A WEB-BASED COLLABORATIVE LEARNING ENVIRONMENT FOR TEACHING LITERATURE IN ENGLISH FOR FORM FIVE USING THE JIGSAW TECHNIQUE

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ABSTRACT

This paper aims to look into the application of a cooperative learning technique called the jigsaw in the teaching and learning of a literature novel prescribed in the syllabus of SPM English language by the Malaysian Education Ministry. This technique was adapted and implemented in a Web-based supported collaborative learning environment with the objective of promoting motivation and interaction among participants of Form Five level to learn the novel better. The study seeks to identify whether motivation and interaction is enhanced through the implementation of the teaching methods - a Web-based courseware and collaborative learning environment using the jigsaw technique. Motivation is measured according to Kellers’ ARCS model of Motivation while interactivities are analysed using interpretation of students’ electronic discourse. The findings of this study show that the implementation enhanced motivation, with recommendation for similar methods to be infused in other areas of learning. The interaction level however, has increased but only at average level when measured by the SPM marking scheme for the Literature Component largely due to the study’s duration. The significance of this study is that, further investigations of it might develop into a platform for discourse on the component shared with other school teachers. In addition, the success it has conjured is sufficient to be included into teacher training syllabus in an effort to encourage more teachers to participate in the methods above.

Keywords:
Web-based Learning, Collaborative Learning Environment, Cooperative Learning Technique, Motivation and interaction in teaching, Jigsaw Technique.

INTRODUCTION

The study is primarily initiated to promote and improve students’ motivation and performance in learning a prescribed literature text in the Literature Component of the SPM English papers. Based on observation of results of past examinations and feedback from language teachers, it is found that students lack motivation in reading the text. This leads to heavy reliance on supplementary sources and poor results in the Literature Component area. Thus, the study implements a Web-based collaborative learning environment using the jigsaw technique as a measure to seek whether motivation and participation in reading and learning the text can be increased in a Form Five classroom. Further, there had been no studies done to combine the two methods with the jigsaw technique in secondary school’s classroom. Hence, this is a pioneer initiative in exploring the possibilities of learning in such teaching methods. In view of certain limitations to the study, the Web-based learning setting has been improvised to be supported with conventional classroom method. The collaborative learning environment and jigsaw technique used are strategies to ensure effective integration of technology in the classroom. In short, the study is believed essential in providing ideas for teachers to vary their strategies from time to time so as to avoid students’ frustrations in learning, especially in the context of learning a novel in English Language. Further, through the Web-based courseware devised, the study intends to provide a possible platform for other

¹ Sijil Pelajaran Malaysia (SPM) is the equivalent of ‘O’ Level examination standard.
Malaysian language teachers and learners to share and propose discussions on the learning of the Literature Component in English in the future.

Motivation In Web-Based Courseware, Collaborative Learning And Jigsaw Technique
Motivation has become the key consideration when preparing lessons and the combination of methods in the study is deemed essential to increase teaching and learning in the literature component. A model used to measure motivation level of samples used in this study is as follows:

Table 1: Keller (1984) ARCS Model of Motivation

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<tr>
<th>ARCS</th>
<th>Methodology</th>
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<tr>
<td>ATTENTION</td>
<td>Perceptual Arousal</td>
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<td></td>
<td>Inquiry Arousal</td>
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<td></td>
<td>Variation</td>
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<td>RELEVANCE</td>
<td>Familiarity</td>
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<td></td>
<td>Motive Matching Goal</td>
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<td>Orientation</td>
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<td>CONFIDENCE</td>
<td>Learning Requirements</td>
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<td></td>
<td>Success Opportunities</td>
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<td></td>
<td>Personal Responsibility</td>
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<tr>
<td>SATISFACTION</td>
<td>Intrinsic Reinforcement</td>
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<td></td>
<td>Extrinsic Rewards</td>
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<td></td>
<td>Equity</td>
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The study takes into relevance of authentic experiences inherent in Web-based and collaborative learning environment to enhance students’ motivation in learning. The copulation of a literature text and jigsaw technique grouping supplements this effort. As discovered by Aronson (1997), jigsaw grouping method has resulted in improved mastery of classroom material, learning experience and increased empathy for others. In addition to that, a sound instructional model for designing information delivery is critical, with proper considerations of the methods to be employed. Thus, The ADDIE model serves as a framework in this aspect.

