the WebQuest used help and guide group members in their Islamic study, besides, motivate students to learn and led them to seek information. Comparison between traditional learning and cooperative learning showed no significant differences in term of students' achievement have concluded that cooperative learning in learning activity did not influenced or increased the effectiveness of WebQuest used. Other than that, the study summarized that most of students have a good attitudes towards WebQuest used, however poor perception on cooperative learning method have been identified. Less research has been done to study the effectiveness of ICT used in the subject of Islamic educa-

tion. Hence this study concluded that, the integration of ICT which is WebQuest in teaching and learning was suitable and applicable for Islamic education since most Islamic courses require a more visual learning and application to further understanding. Many studies reported the effectiveness of cooperative learning activity enhance students' learning outcomes which was contrary with the results of this study. In the view of researcher based on the interview results, the main ineffectiveness has been identified due to the loss of control in class and isolation feeling among students. The feeling of isolation will reduce when more cooperative learning was used in class. Therefore, this is teacher's responsibility to ensure the class under control and teachers' strategies to form the effective group in class in order to prevent argument or any problem among members team.

REFERENCES

[1] Abbit, J., & Ophus, J. (2008). What we know about the Impacts of Web-Quests: A review of research. AACE Journal, 16(4),441-456.

[2] Allan, J., & Street, M. (2007). The quest for deeper learning: An investigation into the impact of a knowledge-pooling WebQuest in primary initial teacher training. *British Journal of Educational Technology*, *38*(6), 1102-1112 http://dx.doi.org/10.1111/j.1467-8535.2007.00697.x

[3] Barbour, M., Rieber, L. P., Thomas, G., & Rauscher, D. (2009). *Homemade PowerPoint games: A constructionist alternative to WebQuests.* TechTrends 53(5).Journal of Science Education and Technology, Vol. 15, No. 2, April 2006 (2006). http://dx.doi.org/10.1007/s10956-006-9005-7

[4] Chafe, A. (1998). *Computer Technology and Cooperative Learning. Retrieved from* http://www.cdli.ca/~achafe/maj_index.html

[5] David W. Johnson, Roger T. Johnson, and Mary Beth Stanne (May, 2000) Cooperative Learning Methods: A Meta-Analysis University of Minnesota 60 Peik Hall 159 Pillsbury Drive, S.E. Minneapolis, Minnesota 55455 D H Jonassen, K L Peck, B G Wilson (1999). *Learning with technology: A constructivist perspective*

[6] Special Education Technology (1999) volume: 16, issue: 1, Publisher: Prentice Hall

[7] Dodge, B. (1995a). Some thoughts about Webquests. retrieved July 25, 2011 from http://webquest.sdsu.edu/about_webquests.html

[8] Gaskill, M., McNulty, A., & Brooks, D. W.(2006). Learning from WebQuests. *Journal of Science Education and Technology,15*(2), 133-136. http://dx.doi.org/10.1007/s10956-006-9005-7

[9] Heibert, E. H. (1991). *Literacy for a diverse society : perspectives, practices, and policies* New York: Teachers College Press, Teachers College, Columbia University.

[10] Jonhson, D. W.; Johnson, R.T. and Smith, K. *(1981). Active learning: cooperation in the classroom. Interaction Book Company. Edina: MN.*

[11] Lara, S. and Repáraz, Ch., 2005. *Effectiveness of cooperative learning: WebQuest as a tool to produce scientific videos*.In: Formatex, ed. Recent research developments in learning technology, 2005. Badajoz: Formatex, 437–441.

