In Kahoots: Learning Vocabulary with Learner-created Quizzes

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INTRODUCTION

The game-based student response system *Kahoot!* has been found to positively influence classroom dynamics, engagement, motivation, and overall learning experience (Guaqueta & Castro-Garces, 2018; Licorish et al., 2018; Zarzycka-Piskorz, 2016). At the same time, recent MALL research indicates that vocabulary is the most common area to integrate into digital mobile learning (Harrold, 2018). While *Kahoot!* is a popular tool for vocabulary review, learners' involvement is typically limited to taking teacher-created quizzes. This preliminary study explores whether the more complex task of creating *Kahoot!* quizzes could lead to better vocabulary learning outcomes.

Research questions: 1. What are the effects of learner-created *Kahoot!* quizzes on receptive vocabulary learning in an EFL reading course?

2. What are learners' perceptions of using *Kahoot!* for learning vocabulary?

METHODS

Participants

Participants were 33 Japanese university EFL learners (10 male, 23 female, ages 18-19). A quiz-creating group (Group A) and a quiz-taking group (Group B) were formed from two classes of similar proficiency. A vocabulary pre-test showed no significant difference between the groups.

Procedure

This study employed a pre-test and post-test quasi-experimental design and was conducted in a 15-week reading course. Each Group A member was asked to create five multiple-choice *Kahoot!* quizzes covering 50 items from the Academic Word List (AWL) that learners were expected to learn in the course. Group B took one of each of the learner-created quizzes in their regular classes. Identical pre- and post-tests on the items were done by both groups. An end-of-course survey was also administered to examine learners' perceptions of using *Kahoot!* to learn vocabulary.

Example question from a learner-created Kahoot! quiz showing screen and player's views
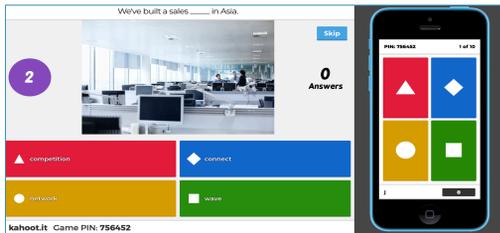
Schedule

Week	Group A activity	Group B activity
1	Pre-test	Pre-test
4	Create Quiz 1	-
5	-	Take Quiz 1
6	Create Quiz 2	-
7	-	Take Quiz 2
9	Create Quiz 3	-
10	-	Take Quiz 3
11	Create Quiz 4	-
12	-	Take Quiz 4
13	Create Quiz 5	-
14	Post-test	Take Quiz 5 Post-test

Vocabulary items by quiz

Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5
adjust	access (n)	challenge (n)	accurately	transform
adjustment	affect (v)	community	contact (v)	transformation
aspect	alter	consumer	crucial	establish
concentrate	alteration	contribute to	precise	generation
consequence	energetic	distribute	analysis	network
mental	recover	distribution	analyze	site
normal	relax	method	impact (n)	assistance
restore	release (v)	participate	project (n)	environment
sufficient	role	positive	economy	option
variation	survive	widespread	similar	trend

ANALYSIS OF TASKS

Tasks analysed using technique feature analysis and involvement load	Creating a Kahoot! vocabulary quiz	Taking a Kahoot! vocabulary quiz
Technique feature analysis Motivation (0-3) + Noticing (0-3) + Retrieval (0-5) + Generation (0-3) + Retention (0-4)	2+2+2+3+1 = **10**	2+2+2+1+1 = **8**
Involvement load Need (0-2) + Search (0-2) + Evaluation (0-2)	1+1+2 = **4**	1+1+1 = **3**

Two well-known ways of evaluating vocabulary teaching techniques, Nation & Webb's (2011) technique feature analysis and Laufer & Hulstijn's (2001) involvement load hypothesis, were used to analyse the tasks. Creating *Kahoot!* quizzes scored higher in both analyses. Some have argued that time on task is a more accurate predictor of effects on vocabulary learning than involvement load (Folse, 2006; Keating, 2008; Webb, 2005). In this study, there was a large time-on-task difference between groups. Most quiz-creators (80%) reported taking 30-60 minutes to make a *Kahoot!* quiz whereas quiz-takers took an average 5.15 seconds to answer a question and each *Kahoot!* took around 10 minutes to play.

RESULTS

The pre- and post-test results for both groups were analysed (*t*-test) and effect size was calculated (Cohen's *d*). While both groups improved, only the quiz-creating group (Group A) made a significant improvement ($p < .05$) with a large effect size ($d = 1.373$). All Group A learners also increased their individual scores, except one who scored the same in both tests.

Pre-test and post-test results by group

|		Pre-test		Post-test			
	N	M	SD	M	SD	p	d
Group A	16	35.5	3.68	40.44	3.50	.0005	1.373
Group B	17	32.06	7.66	36.76	6.48	.0625	0.663

Note: Mean scores out of 50.

LEARNER PERCEPTIONS

Group A (*n*=16)
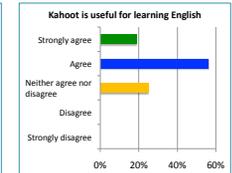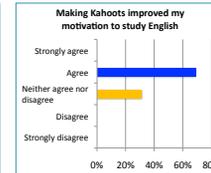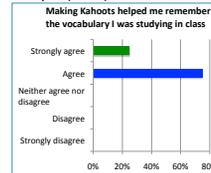
Group B (*n*=17)
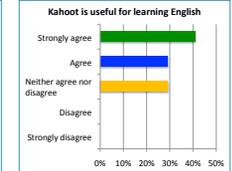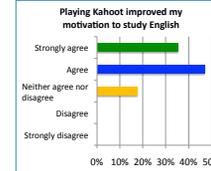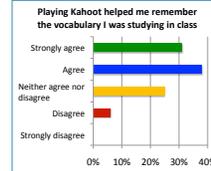
Positives

➢ Learners, especially quiz-makers, felt the tasks helped them remember words: *"Because it's a little tough, I remember words"* and *"I think to make a sentence is little difficult, but remember soon."*

➢ 73% of learners felt *Kahoot!* is useful for learning English: *"I can learn the meaning and usage of many words by using it."*

➢ 85% of learners enjoyed making or taking *Kahoots!*: *"I am not good at memorizing, so it is more fun and easy to memorize vocab"* and *"We have to use our brain quickly, so it was very fun."*

Issues

➢ The most common difficulties were writing questions (69%) and thinking of distractors (56%)

➢ A few quiz-creators had minor problems using the *Kahoot!* site such as creating a user ID

➢ Quality of quiz-taking experience is dependent on a reliable Internet connection

IMPLICATIONS AND LIMITATIONS

Retention Despite the promising results, as there was no full delayed post-test it is not known how much of the vocabulary knowledge was retained over time.

Involvement load or time on task? It is possible that any effects were due to differences in the *quantity* of time on task rather than the *quality* of the processing involved in the tasks.

Training in writing questions A common difficulty for quiz-creators was writing questions and choosing distractors. Pre-task training in writing quiz questions will help prepare learners for this type of task.

Training in using digital platforms Providing pre-task, hands-on training and ongoing support is crucial when implementing learner-centred technology-mediated tasks.

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