



Students' Perceptions of the Benefits of Mobile Polling Technology in Teaching and Learning in College: Implications of Students' Participation and Academic Performance

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Abstract: Students' perceptions of the benefits of mobile polling technology in teaching and learning in college: Implications of student' participation and academic performance.

Objectives: This study aims to analyze students' perceptions of interactive teaching using Poll-Everywhere application as a useful teaching methodology. **Methods:** Strategic Lecturers enter questions using the Poll-Everywhere application. Students' perceptions of interactive teaching that effectively uses this technology are statistically evaluated using a questionnaire.

Findings: The level of student academic ability increased significantly between the two sections for Reading III Test ($M = 89.74$, $SD = 3.26$), and Reading V ($M = 90.42$, $SD = 3.91$).

Conclusions: Students consider it a useful method for giving real feedback, which encourages their performance and participation. Lecturers regard Poll-Everywhere as an effective teaching innovation that encourages deeper information storage and as an effective teaching aid in monitoring student progress and identifying shortcomings.

Keywords: Poll-Everywhere, student' participation, academic performance, feedback, Mobile Polling.

Abstrak: Persepsi siswa tentang manfaat teknologi polling seluler dalam pengajaran dan pembelajaran di perguruan tinggi: Implikasi dari partisipasi mahasiswa dan kinerja akademik.

Tujuan: Studi ini bertujuan untuk menganalisis persepsi mahasiswa tentang pengajaran interaktif menggunakan aplikasi Poll-Everywhere sebagai metodologi pengajaran yang berguna. **Metode:** Strategis Dosen memasukkan pertanyaan menggunakan aplikasi Poll-Everywhere. Persepsi mahasiswa tentang pengajaran interaktif yang efektif menggunakan teknologi ini dievaluasi secara statistik menggunakan kuesioner. **Temuan:** Tingkat kemampuan akademik mahasiswa meningkat secara signifikan antara dua bagian untuk Tes Membaca III ($M = 89,74$, $SD = 3.26$), dan Membaca V ($M = 90.42$, $SD = 3.91$). **Kesimpulan:** Mahasiswa menganggapnya sebagai metode yang berguna untuk memberikan umpan balik nyata, yang mendorong kinerja dan partisipasi mereka. Dosen menganggap Poll-Everywhere sebagai inovasi pengajaran yang efektif yang mendorong penyimpanan informasi yang lebih dalam dan sebagai alat bantu pengajaran yang efektif dalam memantau kemajuan siswa dan mengidentifikasi kekurangan.

Kata kunci: Poll-Everywhere, partisipasi siswa, kinerja akademik, umpan balik, Polling Seluler.

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■ INTRODUCTION

Nowadays, college are fully demanded to develop and support various programs to encourage the academic success of learners. In traditional teaching and learning models, many lecturers or teachers spend countless hours or even repeated meetings in lectures or lessons in the students' room with little interaction and feedback in expressing how much of the content the students are able to absorb (Mula & Kavanagh, 2009). In fact, getting immediate and fast feedback from each student will be invaluable in understanding the learning materials presented, rather than waiting until the final exam results (Bachman & Bachman, 2011).

Briefly explained that many students in our class (in particular) may not be able to adequately follow the content delivered, especially at the speed at which the material is delivered in the classroom. When the lecturer asks questions to be answered by the students, only the best students can answer them. While students with below-average intelligence levels sit silent (Hwang, Huang, Shadiey, Wu, & Chen, 2014) even though they are unlikely to understand learning materials. In the process of learning, teachers often find facts in the classroom that students are physically in the classroom, but their minds are in the outer place. In addition, in the feedback process, students sometimes do not respond because they are unable to express themselves in the language, not confident, for fear, either from their friends or lecturers whom they consider lecturers firmly (Heaslip, Donovan, & Cullen, 2014). Similarly, in the classroom there is often a dominant group of students responding to any question that the lecturer asks (Kay & LeSage, 2009), so that the weak student to respond does not get a chance. In addition, in class often found students fail to understand or follow the logic of the argument presented (Mula & Kavanagh, 2009).

In the midst of these changes, however, it is very important to identify the difficulties faced by colleges and students in making good use of digital technology (Henderson, Selwyn, & Aston, 2017). The use of digital technology for learning and teaching has long been inconsistent and varies greatly between subjects, learning levels, modes and institutional readiness in terms of human resources, facilities and costs (Henderson et al., 2017). Therefore, attention from various parties should be given and supported to help students actively engage in specific forms of digital technology during their studies (Achen & Lumpkin, 2015; Holmes, Tracy, Painter, Oestreich, & Park, 2015). Of course this raises the question of how this technology plays in student learning, student participation rates, as well as academic performance, the outcomes and consequences of using the technology (Hampel & Pleines, 2013).

