Integration of Kahoot into EFL Classroom

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Abstract. Literacy reading was regarded complex and difficult for learners of English as a Foreign Language (EFL) and reduce their interest to read and reflect the materials. To increase students' motivation and reading comprehension, the study aimed to explore the effects of integrating questioning strategies with Interactive Response System (IRS), Kahoot, into English reading courses among junior college students in Taiwan. Together with motivation and attitude toward English learning, what students' feedback about the use of Kahoot in class was discussed as well. A total of 130 junior college students served as subjects of the study. They were all English majors enrolling in literacy reading courses for one semester and helped to complete a set of surveys regarding to English learning motivation and feedback toward the use of integrating Kahoot in class. Findings revealed that students had positive attitude toward using IRS, and their overall satisfaction of Kahoot, together with gender and English proficiency, was found to be relevant to their learning motivation in the end. Discussion and conclusion were provided.

Keywords: Interactive response system · Kahoot · English learning motivation
Literacy reading comprehension

1 Introduction

Nowadays, technology has been widely integrated into classroom, such as mobile devices, computers, media and software. Teachers could integrate various resources through online applications and platforms. Many researches explored the benefits of using interactive response system (IRS) via mobile devices, such as enriching environment, classroom participation, and motivation (Awedh et al. 2014; Chiang 2016; Huang 2016; Wash 2014). Therefore, many studies have been done to investigate the effect of technology on students' various aspect of learning outcome (Chen 2014; Huang 2016; Lin 2016; Wu 2017; Yang 2017). In Taiwan, studies have reported that IRS is proved to promote students' satisfaction and concentration (Lee 2017; Yang 2017; Wang 2016; Wang 2017) and academic performance (Chen 2014; Huang 2016; Kung 2016; Lin 2016; Tsai 2016; Wang 2017). However, some findings showed opposite results. For example, in Lin's (2016) study, the findings showed no significant difference among college students' situational attention and interest using Tablet IRS. Despite of the opposite findings, studies have showed the positive effects of integrating IRS into classroom to promote students' motivation and learning.

In the research site, the huge class size of 50 to 60 students in an English classroom makes it difficult for the teacher to monitor all students' learning. Moreover, studies have showed significant effects of IRS on promoting learning motivation, and particular subjects (Chen 2014; Chiang 2016; Lin 2016; Tsai 2016; Wang 2016; Wang 2017). However, after researching current studies that are done in Taiwan, it is found that most studies on IRS have centered on elementary and junior high school students, especially in the area of science, social science and computer. How IRS affects language learning has not been discussed much in this decade.

To this point, the study aimed to investigate IRS into English courses which students were trained to use Kahoot to offer answers to different types of questions related to their literacy reading materials. By using Kahoot, both the teacher and students could see how well they comprehend the reading materials. Thus, it is hoped to inspire students to think actively and critically via questioning and then increase their motivation on English learning.

1.1 Research Resign

Quasi-experimental design of surveys was used in the study in order to investigate students' language learning motivation and feedback toward the use of Kahoot on English literacy reading courses.

1.2 Participants

Approximately three classes taught by the researcher participated in the study. Participants were all English-majors at a private junior college in Southern Taiwan. Class 1 consisted of 42 third to fifth grade students with English levels from low-intermediate to intermediate (M = 1.95, SD = .37), while Class 2 included 42 fourth grade students whose English levels mostly reached intermediate (M = 3.09, SD = .69), and Class 3 was composed of 61 third year students with low-intermediate English level (M = 2.30, SD = .72). Among the three classes, Class 2 had the highest English level than Class 1 (p < .05) and Class 3 (p < .05), while Class 3 had higher English level than Class 1 (p < .05). By removing the uncompleted surveys, valid samples were reduced to a total of 37, 38, and 55 students for the three classes, respectively. All participants were around 17 to 20 years old, and Chinese was their native language. Summary of the individual demographic background of the subjects were presented in Table 1.

