

# University Students' Perception About *Plickers* for Online Formative Assessment Tools

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## ABSTRACT

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Current digital era has influenced the education system to provide technology-oriented activity in the classroom. The development of online formative assessment tools is one of the impacts of this digital revolution. This study aims at providing the perception of the university students on the use of one of online assessment tools called *Plickers*. The participants of this study consist of 11 pharmacy faculty students who got an English training. The use of *Plickers* was on their formative assessment of the English training. A semi-structured interview was conducted in order to gain the data. The interview focused on two research questions: (1) How do the university students compare traditional method with *Plickers* for English formative assessment? and (2) How are their perceptions on *Plickers* for English formative assessment? The results showed that the students had positive perceptions toward *Plickers*. When comparing *Plickers* to the traditional assessment method, the participants found that *Plickers* was more modern, more fun, and more effective and efficient. This study also elaborates the strength and the weakness of the *Plickers* in terms of the specific application. These findings could provide more insight on the use of *Plickers* for the assessment especially in Indonesian education.

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## I. Introduction

The role of technology has become a necessity and a pivotal element of human beings in this brave new world. Any sector now has been integrated to the technology especially on the application of the online services. As stated by [1], the era of technology has led the world to the digital revolution that has transformed almost all of human life aspects in terms of communicating, accessing information, learning, even playing. Education as one of an important part of human life is not an exception. The development of the education is not only limited to the methodology, furthermore, the application of technology in education has emerged as one of the concerns. The presence of computer and information technology has influenced our education system [2]. These technologies are significantly used to improve the quality of teaching and learning process. Moreover, computer and information technology are applied in teaching and learning process through the use of computer-based communication for the classroom instructions [3]. In addition, the students will learn better with technology as they grow up in the digital age. Regarding this fact, the use of technology in teaching and learning process is intriguing to study nowadays.

Further, many studies have been conducted on the use of technology in teaching. One of the specific technological in teaching and learning process which becomes an interesting study is the system called Classroom Respond System (CRS). CRS is applied in several assessment

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technologies such as *Clickers*, *Socrative*, *Kahoot!*, *Plickers* and *RecaP* which have similar function to provide real time assessment data [4]. As one of the technology assessments, *Plickers* is one of the most popular applications used worldwide. *Plickers* is a system that provide a rapid-response for reflective teaching, remedial and formative assessment [5]. Furthermore, it is a simple tool where the students do not need to use any gadgets on them unlike the other online assessment tools. *Plickers* uses QR (Quick Response) cards to obtain the answers from the students without using any electronic device or internet connection. A Smartphone is only used by the teacher to scan the answers through the *Plickers* mobile application installed on the gadget. However, the internet is needed when the teacher is going to project the questions along with the graphic and correct answers. The teacher only needs to open the website using laptop or computer and it is automatically integrated with the online *Plickers* application on the Smartphone.

The study concerning on the use of application of *Plickers* has been conducted by several researchers: [4]; [6]; [7]; [5]; [8]; [9]; [10]; [11]. The scope of the studies mostly concerns on how *Plickers* transforms assessment positively in a classroom and improves students' learning quality such as in the respect of participation, motivation, excitement, learning outcomes, etc. Most of them promoted *Plickers* as a tool to conduct a formative assessment. Formative assessment is a typical assessment we regularly conduct in our classroom as an evaluation during the learning process in order to improve students' competencies and skills so that they can keep progressing to achieve the learning objectives [12]. Formative assessment is currently considered as one of the most important parts in teaching and learning process. Formative assessment should be considered as one of the central parts of teaching and learning process as it gains real-time information to improve students' achievement of the learning objectives [11].