Motivation to create more student-centered classrooms is a premiere and increasingly important requirement (Holmes et al., 2015). With the (Freeman, Bell, Comerton-Forde, Pickering, & Blayney, 2007) from the outside world in modern classrooms, this confirms that education is changing and educators can now leverage new technologies to change the mindset in demanding greater expectations of critical thinking and problem-solving skills. Currently, educators should provide a framework for student learning to gain knowledge quickly by using their fingertips (Simpson & Oliver, 2007). Thus, there are attempts by which educators should use technology applications in the classroom rather than guiding the discussion topics directly or at least mix them between online and offline learning (blended learning) (Gauci, Dantas, Williams, & Kemm, 2009).

Fortunately, in improving and supporting learning and teaching today, the has begun to be supported by the application of learning

technology (FitzPatrick, Finn, & Campisi, 2011). Digital technology is now an integral aspect of student experience in college (Henderson et al., 2017). Students are getting more familiar using laptops, tablets, and smart phones and other applications such as SMS, and the internet (Calma, Webster, Petry, & Pesina, 2014; Stowell, 2015). The current educational environment has begun to provide opportunities to use technology in teaching and learning, for example by providing wireless connections and learning management systems, and using SMS technology and other innovative ways to communicate with students (Noel, Stover, & McNutt, 2015).

In this study, it becomes important and clear that the introduction of technology can have a major impact on lectures. When technology works well, it helps focus students' attention and organize a lecture (Simpson & Oliver, 2007). However, when problems arise, interruptions can become serious. One of the most relevant developments is the development and use of electronic voting system technology in the context of lectures (Penuel, Boscardin, Masyn, & Crawford, 2007), namely Poll-Everywhere application. This technology can be adopted as a solution that can overcome barriers in offline teaching and learning. This system becomes a feedback mechanism (Mula & Kavanagh, 2009) and can help focus on student needs, as identified by the students themselves. Given that lecturers and students are becoming more interested in the use of technology in their classrooms, studies that investigate the impact of the use of these technologies are timely. It can provide academic inspiration and insight on how to introduce surveys using Poll-Everywhere technology in the classroom.

Poll-Everywhere allows free text response (Kolb, 2011), gives all students a voice, lets students comment on their work, or ask questions. Poll-Everywhere has the ability to increase student

interest and participation (Calma et al., 2014) and can be used as a formative feedback tool that students receive (Stagg & Lane, 2010). Using a quick poll, especially shy students will be given the opportunity to test their understanding or express their views with full anonymity during the lecture and they can directly respond to questions (Sikarwar, 2015). Calma et al., (2014) state that lecturers can directly measure students' views or understanding of concepts or topics, and adjust their teaching. In addition, the use of quick polls in this Poll-Everywhere can help with the lack of student attention during college. Kay & LeSage, (2009) stated that presenting interlude questions in the learning process at specific time intervals able to overcome the lack of student attention during the class. It aims to distract students and restore the focus of active participation in the learning process (Agbatogun, 2014). Another benefit of rapid polling is the ability of students to compare their responses with their peers (Stowell, 2015), monitor their progress in learning and make the classrooms more student-centered (Penuel et al., 2007). Therefore, a quick poll can present a competitive and interactive atmosphere during the lecture and can achieve maximum learning potential for students (Simpson & Oliver, 2007).

The purpose of this study was to investigate the impact of the Poll-Everywhere application on student engagement and academic performance in teaching for active learning by students. The lecture method is one of the best examples of teaching in which teachers explain learning materials or topic concepts to students, but due to time constraints, lecturers sometimes cannot get immediate feedback to understand the concepts of learners (Termos, 2013). It is always a challenge for teachers or lecturers in college to interact with each student in teaching. With this issue in mind, this paper aims to develop a realistic sense of how digital technology is now part of

the student experience. Thus, this study discusses the following set of research questions: (RQ1) did the level of participation of students increase in lectures when a Poll-Everywhere as student response system (SRS) was used? (RQ2) Did the level of academic performance increase in lectures when Poll-Everywhere as a student response system (SRS) was used? (RQ3) What are the potential benefits of a voting system on improving lectures for students?

Method

Participants

Student of English Department of Education, STKIP Muhammadiyah Enrekang-Indonesia with 46 students is a sample in this study, consisting of 24 students from the third semester taking reading courses III and 22 students taking the Reading V course in the fifth semester of academic year 2017/2018. Students were invited to participate in this quantitative and qualitative research after obtaining approval from the Head of the Department of English Education. Quantitative data was collected from students through completion of a mobile survey. All participants indicated that they have compatible personal electronic devices for use in learning activities through cell-based voting. The purpose of this survey was to assess students' opinions about using Poll-Everywhere applications as a technology-based learning method. Respondents consisted of 29 (63.64%) females and 17 (36.36%) males, who were on average between 18 and 22 years old. Samples from these students were then asked to participate in focus groups to collect qualitative data to explore the findings of further surveys. For comparison and validation, the average score of the final exams of students in the previous semester of academic year 2016/2017 is used as a comparison, where the learning model or methods was still used traditional lecture.