Table 1. Summary for individual demographic background

Class	Total	Gender		CEFR level								Sig
		Male	Female	A1	A2	B1	B2	C1	M	SD		
1	37	6	31	4	31	2	0	0	1.95	.37		.000
2	38	6	32	0	6	23	8	1	3.09	.69		2 > 1*
3	55	12	43	3	42	12	3	1	2.30	.72		2 > 3*
All	130	24	106	7	79	37	11	2	2.43	.77		3 > 1*

Note: CEFR levels used here are based on ETS (2015). A1–A2 level ranks as basic user, while B1-B2 ranks as independent user, and C1–C2 for proficient user. *p < .05

1.3 Instruments

The research adopted 16 out of 21 questions developed from Wang (2017) to discover learners' perception toward teaching through IRS, Kahoot, with teaching interaction, engagement, self-efficacy and degree of learning satisfaction. Participants responded to each statement by using 5-point scale, from 1(not at all describes me) to 5 (best describes me). In addition, the survey of students' English learning motivation and attitude was adopted from Gardner (2004) with 7 point scale from 1 (not at all describes me) to 7 (best describes me), which was completed by the students twice, one was in the beginning of the semester (pre-test), and the other was in the end of the semester (post-test). The reliability of the research questionnaires were .932 for students' feedback about using Kahoot, as well as .838, and .872 for the pre-test and post-test of students' English learning motivation, respectively. As Gay and Airasian (2003) mentioned that "If a test were perfectly reliable, the reliability coefficient would be 1,00…. However, no test is perfect reliable" (p. 141), hence, with the reliability coefficient of between .838 and .932, the research instruments were quite reliable.

1.4 Mobile Assisted Learning Tasks (MAL Tasks)

MAL tasks were used mainly to access students' comprehension and to enhance their participation and attention on reading through Kahoot. Questions used in Kahoot were mainly multiple choice items, and used as review games for less than 10 min before the end of class. Students could submit their answers by individual or with peers based on their choice

1.5 Procedures

As the researcher obtained permission from school and participating students, the researcher explained the purpose of the study and MAL tasks, demonstrate how Kahoot were used. MAL tasks were used around 10–14 times in each class, and students completed tasks with pairs or individual depended on the classroom's learning atmosphere and the teacher's concerns. Participants were asked to complete the survey at the end of the semester. In addition, students helped to complete the survey of English learning motivation both in the beginning (pre-test) and in the end of the semester (post-test).

The survey was collected and coded for further analysis. The quantitative data was analyzed through SPSS, version 16. Descriptive statistics, *t*-test, one-way ANOVA, and Regression analysis were processed for means and standard deviation, class differences, and factors relevant to students' change of English learning motivation after the use of Kahoot.

2   Results

2.1   Students' English Learning Motivation Before and After the Use of Kahoot

Findings revealed that before the use of kahoot, students had favorable motivation on English learning with a mean of 4.99 out of 7 (SD = .71), and there was no significant differences among the three classes (F = 1.884, Sig = .172). But after the use of Kahoot, students' motivation to learn English was significantly increased with a mean of 5.12 out of 7 (SD = .78) (F = 7.016, Sig = .009). In particular, though among the three classes, Class 2 had the highest mean, followed by Class 3 and Class 1 both before and after the use of Kahoot, yet there was no significant difference among the three classes; however, after the use of Kahoot, Class 2 had significantly higher mean than Class 1(I-J = 1.6883, Sig = .011). In addition, females had stronger motivation than males (p < .05) after the use of Kahoot. The findings were shown in Table 2.

Table 2. Students' English learning motivation before and after the use of Kahoot

Motivation	Class 1		Class 2		Class 3		Total		Sig
	M	SD	M	SD	M	SD	M	SD	
Before Kahoot	4.79	.75	5.13	.63	5.06	.71	4.99	.71	.172 (F = 1.884)
Rank	(3)		(1)		(2)				
After Kahoot	4.86	.91	5.38	.70	5.13	.66	5.12	.78	.009 (F = 7.016)
Rank	(3)		(1)		(2)				Class 2 > Class 1* Females > Males*

Note. The answer to the items of motivation was from 1 to 7. *p < .05

2.2   Students' Feedback of the Use of Kahoot in Class

In light of students' feedback about the use of Kahoot in class, findings indicated that students had a high level of overall satisfaction of using Kahoot with a mean of 4.44 out of 5 (SD = .49). Additionally, among the groups, there was a significant difference on students' Satisfaction of Materials (p < .05) and Satisfaction of Performance (p < .05), particularly Class 2 students had significant higher mean than that of Class 1 (p < .05). In addition, except for Self Efficacy, females had significant higher means than their counterparts (p < .01–.05). The findings of students' feedback of the use of Kahoot were presented in Table 3.

