

# Learning Engagement, Perceived Motivation and Reception of mE-book in language learning among Polytechnic students

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## Abstract

This study attempts to examine the use of multimedia E-book (mE-book) in the English language classroom of a group of diploma students at two national Polytechnics in Malaysia. Among the aspects that were examined were the student's learning engagement, their perceived motivation and reception towards the mE-book. Two questionnaires were used as data collecting instruments that were given to the students after they have experienced the mE-book. Data collected were analysed to answer the research questions. The results revealed that the polytechnic students who used mE-book in their language classroom showed a significant higher learning engagement and perceived motivation. The study also found out that the students are receptive to the use of mE-book in their language classroom.

**Keywords** Multimedia, E-book, Polytechnics, English, Learning engagement, Perceived motivation, Reception.

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## INTRODUCTION

In line with the 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 that is effective, meaningful and enjoyable. The use of new technologies shows that it improves students' motivation, attitudes and interest (Ministry of Higher Education, 2011). Based on the call of MoHE's policy, a multimedia E-book

was designed and developed to be implemented in the Polytechnics' English module classroom. It is an attempt for the educators to introduce a fun, engaging and motivating multimedia reading material based on appropriate learning theories. To further investigate this postulation, this study was carried out to determine Polytechnics students' perception towards the use of multimedia E-book (mE-book) in their language classroom. It is also attempting to look at their reception of mE-book in the English language classroom.

## **LITERATURE REVIEW**

In this digital age, students' high computer literacy and interest in multimedia have inspired second language educators to consider the possibility of converting their traditional reading instructional setting into e-setting to which students are constantly exposed (Chu, 1995). Educators are encouraged to use computer technology as an intervention strategy to reverse students' negative attitudes towards reading in a second language (Adam & Wild, 1997), and the appearance of texts with multimedia support such as multimedia E-book may account for the changes.

According to Carter (2007), the current generation is digital natives and is more comfortable with text-visual media. They grow up around video and computer games, and when it comes to reading, they expect similarities applied (O'English, Matthew & Lindsay, 2006). These students have developed ways to learn directly through visual media devices such as computers, video games and the Internet, which have more similarities to multimedia E-book than traditional paper-book (Beers, Probst & Rief, 2007).

To cater the digital natives expectation, technology-enhanced electronic books that integrate new features such as multimedia features, search and cross reference functions, and hypertext links (Vassiliou & Rowley, 2008) is taking place in teaching and learning (Ismail & Zainab, 2007). Multimedia E-book (mE-book) is one of the technology-enhanced E-book, which integrates text with video, audio, animation, and even interactive simulation (Porter, 2010). Labbo (2000) defined mE-book as an interactive digital version of stories that employ multimedia features such as animation, music, sound effects, highlighted text, and modelled fluent reading. Similarly, Shamir and Korat (2006) described mE-book as book that integrates different kinds of expressions. They form an interactive digital narrative content that generally combines multimedia effects such as written text, oral reading, oral discourse, music, sound, and animation. This mE-book are able to "read itself" with audio narration, offering the ability to make and share annotations without destroying the content and provides interactive self-tests throughout the chapters. mE-book generally creates a much more enjoyable and engaging reading experience beyond the printed format (Itzkovitch, 2012).

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. The content of the mE-book is presented in an interactive way by adding graphic, colourful text, animation and sound. These elements will attract readers to read more as narrations, animations and graphics can convey more information (Mayer, 2001).

mE-book also support flexible learning strategies. Flexible modes of learning have the potential to increase students' learning engagement by giving them more control over the nature of the learning content and activities, and over the time and place (Gordon, 2002). Students with high levels of engagement will enjoy the process of learning, its challenges and obstacles, and gain satisfaction from scholarly accomplishments (Schlecthy, 1994). It has been argued that the innovative use of multimedia in instructional materials provides interactive, more inclusive and engaging curriculum to improve learning performance and student engagement (Mayer, 2003; Sankey, Birch & Gardiner, 2011).

In addition, mE-book also provides a multi-genre multimedia reading space that engages and draws students into a different interaction with reading text (Barker, 1999). It allows them to engage in ways they prefer, by way of their interest or ability and keep them motivated throughout the lesson. It has been proposed that when attention, relevance, confidence and satisfaction (ARCS) dimensions were applied to the design of instructional materials, more interesting learning environments will be created that will positively affect students' motivation (Keller, 2002; Rodgers & Withrow-Thorton, 2005). mE-book is designed in such a way that it integrated the ARCS dimensions that will help to increase the students' interest, attention and curiosity. It allows the students more control over their learning experience and helps to develop their reading skills.

## **RESEARCH OBJECTIVES**

The objective of the study is to investigate the effects of mE-book on students' learning engagement and perceived motivation. This study also attempts to find out the reception of the Polytechnic students on the use of mE-book in their language classroom.