Although *Plickers* is quite popular as one of the web-based formative assessment among the teachers and researchers, it is somehow unfamiliar to be used in the Indonesian educational scene. The lack of the research about the application of *Plickers* in Indonesian education is a proof that this technology has not been used widely in Indonesia. From several recent research mentioned above, only one study was conducted in Indonesia. The study was conducted by [6] concerning on the use of *Plickers* application in the physics learning process of high school students. This research indeed provides new insight on the integration of the technology in teaching and learning process in Indonesia. However, the information about the use of *Plickers* on other subjects and also on different level of students in Indonesia is insufficient. Therefore, this research emerges as a contribution to fill the gaps in the research toward the use of *Plickers* in Indonesian education. This study concerns on the perception of university students about the use of *Plickers* in English formative assessment. Thus, the research questions for this study can be formulated as follows: (1) How do the university students compare traditional method with *Plickers* for English formative assessment? (2) How are their perceptions on *Plickers* for English formative assessment? Since ELT has become an intriguing study over the world, and the study about the use of CRS in ELT in Indonesia is still rare, the study could be beneficial to obtain more information about the integration of technology in ELT especially on the use of *Plickers*.

## II. Method

This study applied qualitative with a phenomenological design as the approach. The phenomenology as conscious knowledge is associated with saying what is perceived, sensed, and known from the person's experience. The data were gathered by using semi-structured interview which taken from 11 university students of Pharmacy International Class. The class is a special class for pharmacy faculty where the students get a privilege of an intensive English training. The participants consist of 10 female students and 1 male student. Further, the interview was conducted based on specific topic of the students' perception on the use of *Plickers* in their formative assessment for English.

Moreover, the data collection was conducted in several steps. First, the participants were introduced to *Plickers* application. After that, *Plickers* was used three times for the formative tests covering review for every four units in the syllabus. The formative test was conducted by answering the questions and then when it was done, the results were projected immediately on the screen. From the three trials of *Plickers*, it was perceived that the application of *Plickers* was easily

understood by students. Following the formative tests using *Plickers*, the students' opinions were assembled by conducting a semi-structured interview.

### III. Findings and Discussion

The findings of this paper regarding to the research questions about the difference between traditional method and *Plickers* based on students' opinion and the students' perception about *Plickers* are elaborated in this section. Certain relevant literatures are also discussed in order to support the findings. Moreover, some of the statements of the participants in the interview are quoted to elaborate and support the results.

#### Traditional Assessment vs. Plickers

The first research question of this study aims at elaborating the opinion of the participants towards the difference between traditional assessment and *Plickers*. The data are described into general themes concluded from the interview. The findings and the discussion of the topic are as follows.

**Out of Date vs. Modern.** The obvious differences between traditional assessment and *Plickers* are on way of answering questions and giving feedback. Traditional assessment relies on the use of stationery and writing activity while *Plickers* promotes paperless assessment and technology-based method. *Plickers* as one of the products of modern era is undoubtedly fulfilling the needs of modern students, while the traditional assessment felt too old-fashioned to be applied in this digital era. Several participants are aware about the trend change in educational system where technology plays a key role in modern education. Some of the participants stated:

*"Because technology has advanced so we have to change with the times, if we stick to the traditional methods, we are outdated."* (Septi)

*"If you want to keep up with the modern age, we should use Plickers. It is more sophisticated and it is able to accumulate the results instantly, while traditional method is calculated manually."* (Galuh)

This tendency of using technology is a natural skill for new generation (millennial) since it has become a part of their life. The evolution of technology has created new generations who are savvy in employing technology to fulfill their needs [13]. Thus, the use of technology has become a necessity for students nowadays in any respects including education. This demand in millennium era is something that the traditional method cannot cope with anymore.

As for the teacher, coping with the current technology is the skills demanded in today's teaching. Teachers should be sensible on how to find, analyze, evaluate, use and disseminate information within a particular context from the knowledge pool [1]. Then, regarding the millennial students' need on technology, the use of the modern tools such as *Plickers* for education indeed engages the students to be more motivated in the classroom. The use of *Plickers* engaged students to participate more and make them interested in the lesson. Moreover, the students agree that the use of *Plickers* brings a positive impact to their learning outcome [4].

**Time Consuming vs. Effective and Efficient.** The emerge of online assessment tools was one of the positive outcomes of the digital era. These tools were designed to provide more effective and efficient assessment. Being called an SRS (Students Response System) or another preferable term such as CRS (Classroom Response System), this system can serve an instant score, graphic and review of the assessment result. Thus, *Plickers* provide effective, immediate, and efficient feedback to students, particularly when undertaking formative assessment [9]. Responses from the participants also showed similar idea:

*"Plickers is more efficient, it is easy to use, you do not need to write, just raise the QR (Quick Response) paper/card."* (Almira)

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*“Plickers is more effective, faster, and simpler.” (Veronica)*

In line with these opinions, the perception of the participants in research conducted by [7] also shared similar outcomes. The participants found that the traditional method was tiring and time consuming so that the result of the research showed the preference of participants in using *Plickers* rather than the traditional method. A study by [4] also showed that *Plickers* is an effective tool for formative assessment as it engaged students, motivated them and quickly measured their understanding from the instant feedback provided by this app.

