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Designing Motivating mE-book For Polytechnic Language Classroom Using ARCS Model

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Abstract

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This paper describes the design of multimedia E-book (mE-book) based on the Keller's ARCS Model of Motivational Design (1987). This paper also presented the implementation of mE-book as a motivating learning aid to promote ESL language learning in Polytechnic classrooms. Sixty (60) Polytechnic students experienced mE-book in their language classroom and their perceived motivation towards the new learning material is determined using the Instructional Materials Motivation Survey (IMMS). This study adduced a scope for implementing multimedia in language learning in a motivating way for adult learners.

Keywords: mE-book; Polytechnics; ESL; language learning; ARCS model; IMMS

1. Introduction

In line with the Malaysia's National E-learning Policy (DePAN) (Ministry of Higher Education, 2011), Polytechnics have been swiftly extending the use of multimedia technologies to improve the quality of learning. Among the initiatives adopted to place more importance on adapting the e-learning policy is by extending the prudent use of the multimedia in instructional technology that could serve as a useful learning supplement to promote learning and improve students' motivation, attitudes and interest (Ministry of Higher Education, 2011). Based on the call of this policy, a multimedia E-book was designed and developed to be implemented in the Polytechnics' English module classroom. It is an attempt to introduce a fun, engaging and motivating multimedia reading material. This paper describes

the design of multimedia E-book (mE-book) for language learning and its implementation in Polytechnic classrooms.

2. Background of the Study

Research done on the Malaysian Polytechnic students' English language proficiency level noted that the students' proficiency level is low (Md. Yasin, Wan Mohd Shaupil, Muhktar, Abd. Ghani, & Rashid, 2010). Among the main reasons for their low language proficiency, the prominent one is that most of them have low ESL reading comprehension (Md. Yasin et al., 2010). It was reported that these students did not have the acceptable level of vocabulary, grammar and pronunciation due to their low ESL reading comprehension level (Md. Yasin et al., 2010). Researchers have also deduced that the common cause of the Polytechnic students' lack of ESL reading comprehension was the inadequate reading instructional strategies (Fariza, 2013; Suhaily & Faizah, 2013). It was found that the Polytechnic lecturers practiced conventional 'chalk and talk' classroom and drilling techniques to elicit an answer for language classroom tasks (Suhaily & Faizah, 2013). Most of the language teaching and learning process in the Polytechnic focused on completing activities and answering the assessment questions set by the modules (Fariza, 2013).

Inadequate teaching strategies in language reading classrooms have resulted in students having difficulties in comprehending written texts (Zare & Othman, 2013) which led to low reading motivation (Guthrie & Coddington, 2009). Studies have revealed that Polytechnic students have low reading interest and motivation as these students find reading boring (Annamalai & Muniandy, 2013; Subbarau & Abd. Mustafa, 2013). It is justified that when the students' reading motivation is low, they find reading a daunting task and this lowers their reading habit (Irvin, Meltzer & Dukes, 2007). Eventually, this lack of reading habits will lead to low reading comprehension and low language proficiency (Rasiah, Kaur & Nagaratnam, 2011).

Therefore, to motivate the students in the language classroom and improve their reading comprehension, the instructional strategies used to teach reading in the language classroom in Polytechnic have to be upgraded incorporating the use of technology (Harwati & Melor, 2013). This is because Polytechnic students preferred reading activities that involve the application of technologies (Annamalai & Muniandy, 2013; Subbarau & Abd. Mustafa, 2013). One way is to effectively integrate multimedia into reading instruction (Tsai, 2012). However, the use of multimedia in the language classroom has to be motivating and does not overload the students' cognitive (Gilakjani, 2012).

3. mE-book

Multimedia E-book (mE-book) is a multimedia electronic book, which incorporates multimedia elements such as text, narration, visuals, videos and animations. It has 'Read to Me' button feature that narrates on-screen text when it is clicked. During the narrating process, the text is highlighted concurrently.

The content of the multimedia E-book is presented in an interactive way by adding graphic, colourful text, animation and sound. Those elements will attract readers to read more as animation and

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graphic can convey more information (Mayer, 2001). The integration of multimedia features into E-books, such as text, sound and videos in the classroom is becoming a potential teaching and learning tool in language learning especially teaching reading in English as Second Language (ESL) classes. When learners read multimedia E-book, they can hear and see and this provides greater recall of the story rather than printed storybook. This will interest them in reading and improving their literacy.