Educational framework

In the process of teaching Reading III of the third semester and Reading V in the fifth

semester as compulsory courses, where attendance in this lecture is at least 14 obligatory meetings for English education students in the third semester and fifth semester of academic year 2017/2018. Traditional learning models have been presented to them in the previous academic year, both in the form of lecture methods, case studies, problem-based learning and classroom practice. The first module is taught to students up to mid-semester, but students show low involvement and low-class participation due to their diverse educational and cultural backgrounds. Therefore it is deemed necessary to make improvements. At the beginning of the new period of academic year 2017/2018, the author tries to customize the interactive learning using Poll-Everywhere app.

In this study, the lecture method was given. Toward the end of each lecture, 5 to 10 formative questions relevant to the course were given. Polling questions were integrated into the delivery of the course as part of the class discussions on the topics covered. Poll-Everywhere, was selected for this study. Students select their answers using their phone, and the results were displayed on the histogram for multiple choice questions, including simple and short problem-based questions, or displayed in slide form. The results of this poll then affect the way the lecture took place. Questions were asked to the students at the end of the lecture to test post-lecture knowledge.

Every week, multiple choice and open-ended questions were used to break up lectures in order to take a quick formative snapshot of how well students understand the material. Students can respond using apps on their mobile devices. Feedback was immediately given to students using graphs resulting from responses given by students who choose to use mobile apps. Students who do not use the app to answer questions can see their own responses and see how they ask questions. At the end of the

semester, the questionnaires were used to evaluate students' perceptions of the usefulness of Poll-Everywhere application in relation to their involvement in and preparation for the class and their understanding of the subject content. The purpose of adopting this approach is to formulate a way for lecturers or instructors to measure students' understanding of content based on lectures and any other learning activities that occur in the classroom, with the aim of providing data that can guide lecturer to make anything useful as well as modification of course materials and activities learning.

Students were well informed about the Poll-Everywhere app and instructed earlier to download Poll-Everywhere on their device. Before applying the tool, it should be ensured how the tool works, following steps were followed to make sure that transition from traditional teaching to mobile classroom should be smooth: (1) Prior declaration of date in timetable; (2) Explain the Model; (3) Provided prior learning material on e-learning portal; (4) Brainstorming of students prior lecture; (5) Get students to ask questions; (6) Peer learning under the supervision of lecturer; (7) Make sure everyone has access to the Internet; (8) Prior download Poll-Everywhere software for instant answers for questions; and (9) Evaluation by students.

At each meeting, the lecturer gives students ten multiple choice questions and five open questions to pause the lecture so they can take a quick formative snapshot of how well students understand the material through Poll-Everywhere application surveys with specific codes. Each question has an answer option with only one right choice (Appendix 1), while open questions allow students to express their thoughts qualitatively. Questions include material discussed in the reading III and Reading V. These questions are also displayed on the big

screen to help students participate for those who do not use cellular access. Student display of the quick poll using Poll-Everywhere can be seen in the Appendix 1.

The next assessment in this course is the final semester test with multiple choice answers based on the mobile poll application. In addition, questions are displayed through the projection screen so that students who do not have smartphones or tablets should answer multiple-choice questions on paper. After allowing students to answer questions with duration of one to two minutes each question, then the results are displayed through the application's online portal. With this application, the lecturer can see the student's answer choices through a histogram. Example of histogram on a single quick poll question can also see in the Appendix 1. The lecturer then discusses each question and explains to the student why the particular answer is right or wrong. The results are displayed on the website and projected through the screen so that all students can see the results.

Instrument

Polling questions are integrated into course delivery as part of class discussions on Reading III and Reading V subjects. The questionnaire developed in this study was a 20-item survey instrument on the use of mobile-based polls given to students from the English Department. The purpose of this instrument is to gather students' opinions about the perception of the use of electronic devices for mobile-based polling activities during class. The survey items consist of several areas of interest such as student involvement, participation, understanding of subject matter and academic achievement and the benefits of using IT in the learning process. These items use a 5-point Likert response format (strongly agree to strongly disagree). These items are used in this study to obtain quantitative and qualitative

information about the use of mobile devices by students in their academic roles. There are two items used in this study; one special item asks about the ease of using the application to give answers to quick polls and one item to determine whether students use the Poll-Everywhere application or they use pens and paper to participate in activities. Quantitative data from the questionnaire were analyzed using SPSSv.21 software to calculate descriptive statistics and frequency tables.

FINDINGS AND DISCUSSION

Commonly, the qualitative data analysis suggests that the electronic voting system approach is seen by students as supporting student academic success. This exploratory study focused on three themes, students' participation, academic performance, and the benefits of a voting system on improving lecturing.

