



Using Socrative for Vocabulary Tests: Thai EFL Learner Acceptance and Perceived Risk of Cheating

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Despite the growing interest in using online quizzes with Student Response System (SRS) for assessment, knowledge and empirical evidence about learner acceptance and risk of cheating are still limited in the literature. Hence, to address such gaps, this study explored Thai EFL learner acceptance and perceived risk of cheating of using Socrative for vocabulary tests. The participants ($N = 461$, 77.4% female, 22.6% male) attended a General English (GE) course that required them to learn fifty English words every week. The vocabulary tests took place in the first ten minutes of the class for ten weeks delivered by using Socrative. At the end of the course, this study investigated learner acceptance and perceived risk of cheating using a set of survey constructed based on Davis (1989) and collected the data of vocabulary learning outcomes and proficiency levels. The data were, then, analysed by using independent t-test, correlation, and multiple regression analyses. The results indicated Thai EFL learner acceptance of Socrative with the risk of cheating during vocabulary tests. Learner acceptance was influenced by proficiency level and predicted a small amount of learning outcomes. These results have some implications for instructional course designs adopting online quizzes for testing.

Keywords: Socrative, online testing, cheating, vocabulary test, vocabulary learning, gamification

Introduction

There has been a growing interest in exploring the use of online quizzes with Student Response System (SRS) in L2/ foreign language teaching as it offers various benefits for teachers, including evaluation of class understanding, grading, sharing, experimentation and exploration, and formative assessment (Mork, 2014). One of the prominent areas of exploration is using online quizzes with SRS for assessment. A recent study from Premkumar (2016), for instance, investigating the use of SRS for summative assessment, confirms the effectiveness of SRS (Clickers) for examinations of short duration with multiple-choice questions or questions with short-length texts, favoured by teachers and students. The use of online quizzes with SRS is even more popular for formative assessments since it allows teachers to do a “learning check” and provides immediate feedback to students (Petrucco, 2019). Yet, there is still little known about the risk of cheating from using online quizzes for assessment.

Using online quiz tool for assessment offers the possibility to take advantage of smartphones that helps reduce the use of printed paper and save teacher’s time from some printing work. Nevertheless, aside

from all the benefits it can offer, it is important to note that as online testing is getting popular among tertiary educators, there is a possibility that student cheating is also increasing due to the assistance of the internet and related technologies, which is difficult to detect (Watson & Sottile, 2010). There is still limited knowledge with regards to the extent of online quiz tool design to prevent student from cheating; while it can make assessment easier, it can also make assessment invalid (Munoz & Mackay, 2019). The issues of student cheating have been found to be problematic in online courses (e.g., McGee, 2013; Ravasco, 2012), but the evidence is still limited in the context of online quizzes with SRS used in L2/foreign language assessment.

Moreover, some studies have examined students and teachers' perceptions on the use of online quiz tool with SRS in teaching and learning; the findings revealed encouraging results (e.g., Kent, 2019; Rana & Dwivedi, 2016). However, these studies were merely focused on perceptions and did not include the framework of technology acceptance. In the studies of ICT (information communication technology), the framework of technology acceptance is very crucial since it explores determinants of user acceptance of a specific technological device to minimize resistance (Dillon & Morris, 1996). In education, this framework has been adopted in the studies related to user acceptance of collaborative technologies for e-learning (Cheung & Vogel, 2013), factors affecting teachers' use of ICT (Afshari, Bakar, Luan, Samah, & Fooi, 2009), the acceptance of tablet-PCs in classroom instruction (Ifenthaler & Schweinbenz, 2013), technology acceptance and social networking in distance learning (Lee, Cho, Gay, Davidson, & Ingrassia, 2003), and students' attitudes toward the use of the internet for learning (Hong, Ridzuan, & Kuek, 2003). Nonetheless, none of previous studies investigating the use of online quizzes tools adopt the framework of user acceptance.

Thus, to contribute to the literature and provide practical awareness, the present study examines Thai EFL learners' acceptance and perceived risk of cheating of using Socrative for vocabulary tests. Socrative is one of the most popular online quizzes with SRS used in education (Ingalls, 2018). Since the last decade, studies on the use of Socrative in teaching and learning in higher education have gradually increased (e.g., Balta, Perera-Rodríguez, & Hervás-Gómez, 2018; Faya Cerqueiro & Martín-Macho Harrison, 2019). This study seeks to provide empirical evidence on EFL learners' acceptance of Socrative using the framework of user acceptance of information technology from Davis (1989) and survey items validated with reliability analysis. In addition, it also examines the interplay with vocabulary learning outcomes and English proficiency levels.

