Learners' Evaluation of an e-Learning Material

*RASHIDAH RAHAMAT, PARILAH M.SHAH, *ROSSENI DIN, SHARIFAH NOR PUTEH,
JUHAIDA ABD.AZIZ & MOHAMED AMIN EMBI
Faculty of Education
Universiti Kebangsaan Malaysia
43600 Bangi, Selangor Darul Ehsan
MALAYSIA
(*rosseni@yahoo.com, *msuhailtcu@yahoo.com)

Abstract: - The Development of teaching and learning materials are part and parcel of improving the delivery of knowledge from teachers to students. The use of good teaching materials portrayed the teachers' teaching and learning qualities. Materials which are meant for teaching and learning process either the paper-based or computer-based form would be effective if they go through certain procedure to ensure that the materials are of good and satisfying quality. Thus, collaborative planning in developing teaching materials is one of the ways to avoid doing work in isolations and also producing good quality materials. In order to check and evaluate the website, an evaluation set of adapted questionnaire consisting of six main dimensions was used as the instrument for this formative evaluation. Analysis of this end-users' evaluation was used as the guideline for the improvement of the actual website. Results of this formative evaluation process showed that the end-users were satisfied not only with the course and design dimensions of the website but also the learning environment constructed from the use of this e-Learning material. Thus, the involvement of the end-users was found to be beneficial for any development process of teaching and learning materials so as to increase the usability and quality of the materials developed.

Key-words: teaching and learning materials, e-learning, participatory, English literature components, formative evaluation.

1 Introduction

Collaborative planning in developing teaching materials is one of the ways to avoid doing work in isolations [14] as most teachers do. During the process of collaborative or shared planning, a lot of things can be improved and this is beneficial for the materials developer. According to Oliva [12], the process and products of teaching materials are important since the products are meant "…to be put into practice, tried out, revised, tried again, and revised again…" [12].

Producing web-based teaching materials would also be more effective if the developer takes into account the intermediate processes involved before finalizing the products before they are used. As mentioned by Wan Nor Aishah and Norizan [18], Computer Assisted Language Learning (CALL) materials which are used in an ESL classroom could be a simulating tool as it can break "mundane monotony of classroom routine…". However, the CALL material should go through certain stages to ensure it would function accordingly as expected by the users, in this context, the ESL learners. One of the ways is through the formative evaluation. This paper discusses the formative evaluation on a prototype of the English literature component website which involved thirty two (n=32) end-users. This method is better known as the participatory design method which involved the end-users' participation prior, during and after the design and development phase.

2 Statement of the problem

To facilitate the process of teaching and learning, the use of suitable and relevant materials are undeniably important [2][12]. Brown [2] has defined the term teaching materials as "…any systematic description of the techniques and exercises to be used in classroom

teaching". According to McGregor [7], the teacher and his/her understanding of teaching materials can have great impact on the way thinking lessons are being performed. However, choosing the suitable materials that would fit the students' needs are not easy whereby teachers need to make necessary considerations before using them in the class [9]. One issue which emerged with regard in the use of teaching is whether the teacher needs to adapt or adopt the materials.

The term technology-based materials would always be associated with the use of computers. Webster and Murphy [19] stated that with the constantly up-and-coming new technologies, the field of education is not only being challenged to adapt but also "…being present with exciting opportunities…" [19]. Wan Nor Aishah and Norizan [18] reiterated the use of Computer Assisted Language Learning (CALL) materials as an invigorating supplementary tool that "…can break the mundane monotony of classroom routine activities".

The processes of developing the materials are actually important [14]. In the process of developing any educational materials, there are two common things which would be involved: the formative and the summative evaluation. Formative evaluation would be conducted during the development phase; it seeks to understand strengths and amplify them, and understand weaknesses and mend them, before the educational materials are deployed. On the contrary, summative evaluation is to make judgment and to document concrete evidence of accomplishment.

It is unfortunate to see that some instructional designers believed that formative evaluation as something that should be kept internal to a project, and not published. This is due in part to the belief that formative evaluations need not involve learners. Fakomogbon [4] indicated that, "Development of any instructional media demands going through the following stages: (a) design, (b) production and (c) evaluation. In order to carry out these functions successfully it is important that persons with different professional backgrounds should be involved as a team".

