

Enhancing primary students' vocabulary learning motivation and outcomes using the mobile user-generated-content tool

Yanjie Song¹ and Yin Yang²

Abstract. The purpose of this study was to investigate the effect of a mobile User-Generated-Content (m-UGC) tool on enhancing primary students' vocabulary learning motivation and learning outcomes. A total of 40 primary students in Hong Kong participated in this study. The results showed using the m-UGC tool could increase primary students' learning motivation and significantly improve their vocabulary learning.

Keywords: vocabulary learning, mobile user-generated-content tool, learning outcomes, learning motivation.

1. Introduction

Vocabulary learning is central to English language acquisition because words are the basic building blocks of English language. However, learners of English usually find that memorizing English vocabulary is boring (Chen & Chung, 2008). Many studies have been done to investigate the effectiveness of mobile technology on vocabulary learning. Some of the studies focused on tool or system development (Wu & Huang, 2017), while other studies proposed vocabulary learning strategies mediated by mobile technology (Wang & Huang, 2017). Regarding English vocabulary learning motivation, some studies have been conducted and found a positive correlation between vocabulary learning performance and motivation in a technology-enhanced learning context (Solak & Cakir, 2015).

1. The Education University of Hong Kong, Hong Kong, China; ysong@eduhk.hk; <https://orcid.org/0000-0002-8213-7670>
2. The Education University of Hong Kong, Hong Kong, China; s1135072@s.eduhk.hk; <https://orcid.org/0000-0002-9966-248X>

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However, many studies were conducted in the classroom setting, and most learning activities were prescribed by teachers or researchers in the higher education context. Little is known about primary students' learning performance and learning motivation in the m-UGC context in which learners are allowed to generate learning logs and apply the newly learned words in real life contexts. The research questions are: (1) did primary students who learned with the m-UGC tool have better learning outcomes than those without the tool, and (2) were primary students who learned vocabulary with the m-UGC tool more motivated than those who learned vocabulary without the tool?