Literature Review

Socrative

Thornthwaite (2014) in his book *Not a Toy, but a Tool: An Educator's Guide for Understanding and Using iPads* defines Socrative as "a fun way for teachers to facilitate discussions, to assess understanding prior to teaching a new topic, or to quickly determine learning after covering the topic" (p. 53). Thornthwaite appends that Socrative is helpful as it gives space for multiple students in the class to be involved in the activity without registration or downloading the app. It is not complicated as the students only need to input the 'room number' which the teacher provides and then insert their names or ID numbers in order to be identified and evaluated objectively on the ongoing activity throughout the system itself. Similarly, Ansary (2018) delineates Socrative App as a "student response formative assessment system (SRFAS) that can be used for engagement, collaboration, effectiveness and increasing students' Digital Literacy" (p. 11). More closely, Sanborn (2017) describes Socrative as:

online student response system that allows teachers to collect feedback and assess learning using any Internet-connected device. Teachers can use Socrative to measure acquisition of information throughout the entire instructional unit as well as assess learning at the beginning or end. Socrative

is a quizzing system that allows for real-time feedback and collection of data that can be shared live, in class, or later in a report. (p. 209)

Loucky and Ware (2016) describe Socrative as one of the “gamification tools that have been found versatile, user-friendly and highly enjoyable” (p. 50). The reason is that it can be used effectively despite the class size or the level of the students’ linguistic competency. This means that in the case of having large or multiple classrooms, Socrative can free teachers from the burden of correcting formative assessments because results will be prepared instantly in excel file which can be saved as reports either in personal accounts or transferred to teachers’ emails (Fakhr & Khalil, 2016). Socrative grants teachers access to monitor and evaluate students’ responses by simply sharing the room name with students. At this point, Socrative enables real time questioning and immediate visualization of the results of students’ responses, thereby moving away from the traditional style of assessment and promoting a paperless educational environment.

In Socrative, teachers can create different types of questions, e.g., multiple-choice, yes/no and short answer questions, and use them as a real-time or homework quiz. Teachers have a chance to construct and edit their planned assessments and provide feedback to students immediately. With its accessibility for various electronic devices, e.g., mobile, computer, and tablet, and is not time-consuming, Socrative can be an ideal means for formative assessment and survey activities that evaluates students’ comprehension or educational achievement (Eckert, 2016). The ideality of Socrative lies in “its ease of use, efficiency and instructor familiarity with the advantageous modern technology” (Mils & Wake, 2017, p. 173). Unlike Kahoot or Padlet, students prefer using Socrative as it grants them privacy in which other students cannot peep at their answers (Covili & Provenzano, 2015).

The Use of Socrative in Education and English Language Teaching

In higher education, Socrative can be used in various ways to support teaching and learning. With its Student Response System (SRS), Socrative has potential to enhance student engagement and learning experience better than traditional lecture setting (Dervan, 2014). In the context of bilingual education, Socrative can be used as an immersive participation tool that displays argumentative questions and creates polls stimulating class discussions (Archila, Molina, & de Mejía, 2018). For big classes of theoretical-practical subjects in which students tend to focus on practice rather than on theory, Socrative can be utilized as real-time quizzes which encourage students to be engaged with subject materials and attend lectures (Ferrándiz, Puentes, Moreno, & Flores, 2016). Socrative can facilitate interactive learning and improve learning outcomes in Pharmaceutical Sciences courses (Munusamy, Osman, Riaz, Ali, & Mraiche, 2019). The latest study from Faya Cerqueiro and Martín-Macho Harrison (2019) compared the session gamified by using Socrative and the sessions without Socrative. They found an increase in students’ perceived satisfaction and confirmed the effectiveness of Socrative as a means of providing formative feedback, which can save time during lessons. In a nutshell, for teaching and learning in higher education, Socrative offers such benefits as practical use, immediate feedback, time saving and design of different types of questions (Balta & Tzafilkou, 2019).

Socrative is one of the six technological innovations that has substantially influenced English Language Teaching (ELT) and learning in the recent decade (Jana & Iveta, 2019; Marshall, 2016). It has been used to facilitate active learning. El Shaban (2017), for instance, integrated Socrative into reading comprehension class activities to enhance students’ engagement and his qualitative data analysis revealed that Socrative influenced students’ level of engagement and collaboration positively. Additionally, in a study on Korean EFL learners, Kim (2019) found that aside from enhancing students’ active learning, learners’ self-efficacy was affected positively due to the use of mobile technology, i.e. Socrative, in a medical English course. In another non-cognitive area, Socrative has been used to promote self-regulated learning with formative assessment in vocabulary learning in Thailand (Waluyo, 2018). Further, with regards to improving English skills, Socrative has been utilized for comprehension checks and planning

writing tasks in writing course (Ohashi, 2015). It has also been adopted for creating gamified learning in improving ESL learners' grammar knowledge (Hashim, Rafiq, & Md Yunus, 2019). Nevertheless, despite these elaborated examples on the use of Socratic in ELT, the number of empirical studies is still small which is one of the areas that the present study attempts to contribute.

Theoretical Framework

User/ Learner Acceptance of Information Technology

The theory of technology acceptance appeared in the late 1970s that viewed the use of technology using psychological paradigms. However, the present study only refers to the technology acceptance model proposed by Davis (1989, 1993). Davis (1989) examined and validated two specific variables, involving perceived usefulness and perceived ease of use, assumed to be the fundamental determinants of user acceptance of information communication technology (ICT) tools. The findings generated valid measurement scales for user acceptance of ICT tools. A replication study was published three years later by Adams, Nelson, and Todd, (1992), who despite some disagreements with Davis' (1989) conclusion, suggested, "development of valid measures linked to user acceptance of technology is possible and should be pursued" (p. 245). Davis's study on determinants of user of technology was continued and published in 1993, confirming that two determinants, i.e. perceived usefulness, and perceived ease of use, fully mediates the effect of system design features on usage.

Perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). In other words, it explores users' beliefs of whether a technological device or application will enable them to perform their job better. However, there may be a situation where an application is useful for producing better job performance, but it is too hard to use; in this instance, users may or may not use the application. Therefore, the other determinant is perceived ease of use, defined as, "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). In a simple term, an application considered to be easier to use will likely be accepted by users. Previous studies have suggested significant correlations between these two determinants for measuring user acceptance of information technology (e.g., Fenech, 1998; Hendrickson, Massey, & Cronan, 1993).

In the present day, perceived usefulness and perceived ease of use have been used to investigate learner acceptance of educational applications. Sun, Xiong, and Chang (2019), for example, explores university students' intentions to use mobile educational apps; their quantitative analyses disclosed the interplays between perceived usefulness, perceived ease of use, and perceived task-technology fit. In a study on acceptance and usage of mobile information system services, Almaiah (2018) observed that perceived ease of use and perceived usefulness contribute to context of applications leading to student intention to use mobile information system in university environment. Further, the latest study from Granić and Marangunić (2019), who reviewed 71 relevant studies from 2003 to 2018 on technology acceptance in educational context, found that both perceived ease of use and perceived usefulness have been recognized to be antecedent factors influencing acceptance of learning with technology. Thus, the present study intends to use these two core variables to examine Thai EFL learner acceptance of online quiz tool, i.e., Socratic for assessment.

Risk of Cheating

The framework of cheating in this study is built upon previous studies focusing on the possibility of students cheating in online tests. It has been found that there was the likelihood of students cheating in online tests although the results did not pay off (Arnold, 2016; Diedenhofen & Musch, 2017; Fask, Englander, & Wang, 2014). Accessible technological tools and internet connection often tempt students

to perform dishonest behaviors leading to cheating in online tests (Burgason, Sefiha, & Briggs, 2019; Olivero, 2013). Cheating can produce misleading assessment results that portrays what students know and can do inaccurately; unfortunately, it cannot be completely removed in online testing (Munoz & Mackay, 2019). Much assisted by online opportunities, academic cheating is a severe and rising problem which can undermine teaching and learning quality of a higher education institution (Pell, 2018). Despite all the concerns about student cheating on online tests, there is no study that directly explores student cheating in online quizzes, especially in the context of second/ foreign language assessment. The present study attempts to address this need in the literature.

Research Questions

This study addressed the following research questions:

1. How is Thai EFL learner acceptance of Socrative for assessment after using it in vocabulary tests for 10 weeks? Is it significantly different across gender and proficiency levels?
2. How is Thai EFL learners' perceived risk of cheating in Socrative after using it in vocabulary tests for 10 weeks? Is it significantly different across gender and proficiency levels?
3. How do Thai EFL Learner acceptance and their perceived risk of cheating correlate with vocabulary learning outcomes and proficiency levels?
4. What predictive roles do learner acceptance and perceived risk of cheating play on Thai EFL learners' vocabulary learning outcomes?

Method

Research Design

This study employed a non-experimental quantitative research design since it involved survey and correlation research to answer the research questions (Cook & Cook, 2008). The data analysis attempts to disclose descriptions of learner acceptance and perceived risk of cheating of using Socrative for vocabulary tests, examine correlations between learner acceptance, perceived risk of cheating, learning outcomes, and proficiency levels, and unveil predictive roles of learner acceptance and perceived risk of cheating on learning outcomes. Apart from providing results of descriptive and inferential statistics, this study also presents effect size for each analysis involving correlation and regression as it is considered important for practical guidance (Delice, 2010).

Research Context

The context of this study was a mandatory General English (GE) course entitled "English Communication Skills" for undergraduate students at Walailak University in Thailand. It took place in the first term of the academic year of 2019-2020 from July to September 2019. In this course, students were required to learn fifty English words every week from the provided lists. Then, student vocabulary knowledge was tested in the first ten minutes of the class. Socrative was used to deliver the vocabulary tests. Students used their smartphones to access the tests and teachers proctored the tests. One test consisted of fifteen multiple choice questions that lasted ten minutes. In total, students had ten vocabulary tests in ten weeks using Socrative. All the students did not have prior experience of using Socrative. These vocabulary tests accounted for 10% of students' final grade.

Participants

This study involved 461 first-year students from 13 different schools at Walailak University, Thailand as seen in Table 1. Their age ranged from 18 to 21 years old ($Mean = 18.56$, $SD = .59$). Before starting their first term of study, all the students took a university standardized test of English proficiency named “Walailak University Test of English Proficiency (WUTEP)” measuring students’ proficiency levels on the Common European Framework of Reference (CEFR) for Language. The results disclosed that about 90.7% of the participants in this study were basic user of English at A2 level (90.7%), while 9.3% were independent user of English at B2 level (9.3%). The demographic characteristics of the participants are provided in Table 1.