Table 3. Students' feedback of the use of Kahoot in class

Categories	Class 1		Class 2		Class 3		Total		Sig
	M	SD	M	SD	M	SD	M	SD	
1. Interaction	4.25 (5)	.43	4.41 (5)	.46	4.36 (2)	.48	4.35	.46	.252 (F = 1.323)
2. Peer learning	4.26 (4)	.42	4.43 (4)	.45	4.43 (5)	.45	4.34	.44	.129 (F = 2.333)
3. Engagement	4.20 (6)	.49	4.3 (6)	.52	4.27 (6)	.54	4.27	.52	.333 (F = .944)
4. Self efficacy	4.29 (1)	.45	4.48 (3)	.46	4.31 (5)	.53	4.35	.49	.056 (F = 3.723)
5. Materials	4.27 (2)	.42	4.50 (2)	.47	4.36 (2)	.48	4.38	.47	.043 (F = 4.189)
6. Performance	4.27 (2)	.45	4.53 (1)	.50	4.40 (1)	.49	4.40	.49	.043 (F = 4.187)
7. Overall Satisfaction	4.27 (3)	.45	4.55 (1)	.50	4.47 (2)	.50	4.44	.49	.058 (F = 3.650) (I-J) = .282(*) Class 2 > Class 1*

Note. The answer to the items of feedback was from 1 to 5. $*p < .05$

2.3 Factors Predictive to Students' English Learning Motivation After the Use of Kahoot

By Regression analysis, among factors of class, gender and English proficiency, findings showed that the factors predictive to students' English learning motivation before the use of Kahoot were gender ($p < .01$) and English proficiency ($p < .01$). But after the use of Kahoot, together with gender and English proficiency, students' overall satisfaction of Kahoot was found to be predictive to their English learning motivation as well ($p < .01$). In other words, it could be predictive that in the study, students of Class 2, females, and those who had higher overall satisfaction of using Kahoot in class tended to have stronger motivation about English learning ($p < .01$). The findings were displayed in Table 4.

Table 4. Factors predictive to students' English learning motivation after Kahoot

Factors	Before using Kahoot		After using Kahoot	
	t	Sig	t	Sig
(Constant)	9.479	.000	2.341	.021
Class	.796	.428	.540	.590
Gender	4.802	.000	4.152	.000
English proficiency	4.624	.000	3.967	.000
Overall satisfaction of using Kahoot	–	–	3.221	.002

*Dependent variable: English learning motivation

3   Discussion and Conclusion

Literacy reading was complex and challenging for EFL learners and led to students became demotivated. To increase students' motivation and reading comprehension, the author adopted the IRS strategy to integrate Kahoot into classroom for 3 classes of literacy reading-related courses for one semester. Participants were 130 English majors in a junior college in Taiwan and the instruments included two main surveys dealing with students' English learning motivation and their feedback about the use of Kahoot. Findings revealed that students had favorable attitudes toward the integration of Kahoot into classroom (Lee 2017, Yang 2017, Wang 2016, and Wang 2017) and other benefits (Awedh et al. 2014; Chiang 2016; Huang 2016; and Wash 2014). Specially, comparing with their English learning motivation in the beginning of the semester, in the study, students' overall satisfaction about using Kahoot was found to be relevant to their motivation to learn English in the end, particularly, females. Moreover, in light of different classes with students having different English levels, it was found that it made a difference in students' English learning motivation before and after using Kahoot in class. Students with better English proficiency, especially females, had stronger motivation on English learning in the beginning and in the end of the semester. But after the use of Kahoot, together with gender and English proficiency, overall satisfaction was found to be relevant to students' English learning motivation. It has long been believed that motivation is the key to learning. Hence, when other things being equal, being satisfied with the strategy of integration of IRS into classroom seems to be potential to improve students' motivation and lead to more satisfactory learning outcome. However, not a strategy can fit everyone, hence, it's suggested that teachers be aware of students' individual differences when designing the curriculum, teaching activities, and evaluation prior to adopting the IRS as a teaching and learning strategy. Taking students' gender differences, previous knowledge, learning styles, and multiple intelligences into consideration can be a good tip for improving the effectiveness of teaching and learning.

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