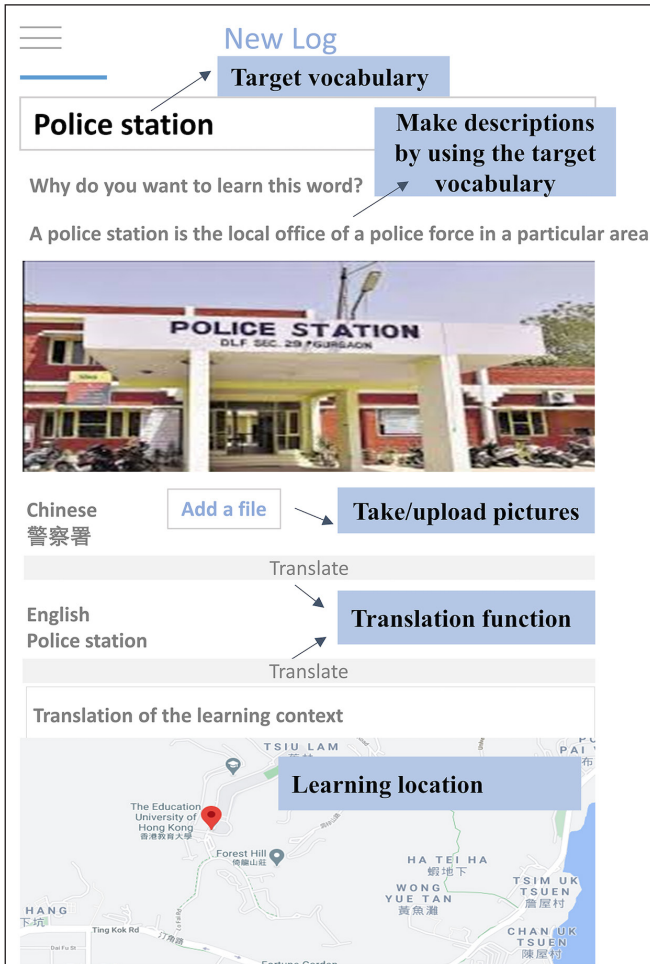
2. Method

This study proposed an in- and out-of-class vocabulary learning approach mediated by the m-UGC tool. The m-UGC learning tool was adapted from SCROLL (System for Capturing and Reminding of Learning Log) which was developed by our research collaborators in Japan (Ogata et al., 2014). The function used in this study included vocabulary learning log creation and peer-comments. Students were expected to generate their own vocabulary logs by inputting target vocabulary and taking or uploading pictures in real life related to the target vocabulary (refer to Figure 1 for an example). All the personalized vocabulary learning logs could be shared by the whole class. Students could make comments on others' learning logs.

The instructional design combined five-stage vocabulary learning processes mediated by the m-UGC tool across in-class and real life settings: (1) encounter a new word; (2) get its form; (3) understand its meaning; (4) consolidate the word; and (5) use the word. In the classroom, students first encounter a new word, get its form, and understand its meaning (Brown & Payne, 1994). Then, they are expected to consolidate and use the target words in real life settings.

A quasi-experimental design method was adopted in this study. A sample of 44 Grade 4 students was invited from two classes of a primary school in Hong Kong. The average age was 9.7. However, only participants who had completed instruments were included in the final analysis. Consequently, the data were drawn from 22 students in the experimental group and 18 students in the control group. English was used as the medium of instruction. The experimental group (n=22) used the m-UGC tool while the control group (n=18) learned vocabulary without the m-UGC tool. The topic of vocabulary learning reported in this paper was 'places' and 'a balanced diet' with 32 new words from Primary Longman Elect 4B.

Figure 1. Interface of a ‘learning log’ on the m-UGC tool



Data collection included students’ vocabulary learning logs recorded on the m-UGC tool and two groups’ pre-and post-vocabulary tests and surveys. A motivation questionnaire with 24 items was adapted from [Wu’s \(2018\)](#) study. Responses were given on a five-point Likert scale, ranging from one for ‘never’ to five for ‘always’. Quantitative data analysis was used with the assistance of SPSS version 25. Independent t-test was adopted to analyse the vocabulary achievement between two groups. With regard to learning motivation, a paired t-test was adopted. In addition, students’ vocabulary learning logs were used as evidence to triangulate the data.

3. Results and discussion

3.1. RQ1: did primary students who learned with the m-UGC tool have better learning outcomes than those without the tool?

Table 1 presents the descriptive statistics of the learning performance in this study. The difference in pre- and post-test score means of the experimental group and control group was 4.091 and -3.778 respectively. The results of the paired sample t-test showed that the difference of pre- and post-test in the experimental group ($t=3.93$, $df=21$, $p<.05$) was significant, while the difference of pre- and post-test in the control group ($t=-2.11$, $df=17$, $p>.05$) was not significant. Table 2 indicated that primary students who learned vocabulary with the m-UGC tool had better learning outcomes than those without the m-UGC tool ($F=8.47$, $p=0.006<.05$).

Table 1. Results of vocabulary performance

	N	Mean Diff. (post-test – pre-test)	SD	t	df	Sig (2-tailed)
Experimental group	22	4.09	4.88	3.93	21	.001
Control group	18	-3.78	7.60	-2.11	17	.050

Table 2. Independent t-test among the experimental and control group

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Mean Diff. (post-test – pre-test)	Std. Error Diff.
Experimental group	Equal variances assumed	8.47	.006	3.97	38	7.87	1.98
Control group	Equal variances not assumed			3.80	27.84	7.87	2.07

There were 274 vocabulary learning logs (pictures and vocabulary) in total created by the students on the m-UGC tool. Among the 274 postings, 264 postings (96.4%) were related to the vocabulary learned on the topic of 'places' and 'a balanced diet'.