TABLE 1
Demographic Characteristics

		Frequency	%
Gender	Female	357	77.4
	Male	104	22.6
Age	18	223	48.4
	19	218	47.3
	20	19	4.1
	21	1	.2
School	Allied Health Sciences	102	22.1
	Liberal Arts	8	1.7
	Architecture and Designs	15	3.3
	Engineering and Resources	27	5.9
	Informatics	19	4.1
	Management	66	14.3
	Medicine	28	6.1
	Nursing	65	14.1
	Pharmacy	65	14.1
	Political Science and Laws	21	4.6
	Public Health	24	5.2
	Sciences	19	4.1
Language Proficiency (CEFR)	A2	418	90.7
	B1	43	9.3

Instrument and Measure

Survey: Learner acceptance

Perceived of usefulness. This scale was intended to measure students’ perceptions on the usefulness of using Socratic for vocabulary tests. The scale was developed by referring to the previous studies by Davis (1989) and Hendrickson, Massey and Cronan (1993). The scale included five items, such as “Socratic is a good tool for vocabulary tests.”, “Socratic is effective for vocabulary tests.”, “Socratic is useful for vocabulary tests.”, “Socratic enhances my experience in vocabulary tests.”, and “Socratic should be used for vocabulary tests in all courses.” The responses range from 1 to 5, where “1” = “Strongly disagree” and “5” = “Strongly agree”. The Cronbach’s alpha is .915, which shows very high internal consistency ($Mean = 3.04$).

Perceived ease of use. This scale was developed to assess students’ perceptions on the use of Socratic for vocabulary tests in the aspect of ease of use. The development of the scale was based on the

previous studies from Davis (1989) and Hendrickson, Massey, and Cronan (1993) that examined scales for assessing user acceptance of information technology. The scale contained five items in five Likert-scale from strongly disagree (1) to strongly agree (5). The items, for example, were “Socrative is easy to use.”, “Socrative is clear and understandable.”, “Socrative is flexible to interact with.” It is easy to become skillful at using Socrative.”, and “Operating Socrative is easy.” The Cronbach’s alpha is .900, which shows very high internal consistency (*Mean* = 2.91).

Perceived risk of cheating. The scale was created to collect students’ perceptions or experiences on the risk of using Socrative for vocabulary tests. This scale was intentionally developed to confirm whether cheating is possible when having a vocabulary test on Socrative. The results were expected to confirm the downside of using Socrative as well as to offer alternatives to tackle it. The scale consisted of six items, including “It is easy to cheat during vocabulary tests on Socrative.”, “It is easy to translate questions during vocabulary tests on Socrative.”, “I prefer vocabulary tests on Socrative than on paper because it is easy to cheat.”, “I have some strategies to cheat during vocabulary tests on Socrative.”, “Teacher will not see if I cheat during vocabulary tests on Socrative.”, and “I screen-shoot questions during vocabulary tests and share them with my friends.” The Cronbach’s alpha is .928, which shows very high internal consistency (*Mean* = 1.79).

Test: Vocabulary learning outcomes

Students had ten vocabulary tests in ten weeks using Socrative which was part of the course requirement that they were studying, as explained earlier in the research context. Each vocabulary tests had fifteen questions involving questions about definition, synonym, antonym, part of speech, and sentence completion. Examples of the questions are shown below.

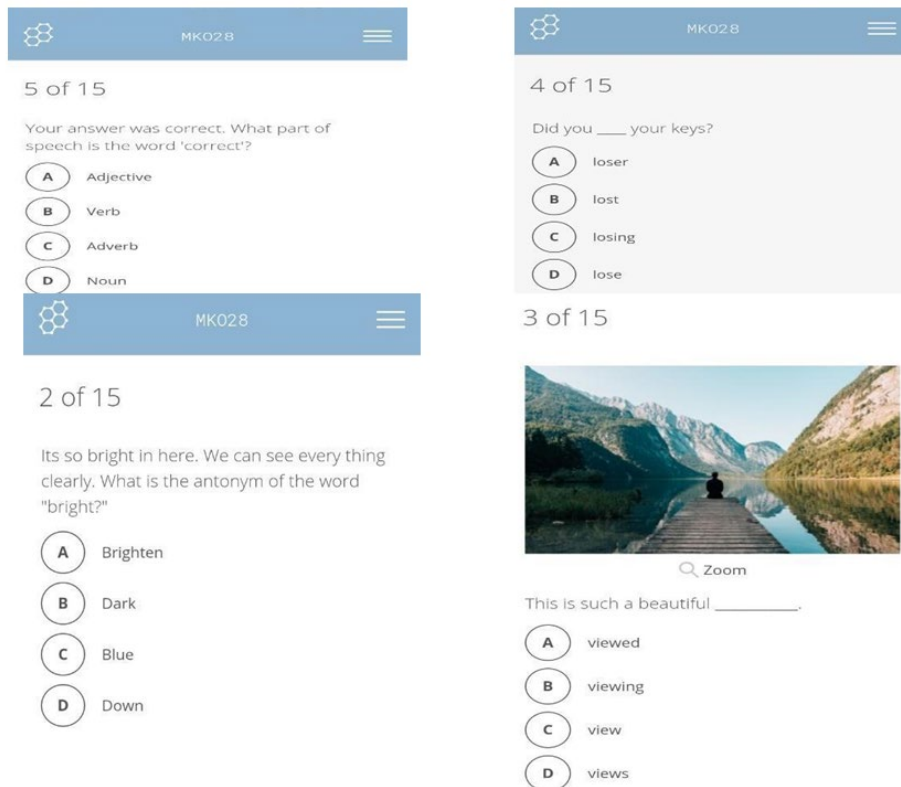


Figure 1. Examples of the vocabulary questions.

