

## THE EFFECTIVENESS OF INTEGRATED AND SELF DIRECTED LEARNING SOFTWARE ON STUDENTS' MOTIVATION

Abdul Razaq AHMAD  
The National University of Malaysia  
[razaq@ukm.edu.my](mailto:razaq@ukm.edu.my)

Mohd Mahzan AWANG  
The National University of Malaysia  
[mahzan@ukm.edu.my](mailto:mahzan@ukm.edu.my)

### ABSTRACTS

This study aims to identify the effectiveness of integrated and self-directed learning on students' motivation. The content of the software used in this study involves the usage of interactive learning and self related aspects of problem solving, information processing and cooperation. Motivation in this study refers to the intrinsic and extrinsic motivation for learning English. This research is a quasi experiment involving 120 samples which 60 were experimental group and another 60 were control group, comprised from four secondary schools in Indonesia. Data was collected through questionnaires distributed and the results of MANOVA tests conducted found that there were or are significant differences in terms of intrinsic motivation and extrinsic motivation among students who were exposed to integrated and self-directed leaning. Hence, this implies that the integrated learning and self-directed learning is suitable to be applied by teachers in the pursue to improve students' motivation in learning to read English sentences in line with the 21st century learning.

**Keyword:** integrated learning, self-directed learning, intrinsic motivation, extrinsic motivation

### INTRODUCTION

Language plays an important role in sharing feelings, wishes, opinions, thoughts, ideas, knowledge, information, understanding other people and many more conveyed via verbally or inscribed (Ahmad & Sulaiman, 2015). English is a well established international language which must be mastered in order to develop ideas and gain knowledge in larger environment. Therefore, most countries uphold English language to be taught as a second language in educational institutions.

Students' competency in English language is still weak despite the government effort which introduced English language as a second language in countries such as Indonesia and Malaysia (Gill, 2002). Although English is a compulsory subject for all students ever since their lower primary school, most secondary school students are having difficulties to speak English fluently (Dash, 2013). Reading English materials is one of the best methodologies which can be employed by the teachers to help their students to master English. Hence, it is imperative for students to master reading skills from early stage of their education. Reading habit should be inculcated in order to build a strong foundation for their reading ability (Mahmoud, 2013). However, to make reading a habit, students must have a high motivation which can drive them to practice the routine.

English Language has always played a significant role in Indonesia in its pursue to become a developed nation. Thus, in Indonesia, English is one of the lessons that must be studied by all students ranging from junior high school students to undergraduates. However, an ample number of students still could not use English to communicate and only a small number of them can write in English (Ras, 2011). Among the four English skills (listening, speaking, reading and writing) which are integrated in the curriculum of English in high school, reading skill is a priority as this is the foundation which allow students to be further equipped with the rest of the skills.

Accordingly, to improve reading skills in English, learning strategies should be fun and exciting. Richards (2009) states that technology accelerates the process of language learning. Thus, the interactive learning is the best alternative in helping students to master reading skills in learning English Language. Integrated and self-directed learning is a medium for alternative teaching in order to improve students' reading skills and enhance their motivation for learning English (Wagman, 2005). Gardner (1985) believes that students with high level of motivation will be more successful as compared to those without motivation.

## LITERATURE REVIEW

**Integrated And Self-Directed Learning Software** Integrated and Self directed learning software in this study involves problem solving, information processing, and cooperation. This integrated and self-directed learning software is a scaffolded learning structure which uses links to important resources from the World Wide Web. One of the authentic function is to motivate students to investigate open questions, the development of individual skills, and participation in society (Awang et al., 2013). This software is also investigative-oriented where some or all of the information required by students come from Internet sources. It consists of six major components, namely the introduction, task, process, resources, evaluation and conclusion. As a result of integrated and self directed learning experience, students are able to analyze an in-depth knowledge and can demonstrate an understanding of the learning material. This is consistent with the opinion of Brem and Boyes (2000) which state that this learning method helps both students and teachers to develop skills in knowledge acquisition. However, the materials that were developed in this integrated and self directed learning software must conform to all levels of capabilities in the classroom and on the basis of content-based learning (Wagman, 2005; Laborda, 2009). In addition, a study by Noordin and Razali (2008) which was conducted on Malaysian students pursuing TESL program also revealed that the users of the software have a positive perception. They noted that self directed learning software is beneficial in learning English as it have meaningful activity, authentic, motivating as well as supporting cooperative learning. In addition, the software also foster critical thinking skills (Noordin & Razali, 2008) and support constructivism principles in language teaching (Matusevich, 1995; Reeves et al., 2002; Matejka, 2004; Baccarini, 2004). This shows that the students can enhance their creativity and promote self-learning technology if used effectively.

