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Does Smartphone-Based Quizlet Affect Students' Learning Interest?

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Abstract

This study aimed to provide empirical evidence of the effect of smartphone-based Quizlet on students' learning interest in Universitas PGRI Madiun, Indonesia. This study was pre-experimental with a one-shot case study that is a group that got help, and the results were observed next. The population were accounting education students in Universitas PGRI Madiun. 54 students received smartphone-based Quizlet assistance in learning activities. We used statistical testing to test comparisons formulated in research hypotheses using simple linear regression tests. The results proved empirically that the use of smartphone-based Quizlet affected the students' learning interest in Universitas PGRI Madiun, Indonesia. The menu provided in the Quizlet application could activate students in learning and give a positive effect to students. Students became active in learning activities, did assignments on time, and learnt independently. The Quizlet application can be used as material for educators to consider increasing student interest in learning social science.

How to Cite

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INTRODUCTION

Learning activities are the occurrence of interactions between teachers and students in a learning environment. The learning objective is to help students learn various knowledge and shape attitudes, behavior, and ways of thinking. Attitude is the tendency of a person's positive or negative behavior towards an object (Sulistioning et al., 2020). A study conducted by Sulistioning et al., (2020) found that to assess student attitudes used indicators of interest because it increased student learning time.

The role of interest in the learning process is important to note because student interest will affect and student responses to the subject matter. Students with good interest development will form connections with the content to be studied so that student interaction in the learning process tends to be active and responsive (Renninger & Hidi, 2002). Interest is an impulse that can influence someone to do something. Interest is also a psychological state that occurs during the interaction between students and the object they are interested in, which causes increased attention and concentration (Hidi, 2006).

Interest is a driving force for the emergence of pre-existing motivation when students participate in learning activities. Changes in interest are fluctuating throughout learning or activities that involve students (Palmer, 2009). Interest affects students' perceptions of learning, followed by the influence of pedagogical aspects and student learning outcomes (Abrantes et al., 2007). Students need a strong interest so that they can learn optimally. In summary, students who have a strong interest make them achieve significant learning goals (Maesaroh, 2013).

Interest can be started from students' perceptions of a subject. A positive perception of a subject that students own will generate enthusiasm for learning activities so that students are interested in learning. Students' negative perceptions of a subject cause learning activities to be boring, so that students are less interested in studying certain subjects (Gani, 2015). Students with a greater interest in learning will be more meaningful, have a more significant impact, have creative self-efficacy, and have greater in learning (Kong et al., 2018).

A study conducted by Cunningham (2017) found the importance of innovation and creativity in implementing learning so that students had an interest in learning. The teacher has a role to help students realize and expand the potential of learning in a meaningful and exciting way (Cunningham, 2017). According to Wolff (2016), a fun and interactive learning experience affect the formation of students' positive attitudes in learning.

Interesting learning is using learning methods that involve students in all activities. Teachers must also be efficient in providing services to students because such responsiveness increases student interest in learning. Attention indirectly affects student interest by affecting learning performance (Abrantes et al., 2007). Interest-based performance leads to optimal motivation enhancement for students of all ages and abilities. Thus, one of the main goals of education should focus on developing student interests that are academically relevant (Hidi, 2006).

According to Palmer (2009) the main sources of interest are a novelty as well as physical activity and social involvement. There is a need for renewal in learning activities that involve more physical and social activities in order to encourage student interest in learning. The use of interactive, unique, interesting, and relevant learning media with competencies is expected to arouse student interest in learning.

Student interest in learning tends to increase when the learning media used emphasizes generating ideas to solve problems given by the teacher (Gani, 2015). Learning activities that are practical and involve technology generate higher interest than without them. The emergence of technology has brought changes to the education system. Learning that is integrated with technology is an exciting aspect and influences student interest and motivation (Osman & Hamzah, 2020).