English proficiency levels on CEFR

This study used the results of Walailak University Test of English Proficiency (WUTEP) conducted in August 2019 as the variable for English proficiency. The students took the test before starting their first term of study. WUTEP is a test of English proficiency developed based on the *Common European Framework of References (CEFR)* and *Classical Test Theory (CTT)*. It has been used to measure the proficiency of \pm 6000 students since 2018. It has also been mapped to other international standardized tests, such as TOEIC, IELTS, and TOEFL. It assesses the four English skills encompassing listening, reading, writing, and speaking as shown in Table 2 below.

TABLE 2
The Test Format – WUTEP (Waluyo, 2019)

Test Format	Number of Questions	Duration
Listening		
Part 1: Statements and pictures	5	40 minutes
Part 2: Statements and responses	15	
Part 3: Conversations	15	
Part 4: Talks	15	
Reading		
Part 5: Sentence completion	20	60 minutes
Part 6: An e-mail completion	5	
Part 7: Reading comprehension: single passage and double passages	25	
Writing		
Topic prompt essay	1	40 minutes
Speaking		
A discussion with a lecturer involving self-introduction, speaking about a topic, and questions-answers.	-	5 minutes

Data Collection

The data were collected in September 2019, at the end of term 1 in the academic year of 2019-2020 at Walailak University, Thailand. A set of survey was created and administered using Google Form. The respondents were the first-year students studying English Communication Skills course with a total of 769 students. Six teachers distributed the surveys by sharing the QR codes that enabled students to complete the surveys using their smartphones. Participation in this research was voluntary. At the end, the study received 461 responses, 60% of the total number of students. The response rate was considered acceptable for the data analysis. The study was, then, continued further.

Data Analysis Procedures and Techniques

After collecting the required data, this study used IBM SPSS statistics 23 to run the data analysis. The first step was data cleaning and preparation, in which the collected data were computed into SPSS and missing data were deleted. Then, the reliability analysis was run to see the internal consistency for each item included in the survey of learner acceptance and perceived risk of cheating. Cronbach's alpha was adopted to determine the reliability level. Items below .70 would be excluded from the data analysis, but the results displayed all the sub-scales had Cronbach's alpha higher than .70: perceived of usefulness ($\alpha = .915$, perceived ease of use ($\alpha = .900$) and perceived risk of cheating ($\alpha = .928$). Hence, all the sub-scales were included into the data analysis. Afterwards, to answer the first and second research questions, descriptive statistics, involving mean, standard deviation, percentage, and frequency, and independent t-

test were conducted. Subsequently, bivariate, and multiple regression analyses were performed to answer the third and fourth research questions, respectively.

Result and Discussion

Result

Thai EFL Learner acceptance of Socrative for assessment

The first research question delved into Thai EFL learner acceptance of Socrative for assessment after using it for ten weeks in vocabulary tests. As explained in the previous section, learner acceptance of Socrative consisted of two core determinants: perceived usefulness and perceived ease of use. In general, Thai EFL learners ($N = 461$) agreed that Socrative was useful for vocabulary tests ($Mean = 3.04$, $SD = .72$) and was easy to use ($Mean = 2.90$, $SD = .69$). A strong and significant positive correlation was obtained between Thai EFL perceived usefulness and ease of use of Socrative ($r(461) = .793$, $p < .001$). The average of perceived usefulness and ease of use disclosed learner acceptance of Socrative for vocabulary tests ($Mean = 2.97$, $SD = .67$). For usefulness, the majority of the learners perceived that Socrative was good (383/83%), effective (362/78.5%), and useful (379/82.2%) for vocabulary tests; it enhanced their experience in vocabulary tests (354/76.7%) and should have been used for vocabulary tests in all courses (351/76.1%). Additionally, the learners informed that Socrative was easy to use (351/76.1%), clear and understandable (367/79.6%), flexible to interact with (301/65.3%), and easy to operate (332/72%); they believed that it was easy to become skilful at using Socrative (338/73.3%).

Across gender, there was no significant difference between female and male learner acceptance of Socrative ($t(459) = .439$, $p = .661$). On the contrary, learner acceptance of Socrative was significantly different across proficiency levels ($t(459) = -2.82$, $p = .005$), in which learners with B1 level of proficiency showed a higher rate of acceptance ($Mean = 3.24$, $SD = .54$) than learners with A2 proficiency level ($Mean = 2.94$, $SD = .68$) with a medium effect size ($Cohen's d = .5$). Learner acceptance of Socrative was significantly correlated with learners' proficiency in listening ($r = .181$, $p < .001$), reading ($r = .222$, $p < .001$), writing ($r = .148$, $p = .001$), speaking ($r = .101$, $p = .030$) and overall ($r = .232$, $p < .001$). These results indicated that more proficient learners were more likely to accept Socrative.