### **Intrinsic and Extrinsic Motivation Towards Learning English**

Motivation is generally acknowledged as important in second language (L2) learning. It is classified into two types; intrinsic and extrinsic. Intrinsic motivation, commonly associated with integrative orientation, refers to the desire to perform an action without exertion of external inducement or reward (Bandura, 1977). Extrinsic motivation, which is usually associated with instrumental orientation, is a learner's desire for achievement to get an external reward (Pittman & Boggiano, 1992). A student was said to have the motivation to learn if his level of involvement and diligence is high in study as well as complete the assignments given. Motivation to learn is essential in the process of teaching and learning in schools in order to improve student achievement, especially when it comes to reading skill in English language.

Motivation is influenced by myriad factors such as the characteristics of learning, learning capabilities, learning environments, and the ability of the teacher to handle the learning process for students (Dash, 2013). Thus, the teacher's role is important in increasing students' motivation. Among the strategies that can be done by teachers to improve students' motivation is to plan learning activities wisely to prevent boring session as well as allowing information and ideas sharing, giving the students opportunity to choose activities which interest them. This will ensure the students to engage in activities and presentations relevant to the teaching and learning materials ( Kim, 2011).

### *Purpose of the study*

This study aims to identify the effectiveness of integrated and self directed learning on students' motivation. The content of the software used in this study involves the usage of interactive learning and self-directed learning which related to the aspects of problem solving, information processing and cooperation. Motivation in this study refers to the intrinsic and extrinsic motivation towards learning English.

## METHODOLOGY

### **Research Design and Sampling**

This research is quasi experiment involving 60 samples as the experimental group and 60 as a control group comprises from four secondary schools in Indonesia. Data for this research were obtained from questionnaires. MANOVA analysis was used to compare the intrinsic and extrinsic motivation among students taught with the conventional method based on their ability.

Respondents in this study were selected based on purposive and random sampling. In this study, researchers were unable to carry out random sampling to select students in the experimental group and the control group. This is because the school administrators only allow the use of existing groups of students in the class. After getting two

schools sampled, researchers will then randomly select eight classes of Form Two students available to be used as the experimental group and the control group; four classes of the experimental group and four classes for the control group. The study involved Form Two students in their first semester as they are expected to easily accept the transformation of teaching and learning using integrated and self-directed learning. After the election, eventually 60 students were placed in the experimental group and another 60 students were used as a control group from all four selected schools in Indonesia.

### Research Instrument (Students Motivation Questionnaire)

Questionnaire items on motivation that were used in this study were adapted from Anita Wenden (1991) and Little (2000). Students' motivation is made up of intrinsic as well as extrinsic motivation. Questions on both intrinsic and extrinsic motivation consist of 26 statements. The questionnaires that were used to measure intrinsic motivation of students to read English materials include motivation aspects that come from within the student: (1) the encouragement and the need to learn comes from yourself; (2) trying to improve understanding; (3) capable of facing any challenges and have confidence in myself to succeed; (4) engage in various activities to enhance understanding; (5) high interest in learning without being influenced by others and (6) apply reading comprehension skills in everyday life depending on my capabilities.

Students' extrinsic motivation is related to the motivation aspects that come from outside of the student: (1) the encouragement and support from friends, parents or teachers; (2) presence of award and hope in the study; (3) conducive learning activities, family and school environment; (4) in the needs to catch up with time and technology; (5) activities with friends and teachers. For validity, Cronbach alpha values for intrinsic motivation is .951 while the Cronbach alpha value for extrinsic motivation is .861.

### Data analysis

## RESEARCH FINDINGS AND MOTIVATION

### Students' Intrinsic and Extrinsic Motivation Based on teaching Methods

**Table 1:** The level of students' intrinsic and extrinsic motivation based on teaching methods

Variable	Teaching Methods	N	Mean	Standard Deviation
Intrinsic Motivation	Experimental	130	4.36	0.199
	Control	130	4.12	0.311
Extrinsic Motivation	Experimental	130	4.31	0.169
	Control	130	3.98	0.334

Based on Table 1, the level of intrinsic motivation for students involved in teaching methods based on integrated and self-directed learning is much higher (mean = 4.36, S.D = 0.199) as compared to students using conventional methods (mean = 4.12, S.D = 0.311). Similarly, the extrinsic motivation where students are being taught using integrated and self-directed learning is also higher (mean = 4.31, S.D = 0.169) than the students taught using conventional teaching methods (mean = 3.98, S.P = 0.334).