In terms of efficiency, the use of *Plickers* benefits both teachers and students in conducting paperless-assessment, therefore, it is more economical. Moreover, the key feature of CRS technology is the ability to present the result immediately so that the teacher can conduct immediate feedback to students in which it is beneficial for time-efficiency in teaching and learning process[13].

Another interesting opinion stated by the participants is that *Plickers* is able to reduce cheating since the method applies QR code to answer the questions so that it is quite hard to notice the answers of other students. A participant stated:

*“Plicker is more effective because we do not need to write on paper and it cannot be copied or cheated” (Salma).*

Regarding to this opinion, [14] mentioned that QR cards for *Plickers* can only be scanned with the *Plickers* app on the Smartphone so that it is hard for students to see each other's answer and therefore it is quite effective to minimize cheating.

**Boring & frustrating vs. Fun.** The most responses that appeared from the participants are *Plickers* brought fun and excitement in learning process. Since the participants are used to doing the test in traditional method, the use of *Plickers* is something refreshing for them. They found that this new method is fun, thus changing their perception on the test which is always boring and monotonous. One of the participants stated:

*“So far it's been fun to change our perception about test that is usually monotonous on paper.” (Ayu)*

Another important impact of the use of *Plickers* is that the method is less stressful compare to paper-based assessment. The traditional method felt too formal so that the atmosphere of the lesson is becoming more tense. Some participants stated those experiences as follows:

*“Plickers is more fun, the learning atmosphere is not tense and more efficient also because it does not need any stationery other than the QR paper.” (Septi)*

*“The traditional one is too formal, Plickers is more fun.” (Nabila)*

*“This is a new and interesting method because it uses QR card to answer its multiple choices.” (Hafidz)*

*“It is more fun compared to traditional methods which is more difficult.” (Ana)*

This result affirms the recent previous studies which infer that the use of *Plickers* brings fun and stress-free way of doing an exam. [7] presented the result of his research where a significant number of high school students feel that *Plickers* did not stress them out when conducting the assessment, unlike the traditional method which is found quite frustrating. Moreover, [15] showed the result of their study which emphasized that the fun aspect of using *Plickers* affected students to be more motivated. It also increased students' participation in the assessment and provided a less pressure atmosphere in the formative test process.

Furthermore, the exciting element of using *Plickers* has transformed the teaching and learning process to be better as inferred by [16] in their study. They found that the lesson using CRS such as *Plickers* is more fun and it increases motivation and participation of the learners. They stated that the contribution of CRS is pretty significant in improving students' interest, facilitating

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the students, preventing frustrating atmosphere and amusing the learning activity. Thus, it is important to set up a good classroom environment for the students so that they can experience the teaching and learning process comfortably and enjoyably. It can be inferred that the students expected an amusing learning environment which significantly improves their learning outcomes. Therefore, the use of *Plickers* can improve the quality of learning activity in order to make the students able to achieve the learning objectives.

### Perception on *Plickers* for Formative Assessment

In this part of findings and discussion, the specific discussion on the application of *Plickers* is elaborated. This part concerns on the opinion of the participants related to the strength and the weakness of *Plickers* technology.