Thai EFL learners' perceived risk of cheating in Socrative

The second research question addressed Thai EFL learners' perceived risk of cheating in Socrative after using it for ten weeks in vocabulary tests. In total, Thai EFL learners ($N = 461$) indicated the risk of cheating in Socrative during vocabulary tests ($Means = 1.79$, $SD = 1.09$). Most of the learners agreed that it was easy to cheat during vocabulary tests on Socrative (194/42.1%) and it was easy to translate questions during vocabulary tests on Socrative (190/41.1%). They agreed that they preferred vocabulary tests on Socrative than on paper because it was easy to cheat (186/40.3%). Nonetheless, they did not have certain strategies to cheat during vocabulary tests on Socrative (223/48.4%) and they still believed that teacher would find out if they cheated during vocabulary tests on Socrative (204/44.2%). There was no significant difference found both across gender ($t(459) = .175$, $p = .861$) and proficiency levels ($t(459) = 1.92$, $p = .055$). Learners' perceived risk of cheating had negative correlations with learners' proficiency in reading ($r = -.114$, $p = .014$) and overall ($r = -.098$, $p = .035$), while no statistically significant correlation was found with learners' proficiency in listening, writing, and speaking. These results hinted that the risk of students cheating during vocabulary tests on Socrative existed, but more proficient learners were less likely to perform cheating during vocabulary tests.

Relationships between Thai EFL learner acceptance and perceived risk of cheating

The next research question examined the correlations between Thai EFL Learners' acceptance and perceived risk of cheating of Socrative with their vocabulary learning outcomes and English proficiency levels. Learner acceptance of Socrative was positively correlated with vocabulary learning outcomes ($r(461) = .251, p < .01$) and proficiency levels ($r(461) = .232, p < .01$), yet the Pearson correlation coefficients were low. In contrast, learners' perceived risk of cheating was negatively correlated with vocabulary learning outcomes ($r(461) = -.193, p < .01$) and proficiency levels ($r(461) = -.098, p = .035$) with low Pearson correlation coefficients. Yet, there was no correlation between learner acceptance of Socrative and perceived risk of cheating; the sub-scales of learner acceptance were also not correlated with perceived risk of cheating. Then, significant correlations were observed between the sub-scales of learner acceptance with vocabulary learning outcomes and proficiency levels, as illustrated in Table 3.

TABLE 3
The results of Pearson Correlations ($N = 461$)

	Perceived ease of use	Learner acceptance	Perceived risk of cheating	Vocabulary learning outcomes	Proficiency levels
Perceived usefulness	.793**	.949**	.000	.217**	.167**
Perceived ease of use		.944**	.057	.261**	.276**
Learner acceptance			.030	.251**	.232**
Perceived risk of cheating				-.193**	-.098*
Vocabulary learning outcomes					.469**
Proficiency levels					1

Roles of Thai EFL learner acceptance and perceived risk of cheating

The last research question analysed the predictive roles of learner acceptance and perceived risk of cheating on vocabulary learning outcomes. Hierarchical multiple-regression analyses were conducted, where model 1 included perceived usefulness and perceived ease of use and model 2 involved learner acceptance and perceived risk of cheating as predictors, entered into the model in sequence. The first results of the analyses disclosed that perceived usefulness and perceived ease of use of Socrative for vocabulary tests made significant predictions for learners' vocabulary learning outcomes. Specifically, learners' perceived usefulness of Socrative significantly and positively predicted their vocabulary learning outcomes ($\beta = .22, t = 4.75, p < 0.001$). When learners' perceived ease of use of Socrative was added, the model reflected significant and positive results ($\beta = .24, t = 3.23, p < 0.001$). The R^2 change was .02 (F change = 10.43, $p = .001$), implying that an increase of 2% happened when the regression model involved both sub-scales. However, despite these encouraging results, the model could only predict 7% of the variance in learners' vocabulary learning outcomes ($R^2 = .07$) with a very small effect size ($f^2 = .08$). Then, the second results also confirmed that learner acceptance ($\beta = .25, t = 5.57, p < 0.001$) significantly and positively predicted learners' vocabulary learning outcomes, but when perceived risk of cheating was entered into the model, the results turned into a negative prediction ($\beta = -.20, t = -4.52, p < 0.001$). The R^2 increased by .04 (F change = 20.45, $p = .001$). This second model could explain 10% of the variance in vocabulary learning outcomes ($R^2 = .10$) with a small effect size ($f^2 = .11$). The details can be seen in Table 4 and 5 below.

