The influence of mobile applications on students’ speaking skill and critical thinking in English language learning

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Abstract. Mobile assisted learning especially in language learning gives both benefits and challenges in optimizing students’ outputs toward learning targets. We investigated the influence of mobile applications as learning assistance which can help students improve their speaking skill and critical thinking in English language learning. Convergent parallel mixed method design was used to capture quantitatively and qualitatively the data (test, observation, and interview). The data was taken from 38 students in speaking class at English department of Borneo University Tarakan Indonesia for one semester with 12 meetings (Socratic circle speaking). Mobile applications used were online dictionary, language translator, speaking English, English grammar, speech to text, critical thinking, WhatsApp, Google chrome, YouTube, Weebly, and Gmail. Statistic result for both students’ speaking and critical thinking obtained significance value .000 < 0.05 which means that mobile applications used as learning assistance positively optimized students’ speaking skill and critical thinking in English language learning. Interview reveals that students were very enthusiastic exploring and practicing mobile learning applications although they got problem with unstable internet connection. Technology in the form of mobile learning applications provides opportunities to both the teacher and the students in improving the quality of teaching and learning. It is applicable for any subject by selecting appropriate mobile learning applications.

1. Introduction

Recently, mobile assisted learning becomes popular among educators especially in higher education where technology becomes a key of economic competitiveness and social development [1]. Previously, technology in education mostly was computer based learning but since many people own mobile technologies which supported with internet connectivity, there is a shift from computer based learning to mobile assisted learning [2]. It provides portable personal learning which can be done anytime, anywhere, inside and outside classroom practice [3]. Teachers and students can use smart phones, tablets, MP3/MP4 players, and laptop to develop teaching and learning method and provide learning sources which can improve not only the quality of teaching and learning but also students’ skills [4].

Many previous researches related to technology enhanced learning especially mobile assisted learning positively contribute the development of teaching and learning [5]. Mobile assisted learning gives opportunity to both teacher and students to explore new knowledge, share the information, think critically, improve skills, and change perspective on teaching and learning concept. Mobile assisted
learning also influences learning environment among teacher and the students. The implications go to pedagogical effect, teaching and learning design, and technology mastery [6].

In language learning, technology helps students access the language resources, practice their skills and can directly communicate with native speakers. Language skills such as listening, speaking, reading and writing can be explored through learning applications. The students can practice the language inside or outside the classroom and it makes them become independent learners. Teacher centred now already shifted to learner centred [7].

In Indonesia, the growth of technology enhanced learning also influences many aspects of education. It has been used and integrated by the teachers in the classroom to increase students’ learning outputs. The policies are made to facilitate this technology integration because of education in Indonesia adopts top-down system and centralized education. Teacher centred and rote learning as instructional method is mostly used by Indonesian teachers. Similar to other developing countries, Indonesian teachers also get both benefits and challenges in adapting and integrating technology in classroom practice [8].

This paper presents investigation result on the use of mobile applications as learning assistance which can help students improve their speaking skill and critical thinking in English language learning. Mobile assisted learning, here, is the use of mobile applications through teacher’s and students’ smart phones as learning assistance. This paper shows the influence of mobile applications on students’ speaking skill and critical thinking in English language learning, describes the use of mobile applications as learning assistance, also students’ experience in using mobile learning applications.

2. Literature Review
2.1. Mobile assisted language learning
Ananiadao et.al. [9] explained that in technology enhanced language learning should consider knowledge technologies, language technologies, speech technologies, text technologies, multimedia and multimodality technologies which are connected in language learning context.