As the instructional technologies develop, mE-books support flexible learning strategies. Flexible modes of learning have the potential to increase students' engagement in learning by giving them more control over the nature of the learning content and activities, and over the time and place they study (Gordon, 2002). In addition, mE-books can be used to improve students' reading skill and the students would feel more motivated in learning a second language by integrating the technology into teaching and learning session. It provides a multi-genre reading space that engages and draws students into a different interaction with reading text (Tsai, 2012).

4. Designing mE-book using ARCS Model

The design of the instructional content structure and motivational aspects of mE-book was based on Keller's ARCS Model of Motivational Design (Keller, 1987). This model has been widely used in instructional materials and is an example of a well-documented design model that gives importance to the motivational aspects of the learners (Song & Keller, 2001). This model has been particularly influential in the training and design of instructional materials (Mills & Sorensen, 2004) as it serves as a template for developing and delivering a unit of instruction that motivates learning (Keller, 1987).

The rationale for using the ARCS model to design the instructional content for mE-book is that this model has a very simple and systematic flow of instructional steps that can be applied into the design of mE-book. One of the most significant rationales of using the ARCS model in this mE-book design is that this model promotes the transfer of knowledge through the stages of memory (Keller, 2010). It summarizes the key research factors that are related to instruction, such as motivation, perception, feedback, reinforcement, individual differences, retention, and transfer of knowledge (Mills & Sorensen, 2004). Keller's ARCS Model of Motivational Design served as the foundation for the instructional content design of mE-book. There are four components in the ARCS model that are necessary when designing a motivating instructional material: attention, relevance, confidence and satisfaction.

The first and single most important aspect of the ARCS model is gaining and keeping the student's attention. According to Keller (2010), tactics for this can range from simple, unexpected events such as a loud whistle or various elements that engage students in a deeper level of curiosity. In mE-book, the students' attention was engaged by using simple animation and a soft sound in the background at the beginning of the content of the learning material, and was continuously sustained by using different elements of the multimedia to present the content.

The second component is to build relevance. Without relevance, students' attention and motivation will not be maintained (Keller, 2010). The students should be able to relate to the particular topic, with the belief that the topic is relevant and will bring benefits to them. mE-book was designed with contents that relates to the students' daily lives, academic requirements and future job opportunities.

These contents were delivered by using analogies, examples, video clips and scenarios that relate to the students' immediate, current interests and experiences.

The confidence aspect of the ARCS model is required so that students feel that they should put in effort into the lesson and establish positive expectancies for success. Often students have low confidence because they have very little understanding of what is expected from them (Keller, 2010). By making the objectives clear, it is easier to build confidence (Keller, 2010). In mE-book design, the students were exposed to the objectives of learning at the beginning of the lesson. According to Keller (Keller, 2010), to improve confidence in a technology-based instructional material application, students should be given the control over the lesson and the time required to complete lessons. Also, the students were given full control and capacity to self-navigate throughout the lesson. The accessibility provided to them to navigate throughout mE-book on their own will, and learn in their own time, is expected to provide them the confidence and keep them motivated throughout the lesson.

Finally, students must obtain some type of satisfaction or reward from the learning experience. Satisfaction refers to positive feelings about one's accomplishments and learning experiences (Keller, 2010). This can be in the form of entertainment or a sense of achievement such as scores or completion certificate. As for mE-book, the satisfaction component of the ARCS model is applied by providing positive feedback for every question in the assessment and the students were rewarded with a certificate upon completion of all the assessments, which can be printed by the students.

Table 1. Application of ARCS Model in mE-book Design

ARCS components	Strategies	Application in mE-book
Attention	Strategies for arousing and sustaining students' curiosity and interest.	Narration, visuals, animations and videos used in mE-book.
Relevance	Strategies that link to learners' needs, interests, and motives.	Relevance to the topic, syllabus and activities to the students' daily life.
Confidence	Strategies that help students develop a positive expectation for successful achievement.	Full control over the mE-book, the interest and the capability to navigate throughout the lessons.
Satisfaction	Strategies that provide extrinsic and intrinsic reinforcement for effort.	Enrichment activities (Quiz). Immediate feedback for every question. Certificate of Completion is awarded upon completion of the unit.