TABLE 4
Perceived Usefulness and Ease of Use as Predictors

R	R Square	Adjusted R Square	Std. Error of the Estimate	β	t	Sig.
.217 ^a	.047	.045	1.04205	.22	4.75	.000
.261 ^b	.068	.064	1.03150	.24	3.23	.001

a. Predictors: (Constant), Perceived usefulness

b. Predictors: (Constant), Perceived usefulness, Perceived ease of use

TABLE 5
Learner Acceptance and Perceived Risk of Cheating as Predictors

R	R Square	Adjusted R Square	Std. Error of the Estimate	β	t	Sig.
.251 ^a	.063	.061	1.03310	.25	5.57	.000
.321 ^b	.103	.099	1.01188	-.20	-4.52	.000

a. Predictors: (Constant), Learner acceptance

b. Predictors: (Constant), Learner acceptance, Perceived risk of cheating

Discussion

The first results of this study confirm Thai EFL learner acceptance of Socrative for assessment in the context of vocabulary tests. Their acceptance was built upon ten weeks of experience using Socrative in online tests in class. Socrative was accepted because of its usefulness and ease of use. Learner acceptance was no different across gender, but proficiency levels had an influential role. Previous studies have verified that Socrative is one of the most influential in language teaching and learning in the recent decade (Jana & Iveta, 2019; Marshall, 2016) as it can be used to enhance active learning activities (El Shaban, 2017; Kim, 2019), promote self-regulated with formative assessment in vocabulary learning (Waluyo, 2018), and to improve students' English skills encompassing writing (Ohashi, 2015) and grammar (Hashim, Rafiq, & Md Yunus, 2019). The findings of this study add to the knowledge of EFL learner acceptance of an online quiz tool, i.e. Socrative, based on the framework of technology acceptance model by Davis (1989). Socrative allows teachers to implement formative assessment with immediate feedback as well as create gamified quizzes in class (Faya Cerqueiro, & Martín-Macho Harrison, 2019). Gamification is a newly growing trend in teaching and learning that emerges to enhance instructional contents in educational settings. It has been found that students who completed more gamified quizzes perform better across summative tests (Sanchez, Langer, & Kaur, 2020).

The present study also examined the risk of student cheating in the use of online quiz tools such as Socrative. Cheating is one the biggest concerns in the emergence of utilizing technology for assessment (Burgason, Sefiha, & Briggs, 2019; Olivero, 2013). As much as technology can offer for education, it also comes with consequences for student learning; one of them is the opportunities to cheat during online tests. When an assessment is compromised by cheating and dishonest behaviors, the results can no longer reflect what students know and can do accurately, which eventually undermines the quality of teaching and learning (Munoz & Mackay, 2019; Pell, 2018). The second findings of this study offer a new perspective for the use of Socrative and other online quiz tools with regards to the risk of cheating during online tests. In this study, Thai EFL learners confirmed the ease of cheating when having online tests using Socrative; however, more proficient learners were less likely to perform cheating during vocabulary tests. At this point, this study would suggest that although Socrative is useful, easy to use, and offers a wide range of benefits for teaching and learning, teachers should anticipate some cheating activities during online tests or assessment. Costley (2017) studied instructional factors leading to cheating in an online university setting and suggested that instructors/ lecturers can influence the amount their students

cheat by bettering the quality of their course. In Costley's study, there were positive relationships between students' levels of learning, engagement, satisfaction, interest, and cheating.

Though it is not part of the collected data, researchers observed that the ease of cheating on Socrative was due to the availability of online translation tool that could be embedded to internet browsers effortlessly. When students are having an online test on Socrative, they can just block the words and choose 'Translate'. This action can be done in a matter of seconds, as seen in Figure 2 below.

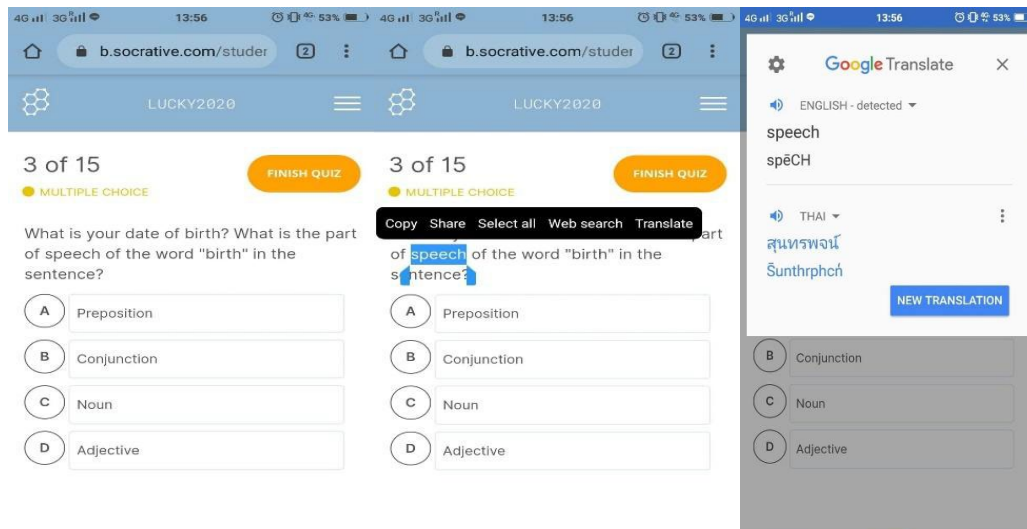


Figure 2. Illustration on how cheating can be done on Socrative.