Students who learn using integrated and self-directed learning have higher intrinsic and extrinsic motivation than students who learn using conventional methods. This suggests that integrated and self-directed learning method can significantly improve both intrinsic and extrinsic motivation among students. Integrated and self-directed learning software provides the usage of technology in teaching concepts and methods which appeal to the students (Ahmad & Sulaiman, 2015). In addition, the activities provided also lead to active participation of students in teaching and learning sessions. The finding is consistent with studies conducted by Camara et al. (2013) which revealed that there is an increase in motivation among students who learn using computers. Increased motivation is probably due to the use of integrated and self-directed learning which acts faster in shaping students' knowledge continuously which is linked to their existing knowledge (Chang et al., 2011).

**Intrinsic And Extrinsic Motivation Among Students Taught Using Integrated and Self Directed Learning Software As Compared to Conventional Method Based on Students' Capabilities**

MANOVA analysis was carried out to identify the differences in intrinsic and extrinsic motivation of students taught using M-WQ as compared with the conventional method based on the student's ability. Before manova analysis was conducted, the researchers first carried out a test to determine the homogeneity of the variance-covariance matrix using Box's M test. Box's M test analysis can be seen in Table 2 below.

Jadual 2 Box'M Test for Differences in Intrinsic And Extrinsic Motivation Among Students Taught Using Integrated And Self-Directed Learning Software Compared With Conventional Method Based On Students' Ability

Box's M	F- Value	df1	df2	Sig.
71.896	4.685	15	155737.785	0.002

Table 2 shows that there is no significant difference in variance-covariance among the dependent variables for all level of independent variables with the value of Box's M = 71,896 and Sig = 0.002 ( $p > 0.001$ ). This means that the variance-covariance of dependent variable is homogenous across the independent variables. Therefore, MANOVA tests can be performed to see the difference in intrinsic and extrinsic motivation of students taught by using integrated and self-directed learning software as compared with the conventional method based on the students' capabilities (Pallant, 2007).

Jadual 3 Wilks' Lambda Value for The Differences in Intrinsic and Extrinsic Motivation On Students Taught Using M-WQ Compared With Conventional Method Based On Students' Ability

Effect	Wilks' Lambda Value	F Value	DF between groups	DF in group	Sig
Teaching Strategy	0.720	49.109	5	254	0.000
Ability	0.951	3.206	5	254	0.013
Teaching strategy*Ability	0.977	1.467	5	254	0.211

Table 3 shows that the Wilks'  $\lambda$  value= 0.720,  $F(5,254) = 0.000$  ( $p < 0.05$ ) which implies that there are significant differences in students' motivation when taught with different methods of teaching. The findings also indicate that there are significant differences in student motivation based on their ability with the Wilks'  $\lambda = 0.951$ ,  $F(5,254) = 0.013$  ( $p < 0.05$ ). This study is in line with the findings by Kurtulus and Kilic (2009) which stated that the use of M-WQ can improve students' involvement in classroom activities as well as brainstorming ideas and sharing those ideas with friends.

However, there was no significant interaction between teaching methods and students' ability in learning motivation with the Wilks'  $\lambda = 0.977$ ,  $F(5,254) = 0.0211$  ( $p > 0.05$ ). In terms of mean, it shows that students who being taught using integrated and self-directed learning method has higher intrinsic and extrinsic motivation than students who studied with conventional method as portrayed in Table 4.

Table 4 below shows that based on the results from treatment group, the students with high capabilities (mean = 4.46 and SD = 0.215) have higher intrinsic motivation than their peers with moderate (mean = 4:34 and SD = 0.189) and low abilities (mean = 4:28 and SD = 0.159). Next, the results from control group shows that students with moderate

(mean = 4.15 and SD = 0.322) and high ability (mean = 4.11 and SD = 0.284) have higher intrinsic motivation than the student with lower ability (mean = 4.08 and SD = 0.319). Overall results revealed that students in the experimental group (mean = 4.36 and SD = 0.199) have higher intrinsic motivation than students in control group (mean = 4.12 and SD = 0.311). Based on the capabilities aspect on the other hand, the results show that the students with high ability have higher intrinsic motivation (mean = 4.29 and SD = 0.307) compared with those with medium (mean = 4.24 and SD = 0.280) and low ability (mean = 4.18 and SD = 0.269).