We made preliminary observations on learning activities at Universitas PGRI Madiun, Indonesia. Preliminary observations on learning activities and interviews with three lecturers regarding learning media, we found that the majority still used conventional media with Microsoft Office PowerPoint media in delivering material. Initial findings were explored through interviews with four students showed that less creative and innovative PowerPoint displays made students bored and busy playing with their smartphones. Students did not focus on the material presented by the teacher. Students were more interested in the various menus on their smartphones than in PowerPoint slides showing course material. Topic content, activities, and learning objectives can influence student interest. Students will focus more on activity rather than topic content and learning objectives (Swarat et al., 2012).

According to Woodcock et al., (2012), students use smartphones to establish communicati-

on and seek entertainment rather than looking for references related to learning material. In our observation, from 54 students, none had a learning application on their smartphone. Students do not fully understand the benefits of smartphones, especially in learning. Students mostly install and use social media applications to communicate and perpetuate activities in online social media accounts.

Previous studies by Miskiah et al., (2019) concluded that internet use was still restricted to finding additional information concerning material learning. Likewise, the social networking site is still not yet well utilized as a part of the learning system. Students who own smartphones are mostly unaware of the potential of smartphones in supporting learning and, in general do not install applications for learning purposes. Woodcock et al., (2012) found that students are interested and open to the potential of smartphones when students know the benefits and purposes of smartphones.

The role of the teacher in making students understand science and directing student attitudes and behavior in learning today can use various technology-based learning aids. The monotonous use of PowerPoint presentation media is no longer attractive to students. Students who are always interested in smartphones can use by lecturers to try to carry out a smartphone-based learning process. In line with Sailin et al. (2020) statement, interest will arise when students are faced with new applications that make students interested in learning in an interactive environment which can produce better performance later. Various smartphone-based application media can be used by lecturers to support learning goals (Hidi, 2006; Woodcock et al., 2012).

Previous studies by Safdar et al., (2020) concluded that the internet was the students' favorite tool, a source of inspiration for e-learning. The use of e-learning media affected students' interest in learning (Oktarika, 2015). Quizlet is an e-learning tool that allows students to use it to support their learning activities. In 2005 the Quizlet application was developed by Andrew Sutherland (Aribowo, 2015). Furthermore, in 2007, Quizlet was launched on a website. Quizlet is an online learning tool in the form of an iOS mobile application. Furthermore, in 2013, the iOS mobile application also developed into an Android application (Aribowo, 2015).

The Quizlet application has various menus that support learning. Various menus on the Quizlet application also make teacher and student interactions useful. More than that, Quizlet, which is installed on a smartphone, makes it easier for students to study anywhere and anytime. Students also can learn the subject matter by accessing the Quizlet on their smartphone. The application of smartphones in learning increases students' high interest and curiosity about the material (Hochberg et al., 2018; Wibawa, Astuti & Pangestu, 2019). The use of smartphones in learning is beneficial for students who are less interested at the start of learning.

Every lesson using Quizlet can increase interest in learning because they are very interested in the material and Quizlet mediated questions (Aristiyo, 2019). Quizlet can be used as an assessment tool related to interest, attention, and learning (Sailin et al., 2020). Quizlet encourages students' interest in learning because it has a variety of interesting and interactive menus.

Quizlet's interactive games can help students develop strategies for independent learning (Cunningham, 2017). Game-based learning will increase student involvement in cognitive, affective, psychomotor and socio-cultural aspects. An attractive game design is used as a strategy to achieve conscious student involvement in learning (Plass et al., 2015). Quizlet is more interactive in giving students feedback on each activity implementation (Hikmah, 2019). Students who are actively involved in all stages of learning make learning more meaningful and not easily lost.

Another benefit of Quizlet is beneficial for practical vocabulary learning for students (Andarab, 2019; Anjaniputra & Salsabila, 2018; Dizon, 2016; Tri, 2015; Wahjuningsih, 2018; Wright, 2016)and whether it is likely to be more effective than learning decontextualized individual words. In so doing, 70 upper-intermediate English as a foreign language (EFL. Several previous studies have found that the Quizlet application was effective in language learning because it made it easier to understand and memorize vocabulary (Sanosi, 2018; Tri, 2015; Wahjuningsih, 2018; Wright, 2016).