Thus, the main objective of this formative evaluation phase of an e-Learning material is to find out the learners' perceived satisfactions towards the e-Learning material based on the dimensions and present the findings descriptively.

3 Research Framework

The framework of this formative evaluation is based on a study [16] which look at the learners' perceived satisfactions toward the material developed by the researcher. Figure 1 shows the framework used in this formative evaluation phase:
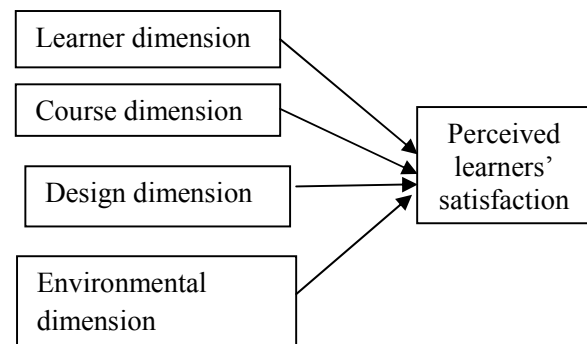

Figure 1: The dimensions of the perceived satisfactions towards the e-Learning material.

4 Research Methodology

This formative evaluation phase employed a survey method in order to gather the learners' perceived satisfaction towards the e-learning product developed. A set of adapted evaluation form was used as the main instrument. The adaptations were based on several studies [6][8][15]. The detailed items contain in the instrument used are based on the dimensions and as presented in the following table:

Table 1: The detailed specifications of the items

No	Dimension	Sub-construct
1	Learner	*Attitude toward IT
2	Course	*Flexibility *Quality
3	Design	*Perceived usefulness *Perceived ease of use
4	Environmental	*Diversity in interaction

The implementation of this evaluation process involved the participations of thirty two form four students who were conveniently selected. Early arrangements were made in terms of the administrations aspects involving the principal, the IT teacher as well as the English Language teacher in charge of the class. The researcher met the respondents one week earlier in order to get their agreement to participate in the study. The evaluation process was divided into two parts: 1) the familiarization part and 2) the evaluation part. The familiarization sessions involved with the briefing and introduction of the respondents to the e-learning material which is an English Literature Components website known as e-Lit. This took place at the school's computer lab. Since the computer lab could only cope with 20 students at one time, the respondents were divided into two groups: group A and B. Apart from that, this formative evaluation was also considered as the pilot test phase of this research. Therefore, any inappropriate actions during the event will be improvised for the actual summative evaluation.

As for the evaluation part, the researcher divided it into two parts, one was on the evaluation of the material and the other was on the learning environment used in this study. As for the data collected and data analysis, the researcher would look into the reliability of the items based on the dimensions stated in Figure 1. The reliability of the instrument was analyzed and presented descriptively using SPSS version 18.0.

5 Findings of the Evaluations

Discussions on the findings of the formative evaluation would be based on the four dimensions stated earlier. The evaluation is based on the learners' perceived satisfactions towards the e-Learning materials developed by the researcher. Analysis for the reliability for each construct was found in the range of 0.6 to 0.9.

5.1 Learner Dimension
The focus of this dimension is the learners' attitude toward IT. Analysis of the Alpha-Cronbach reliability of these six items was found to be 0.635. The findings showed that these respondents exhibited positive attitudes towards IT. From the response in the demographic data, 56% (n=18) of them showed a little trust in Internet, 376% (n=12) trusted the Internet and the remaining 6% (n=2) totally trusted the Internet.

However, the analysis on their attitudes towards the use ICT indicated that they were positive towards IT. From the data, 56% (n=18) respondents agreed that they spent little time with technology, 29% (n=9) often engaged in the use of technology outside the classroom, 63% (n=11) disagreed that they did not use technology, 56% (n=18) agreed that they sometimes used technology to support exploration in learning and a total of 72% (n=23) agreed that they use Internet to get information on literature components.

5.2 Course Dimension
The other analysis was done based on the course dimension which was divided into three aspects: the flexibility, functionality as well as the interesting quality of the e-Learning material. Based on the Cronbach alpha value, the reliability coefficients of the three aspects were 0.702, 0.892 and 0.924 respectively. Based on these values, the analysis was carried out on the related items. Each sub-construct under this course dimension has different number of items.