![Figure 1. Language Technology in Context](image)

Mobile devices provide many features such as instant communication through social media, web browsing, video player, voice recording, etc. These features can be integrated in teaching and learning which effect the pedagogies such as inquiry learning, self-directed learning, and also the formative assessment [5]. The expansion of mobile phones as learning assistance offers an access to learning resources spontaneously and continuously. Mobile assisted learning accompanies both teacher and students to run social constructivist learning because it can be done in formal (inside the classroom) or informal (outside the classroom), the form can be synchronous or asynchronous, and learning contexts are dispersed geographically. The use of mobile devices can activated students’ participation, contextual materials, learning situation, creating learning community, effective interaction and communication although outside the classroom [10].
2.2. Teaching speaking skill
Khan [11] said that communicative language teaching incorporates the idea of interaction, considering it as essential element of the whole process and output. The total interaction in meaning which the students depend on and participate will influence the success of acquisition in target language. Of course, the contribution in developing students’ system comes from language input which is integrated to language output. Ahn and Lee [12] added that arguments, discussions, and debates are some communicative activities which can be used by the students to achieve their higher order thinking. The students are introduced to conceptual issue and problems which lead them to share their opinion to others, assess the information to solve the problems, make self-reflection and investigate their understanding which cover their needs and make them get new interpretation toward real life issues.

3. Method
Convergent parallel mixed method is the design of this research [13]. The purpose of this design is investigating the use of mobile applications as learning assistance which can help students improve their speaking skill and critical thinking in English language learning. The research was done at English department of Borneo University Tarakan Indonesia in academic year 2017/2018. The Subject of the research was 38 students in speaking class at English department of Borneo University Tarakan Indonesia for one semester with 12 meetings (Socratic circle speaking). The researchers took pretest-posttest, observation and interview to capture quantitatively and qualitatively the use of mobile applications as learning assistance which can help students improve their speaking skill and critical thinking in English language learning.

4. Findings and Discussion
4.1. Students’ speaking skill result
Pre-test and Post-test Speaking result was done through Wilcoxon signed ranks test. Wilcoxon signed rank test is used to determine whether there is an average difference between two paired samples. If the value of Asymp. Sig. (2-tailed) is smaller than <0.05 then Ha is accepted. Conversely, if the value of Asymp. Sig. (2-tailed) is greater than> 0.05 then Ha is rejected. Speaking pre-test and post-test were done through the six types of Socratic questions; (1) conceptual clarification, (2) probing assumptions, (3) probing rationale, reasons, and evidence, (4) viewpoints and perspectives, (5) probe implications and consequences, and (6) questions about the questions. Topic for pre-test was gadget and social media while post-test topic was HIV, AIDS, and free sex. Students’ speaking was assessed in the area of fluency, pronunciation and accent, vocabulary, grammar, and details.

| Table 1. Pre-test and Post-test Speaking |
|----------------------------------------|
| N     | Mean Rank | Sum of Ranks |
|-------|------------|--------------|
| Negative Ranks | 0*** | .00 | .00 |
| Positive Ranks | 38*b | 19.50 | 741.00 |
| Ties     | 0*       |        |      |
| Total    | 38       |        |      |

| Table 2. Test Statistic Result |
|--------------------------------|
| Test Statistics*b |
| POSTTEST - PRETEST |
| Z                  | -5.391* |
| Asymp. Sig. (2-tailed) | .000 |

From the Table 1 and Table 2, it can be seen that 38 students have better speaking skill after using mobile applications as learning assistance which can help students improve their speaking skill in English language learning. There is no student who’s speaking skill decreases. No student has same...
speaking skill before using mobile applications as learning assistance which can help students improve their speaking skill in English language learning.

Test statistics table shows that Wilcoxon test result obtain significance value .000 < 0.05 which means there is difference in students’ speaking skill after using mobile applications as learning assistance which can help students improve their speaking skill in English language learning.

4.2. Students’ critical thinking result
Pre-test and Post-test Critical Thinking result was done through Wilcoxon signed ranks test. Wilcoxon signed rank test is used to determine whether there is an average difference between two paired samples. If the value of Asymp. Sig. (2-tailed) is smaller than <0.05 then Ha is accepted. Conversely, if the value of Asymp. Sig. (2-tailed) is greater than > 0.05 then Ha is rejected. Critical thinking pre-test and post-test were done through the six types of Socratic questions; (1) conceptual clarification, (2) probing assumptions, (3) probing rationale, reasons, and evidence, (4) viewpoints and perspectives, (5) probe implications and consequences, and (6) questions about the questions. Topic for pre-test was gadget and social media while post-test topic was HIV, AIDS, and free sex. Students’ critical thinking was assessed in the area of accuracy in interpreting evidence, statements, graphics, questions, etc. identification of arguments, analysis and evaluation of alternative perspectives, justification of procedures and result, explanations of assumptions and reasons, fair-minded, and ethical judgement.