Implication of Students' participation

In this study, one way to measure students' involvement in teaching and learning in the English Department of Education at STKIP Muhammadiyah Enrekang as a college involved in education and teaching is to use the Poll-Everywhere as Audience Response System (ARS) to provide feedback to students. This study aims to find out how the use of Poll-Everywhere affects the level of involvement of student participation. The survey items selected for this study are authorized and used to understand the effects of mobile-based polls. In the aspect of student involvement, it is generally reported to have a positive attitude between the uses of mobile-based polls. Participating in a quick poll using the Poll-Everywhere app is a strong positive experience for students from the English Department of Education.

The student's vision of the benefits of social-based learning through technology polls was also different. Table 1 shows that students as prospective teachers in the sample as a whole

tend to assess both the use of student response systems in improving learning. Experience shows that (93.48%) students easily use Poll-Everywhere outside or inside the classroom. Furthermore, 91.30% of students love to use personal mobile devices to engage in Poll-Everywhere voting in the class. Similarly 93.48% of students enjoy participating in a quick poll using the Poll-Everywhere app, rather than writing answers on paper, and the students would recommend other lecturers to use mobile devices (Poll-Everywhere) for learning purposes in the upcoming academic year class (91.30%), and 93.48 % of the students stated that using Poll-Everywhere develops a desire to learn.

The survey associated with the students' response to classroom understanding was 91.30% of students as teacher candidates claiming they were better able to understand classroom material when they used the Poll-Everywhere survey. Likewise, 93.48% of students also told us that they could increase their interaction in learning for both the lecturer and with other students through use of the Poll-Everywhere survey. Furthermore, 89.13% of students are able to improve student concentration and motivation by using Poll-Everywhere. In addition, student participation (93.48%) in the polls can quickly improve student performance and attendance.

Surveys related to the enthusiastic responses of students participating with mobile-based polls are the students' emotional outlook. These surveys include student contributions in expressing feelings during classroom discussions. In table 1 Item 10 to item 15 shows a favorable view of the polling experience. Overall, students in this sample stated to have high enthusiasm or positive emotions associated with the use of personal devices for cell-based polls.

Table 1. Descriptive Results Item Survey for Students' Participation

No.	Item	Distribution of Response* (%)					M
		SD	D	U	A	SA	
1	It was easy to use the Poll-Everywhere app inside or outside the classroom	-	2.17	4.35	58.70	34.78	4.35
2	I love using a personal mobile device to engage in Poll-Everywhere voting in the classroom	-	2.17	6.52	63.04	28.26	6.52
3	I enjoyed participating in a quick poll using the Poll-Everywhere app, rather than writing my answer on paper	-	2.17	4.35	60.87	32.61	4.35
4	I would recommend to other lecturers to use mobile devices (Poll-Everywhere) for learning purposes in the upcoming academic year class.	2.17	2.17	4.35	67.39	23.91	4.35
5	Using Poll-Everywhere develops a desire to learn	-	2.17	4.35	67.39	26.09	4.35
6	Using Poll-Everywhere during class helps me to better understand class material.	-	4.35	4.35	65.22	26.09	4.35
7	My participation in quick polls improved my interaction in learning for both the lecturer and with other students.	2.17	2.17	2.17	58.70	34.78	2.17
8	Using Poll-Everywhere helps increase my concentration and motivation	-	2.17	8.70	56.52	32.61	8.70
9	My participation in the polls quickly improved my performance and increases my presence in this regard.	2.17	2.17	2.17	67.39	26.09	2.17
10	Using Poll-Everywhere encourage me to think about the lecture content outside the classroom.	-	2.17	6.52	69.57	21.74	6.52
11	I felt that using Poll-Everywhere during classes encourage self-evaluation.	-	2.17	8.70	69.57	19.57	8.70
12	Using Poll-Everywhere in class makes me feel as if I have a voice to contribute during classroom discussions and have brainstorming ideas.	2.17	2.17	2.17	63.04	30.43	2.17
13	I became confident when my lecturer directed us to respond honestly to sensitive questions using Poll-Everywhere.	-	2.17	6.52	65.22	26.09	6.52
14	Using Poll-Everywhere identifies where to focus the contents of revision sessions to get the topics we need.	2.17	4.35	4.35	56.52	32.61	4.35
15	Using Poll-Everywhere reveals misunderstandings and ensures understanding of the concepts that support before moving on to the next session.	2.17	2.17	8.70	60.87	26.09	8.70
16	I see the benefits of using Poll-Everywhere after graduating in my professional life.	-	2.17	4.35	71.74	21.74	4.35
17	Being able to manage Poll-Everywhere sessions will be an excellent valuable skill for me to demonstrate in the workplace	2.17	2.17	8.70	54.35	32.61	8.70
18	Using mobile devices for Poll-Everywhere during class fun.	-	2.17	6.52	67.39	23.91	6.52
19	Conducting Poll-Everywhere during class is a waste of class time	-	2.17	4.35	63.04	30.43	4.35
20	I feel more connected with the class when participating with Poll-Everywhere.	-	4.35	6.52	65.22	23.91	6.52
Average Score				8.70%		91.30%	