METHODOLOGY
The study seeks to answer the following questions:
- Does a Web-based supported collaborative learning environment aids and improve students’ motivation in learning of the novel?
- To what extent did the Web-based supported learning environment using the jigsaw technique improve students’ performance?

To answer the above questions, the study initiates a Web-based tutorial courseware which contains material related to the learning of a reading text prescribed in the literature component of SPM English paper. The domain of the website can be accessed at The Pearl Web-Based Courseware at http://www.digitalmalaya.com/aniq. Lessons using the courseware are conducted for 8 weeks. The following diagram describes the development of the storyboard in the courseware in line with the ADDIE model.
Samples from a classroom of 36 Form Five students were chosen from the researcher’s work site and organized through the jigsaw technique. Their interaction and work produced is observed in a collaborative Web-based supported setting. The courseware and other learning techniques are mapped according to an instructional design model known as the ADDIE. As for motivation level, it will be measured using the ARCS Model of Motivation. A Web-based survey based on the model will be carried out as pre and post evaluation of the study. These will be observed as data collection and analysed to provide the outcome of the study.

FINDINGS
The Jigsaw Technique (Aronson, 1978) is a learning strategy that divides students into Home Groups and Expert Groups. The Expert groups research a certain topic and then return to Home Groups (made up of students from different expert groups) to share or teach the information to their peers.

The study revealed that the formation of groups was successful due to students’ curiosity towards the activities in the lessons. They were fast to identify with their peers and came up with interesting name for their groups. The group formation reinforces the concept of positive interdependence and heterogeneous grouping (Johnson, Johnson & Holubec, 1993) in which they identify group members who may have varying abilities in terms of computing skills and language but are able for them to work together with. Some of the group’s synchronous discussion can be found in the Message Board in The Pearl’s website courseware. In the electronic Message Board, participants have started to interact with each other and teacher with some showing more advanced multimedia application by pasting icons in their post. These reflect a fun and motivated attitude towards their lesson and corroborate with other conclusions of other researchers that anxiety among ESL learners is reduced when electronic discussion is used, especially when it precedes oral classroom discussion (Kern, 1995) or allows time for students to form responses (Sullivan, 1993).

The questionnaire has displayed the data analysis of students’ motivation level according to the Keller’s ARCS Model of Motivation. The following are a brief summary of the components’ analysis:
Attention: Data analysis shows that research participants have rated highly on all four items in the post test. They show significant interest in learning the novel through the courseware (81%), learning through group discussions (76%), using the online facilities available in the courseware (74%) and find the whole courseware interesting and easy to follow (77%). On the other hand, their response towards the open-ended question in the questionnaire suggested that they would like more attractive features to be available in the courseware such as animations, graphics, music and video clips. Suffice to say, the participants are able to compare the Web-based courseware to other exciting Websites due to their exposure and access to Internet during the learning of the courseware. Participants are aware of what would entertain them more in their learning and using the courseware is a good step to gain their attention in learning.

Relevance: The four questionnaire items related to the Relevance component also shows positive ratings on the Strongly Agree and Agree scale in the post test. Participants relate well to the courseware. 70% admitted that the course suits their language and computer abilities, 79% agreed that the activities aided their understanding of the novel and should be integrated in other areas of learning too. One factor that contributes strongly to Relevance is that half of the participants are familiar to use of Internet in their studies as indicated in the pre and post test thus, makes it easier for the courseware to be implemented. The number of participants who admitted that they cannot understand the content of the courseware is quite low, with 25% in the pre test being reduced to only 3%. This 3% represents only one participant out of 30. The participant is identified as very weak learner in the language and need remedial classes out of the course.

All the questionnaire items in the Relevance component rated highly in the Strongly Agree scale. This shows the students identified their learning very well with the Web-based courseware and the jigsaw technique.

Confidence: About 8 questionnaire items were tested relating to participants confidence level. 70% claimed that the Web facilities in the courseware have made them become more interested in learning and 90% claimed that the activities made them retain information better. 77% participants also claimed that learning in groups made them more aware of their learning strategies. The rest of the items tested participants in their anxiety level to learn through the coursework and whether they are dependent on others to learn. 74% stated that they need help of their teacher and friends to learn. This is not a surprise due to a typical weakness of ESL learners in language acquisition. After all the novel requires a lot of vocabulary proficiency and participants rely on each other to help them understand the language better.