Although Quizlet is very suitable for language learning, it is also suitable for learning in various disciplines. Quizlet's various attractive menus suit various disciplines, for example, organizing course materials using flashcards. Also, Quizlet is easy to use because it can be accessed anywhere and anytime via a smartphone or laptop (Sari, 2019; Wright, 2016). Users can create a Quizlet account via a smartphone or laptop, which can then take advantage of the various menus available to support the learning process.

Several previous studies concluded that the primary function of Quizlet helped to deve-

lop language intelligence, especially in increasing vocabulary (Andarab, 2019; Anjaniputra & Salsabila, 2018; Dizon, 2016; Tri, 2015; Wahjuningsih, 2018; Wright, 2016)and whether it is likely to be more effective than learning decontextualized individual words. In so doing, 70 upper-intermediate English as a foreign language (EFL. However, currently, Quizlet can practice other language skills, namely speaking, listening, reading, and writing (Aribowo, 2015). The use of Quizlet in learning vocabulary in social science learning can improve knowledge and new vocabulary skills related to reading standards. Students prefer to use technology rather than non-technology to learn vocabulary (Vargas, 2011).

Quizlet provides complete audio-visual facilities, where users can listen to the pronunciation of words by paying attention to the images presented on the flashcard. Various menus provided by Quizlet, namely: (1) Flashcards contain lesson materials. Flashcards can contain words, pictures, diagrams, or graphics. (2) Learn, contains various questions related to the subject matter on the flashcard. (3) Write, is a form of practice questions in the form of an essay. (4) The spell is an audio-visual medium that requires students to write answers. (5) A test is an evaluation tool in the form of essays, multiple-choice, matching, and true or false. (6) A match is an evaluation tool with a game menu. (7) Gravity is several problems made to resemble meteors from the sky that descend to earth, with different speed levels. The gravity menu test trains students' accuracy and speed in answering. (8) Quizlet Live is considered the most exciting menu because students can work together to complete the test on Quizlet Live in groups immediately. The group that completes the test fastest and achieves the highest score is shown on the screen after the Live time ends (Aribowo, 2015; Sari, 2019; Wahjuningsih, 2018).

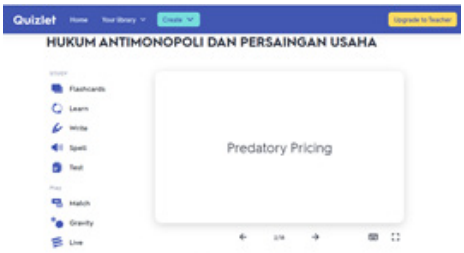

Figure 1. Menu Display on the Quizlet Application. Processed Primary Data (2020)

In addition to the benefits we have described, Quizlet's main advantage is that it connects teachers and students through websites and mobile devices that already use iOS and Android systems. The Quizlet application can be downloaded and installed into a mobile device so that students can access and enjoy interactive information presented audio-visual (Aribowo, 2015). Mobile application technology increase students' motivation and learning (Jeno et al., 2017). Compared to textbooks, mobile application tools make students more interested in learning a topic.

The research hypothesis is that there is an effect of smartphone-based Quizlet on students' interest in learning in Accounting Education, Universitas PGRI Madiun. This study seeks to complete previous research gaps by providing empirical evidence of using smartphone-based Quizlet on student interest in learning at the Universitas PGRI Madiun, Indonesia.

METHODS

We conducted an experimental study adopting the model developed by Campbell & Stanley (1963). The experimental model with a one-shot case, where there was a group that got treatment, and then the results were observed (Campbell & Stanley, 1963). The treatment was an independent variable, and the results were the dependent variable. The independent variable in this study was the smartphone-based Quizlet application, which was assessed by content, activities, and objectives. In contrast, the dependent variable was the student's interest in learning, measured by attention, construction, and influence.