*1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Unsure (U); 4 = Agree (A); 5 = Strongly Agree (SA)

Student survey results (91.30%) agree that using Poll-Everywhere encourages students to think about the content of the lecture and how the idea utilizes the rest of the time in the classroom after the mobile-based learning process. Meanwhile, Poll-Everywhere was able to improve students' self-evaluation (89.13%) and (93.48%) students said they had a voice to contribute during class discussions and brainstorming ideas, and 91.30% of students became confident when lecturers responded respond directly to sensitive questions honestly using Poll-Everywhere.

In addition, a total of 89.13% of students said that they were able to identify where the focus of the contents of the revision sessions was to get the topics they needed using Poll-Everywhere, and 86.96% of students were able to express misunderstandings and ensure understanding of the concept of support before proceeding to the next session. With the opportunity to start utilizing technology to foster learning improvement, it is not surprising that the performance of students as prospective teachers and education departments has a passion and motivation to learn better.

The focus of the next survey is an effort designed to develop an understanding of the efforts in transferring cognitive learning of students. These surveys are categorized as students' intellectual stimuli; these surveys are listed in tables 1, 16 through 20. In particular, the focus of the survey was to include the degree of student involvement in understanding the benefits of cell-based polls to learn about learning materials both inside and outside the classroom. This opportunity allows students to practice experience in teaching exercise programs.

The level of student involvement in table 1 items 16 through 20 in the learning transfer aspects' in this study provides a positive view

of their cognitive level on the use of cell-based polls. Participants reporting cell-based polling perceptions can be useful after they graduate (93.48%). The majority believe (86.96%) that the provision of mobile-based polls will be a good and valuable skill to enter the workforce. They feel comfortable managing voting sessions (91.30%) in an out-of-class context, and having a sense of emotional connection to class during voting (89.13%).

In addition, to identify possible hasty or random student responses then enter the precautionary items, i.e. the use of polls everywhere is a waste of time. The inverse results associated with voting as 'waste of time' consistent with the rest of the emotionally related data (93.48%) show favorable views of the polling experience. Overall, students in this sample stated to have high enthusiasm or positive emotions associated with the use of personal devices for cell-based polls.

Furthermore, student feedback results show a strong preference for learning how to facilitate a voting session for use outside the classroom with the same number of students feeling confident enough to lead a voting session. This transfer of learning is important for leadership students who use polls for academic-related projects in other courses or professional-related presentations.

Implication of Academic performance

The results for academic performance show significant differences between traditional groups held in the odd semester of the academic year 2017-2018 and the mobile device classroom performed even in the semester (Figure 1). Additionally, the mean score indicates no significant difference between the two groups in the educational method class. Because participants in classroom research methods are all undergraduate students, the reason for this result may be that the poll cell

works better to improve student outcomes in an environment consisting of undergraduate students.

In contrast, class survey findings were interesting because there were differences in all items except clarity of lectures no significant differences with traditional teaching ($M = 4.05$) for traditional classroom and $M = 4.14$ for mobile device classroom. While other items, student responses increased in the interactive aspects of the lecture ($M = 3.39$ in the traditional class and $M = 4.05$ in the mobile device classroom). Similarly, student responses ($M = 3.61$) in the traditional class and the mean values in mobile device classroom ($M = 4.09$) were able to understand the subject content, while the exposure to the lecture materials $M = 4.05$ for the traditional class and $M = 4.14$ mobile device classroom stated exposures more clearly. The student's response to the lecture setting was $M = 3.56$ for the traditional class and $M = 4.09$ for the mobile device

classroom. The students' response to encourage self-evaluation ($M = 3.21$) for the traditional class says quite clearly, and ($M = 4.00$) for the Poll-Everywhere class. Meanwhile, the student's response to the assessment format ($M = 3.04$) for the traditional class says quite clearly, and ($M = 3.78$) for the mobile device classroom.

The survey results of items related to lecture evaluations indicate that students perceive polls as a means to improve the quality of learning, understand the content, facilitate interaction with colleagues and lecturers, and actively engage with discussions, as well as clear assessment methods. The ability to motivate the students through learning and applying new information is essential for academic achievement, especially student lectures and student evaluations. Mobile-based polls provide new opportunities and environments for students to learn subject matter (Noel et al., 2015).