Table 3. Pre-test and Post-test Critical Thinking

| Ranks  | N  | Mean Rank | Sum of Ranks |
|--------|----|-----------|--------------|
| Negative Ranks | 0  | 0.00      | 0.00         |
| Positive Ranks | 26 | 13.50     | 351.00       |
| Ties   | 12 |           |              |
| Total  | 38 |           |              |

a. POSTTEST < PRETEST
b. POSTTEST > PRETEST
c. POSTTEST = PRETEST

From the Table 3 and Table 4, it can be seen that 26 students have better critical thinking skill after using mobile applications as learning assistance which can help students improve their critical thinking in English language learning. There is no student whose critical thinking skill decreases from pre-test until post-test. There are 12 students have same critical thinking skill from pre-test until post-test.

Test statistics table shows that Wilcoxon test result obtains significance value .000 < 0.05 which means there is difference in students’ critical thinking skill after using mobile applications as learning assistance which can help students improve their critical thinking in English language learning.

4.3. Influence of mobile applications as learning assistance from observation and interview
In this research, we used mobile learning applications which can be downloaded easily in Google play store. Some of mobile applications are online and some others are offline. Explicit instruction on teaching method in speaking course and mobile learning applications used were given to both teacher and students. Mobile applications were used only outside the classroom to explore the materials, practice their skills, and communicate and discuss the lesson while in the classroom teacher and the students run Socratic circle speaking.
From the Figure 2, it can be seen that mobile learning applications used were divided into four groups; Speaking applications, Critical Thinking applications, Authentic Learning Source applications, and Outside Classroom Communication and Discussion applications. Mobile speaking applications used were online dictionary, language translator, speaking English, English grammar, and speech to text. Mobile critical thinking applications used were critical thinking concept and critical thinking basic. Mobile applications on authentic learning sources used were google chrome, YouTube, and Weebly. Mobile applications as Outside classroom communication and discussion applications used were WhatsApp and Email.

In the interview, students were asked the questions related to the use of mobile applications as learning assistance which can help students improve their speaking skill and critical thinking in foreign language learning. They positively responded the given applications and method.

Mobile assisted learning is connected to constructivist learning where the students construct their knowledge through the principles such as; active process, adaptive, contextual, constructive, personal, social, sense making, experiencing and comprehending, interaction, and effective learning [14]. It functions to increase the efficiency, facilitate knowledge transfer, and contribute the exploration [15]. In this research we can see that the students constructed the knowledge through dialogue which made them interacted each other and made reflection to the goal of meaning making [16].

5. Conclusion

Research problems are teaching English as Foreign Language especially speaking skill and infusing critical thinking to increase the quality of students’ speaking. The implementation of mobile applications as learning assistance can help students improve their speaking skill and critical thinking in English language learning which answers the research problems. Socratic dialogue as teaching method used in the classroom creates learning context where the teacher and the students share knowledge, build and apply new comprehension by constructing new information and knowledge via through mobile learning applications used. Mobile applications take the role as students’ learning assistance. Mobile learning applications which used outside the classroom can make students increase their skills and become independent learners. The use of Mobile learning applications which supported Socratic dialogue can be used as an alternative solution to improve students’ speaking skill and critical thinking. Mobile learning applications also can be used to any learning subject by adjusting it with teaching method used and selecting appropriate mobile learning applications.

The implication of this research goes to the potential of technology where the teachers need technology education, especially the use of technology in practice which can be used in specific learning context and form their beliefs culturally. Other implications are policy makers, infrastructures, learning environment, and the learning itself.

This research only focused on the implementation of mobile learning applications to support Socratic Method as outside classroom assistance. Future research is suggested to explore more in the...
area of curriculum and material development, students’ cognitive, social and cultural engagement, teaching methods, and learning assessment.

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