Based on the extrinsic motivation of students in experimental group, the students with high ability have higher extrinsic motivation (mean = 4.33 and the SD = 0.192) compare to their peers with medium ability (mean = 4.31 and SD = 0.163) as well as those with lower ability (mean = 4.30 and SD = 0.160). Moreover, the results of extrinsic motivation from control group reveals that students with medium (mean = 4.03 and SD = 0.327) and low ability (mean = 3.95 and SD = 0.333) had higher extrinsic motivation than students with high ability (mean = 3.92 and SD = 0.346). Overall results indicates that students in experimental group (mean = 4.31 and SD = 0.169) have higher extrinsic motivation than students in the control group (mean = 3.98 and SD = 0.334). On the ability aspect on the other hand also showed that the students with medium ability (mean = 4.17 and SD = 0.292) have higher extrinsic motivation compared to the students with high ability (mean = 4.13 and SD = 0.347) and their peers with low ability (mean = 4.13 and SD = 0.312),

**Table 4:** Intrinsic and extrinsic motivation level based teaching and students' Abilities

Variable	Teaching Method	Ability	N	Mean	Standard Deviation
Intrinsic Motivation	Experimental	High	32	4.46	0.215
		Moderate	66	4.34	0.189
		Low	32	4.28	0.159
		Total	130	4.36	0.199
	Control	High	32	4.11	0.284
		Moderate	66	4.15	0.322
		Low	32	4.08	0.319
		Total	130	4.12	0.311
	Total	High	64	4.29	0.307
		Moderate	132	4.24	0.280
		Low	64	4.18	0.269
		Total	260	4.24	0.286
Extrinsic Motivation	Experimental	High	32	4.33	0.192
		Moderate	66	4.31	0.163
		Low	32	4.30	0.160
		Total	130	4.31	0.169
	Control	High	32	3.92	0.346
		Moderate	66	4.03	0.327
		Low	32	3.95	0.333
		Total	130	3.98	0.334

Variable	Teaching Method	Ability	N	Mean	Standard Deviation
Intrinsic Motivation	Experimental	High	32	4.46	0.215
		Moderate	66	4.34	0.189
		Low	32	4.28	0.159
		Total	130	4.36	0.199
	Control	High	32	4.11	0.284
		Moderate	66	4.15	0.322
		Low	32	4.08	0.319
		Total	130	4.12	0.311
	Total	High	64	4.29	0.307
		Moderate	132	4.24	0.280
		Low	64	4.18	0.269
		Total	130	3.98	0.334
	Total	High	64	4.13	0.347
		Moderate	132	4.17	0.292
Low		64	4.13	0.312	
Total		260	4.15	0.311	

The findings indicate that students with high ability have a higher intrinsic and extrinsic motivation than students with medium and lower ability. This urges the increment in the usage of technology by the teachers in conducting English lesson as well as ensuring that students with various level of abilities are capable to master and equipped with good skills in conducting the technologies. Supporting the opinion in Yin (2009) which states that teachers and educators should pay more attention to the situation in which technology can be used effectively by both teachers and students in the classroom in learning language. The use of the technology has been proven to enhance learning English in line with the study by Mahmoud (2013) which found that students who practiced *Short Messages Service* (SMS) with their teachers noticeably improved their writing and speaking performances.

### CONCLUSION AND IMPLICATIONS

This study successfully adapted the use of integrated and self-directed learning software to enhance the intrinsic and extrinsic motivation among students on their achievement in English reading comprehension. The finding also supports theories of learning and motivation in improving student achievement. Therefore, integrated and self-directed learning software can be applied by teachers in their goal to improve students' achievement in the English language. This approach can also be integrated as a suitable alternative approach if direct interaction in classroom can not be conducted due to some constraints.

Integrated and self-directed learning software can help English teachers in applying information technology into their teaching strategies. The use of integrated and self-directed learning in teaching software can relieve the the work burden of teachers as well as capable to increase their creativity in teaching and learning activities in the classroom. This is due to the minimum involvement of teacher in using integrated and self-directed learning software. Integrated and self-directed learning software may also be served as a source of reference for various parties in order to construct various web sites to improve the skills of teachers in using technology in education in accordance with the present era of information technology. The ministry can play a role by providing courses to train teachers especially

English teachers in applying integrated and self-directed learning in teaching and learning processes which aligned with the curriculum specification.

Further studies can be done involving students with various levels in the use of integrated and self-directed learning software in teaching reading skill in English language to get more detail information about the use of integrated and self-directed learning software. Demographic studies involved in this study should represent various characteristics of students, such as gender, location and family income. It aims to identify whether demographics aspect might be an influencing factor in the usage of integrated and self-directed learning software. In addition, the effectiveness of integrated and self-directed learning software should also be viewed from various aspects. The effect can also be seen from myriad variables such as students' knowledge, usage and skills in the usage of the learning software. The results in this study make practical sense and are coherent with instructional and learning theory, as well as motivational theory.

This study successfully adapted the use of integrated and self-directed learning software to enhance the intrinsic and extrinsic motivation among students on their achievement in English reading comprehension. The finding also supports theories of learning and motivation in improving student achievement. Therefore, integrated and self-directed learning software can be applied by teachers in their goal to improve students' achievement in the English language. This approach can also be integrated as a suitable alternative approach if direct interaction in classroom can not be conducted due to some constraints.

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