The class used in the Quizlet implementation was the business law class. Business law is a subject that students of Accounting Education must take at the undergraduate level. There are many business law-related vocabularies that students must memorize and understand, so the Quizlet application was used in learning to make students more interested in learning. The study population was 54 students of accounting education, Universitas PGRI Madiun. The type of sample used was a saturated sample so that all students were treated by using smartphone-based Quizlet in learning activities. After the learning was completed, students observed the results of their interest in learning (Campbell & Stanley, 1963).

The data collection technique used a questionnaire to empirically determine the effect of using a smartphone-based Quizlet on student interest in Accounting Education. The questionnaire consisted of 18 question items. The validity and reliability of the questionnaire used the help of the SPSS program. The validity test used Bi-

variate Pearson with a significance level of 0.05. Reliability test with Cronbach Alpha Cronbach's alpha results were expressed as a number between 0 and 1. Acceptable reliability values is 0.7 and higher (Heale & Twycross, 2015). If the alpha value > 0.7 means sufficient reliability, and if alpha > 0.8 means that all items consistently have strong reliability.

Analyzing the data with statistical testing to test the effect that has been formulated in the research hypothesis used a simple linear regression test. Data analysis used the help of the SPSS program. Before testing the hypothesis, a prerequisite test was carried out, including a normality test and a heteroscedasticity test to ensure that the research data was suitable for further analysis. Furthermore, hypothesis testing was carried out by inputting data into the SPSS program, then the results were interpreted and conclusions are drawn.

RESULTS AND DISCUSSION

The results of the validity and reliability tests on 18 questions indicated that the questionnaire instrument could be used to study research data. The validity test by comparing the significance value with an alpha value of 0.05 indicated a significance of <0.05. The validity test was also carried out by comparing the calculated r-count with the r-table. The results of the validity test in table 1 and table 2 showed that r-count > r-table. This means that 18 question items were valid. Furthermore, the reliability test presented in table 3 showed the Cronbach Alpha value > 0.7. This means that the research questionnaire instrument was declared reliable.

The results of descriptive statistical testing

Table 1. Test Results of Quizlet Variable Validation

Variable Items	r-Count Value	r-Table Value	Result
X_1	0.545	0.268	Valid
X_2	0.570	0.268	Valid
X_3	0.564	0.268	Valid
X_4	0.672	0.268	Valid
X_5	0.596	0.268	Valid
X_6	0.502	0.268	Valid
X_7	0.539	0.268	Valid
X_8	0.557	0.268	Valid
X_9	0.534	0.268	Valid

Source: Primary Data Processed (2020)

Table 2. Test Results of Students' Learning Interest Variable Validation

Variable Items	r-Count Value	r-Table Value	Result
Y_1	0.492	0.268	Valid
Y_2	0.574	0.268	Valid
Y_3	0.715	0.268	Valid
Y_4	0.608	0.268	Valid
Y_5	0.740	0.268	Valid
Y_6	0.712	0.268	Valid
Y_7	0.650	0.268	Valid
Y_8	0.705	0.268	Valid
Y_9	0.636	0.268	Valid

Source: Primary Data Processed (2020)

Table 3. Test Results of Instrument Reliability

Variable	Cronbach's Alpha Value	Result
X (Quizlet)	0.780	Reliable
Y (Students' learning interest)	0.851	Reliable

Source: Primary Data Processed (2020)

in this study are shown in table 5. Before testing the hypothesis, a prerequisite test was carried out, namely the normality test and the heteroscedasticity test. The normality test used the Kolmogorov Smirnov test with a significance value of 0.234, greater than 0.05. This means that the data was usually distributed. The heteroscedasticity test used the Scatter graph, which showed no particular pattern because the point spread irregularly above and below the 0 axes on the Y-axis. This means that there were no symptoms of heteroscedasticity.