5.2.1 The Flexibility of the e-Learning Material.
There are 9 items which represent this construct. In terms of accessing the notes anytime and anywhere, the level of satisfaction was found to be high where 81% (n=26) reflected they were strongly satisfied, 19% (n=6) slightly satisfied and none showed dissatisfaction. Apart from that, they were also satisfied with the flexibility in getting connected with their peers at anytime and any place; 88% (n= 28) was very satisfied, 9% (n=3) a little satisfied and only 3% (n=1) was dissatisfied.

In terms of time limitations, flexibility to learn at any suitable time, learning styles, learning pace, autonomous in deciding on what to learn, the tools to be used as well as choosing the learning approach are the other items being highlighted in evaluating the e-Learning material which is known as the e-Lit website. The

following figure displays the findings for the other aspects of flexibility which the respondents felt satisfied:
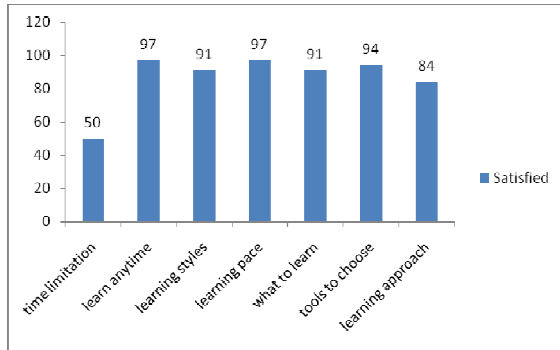

Figure 2: Satisfactions towards the flexibility of the e-Learning material

5.2.2. Functionality

The aspect being stressed for this sub-construct is how well the e-Learning material works. In order to evaluate the functionality, there are 20 items being listed in the evaluation form. The reliability of the items was found to be 0.892 and according to Pallant (2002) this value is considered high and the items are suitable for the construct being looked into.

The items in this section focus mainly on the functionality of the buttons, navigation, search engines, options, facilities to interact, give comments as well as control towards the e-Learning material. The analysis shows that majority of the students displayed high level of agreement that they function accordingly to their expectations. For evaluation on the functionality of the buttons, 77% agreed and satisfied with it, satisfied with the options in the web site 74 % agreed, 79% agreed they were satisfied with the facilities provided and 76.34% agreed that their navigation on the website function as expected.

5.2.3 The Interesting Quality

There are 21 items that focus on the interesting quality of the e-Learning material. The analysis on reliability of the construct showed high value where the Cronbach Alpha was found to be 0.924.   The interesting quality being evaluated was based on the quality of the design, colour, format of the font and images.
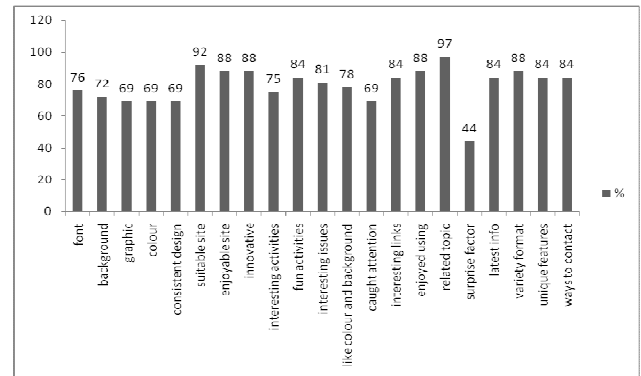

Figure 3: The evaluation on the interesting quality of the e-Learning material

5.3 Design Dimension

The evaluation of the design dimension focuses more on the learners' perceived usefulness as well as perceived ease of use toward the learning material.   Similar process was taken by the researcher where the reliability of the items was first checked. The values of Cronbach Alpha for these two sub-dimensions were: 0.962 for perceived usefulness and 0.912 for perceived ease of use. Since the values are high, no item being deleted.