## **RESEARCH QUESTIONS**

This study is designed to address specifically three sets of questions:

1. What is the effect of mE-book on Polytechnic students' learning engagement?
2. What is the students' perceived motivation of mE-book in their language classroom?
3. What is the students' reception on the use of mE-book in their language classroom?

## RESEARCH QUESTIONS

This study was carried out with a group of 100 Semester 1 Polytechnic students who enrolled in the English module classroom. In this module, the students were asked to read and comprehend passages. These students are from five departments: Civil, Mechanical, Electrical and Business, from two national Polytechnics in Malaysia. The two polytechnics chosen for this study are similar in terms of academic achievement and socioeconomic status. The sample subjects are homogenous, whereby they are Sijil Pelajaran Malaysia (SPM) leavers, who are currently pursuing diploma in respective Polytechnics. The sampling method used was purposive random sampling. These students have basic English reading ability and computer literacy.

This study employed a survey design with a purpose of determining the effects of mE-book on students' learning engagement and perceived motivation. In this study, learning engagement refers to the students' emotional and behavioural efforts to understand their reading. Perceived motivation refers to motivation level (interest and relevance) perceived by each student to use the mE-book provided during the research. This study also attempts to look at the reception of mE-book in their language classroom.

The students in the selected Polytechnics are assigned to the mE-book whereby the students learned 'Greetings and Introduction' concept. mE-book resembles an electronic book, which incorporated multimedia elements such as text, narrations, visuals, videos and animations. This electronic book has a 'Read to Me' button feature that narrates text when it is clicked. During the narrating process, the text is highlighted accordingly. mE-book was designed and developed based on the syllabus, lesson plan and the module provided by Polytechnics' Curriculum Department, Ministry of Higher Education (MOHE).

The instruments used for this study includes Learning Engagement Scale (LE<sub>ng</sub>S) (Malliga, 2011) to measure the student' learning engagement and Instructional Materials Motivation Scale (IMMS) (Keller, 1993) to measure the students' perceived motivation of mE-book. The Learning Engagement Scale (LE<sub>ng</sub>S) measures the emotional and behavioural learning engagement activities, which give implication on the students' retention. This Learning Engagement Scale (LE<sub>ng</sub>S) is a Likert-type scale with 18 survey items created by Malliga (2011). There are 10 items for emotional construct and 8 items for behavioural construct. The Instructional Material Motivational Scale (IMMS), by Keller (1993), comprised thirty-six Likert-type statements that measure the four dimensions of the instructional material's motivation perception: Attention, Relevance, Confidence and Satisfaction (ARCS).

The expected result from this study is that mE-book would motivate students and engage them in the ESL reading classroom. It is also expected that the student will perceive the mE-book as beneficial and receptive to the use of mE-book in their language classroom.

## DATA ANALYSIS

The data were treated statistically using the Statistical Package for the Social Sciences (SPSS version 18.0). All the data are statistically analysed by using 0.05 ( $p < 0.05$ ) significant levels.

### Distribution of the Students

The sample consisted of 100 Semester 1 Polytechnic students from five departments. Table 1 shows the number of students assigned to mE-book according to the department and gender. The sample consisted of 57 male students and 43 female students.

**Table 1** Sample distribution for each department

Department	<i>n</i>	Gender	<i>n</i>
Civil	20	Male	12
		Female	8
Mechanical	20	Male	16
		Female	4
Electrical	20	Male	13
		Female	7
Business	20	Male	7
		Female	13
Information Technology	20	Male	9
		Female	11
Total	100		100

Note: the letter 'n' denotes number of students

### Findings

Table 2 shows the statistical analysis for the Polytechnic students' learning engagement using mE-book. The analysis showed that for students' learning engagement, mE-book has high mean scores whereby the students find the mE-book as engaging, motivating and can be used in their learning environment. The statistical analysis also showed that mE-book has high impact on students' emotional and behavioural engagement. The total mean for the students learning engagement is 4.41 with a standard deviation of 0.249. For the emotional engagement, the mean score was 4.42 ( $SD = 0.323$ ) and for the behavioural engagement, the mean score was also 4.39 ( $SD = 0.294$ ). Clearly, students who used the mE-book showed a higher learning engagement. Likewise, students found the mE-book was emotionally engaging (what a student feels during the treatment) compared to behavioural engagement (what a student does during the treatment).

**Table 2** Students' learning engagement

Construct	n	Mean	Std. Deviation	Std. Error Mean
Emotional engagement	100	4.42	0.323	0.032
Behavioural engagement	100	4.39	0.294	0.029
Learning engagement	100	4.41	0.249	0.025

Table 3 summarizes the result of the *independent t-test* analysis for students' learning engagement using the mE-book. The table indicates that there was no significant difference in the effects of mE-book between the male and female students. The mean difference of the students' learning engagement based on their gender was only 0.0001, implying a non-significant difference between male and female students ( $p = 0.998$ ) with regard to the effects of mE-book.