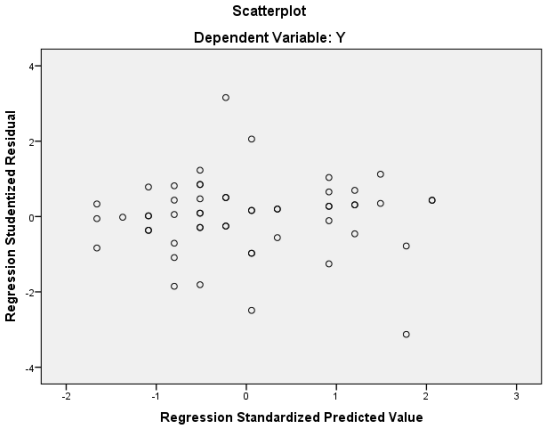

Figure 2. Heteroscedasticity Test Results with Scatterplot. Processed Primary Data (2020)

Based on table 5, the descriptive statistics of using smartphone-based Quizlet showed that the total sample size was 54 students with a minimum score of 32 and a maximum score of 45. Three students had a minimum score, and two students had a maximum score. Students considered that Quizlet was easy to access via a smartphone, made learning more enjoyable, supported the achievement of learning goals, and supported students to study independently. As for the use of Quizlet, there were still many obstacles, especially regarding the internet network, so that it was not easy to use in learning. Quizlet was used when connected to the internet. If the student's smartphone was not connected to an internet network, it would be challenging to participate in learning activities.

The standard deviation showed the heterogeneity that occurred in the research data. If the standard deviation value was greater than the average value, it means that the average value was an inadequate representation of the overall data. However, if the standard deviation value was smaller than the average value, then the average value can be used to represent the overall data. The mean value of respondents in using Quizlet was 37.80, which was greater than the standard deviation value of 3.493, so it could be concluded that the average value could be used as a representation of the overall research data.

The minimum value of student interest in learning after using Quizlet in learning was 30, and the maximum value was 45. Two students had a minimum score, and four students had a maximum score. All students had the Quizlet application on a smartphone and used Quizlet's various menus optimally in their learning activities. Students also participated actively during learning and completed assignments on time. However, not all students could access the Quizlet application during learning due to unstable internet network constraints. The mean value of respondents in assessing student interest in learning was 37.39, which was greater than the standard deviation value of 4.118, so it could be concluded that the average value could be used to represent the overall data. Data distribution could be said to be good.

The study used simple linear regression testing to determine the effect of using smartphone-based Quizlet on students' learning interest in Accounting Education, Universitas PGRI Madiun empirically. The results of simple linear reg-

Table 4. Test Results of One-Sample Kolmogorov-Smirnov

		Unstandardized Predicted Value
N		54
Normal Parameters[,b]	Mean	37.3888889
	Standard Deviation	3.16120582
Most Extreme Differences	Absolute	0.141
	Positive	0.141
	Negative	-0.117
Kolmogorov-Smirnov Z		1.035
Asymptotic Significance (2-tailed)		0.234

Source: Primary Data Processed (2020)

ression testing are presented in table 6. Based on the results of the linear regression analysis, the following equation was obtained:

Y = 3.186+0.905X

A positive constant of 3.186 means that when using a smartphone-based Quizlet was zero, student interest in learning was worth 3.186. The positive coefficient of 0.905 means that when smartphone-based Quizlet increased by one unit, it would affect the increase in student interest in learning by 0.905 units, assuming other variables were constant.

This study aimed to provide empirical evidence of the effect of smartphone-based Quizlet on student interest in Universitas PGRI Madiun, Indonesia. Table 6 showed the results of hypothesis testing regarding the effect of using smartphone-based Quizlet on students' learning interest in Accounting Education. The t-test results showed that the significance value for the independent variable using the student smartphone-based Quizlet was 0.000, which was less than 0.05. This result means that the research hypothesis was accepted, namely that there was an effect of using smartphone-based Quizlet on student interest in Accounting Education, Universitas PGRI Madiun. The study results supported the findings (Boyce, 2016; Hikmah, 2019; Hochberg et al., 2018; Setiawan & Wiedarti, 2020; Shyr et al., 2021; Wardana & Zakiah, 2019; Woodcock et al., 2012)as their built-in sensors allow many different measurements, but until now, there has been little research that studies this approach. Due to current interest in their development, it seems necessary to provide empirical evidence about potential effects of SETs by a well-controlled study. For the present investigation, experiments were developed that use the smartphones' acceleration sensors to investigate an important topic of classical mechanics (pendulum.