**A friendly user.** Some participants pointed out that *Plickers* is easier and simpler in usage, especially when it is being contrasting with other assessment tools. Unlike most of technology-based assessment tools, *Plickers* minimizes the use of gadgets and internet access because the students do not need them when answering the questions. Some participants stated:

*“Plickers is simpler, you do not need to log in first, normally other applications need to log in, however it is not necessary when using Plickers because it only uses QR papers or cards so you just need to raise the cards.” (Almira)*

*“It is very efficient, other application models use internet quota and sometimes there are students who have not quotas and sometimes the internet access is bad, too. But for Plickers, only the lecturers use the internet.” (Lutfia)*

The use of QR cards is the uniqueness of *Plickers* technology which is beneficial in minimizing the use of electronic device and internet access. Thus, this technology can be used for the classroom in the area where the possession of gadget is relatively rare for students or in the schools that have restriction in bringing any electronic devices. *Plickers* is an online formative test tools that can be utilized even in low technology classroom such as in some rural areas [5]. Regarding the practicality of *Plickers*, [9] in his study stated that the strength of *Plickers* is in its simple user setting, online-based instruction through Smartphone or tablet and QR system. Moreover, the activity can be conducted either offline or online. To display the live assessment, the teacher needs to project *Plickers* Live View option from the website. A real time results can also be presented immediately as the feedback.

During the trial of the application of *Plickers* in this study, it showed that students fully understood about the app right away after it was introduced. This result is also in line with the research by [11] and [7] who confirmed that all of the participants found it easy to use *Plickers*. Most of the Participants even responded in the questionnaire that they were strongly agreed that *Plickers* is easy to use in the classroom.

**Instant results and reliable reports.** Some participants found that the real-time reports provided by *Plickers* are beneficial for them in order to improve their knowledge on the topic being assessed. They found that by learning from their mistakes is something important to improve their knowledge and skills in English. Thus, the instant results provided by *Plickers* is useful for students. Some participants mentioned:

*“With Plickers we can immediately find out our score and also we know in which part we did mistakes.” (Galuh)*

*“Plickers is good because it minimizes cheating and have a transparent assessment so we know where the mistake is and what score we get immediately,*

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*other applications show the incorrect answers, however we cannot see our score.”*  
(Veronica)

Feedback is one of pivotal elements in formative assessment. The function of feedback is to provide the information about the progress of both students and teachers in teaching and learning process [17]. Moreover, the feedback could motivate students to improve their learning so that it is beneficial for achieving the learning objectives. [7] also shared similar results in which Plickers' instant feedback is beneficial for the participants, the scores can be seen in real time so that they know where their mistakes are and they also have opportunity to correct their mistakes right away. This is different with traditional method that needs time to get the result. Thus, the participants in this research and the previous research found that Plickers is more useful for them rather than traditional method in formative assessment. Additionally, Plickers also provides reliable reports in the form of complete record of students scores including the reports about their answers both for correct and incorrect ones. The report can be printed out and the teacher can easily use it to see students progress per assessment.

**Scanning Problem.** Despite the benefit of *Plickers* for formative assessment as mentioned previously, the participants also found some weaknesses in *Plickers*. Most of the problem experienced by the participants is when the answers are being scanned. Sometimes the process takes a bit longer as the participants mentioned on their interview:

*“When you want to answer sometimes the process is a bit long because the QR paper isn't detected.”* (Almira)

*“My only problem is on the QR code that is sometimes difficult to scan.”* (Septi)

Other responds from the participants are pretty much similar to the ones cited above. The scanning problem might occur because of several reason related to the condition of the QR papers/cards or the Smartphone being used. Most of the time students' cards are not in the range of the Smartphones camera, so that the scanning process couldn't be proceed. Another problem is because the students are in the dark spot of the classroom, or they might cover the cards with their hands when they raise the cards. To overcome this problem, the light should be properly set up. The teacher should take a place where he/she can capture all students' QR cards and inform the students to hold them properly without covering them by their hands.

#### IV. Conclusion

Referring the findings and discussion, it can be inferred that the participants have positive perception on *Plickers* compare to traditional method. *Plickers* is better because it brings fun and excitement in the assessment process. Moreover, the atmosphere of the classroom is less tense when using *Plickers*. The features provided by *Plickers* also make the formative assessment more effective and efficient. The specific strength of *Plickers* compare to other online formative tools is on the simplicity as it does not need any gadget and internet to perform it by the students. The instant results and reports are also found beneficial for the improvement of the students. However, the problem sometimes occurred during the process of scanning the answers from the students' QR cards. Regarding the insufficient research on the use of *Plickers* in Indonesia, this study at least could fill that gap. However, further research focusing on the broad scope should be conducted in order to enrich the information of the integration of the technology in Indonesian education.

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