5. Findings

mE-book was administrated on sixty (60) Semester 1 Polytechnic students. They were 29 males and 31 females, with the mean age of 19. The students' perceived motivation towards mE-book were measured, whether the mE-book used for was interesting, relevant, brought about confidence and gave satisfaction to the students. To investigate this, a questionnaire related to ARCS model, which is the Instructional Material Motivational Scale (IMMS) developed by Keller (1993) was used. The IMMS was developed for assessing the motivational quality of the instructional materials based on the principles of ARCS: Attention, Relevance, Confidence and Satisfaction. The rationale of IMMS being used in this study is that the mE-book were designed based on the ARCS Motivational Design Model;

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therefore, it was the most suitable questionnaire to assess the motivational characteristics of the instructional material used in this study. There are thirty-six statements in this questionnaire, that transfer the students' opinions to a scale of 1 (not true), 2 (slightly true), 3 (moderately true), 4 (mostly true) and 5 (very true). Keller (2010) stated that Cronbach's Alpha reliability coefficient for IMMS is 0.96. For this study, the Cronbach's Alpha reliability coefficient for IMMS questionnaire was also 0.94, signifying that the questionnaire is reliable. Table 2 shows the descriptive statistical analysis results for IMMS scores.

Table 2. Statistical Analysis for IMMS Scores

Variable	Sample size	Mean	Standard deviation
Attention	60	4.401	0.307
Relevance	60	4.393	0.362
Confidence	60	4.391	0.314
Satisfaction	60	4.450	0.372
Perceived motivation	60	4.405	0.290

The statistical analysis findings for students' perceived motivation showed that the mE-book is regarded that motivating ($\overline{X}_{IMMS}$ = 4.405). In each of the individual subscales; attention, relevance, confidence and satisfaction, the findings showed that the mean scores are more than four ($\overline{X}_{Attention}$ = 4.401, $\overline{X}_{Relevance}$ = 4.393, $\overline{X}_{Confidence}$ = 4.391, $\overline{X}_{Satisfaction}$ = 4.450), indicating that the mE-book is a motivating medium for language learning. Overall, the findings showed that Polytechnic students opined mE-book as engaging, motivating and usable in their language learning environment.

6. Discussions

This paper provides the design of a motivating mE-book for language learning in Polytechnic classrooms. For this purpose, Keller's ARCS Model of Motivational Design provided all the essential support and guidance to design a motivating mE-book for language learning. mE-book was found to greatly motivate the students to read, which is important for language learning.

According to Keller's ARCS model, an instructional material should contain engaging elements for it to be motivating. mE-book was designed and developed using elements of multimedia that are able to engage students. The text is the basic element of mE-book. It is used to convey information in written form. Text in mE-book is also used as reinforcement for information contained in other media items. Audio in mE-book involves the use of narration, music and sound effects. This narration element appears as a part of the application content and aids interaction between the reader and the on-screen text. Graphics are also used in mE-book as digital images and characters to make the instructional material attractive and interactive. They help to illustrate ideas. Video provides a powerful impact in mE-book resulting in greater interest and enjoyment for students. It portrays the real situation that is relevant to the content. Animation is used in mE-book to include interactive effects that enhance learning by allowing for greater enjoyment in reading experiences. mE-book involves these elements to

allow students to participate actively in language classroom activities rather than being passive recipients of information. From this, it can be inferred that mE-book allows the students to be engaged in the reading process as they make their own decisions regarding what and when different components will be used throughout the lesson.

This attempt can be considered as a beginning point for establishing guidelines of using multimedia elements and principles as the pedagogical strategy for learning ESL reading among teenage students. Using mE-book as an alternative intervention in reading classroom encourages the students to explore the language in an alternative medium other than conventional books. The students will experience the effects of multi-modality rather than reading on static book. This will motivate them to read more as mE-book could help to make reading more enjoyable and fun, as the students, who are digital-natives, are keener to use computers and technologies for reading. By increasing their motivation to read, the students will be reading more, which will lead to improvement in reading and would help to increase students' language proficiency.

7. Conclusion

This paper proposes an idea of strategies for designing and developing multimedia E-book (me-book) for ESL reading that is engaging, fun and motivating. The present study had also tested for the effects of the developed mE-book on students' perceived motivation. This is rationalized by the findings that mE-book has a higher motivational appeal. This study also contributed a positive outcome to language learning which suggests that reading can be taught using multimedia. The multimedia elements embedded in the learning content motivates the students to read, which engages them and subsequently, improves their reading comprehension.

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