Figure 3. Students Learn Using Quizlet
Processed Primary Data (2020)

After students knew the benefits of the Quizlet application, students looked enthusiastic about using Quizlet in learning. All students certainly had the Quizlet application installed on their smartphones. The study results were supported by Baptist (2018) which stated that based on the results of a survey of student responses to Quizlet, most students enjoyed and felt the benefits of the Quizlet application. Setiawan & Wiedarti (2020) showed that the use of the Quizlet application proved effective in increasing student learning motivation. Students felt more enthusiastic and did not get bored easily during learning so they showed high interest. Students also carried out the tasks provided in the application independently.

The development of technology had changed the learning method to be integrated with technology which strengthened students' competency mastery. The study results Wardana & Zakiah (2019) stated that the learning responses of students who took part in learning activities using

Table 5. Test Results of Descriptive Statistical

	N	Minimum	Maximum	Mean	Standard Deviation
X (Quizlet)	54	32	45	37.80	3.493
Y (Students' learning interest)	54	30	45	37.39	4.118
Valid N (listwise)	54				

Source: Primary Data Processed (2020)

Table 6. Results of Linear Regression Test

Coefficient

Model		Nonstandard Coefficient		Standard Coefficient	t	Significance
B		Standard Error	Beta			
1	(Constant)	3.186	3.977		0.801	0.427
	X	0.905	0.105	0.768	8.637	0.000

a. Dependent Variable: Y

Source: Processed Primary Data (2020)

Quizlet as a smartphone-based learning medium had a much higher score than students who took conventional learning. The use of Quizlet increased student interest and learning outcomes (Shyr et al., 2021).

The study results of Platzer (2020)viz. Match, Learn, Test, Write, Spell, Gravity, and Flashcard. This study explores the following aspects of Quizlet use among a sample of 165 first-year business students: (a based on regression analysis also showed that the use of Quizlet had an influence on increasing the competence of previous students. In addition, the Quizlet application also trained kinesthetic abilities so that students who learnt to use Quizlet had a better performance in remembering and understanding material than students who only learnt visually (Barr, 2016). The Quizlet application was proven to make it easier for students to learn the material so that academic competence increased.

Learning through smartphone-based Quizlet could make the learning process more enjoyable, interactive, and fun so that students were more enthusiastic about learning. The use of the smartphone-based Quizlet application had been shown to increase student involvement in learning activities (Muthumaniraja, 2020). Learning activities were designed by using the menus available in the Quizlet application such as flashcards, learn, speller, and tests to make the learning process more interesting because students quickly learnt the material (Hikmah, 2019).

The use of Quizlet in learning gave students joy because the menu provided could create an interesting and fun context (Waluyo & Bucol, 2021). The benefits of Quizlet in learning were related to providing enjoyable learning, resulting in learner autonomy, persistence, focus, attention, and involvement (Anjaniputra & Salsabila, 2018). Students value interactive and student-focused methods, so teachers should use methods that engaged students (Abrantes et al., 2007). Learning methods that involved students in every activity would make learning more meaningful.

Learning with Quizlet showed changes in student attitudes and involvement, but it could not be concluded that the use of Quizlet had an impact on student academic achievement. Students' understanding would increase, along with involvement in learning and independence in learning (Boyce, 2016). There was no difference in learning achievement in the application of smartphones, but it could increase students' interest and curiosity (Hochberg et al., 2018).

The smartphone-based Quizlet application for students made learning more practical and comfortable. Accounting Education students could explore knowledge widely and learn anywhere and anytime with smartphones independently. The study results also supported the statement by Woodcock et al. (2012), namely that once students started using smartphones for learning, students began to appreciate the benefits of smartphones and use applications for learning activities and organize study schedules. Quizlet provided a new way for students to study independently with their smartphones.