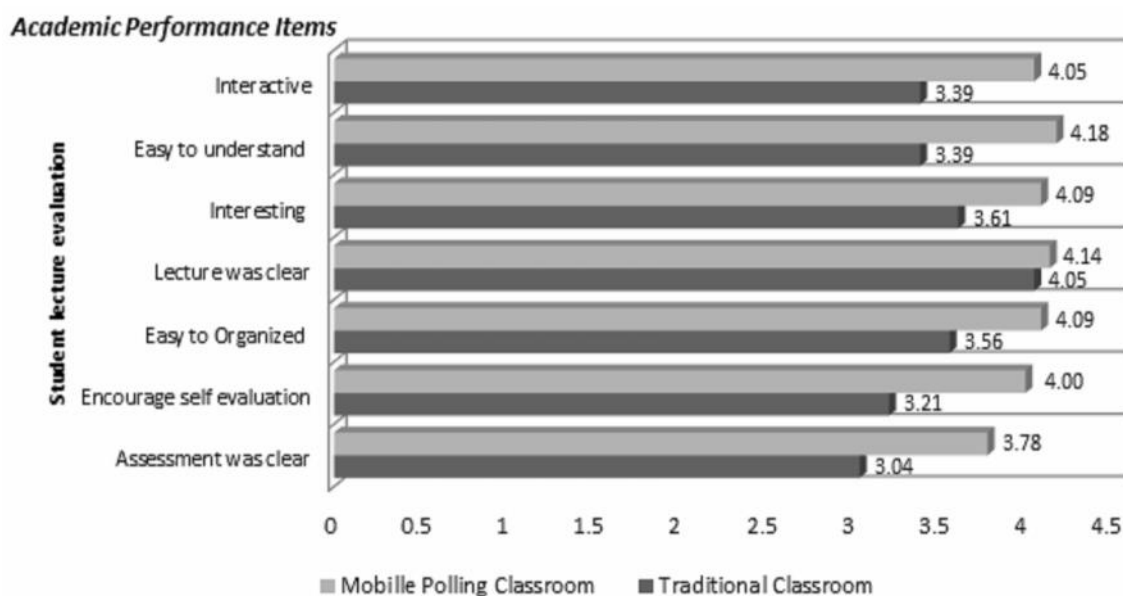


Figure 1. Comparison of student lecture evaluation for academic performance (N = 46)

In Figure 2, responses to the comparison of student evaluations for lecturer performance have significant differences between traditional classroom teaching and reversing classes. For the traditional teaching class, students stated ($M= 3.26$) could increase participation for lecturers, while ($M= 3.96$) in inverting classes. The most interesting results are noted for clarity of lectures where only ($M= 3.26$) in the traditional class of students responds positively to the clarity of the lecture, while the student response ($M= 4.14$) increases in the mobile device classroom. Results on the level of lecturers ‘confidence in which the students’ responses ($M= 3.61$) in the traditional class, and ($M= 4.09$) of student responses showed increased confidence for the lecturer in the mobile classroom. Results on the level of lecturers’ confidence in which student responses ($M = 3.61$) in the traditional class, and ($M = 4.09$) of student responses indicate increased confidence for lecturers in mobile device classroom. For traditional classroom teaching, the student’s mean score was 3.34 on clear audible

ability, and in the mobile device classroom was $M = 4.18$. While the student response to the lecturers’ enthusiasm in delivering the presentation material is 3.17 for traditional classroom teaching, and a mean score of 4.05 for the mobile device classroom.

The student’s response to the lecturer feedback result (figure 2) in learning was 3.56 for the traditional class and the average score was 4.31 for the Poll-Everywhere class. Student responses to finding new ideas in learning ($M = 3.39$) for traditional classes, and different from those using Poll-Everywhere ($M=4.00$). Student Responses ($M = 3.17$) can ensure they gain knowledge after the class in traditional classrooms, and ($M = 3.87$) students using Poll-Everywhere can understand knowledge after classroom learning. While teaching using Poll-Everywhere can use it to gather data ($M = 3.96$), and traditional class ($M = 3.12$). This feedback data can be saved and share with individuals when the students give feedback on the presentation through Poll-Everywhere.