**Table 3** Independent t-test analysis of students' learning engagement

Construct	Gender	n	Mean	Std. Dev	Std. Error Mean	Sig. (2-tailed)
Emotional engagement	Male	57	4.41	0.330	0.044	0.805
	Female	43	4.43	0.317	0.048	
Behavioural engagement	Male	57	4.40	0.294	0.039	0.731
	Female	43	4.38	0.296	0.045	
Learning engagement	Male	57	4.41	0.260	0.034	0.998
	Female	43	4.41	0.237	0.036	

A *one-sample t-test* was conducted to analyse the students' perceived motivation of the mE-book. Table 4 summarizes the results of the t-test analysis.

**Table 4** Students' perceived motivation of mE-book

Construct	n	Mean	Std. Deviation	Std. Error Mean
Attention	100	4.39	0.179	0.018
Relevance	100	4.40	0.237	0.024
Confidence	100	4.43	0.228	0.023
Satisfaction	100	4.43	0.276	0.028
Perceived motivation	100	4.41	0.162	0.016

The mean score of students' perceived motivation of mE-book was 4.41 with a standard deviation of 0.162. There are four dimensions for the motivational factor of the instructional material, which are Attention, Relevance, Confidence and Satisfaction. For the Attention dimension, the mean score was 4.39 ( $SD = 0.179$ ). For the Relevance dimension, the mean score was 4.40 with a standard deviation of 0.237. The analysis of the Confidence and Satisfaction dimensions produced similar mean scores of 4.43, with standard deviations of 0.228 and

0.276, respectively, indicating that students who used the mE-book showed higher perceived motivation as they found the mE-book to be informative and motivating in their learning.

Table 5 summarizes the results of the *independent t-test* analysis of students' perceived motivation of mE-book based on their gender. Based on the analysis, the difference between male and female students in terms of perceived motivation was not significant ( $p > 0.05$ ).

**Table 5** Independent t-test analysis of students' perceived motivation of mE-book

	Gender	n	Mean	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
Attention	Male	57	4.38	0.189	0.025	0.685
	Female	43	4.39	0.166	0.025	
Relevance	Male	57	4.42	0.250	0.033	0.384
	Female	43	4.38	0.218	0.033	
Confidence	Male	57	4.44	0.224	0.029	0.504
	Female	43	4.41	0.235	0.036	
Satisfaction	Male	57	4.44	0.293	0.039	0.621
	Female	43	4.41	0.253	0.039	
Perceived motivation	Male	57	4.42	0.176	0.023	0.576
	Female	43	4.40	0.144	0.022	

This study also attempts to survey the Polytechnic students' reception of the mE-book. From the data analysis (see Table 6), 92% of the students were found to be receptive to the use of mE-book in their language classroom. In addition, the students preferred to have the instructional materials in their language classroom as they deemed these materials to be engaging and entertaining.

**Table 6** Gender\*Reception cross tabulation

	Gender	Reception			Total
		Like	Dislike	Not sure	
	Male	53	2	2	57
	Female	39	3	1	43
	Total	92	5	3	100

## DISCUSSION AND CONCLUSION

This study was conducted in an attempt to find out Polytechnic students' perception toward the use of multimedia E-book (mE-book) in their language classroom. It is also attempts to look at the reception of mE-book in their classroom. The findings of this study revealed that the polytechnic students

who used mE-book showed higher learning engagement. With the mE-book, the students could improve their reading through audio narration, giving them a much more enjoyable reading experience. In addition, they found that mE-book was engaging, motivating, and usable in their learning process. This finding is not surprising given the richness of the learning materials by means of embedded multimedia features, such as narration, text-highlighting, animations, and music or sound effects – an impossible feat in printed books. The combination of text, audio, and visual elements in mE-book offers students a refreshing change from routine lectures in the classroom, which arouses their interest in learning through various types of modalities.

While students' interest is certainly one of the most important benefits of mE-book, there are many other benefits of using this genre in educational settings, especially in ESL reading. One of the most comprehensive benefits of mE-book is that it supports multiple modalities: verbal and visual (Carter, 2007). Multiple modalities take information and channel it through different modes (Mayer, 2009). For example, if students find learning a concept from direct text is difficult, they can resort to learning using visual or verbal representations in mE-book. Invariably, students prefer to read books that are not only informative but also entertaining; thus, mE-book can effectively facilitate student learning through the combination of text, narration, and other multimedia elements, which ultimately improves their comprehension (Little, 2005). In addition, mE-book can help unmotivated or struggling readers to remain focussed by means of its audio instructions and narration. More precisely, the narration element in mE-book can support vocabulary development where students who see an unfamiliar word will be guided with narration context clues to allow them to see the proper context in which a particular word fits in elegantly (Pennella, 2009). Therefore, it can be concluded that the mE-book is indeed beneficial for students' language classroom. The use of mE-book as a reading instruction material can encourage students to engage in a learning process based on diverse media (in addition to the conventional books). Today's students, who are digital natives, have been exposed to various types of technologies, notably multimedia technology; thus, through learning materials that are interactive, media-rich, and visually appealing, they can be motivated in language learning which leads to better performance.

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