[12] Lee Sheh Wui and Rohaida Mohd. Saat(2007) An Evaluation of a Nutrition WebQuest: The Malaysian Experience.University of Malaya, Kuala Lumpur, MALAYSIA Eurasia Journal of Mathematics, Science & Technology Education, 2008, 4(2),99-108

[13] March, T. (1998). *WebQuests for learning: Why WebQuests? An introduction.* Retrieved August 18, 2011, from http://tommarch.com/writings/intro_wq.php

[14] Nayereh Baghcheghi, Hamid Reza Koohestani, Koresh Rezaei (2011). *A comparison of the cooperative learning and traditional learning methods in theory classes on nursing students' communi-

cation skill with patients at clinical settings, retrived from* http://www.sciencedirect.com/science/article/pii/S0260691711000190. http://dx.doi.org/10.1016/j.nedt.2011.01.006

[15] Othman B. Md. Johan & Lukman Bin Dinyati. *Persepsi Guru-Guru Pendidikan Islam Terhadap Penggunaan ICT Untuk Tujuan Pengajaran Dan Pembelajaran Sekolah Kebangsaan Di Daerah Kluang* Fakulti Pendidikan Universiti Teknologi Malaysia retrieved July 11, 2011 http://eprints.utm.my/11802/1/Persepsi_Guru.pdf

[16] Pun, S.W., Lee, F.L., Chan, Y.Y. & Yang, H.H (2005). Student Teachers' Beliefs to Teaching with Webquest in the Classroom. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2005* (pp. 3351-3355). Chesapeake, VA: AACE.Retrieved from http://www.editlib.org/p/19647.

[17] Renante P. Manlunas (2011) *ICT and Cooperative Learning: Reinventing the Classroom* University of the Philippines in the Visayas Cebu College Professional Education Division retrevied from http://www.fit-ed.org/ictcongress/paper/fullpapers/manlunas.pdf

[18] Robyn M. Gillies (2004). *The effects of cooperative learning on junior high school students during small group learning.* School of Education, The University of Queensland, Brisbane 4072, Australia. Volume 14, Issue 2, April 2004, Pages 197-21. http://dx.doi.org/10.1016/S0959-4752(03)00068-9

[19] Small, R. V., Dodge, B. M., and Jiang, X. (1996). *Dimensions of Interest and Boredom in Instructional Situations*. In Proceedings of Annual Conference of Association for Educational Communications and Technology, *Indianapolis, IN.*

[20] Strickland, J. (2005). Using WebQuests to teach content: Comparing instructional Strategies. Contemporary Issues in Technology and Teacher Education, 5(2), 138-148.

[21] Swan, K. (2005). A Constructivist Model for Thinking About Learning Online. Needham, MA: Sloan-C.

[22] Vidoni, K. L., & Maddux, C. D. (2002). Web-Quests: Can they be used to improve critical

[23] thinking skills in students? *Computersin the Schools*, *19*, 101-117.Wang, F., & Hannafin, M. J. (2008). Integrating WebQuests in preservice teacher education.*Educational Media International,45*(1), 59-73.

[24] Weinburgh, M. (1995), *Gender differences in student attitudes toward science: A meta-analysis of the literature from 1970 to 1991.* Journal of Research in Science Teaching, 32: 387–398. http://dx.doi.org/10.1002/tea.3660320407

[25] Yuen-Yan Chan(2007) *"Teaching queueing theory with an inquiry-based learning approach: A case for applying webquest in a course in simulation and statistical analysis,"Frontiers In Education Conference - Global Engineering: Knowledge Without Borders, Opportunities Without Passports, 2007. FIE '07. 37th Annual* , vol., no., pp.F3C-1-F3C-6, 10-13 Oct. 2007 http://dx.doi.org/10.1109/FIE.2007.4418162

[26] Victor Battisstich, Daniel Solomon, Kelvin Delluchi, development studies center Oakland , CA, (1993) Interaction processand students outcomes in cooperative learning group. The Elementary School Journal Vol. 94, No. 1, Sep., 1993

AUTHORS

Issham Ismail is Senior lecturer in University of Science Malaysia. (e-mail: issham21@usm.my).

Azidah Abu Ziden is with Faculty of education in University of Science Malaysia (email: azidah@usm.my)

Robitah Spian is with the Faculty of distance education in University Science Malaysia. (Email: iytadiyanz@gmail.com)