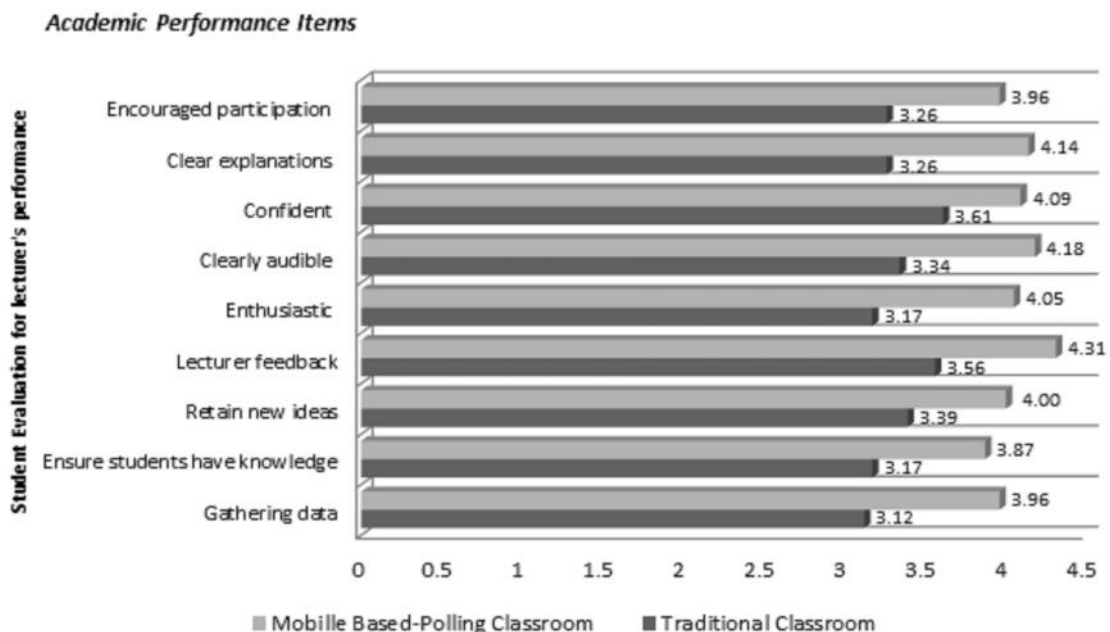


Figure 2. Comparison of Student Evaluation for lecturer performance (N=46)

The results of student responses show that some lectures can be a very passive learning experience and cannot do all the work when students are not challenged. By asking a few questions with Poll Everywhere at intervals throughout the course and asking students to discuss their thoughts in pairs before answering questions, lecturer can change passive lectures. Our study findings show that mobile-based polls have the potential to promote innovative thinking and innovative problem solving. If they use polling sessions to deliberately stimulate followers on an intellectual level, a certain level of motivation for learning can also arise. In this way, students can learn to apply polling technology to improve their understanding of concepts related to intellectual stimulation (Noel et al., 2015). Besides, Poll-Everywhere allows free text responses, giving all students a voice (Barbour, 2008). This can be used to allow students to comment on each other's work, or to ask questions.

Using Polling Everywhere can increase students' motivation to understand the material. Students who want to do well will be motivated to grapple with questions and try to answer, to get feedback about where they stand. And when students are asked to answer ARS questions in pairs or small groups, they show serious involvement. These questions can break the

monotony of a lecture. A study by (Benjamin, 1996) shows that most people can only focus on speech for a maximum of 10 to 15 minutes before the mind wanders. If the lecture is divided into 10 minutes, followed by one or two questions, change can bring students back to attention. Questions help students clarify their thinking (Abdel Meguid & Collins, 2017). The question becomes a trust builder. They get positive or negative feedback about what they learn, which can give them information about what to focus on as they learn.

To state that students using polls everywhere will show better academic performance than traditional teaching. Academic achievement is measured by the actual value obtained from the results of the semester exam by comparing the classic class reversal test score on the Reading V course at STKIP Muhammadiyah Enrekang. Table 2 shows that for the test scores in the Reading II course (M = 81.79, SD = 3.81), and Reading IV (M = 83.84, SD = 1.98) in the traditional classroom teaching of the academic year 2016/2017. However, after the introduction of the Poll-Everywhere application in the 2017/2018 academic year, it appears that the level of academic ability of students increased significantly between the two parts for Reading Test III (M = 89.74, SD = 3.26), and Reading V (M = 90.42, SD = 3.91).

Table 2. Comparison of the average score of students in the final semester exam

Final Exam (course)	Mobil polling classroom (Academic year 2017/2018)		Final Exam (course)	Traditional classroom (Academic year 2016/2017)	
	M	SD		M	SD
Reading III (N=24)	89.74	3.26	Reading II (N=24)	81.79	3.81
Reading V (N=22)	90.42	3.91	Reading IV (N=22)	83.84	1.98

Currently, teaching has been integrated with good technology especially to support teaching technology and education. Technology will be an important supporting tool that is useful for learners to understand the fast concepts applied by lecturers in achieving learning outcomes in a short time compared to traditional teaching. Student adaptation of mobile device features to school work provides a great model for expanded classroom use. Students should have a clear vision of the potential of mobile learning to enable, engage and empower them as 21st century learners (Project Tomorrow, 2011). When we ask students about using their own mobile device for classroom learning purposes for the next academic year, 81.82 percent of students say “agree” (Table 1 Item 4).

In addition, feedback plays an important role in improving the quality of learning when strengthening is appropriate and integrated. Qualified feedback should be given to students. Jones (1999) adds that this feedback should be timely and in an optimal setting for learning. Poll-Everywhere is one tool that can be used for effective feedback (Mula & Kavanagh, 2009). Feedback plays an important role to improve only if it can be done immediately (Sikarwar, 2015). The Poll Everywhere tool is used with the concept of inverse class for this pilot study which is highly accepted by the students (Agbatogun, 2014; Keough, 2012). The advantage of using the Poll Everywhere tool in the class is primarily to get timely feedback.