Mobile technology contribute to a more motivating and personal learning process. Student motivation increased when they used mobile technology, leading to greater participation, and consequently, better and faster learning of concepts and skills. The use of mobile technology in learning also created collaboration between students and students, students and teachers (Ferreira et al., 2015). Smartphone-based Quizlet was an effective application in increasing student interaction in learning. The Quizlet application helped students learn independently in studying the material and working on the questions that were available on Quizlet (Nemeth, 2019; Sari et al., 2020).

Quizlet provided a variety of exciting menus to use in innovative learning, namely flashcards, learn, write, spell, test, match, gravity, and Quizlet Live. The use of the live Quizlet menu could improve student collaboration skills in solving questions. Quizlet Live not only helped students understand the material but also improved teamwork and communication skills. Quizlet Live combined learning with social play to motivate students to learn independently and increase student participation in learning (Wolff, 2016).

The results of the study corroborated the finding of Styaningrum et al., (2019) and Sanosi (2018), which stated that with a competition system in completing group assignments in the Quizlet live menu, students were more enthusiastic about completing assignments. Groups that cooperated and exchanged information would immediately complete the task so that they became winners. Quizlet provided students with an effective collaborative learning process. With the spirit of competing with other groups of students, learning became more active and cooperative. The study results also supported by Nemeth (2019) that the use of Quizlet during learning activities encouraged students' interest to cooperate with other students in completing assignments.

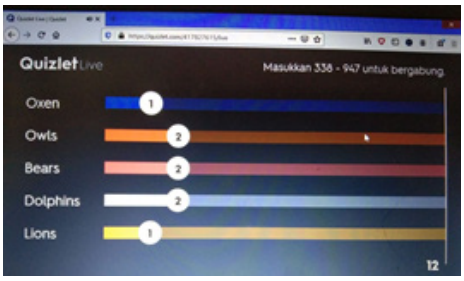

Figure 4. Quizlet Live Menu Display
Processed Primary Data (2020)

The Flashcard menu in Quizlet could help students' activity in recalling concepts through independent learning experiences. The results of the study corroborated research by Aribowo (2015), which stated that flashcards could provide feedback quickly when students completed several questions and helped teachers improve their understanding of certain concepts they were learning. The study results of Lees & Mcnee (2015) also showed that learning using flashcards was more attractive to students, namely by utilizing the functions of pronunciation, typing and various other options in understanding the concept of the material. The advantages of Quizlet were that it provided a menu for making multilingual flashcards, adding images to the flashcards that were made and allowing students to import data from existing flashcards (Nakata, 2011).

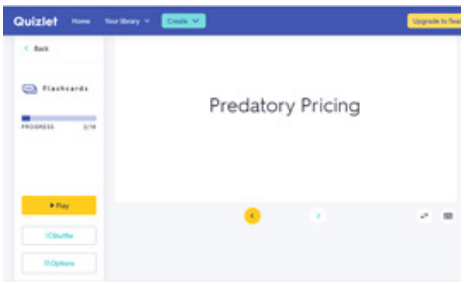

Figure 5. Flashcard Menu Display
Processed Primary Data (2020)

CONCLUSION

Integrating smartphone technology in learning made activities more interesting. This study aimed to provide empirical evidence of the effect of the use of smartphone-based Quizlet on students' learning interest in Universitas PGRI Madiun, Indonesia. The study conclusion from the results of hypothesis testing and discussion was that it could be proven empirically that the use of smartphone-based Quizlet affected students' learning interest in Universitas PGRI Madiun, Indonesia. The various menus provided in the Quizlet application could activate students in learning and had a positive effect. Students became active in learning activities, did assignments on time, and learnt independently.

Suggestions that can be given are that the use of digital technology needs to be developed to increase student interest in learning and support the achievement of learning goals. Future research can add internal factors to students in influencing student interest in learning.

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