Satisfaction: The courseware and collaborative learning techniques have helped students realize their potentials in learning and this gives them satisfaction as they achieved one task after another. 80% have rated highly in the Strongly Agree and Agree scale in the post test that they are confident they are able to use the knowledge gained from the courseware in the future. 90% students enjoyed the whole courseware, showing that learning through it had been a very successful effort. In consideration of the component, almost all items indicate the level of satisfaction is on high side in the post-test. This suggests that the participants are fully satisfied with the learning sessions.

The study also seeks to identify to what extent interaction among students during the session of the courseware and the jigsaw technique had enhanced their communication skills. This can only be measured through students’ discussion in the message board in ‘The Pearl’ courseware, the Power Point presentations and the summative answers to questions posted through e-mail. Throughout the course, there is evidence that students managed an average level of communication and tasks as evaluated through the SPM marking scheme for the Literature component. Thus, interaction did exist, but on the level of SPM standard, it is of average range.

Thus, the analysis suggested that based on the study, the Web-based supported learning environment using the jigsaw technique is effective in involving all students to participate in producing materials in English and present them in groups. It indirectly forces them to acquire
some competence in the language to be able to interact with the teacher and group members as each interaction can be seen through the online elements of the courseware, thus, motivates them to use and explore the language. However, the level of interaction is still average, if measured by the SPM marking syllabus.

Based on the findings, the study reviewed the questionnaire and found that all responses from students shown evidence of motivation as mapped by the Keller’s Model of Motivation. There are high ratings in the Strongly Agree and Agree compartment in the post test after students had been exposed to the courseware. This shows that students are very positive towards the implementation of the courseware and the cooperation of learning through group members. They admitted to becoming more aware of their strength and weaknesses. In addition, the implementation of jigsaw technique and its process have produced a more structured cooperation among group members and motivate them to interact in English. It has proven itself as a meaningful learning method and feasible in a Web-based learning environment.

Further recommendations will be discussed in the following.

SUGGESTIONS AND RECOMMENDATIONS

There are a number of lessons that can be drawn from the findings which includes:

- The Web-based courseware and jigsaw technique can be used to enhance learning in a large classroom.
- Students appreciate the opportunity to express themselves through multimedia and Internet tools. They wish for a separate lesson on multimedia applications and how to make a website because they were inspired by the Web-based courseware website.
- The tasks sets for the students should be simple while they are learning how to use the technology and how to learn in a collaborative jigsaw technique environment.
- Strong cooperation is needed between participants and Internet access is essential to make the learning sessions in the courseware a success.

Although these lessons can be drawn from the study, instructors and teachers must be aware of the effort required to design a successful courseware and implement it with suitable pedagogy. The provision of content material in the Literature Component of the English syllabus is already limited, and there is no standard application a Web-based courseware that caters to the syllabus requirement. Thus, future development of web-based courseware should then be reinforced in the development of students learning and teacher-training.

The introduction of a Web-based courseware in the classroom is a major initiative as it can develop into a Learning Management System, a concept of software platform that enables the delivery, management and administration of e-learning and training throughout an organization, and in this case the Education Ministry department. The design of high quality Websites requires expertise in the field of Information technology and teachers are not trained in it. However, through a combined effort between the teachers as supplier of subject content expert and Website designers and programmers, an LMS can be set up to make learning resources and methods on the Literature in English Component are made available for teachers all over the country. This can be realized through the assistance of the Education Ministry.

The jigsaw technique formation and phases provides collaborative learning environment with more structure and precise dissemination of information. It also enhances group cohesion and interaction, because there is 100% involvement from all students, regardless of strength or weaknesses. It is mostly feasible to be used online due to its inherent values in the promotion of communicative skills by the act of concept re-presentation. However, time frame is of essence, because the jigsaw group coordination requires participation of group learning strategies and familiarization of new roles in learning. Proper planning of task and rubric to evaluate learning are also fundamental because this will provide teachers proper implementation of the task. The study assisted the researcher with the conclusion that jigsaw technique is an effective method to be implemented in groups of learning in the classroom. While the study has met its objective of promoting motivation and increase interaction, the study requires further research in the fields mentioned in the foregoing.
REFERENCES