The use of effective learning tools is essential and institutional institutions in particular must have strong e-learning or information technology support (Khan, Egbue, Palkie, & Madden, 2017). If students face problems in e-learning or information technology should be supported by experts and most importantly all students must have electronic devices to choose from (Khan et al., 2017). The lecturer has the flexibility to reduce the response time limit. Sikarwar, (2015) state

that Poll-Everywhere is a great tool for places where colleges have better facilities with high-speed internet, smart phones, etc.

But beyond that, the weaknesses and challenges of using mobile devices in the learning process are costly and time consuming processes if internet service is not fast (Sikarwar, 2015; Stowell, 2015). Therefore, lecturers should plan ahead in time management. Lecturers should take the time to assess students’ understanding of the content and to clarify misunderstandings if students cannot understand. Lecturers also need to dedicate time for questions and responses by students to identify areas of their difficulty.

Thus, teaching can be a challenging task (Kay & LeSage, 2009; Sun, 2014). However, by using a number of organizational and teaching strategies, instructors can ensure that they provide an effective and engaging learning environment for their students (Hanover Research, 2010). New technology is increasingly helping instructors to approach these classes in ways that make them far more than just monotonous lectures (Stagg & Lane, 2010).

The potential benefits of a voting system on improving lecturing

As identified in the previous section, the voting system can support teaching and learning in the lecture, any benefit will depend on how effectively they are used at every opportunity. To assess whether the system does improve the lecture format, it is necessary to identify the assumptions made about what is considered ‘good’ learning (Embi, 2012). The implication is that the voting system should be able to support and promote good lectures, even if they do not cause it to happen in a simplistic way (Simpson & Oliver, 2006). The evidence so far suggests that there was a general benefit to be achieved from the use of a voting system in a lecture. Among the evidence use of polling based software in this study is able to encourage the participation of each student (Khan et al., 2017). When we

try to use traditional teaching methods such as asking questions, not all students can be asked to respond because of time constraints and sometimes even students are reluctant to respond. However, using more interactive teaching methods (Prasty, 2017) such as software-based polling technology (Poll-Everywhere) can help all students respond to a given question. In addition, student responses can be detected or recorded well with existing data in an interesting way (Sun, 2014).

Other evidence is timely feedback. Timely feedback to students about their performance can be greatly assisted by the use of the voting system (Siau, Nah, Siau, Sheng, & Nah, 2006; Simpson & Oliver, 2006). Because answers are marked electronically and automatically, feedback on performance and presentation of correct answers can be achieved quickly (Siau et al., 2006; Simpson & Oliver, 2006). Students can then see how their performance and students can get immediate feedback about their work. Further evidence is to encourage active learning. Students are actively involved throughout the lecture, from registering responses, providing answers (Calma et al., 2014) and seeing responses will affect student interest in what happens next. For example, students should prepare to focus on learning and stay alert during the lecture period. Similarly, if students want to answer questions, they need to be more reflective about what they have learned and how they learn. "However, (Martin, 1999) stated doing such activities in teaching will help create an atmosphere where genuine involvement is encouraged and supported.

Given the improvements in online learning, there was an increasing interest involved to ensure that students today have a strong foundation in information. However, we see that the lecturer and students are not on the same page when it comes to evaluating the relative importance of a particular skill. As technology roles emerge in

education, we may need to re-calibrate the value system to help students develop the 21st-century skills necessary to meet the demands of their future workplace (Project Tomorrow, 2011).

■ CONCLUSION

In this study, an overview has been offered of the literature on the use of electronic voting systems to support lectures. From this review, the conclusion can be drawn that using an electronic response system can be useful for lecturers who want to increase student involvement in their classrooms. Poll-Everywhere can be a useful tool for students to understand concepts and support lecturers to achieve learning outcomes in a limited time. In addition, the use of the Poll-Everywhere application has been shown to improve student attendance, test scores, final grades, attention, motivation and involvement. The results show that there are several positive benefits that can be gained through the use of Poll-Everywhere technology applications in English classes. Based on a student survey analysis of feedback, both qualitative and quantitative, students see the use of Poll-Everywhere technology as a positive experience that can improve their understanding of the content by responding to the questions presented. Their role in supporting feedback on the learning process is very valuable in this regard. Higher participation rates and enhanced learning experience occur. This paper provides evidence to be used as a starting point for further research into the use of Poll-Everywhere technology in the educational process and the opportunity to expand studies into larger groups of students and other disciplines. Thus, this study recognizes that student participation and involvement in lectures can be a problem; however, using a quick poll through smart phone applications can offer a solution. In short, the voting system seems to have the potential to increase learning and motivation, and provide variety and involvement in lectures.

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