The next findings of this study support the assumption that albeit students cheat during online tests using online quiz tools such as Socrative, their learning outcomes are not enhanced. It was found that learners' perceived risk of cheating was negatively correlated with vocabulary learning outcomes and proficiency levels. One of the previous studies from Arnold (2016), who examined cheating in online formative tests, found similar results that student cheating was likely to happen, but it would not benefit students during proctored summative tests. Although it is not an acceptable behavior, Costley (2019) found that students considered academic dishonesty was part of their natural learning experience. Nonetheless, students should not be the only party to be blamed for cheating cases because there are students who are concerned with the possibilities of cheating and low degree of trust in online tests (Kocdar, Karadeniz, Peytcheva-Forsyth, & Stoeva, 2018). In this instance, raising awareness that cheating will compromise learning outcomes among students is one of the suggestions that the present study attempts to advice. After all, student cheating happens in assessment with or without technology involvement but disseminating the recognition of the consequences of cheating will probably diminish the number of cheating cases.

Then, the last findings of this study suggest that learner acceptance of Socrative can affect learning outcomes with a positive small effect. Learner acceptance of Socrative is clearly not the biggest contribution to learning outcomes and certainly there are many influential variables that this study does not explore. Yet, in a bigger picture, these findings indicate that at the very least, when learners accept one technology or application, they will be positively supported by the means of the technology or application thereby influencing their learning outcomes. It sustains the findings of the previous studies that indicate the interplay between learner acceptance of technology or application and task-technology fit in educational settings (e.g., Almaiah, 2018; Sun, Xiong, & Chang, 2019).

Implications and Limitations of the Study

Boitshwarelo, Reedy, and Billany (2017) reviewed the literature on the role of online tests in higher education and the connection to student learning. One of their findings suggest that there is a lack of empirical studies with regards to the practice of online tests in the humanities, specifically on student experience from diverse linguistic and cultural backgrounds. Therefore, one of the implications of the findings of this study is to provide empirical evidence on interplays between learner acceptance of technology, perceived risk of cheating from using technology in online tests, learning outcomes, and proficiency level. Specifically, in the field of ELT, it emphasizes that Socrative is useful and easy to use and EFL learners will likely accept it for online tests such as vocabulary tests. There are no differences across gender, but more proficient learners will have a more tendency to accept Socrative as part of their learning with technology. Nonetheless, the risk of student cheating exists and should be considered in instructional course designs adopting Socrative for online testing.

It is acknowledged that this study has some limitations. The fact that this study uses self-report survey should not be neglected since there is a possibility that respondents do not reveal the truth in their survey responses. As this study focuses on one of the sensitive topics, i.e., cheating, some students may not be willing to choose choices that can cause them some anxiety or embarrassment and end up with the neutral option or not willing to reveal. The findings of this study should be treated using contextual appropriateness, in which they may or may not be discovered in other contexts due to other factors that are not included in the present study. This study has initiated an investigation using technology acceptance framework from Davis (1989) in second/ foreign language assessment. There is still a limited number of studies in this area and future research is recommended to explore EFL learner acceptance and perceived risk of cheating in other technology or applications used in English teaching and learning.

Conclusion

Integrating Information Communication Technology (ICT) into English Language Teaching (ELT) inside and outside classroom has gradually become one of the keys to attain the learning objectives (Waluyo, 2020). It enables teachers to embrace a wide range of teaching approaches, including blended/ hybrid learning, situated learning, mobile learning, and flipped classroom, which have potential to create various learning experiences and supports for learners. Since the internet and mobile technology became popular in the past two decades, there have been significant changes in language learning settings as well as literacy acquisition environments (Young, 2003). Classroom has been extended to Virtual Learning Environment (VLE), class hours have involved synchronous and asynchronous interactions, and testing and quiz have been moved to the use of online quizzes with Student Response System (SRS) (Jones, 2019). Innovative uses of internet and mobile technology have progressively appeared to assist both teaching and assessing all English skills (Shetzer & Warschauer, 2000). At this point, the present study contributes to the body of the literature as well as the practices of technology integration into ELT in four points. First, it suggests that Thai EFL learners accept the use of Socrative for vocabulary tests because of its usefulness and ease of use. There is no difference across gender, but level of proficiency may affect the degree of acceptance. Second, Thai EFL learners indicate the risk of cheating of using Socrative for vocabulary tests; some preventive actions are suggested for this reason. Third, students cheating seems problematic in online tests, but it is suggested that teachers raise the awareness of the consequences of cheating as it will not enhance learning outcomes. Lastly, although small, learner acceptance of an online application tool has an influential role on learning outcomes.

Recently, interests to use online application tools for conducting tests have started to be visible due to some benefits it can offer such as flexibility and being paperless. Teachers should implement strict proctoring activities during test. One of the signs that students are cheating is by looking at the movement of their fingers. In an online test, students should just use their fingers when moving to the next questions.

If students move their fingers much, teachers should approach and ensure that students are not moving out of the used app to access a translation tool. In the future, app developers may develop an online interface that disallows test takers to move out of the app without asking for permission and disables the feature to embed a translation tool in the app.

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