5.3.1 Perceived usefulness

Based on the analysis of 5 items under this dimension, the value of Cronbach Alpha was 0.948. The raw data showed that the respondents perceived the e-Learning material as useful. With respect to "strongly agreement" and "agreement" responses, 91% (n=9) of the respondents felt that the "information presented", "options", "links" and "tool" were useful, while 94% (n=30) of them viewed that the material was useful for "students' learning of literature. These figures were higher compared to the figures for those who disagreed with the usefulness of the e-Learning material being evaluated.

5.3.2 Perceived ease of use

There are 8 items analyzed for this dimension which has high reliability with the value of 0.912. The criteria of content display, navigation, instructions and language used are the main focus in evaluating the ease of use of this e-Learning material. The response rates for

the items in this dimension were high for "strongly agree" and "agree".

The results showed a total of 84% (n=27) of the respondents rated the display of content as easy, 88% (n=28) agreed that the content was neatly arranged, 91% (n=29) rated the main path to navigate was easy, 78%(n=25) agreed the options made their navigation easy whereas another 81% (n=26) also agreed that the instructions were easy. In measuring their satisfaction towards the information in the website, 72% (n=23) agreed that it was easy to understand. However, as for the language used in this e-Learning material, only 66% (n=21) of the respondents agreed it was easy and 78% (n=25) claimed that it was an easy site to be used to learn English Literature Components.

5.4 Environmental Dimension

The other aspect of dimension evaluated in this pilot study was the environmental dimension. The researcher has categorized four sub-elements being looked at and they are: the learning community, motivation, sharing and feedback.

Results for the learning community were gathered from 5 items which has Cronbach Alpha value of 0.725. Learning environment created for them in this research was aimed to lead the students to have their learning community. A total of 91 % (n=29) agreed they had more opportunities to interact, 81% (26) agreed they were able to communicate in between face-to-face lesson, and 75% (n=24) agreed they were free to chat with their peers. Apart from that, 88% (n=28) these respondents also indicated that they had more facilities for communications and 75% (n= 24) agreed they were able to communicate with other students from the other group through the use of this e-Learning material.

Besides, their involvement in the use of this website in learning also affected their motivations. The dimension rated for motivation was found to be high. These students claimed they enjoyed the fun of learning (91%), the variety of approaches increased their interest to study (100%), felt comfortable (94%), satisfied with the learning environment (84%) and the SMS they received made them felt motivated to learn (94%).

Another aspect that this e-Learning material is creating is the sharing opportunities in learning. Students were able to share not only the materials but their thoughts as well. 84% (n=27) of them agreed they were able to share materials, 91% (n=29) agreed they were able to share opinions, 75% (n=24) was able to share problems, 91% (n=29) was able to share experience and finally 88% (n=28) was able to share knowledge with their peers from the activities provided in the e-Learning material.

Apart from the three sub-dimensions above, the evaluation also focused on the feedback given when they used this website. There are 5 items which measure the feedback aspect of the material. The respondents reflected high level of agreement that they did not have to wait for the face-to-face meeting to get feedback (84%), were able to check their record status (91%), obtained feedback for the skills mastered (75%), their involvement could be checked (91%) and obtained quick feedback from the facilitator (88%).

6 Discussion

Based on the empirical findings, it can be concluded that majority of the respondents were satisfied with the use and quality of the e-Learning material developed for the study. One of the reasons for the satisfaction was because these students have positive attitudes towards the use of technology in general. In addition, the respondents were also motivated to use the website as their learning tool. It is important to take note that, today's generation who are born together with technology would want something more interesting rather than the conventional process of learning using chalk and talk [10]. Hung and Khine [5] mention in their critical review that it is vital and in fact appropriate for educators to engage learning with the emerging technologies because they view that in today's era, the notion "…engagement with learning is likely to mean engagement with technology". Involving users in the process of evaluating the learning material which is important because they "…may play a role in the development of web pages, acting as 'curators'...of good pages" [1].

In the case of e-Learning material evaluation, Aquaro and DeMarco [1] pointed that when evaluating a website, there are three main areas to focus on: the content, the overall structure and accessibility to all. Besides, it is also a good practice if the evaluation can be done regularly as to ensure the accuracy of the material and up-to-date information is provided to the users [1]. Besides, Richards [14] points out the aspects of design, structure, content and general issues of any website or e-Learning materials can be done through the use of a checklist.