Some vocabulary learning logs created by students were identified and presented in Figure 2 and Figure 3. These user-generated learning logs show that the primary students were able to apply the newly learned words in real life supported by the m-UGC tool.

Figure 2. An example of a ‘learning log’ on the m-UGC tool – ‘fruit and vegetables’

EDIT **DELETE**

- AUTHOR 4A14
- CREATEATED 2019/10/23 11:42
- UPDATED 2019/10/23 11:42

Read (6) · ReLog (0) [Click to re-log](#)



Fruit and vegetables(English)

- **DESCRIPTION** Eats a lot of fruit and vegetables every day. They are good for you. They have a lot of vitamins and minerals. They keep you healthy. It is better to have fresh fruit and not juice. Too much fruit juice is bed for because it is often high sugar. (2019/10/23 12:15)
- **COMMENTS** Eats a lot of fruit and vegetables every day. They are good for you. They have a lot of vitamins and minerals. They keep you healthy. It is better to have fresh fruit and not juice. Too much fruit juice is bed for because it is often high sugar.

Figure 3. An example of a ‘learning log’ on the m-UGC tool – ‘grain’

EDIT **DELETE**

- AUTHOR 4A03
- CREATEATED 2019/11/01 11:45
- UPDATED 2019/11/01 11:45

Read (13) ReLog (0) [Click to re-log](#)



Grain (English)

糧食 (Chinese)

- **DESCRIPTION** Grain is good for us. We should eat more. (2019/11/01 12:16)
- **COMMENTS**
 - 4A01 (Nov 01, 2019 12:13:15 PM) I like eating cereal. **I like eating cereal.**
 - 4A03 (Nov 01, 2019 12:17:58 PM) I don't like eating cereal. **I don't like eating cereal.**
 - 4A13 (Nov 02, 2019 12:20:33 PM) Grains is good for us **Grains is good for us**

3.2. RQ2: were primary students who learned vocabulary with the m-UGC tool more motivated than those who learned vocabulary without the m-UGC tool?

Table 3 presents the descriptive statistics of four dimensions of students' learning motivation and the results of the paired sample *t*-test over pre- and post-survey in this study. As noted, students' learning motivations in the experimental group increased, but the difference was not significant. Overall, students who learned vocabulary with the m-UGC tool were positive especially in terms of learning confidence and satisfaction. In contrast, the control group (n=18) reduced their mean score in terms of attention, relevance, and satisfaction.

Table 3. Results of learning motivation

Groups	Items	Pre	Post	Mean Diff.	SD	Paired sample t-test		
						t	df	Sig.
Experimental group	Attention	3.66	3.80	0.14	0.72	0.79	16	0.442
	Relevance	3.81	3.91	0.10	0.65	0.67	17	0.518
	Confidence	3.74	3.99	0.25	0.99	1.07	16	0.302
	Satisfaction	3.69	4.07	0.39	0.91	1.82	17	0.087
Control group	Attention	3.19	3.11	-0.07	1.18	-0.27	17	0.793
	Relevance	3.22	3.15	-0.07	1.16	-0.26	18	0.795
	Confidence	3.28	3.40	0.11	1.41	0.31	16	0.757
	Satisfaction	3.35	3.29	-0.06	1.30	-0.21	17	0.835

4. Conclusions

The findings of the study show that students' overall learning outcomes and learning motivation were increased and leveraged by the m-UGC tool. The increase of learning motivation in the experimental group was not significant. Several reasons may explain it: (1) the sample size in this study was quite small; (2) the duration time of the study was only two weeks; and (3) the limited functions of the m-UGC tool. It was found that some of the functions of the m-UGC tool were not compatible across different devices and were not user-friendly. Future work focuses on refining the tool and scaling up its implementation. In addition, future research will also be conducted to explore more factors that may affect student learning motivation and outcomes longitudinally leveraged by the m-UGC tool in a real life context.

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