7 Conclusion

It is very true as mentioned by Nielson [11] and Brown [2] that developing any teaching materials should not be an isolated and individual process. Collaborative work involving the end-users should be done. This would benefit not only the developer of the materials but also the end-users. The process of revising as well as trying out the initial prototype of the curriculum product being developed is vital before coming out with the final product.

References:

[1]   Aquaro, P.D & DeMarco, M. (2008). Literature review: what makes a good school website, why build one and is there help in doing so?. Retrieved from http://www.mariannedemarco.com/academic/graduate_ms/Research/LiteratureReview.pdf . 20.6.2010

[2]   Brown,J.D. (1995). *The elements of language curriculum*. Boston: Heinle & Heinle Publishers

[3]   Collis, B. & Moonen, J. (2006). The contributing student: learners as co-developers of learning resources for reuse in web environments. In Hung, D. & Khine, M.S (eds). *Engaged learning with emerging technologies*. Netherlands: Springer.

[4]   Fakomogobon, M.A (1998). Coordinated team approach in developing instrucional media for special learners: a case study of captioned videotape instructional package in introductory technology. Journal of Educational Niedia And Technology, Vol.7, No, I, pp.1-10.

[5]   Hung, D & Khine, M.S. (Eds). (2006). *Engaged learning with emerging technologies*. Netherlands: Springer

[6]   Ling Siew Eng.(2008). Membina dan mengesahkan instrument penilaian kursus blended learning di institusi pengajian tinggi di Malaysia. PhD Thesis, PhD Thesis National University of Malaysia.

[7]   McGregor, D. (2007). Developing thinking developing learning: a guide to thinking skills in education. New York: Open University Press.

[8]   Mohamed Amin Embi. (2004). Development and Evaluation of an ESL Web Site on Learning-To-Learn English. CALL- EJ Online, Vol(6), 1. Retrieved from http://www.tell.is.ritsumei.ac.jp/callejonline/journal/6-1/embi.html. 30.4.2011.

[9]   Mohammad Zohrabi & Parilah Mohd Shah. (2009). Culture free and culture bound English language classes. *SoLLS Intec 2009 Proceedings*. Retrieved 16 May 2011, from http://pkukmweb.ukm.my/~solls09/Proceeding/PDF_PPT.html

[10]   Mohd. Arif bin Hj Ismail. (2004). Pembangunan dan penggunaan teknik video filem (tvf): satu kajian kes penerapan nilai-nilai murni. PhD Thesis National University of Malaysia.

[11]   Nielson, J. (1994). *Usability engineering*. Oxford: Academic Press.

[12]   Oliva, P.F. (2005). *Developing curriculum*. United States of America: Allyn and Bacon.

[13]   Pallant, J. 2002. SPSS survival manual. Sydney: Allen & Unwin.

[14]   Richards, J.C. (2001). *Curriculum development in language teaching*. USA: Cambridge University Press.

[15]   Small, R.V & Arnone, M.P. 1999. Website motivational analysis checklist webmac middle (v.2.0). Retrieved from http://www.marilynarnone.com/WebMACMiddle2.0pdf. 30.4.2011

[16]   Sun, P., Tsai, R.J., Finger, G., Chen, Y. & Yeh, D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction. Computers & Education , Vol.50 , pp. 1183- 1202. Retrieved from www.elsevier.com/locate/compedu. 18.6.2011.

[17]   Teeler, D. & Gray, P. (2000). How to use the internet in ELT. England: Pearson Education Limited.

[18]   Wan Nor Aishah Wan Omar & Norizan Abdul Razak. (2008). An insight towards the development of a vocabulary courseware for esl learners. In Mohamed Amin Embi, Muhammad Kamarul Kabilan & Norizan Abdul Razak (eds). *Readings in online language learning and teaching: research and practice*. Shah Alam: Karisma Publications Sdn Bhd.

[19]   Webster, L dan Murphy, D.(2008). Enhancing learning through technology: challenges and responses. Dlm Kwan, R., Fox,R., Chan F.T. & Tsang, P (pnyt). 2008. Enhancing learning through technology: research on emerging technologies and pedagogies. New Jersey:World Scientific.