

Mentimeter as a Reflective Teaching Tool: A Review

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Abstract

The COVID-19 epidemic has prompted calls for increased digital literacy training among university lecturers or educators to enable greater use of online courses. Some educators go to great lengths to involve their students in classroom discussions and activities. Therefore, interactive technology has solved the problem and enabled a higher rate of active learning among students. They can enrich their college life while fostering a better sense of belonging. The incorporation of interactive technologies into the lectures has increased the learning experience, the achievement of learning goals, and the motivation of the students. Students are free to express themselves and participate in activities that require assessment without worrying about how they will be perceived by their peers. This research examines the potential pedagogical implications of a popular form of interactive technology used by students in the classroom. The results also showed how students can effectively incorporate technology strategies into their classroom routines. This research contributes to the understanding of the role of interactive technologies in higher education.

Keywords: Mentimeter, Teaching, Learning, Instrument, Education

Introduction

Higher education has been severely impacted since COVID-19 spread rapidly around the world. In September 2020, COVID-19 appeared to be under control (Muthuprasad et al., 2021). Since April 2020, all educational processes are carried out digitally, especially at higher

institutions in Malaysia. Between April 2020 and June 2020, all enrolled students and educators are expected to engage in online education. When most institutions reopen in October 2020, it will be time for students to come back (MQA, 2021). Due to a drastic improvement in circumstances, traditional face-to-face classes have been discontinued. Once again, students had no choice but to take their courses online forever. It is undeniable that online learning is crucial to maintaining a stable curriculum (Markom et al., 2021).

Technology offers a solution to the problem of student disinterest (Rashid and Asghar, 2016). The web world is full of interactive tools like Mentimeter, Padlet, and Jamboard. Especially in large classrooms, these tools make education more interesting and exciting for all students (Little, 2016). Unfortunately, not all students can be reached and engaged through technology (Skaik and Tumpa, 2022). Extensive research has shown that integrating interactive technology into the classroom is beneficial (Wood, 2020). However, there is a lack of research on the global impact of this interactive technology on student education (Gokbulut, 2020; Khalili and Ostafichuk, 2018).

Therefore, the development of cutting-edge technology tools has greatly aided the dissemination of teaching methods and encouraged student participation. Many studies have shown that when educators use ICT, students learn more, retain more, and feel more responsible for their education (Pichardo et al., 2021b).

The motivation for this study was the desire to add new or at least different information to the existing body of knowledge. This paper will complement the existing body of research and expand our understanding. Research writing provides a unique platform to share insights and address pressing issues within a given sector.

Therefore, the main purpose of this research is to determine whether Mentimeter, one of the latest interactive technologies, has significantly improved the educational experience for students.

Literature Review

Simplest Online Tools

Educators often have difficulty assessing their student's understanding of a lesson when dealing with large class sizes (Funnell, 2017; Van Daele et al., 2017). There are instances where students are afraid to raise their hands and ask questions (Kuritza et al., 2020), which can be detrimental to their participation and learning. To combat this problem in both large and small classes, the Audio Response System (ARS) has been used since 1985 (DeBourgh, 2008). ARS allows classrooms to be restructured to place greater emphasis on student learning than that on the instructor. Student Response Systems (Cain et al., 2009), Instant Response Systems (Yourstone et al., 2008), Electronic Feedback Systems (Brady et al., 2013), Classroom Communication Systems, and Instructional Performance Systems are just a few of the names used in of the scientific literature for ARS have been suggested (Cain et al., 2009).

The use of ARSs provides several benefits, including monitoring and improving classroom participation, evaluating the effectiveness of specific lectures, and gaining a better understanding of students' educational experiences (BlascoArcas et al., 2013; Kulatunga & Rameezdeen, 2014). In academia, ARS can take the form of either clickers or digital resources

(Funnell, 2017). The clicker signals are collected by a computer program and transmitted to a small handheld device (Fies & Marshall, 2006). Much research has been done on clickers because they are a standard response mechanism for students. Although the first clickers appeared in the 1960s (Hunsu et al., 2016), their widespread commercial acceptance did not begin until the early 1990s. Others share this view (Abrahamson, 2006). Clickers have been widely used in secondary and tertiary education since 2003 (Abrahamson, 2006), and since then, clicker proficiency, diversity, and accessibility have improved significantly (Hunsu et al., 2016).

The correct software must be installed on the presentation computer and a dongle is required for WLAN. Some popular products in this category are the iClicker and the TurningPoint (Funnell, 2017). In recent years, clickers have become widespread in classrooms (Blasco-Arcas et al., 2013; Kulatunga & Rameezdeen, 2014). This technology facilitated full student and teacher participation and numerous opportunities for classroom collaboration and personal development (Blasco-Arcas et al., 2013). Innovative online ARSs such as Poll Everywhere, Mentimeter and Socrative have emerged in recent years. These tools mediate between data collectors and those who need to analyze, summarize and present the data. Online ARS, unlike clickers, allows students to bring their own devices to class. The authors used a case study approach and Mentimeter for this research. With no configuration or installation required, this handy tool makes setup a breeze (Rudolph, 2018).

Mentimeter in Classroom

Mentimeter supports the creation of interactive lesson slides. Students can access the slides using any internet-enabled device, including smartphones and laptops. Students must enter a six-digit number to respond to the questions anonymously, ask on-screen questions, or make other comments (Mayhew, 2019). Educators can customize the presentation of the Mentimeter platform online to suit their needs. The advanced quiz feature is one of Mentimeter's most popular features, allowing students to compete in a stimulating environment.

Another fascinating aspect of Mentimeter is word clouds, a fun approach to engaging students and measuring their impressions or understanding of the material being studied (Mayhew, 2019). Lin and Lin (2020) conducted a case study analyzing the use of Mentimeter in light of specific communication theories and their implications for teaching effectiveness and improving pedagogical communication skills. The study found that the instrument improved the recapping process. Another study found that the use of Mentimeter was well received by medical students, who found the tool helpful in improving their understanding of historically challenging topics and exam preparation (Kuritza et al., 2020). In addition, the study found that real-time feedback helped students understand their information retention.

Wood (2020) measured and cross-examined undergraduate geography students to determine their perception of Mentimeter. Students in this study agreed that Mentimeter helped gauge their comprehension of course material, enhancing their interest in and engagement with class material, encouraging them to take an active role in their learning, and allowing them to compare their performance with that of their peers. Funnell (2017) empirically examined the relative efficiency of clickers and online ARSs such as Mentimeter,

Socrative, or a mix of both. Two cohorts of medical students surveyed their use of clickers and online ARSs.

Special Features in Mentimeter

Online ARSs, particularly Mentimeter's word cloud component, have met with great enthusiasm in the classroom. The batch that used Mentimeter reported higher levels of satisfaction and confidence than the other cohort that used clickers. Van Daele et al (2017) studied the effect of using Mentimeter on second-year applied psychology students. The study showed that technology improves classroom participation by allowing students to inquire about questions anonymously. Correspondingly, Khalili and Ostafichuk (2018) conducted a pilot study of the use of a Mentimeter and found that Mentimeter made students more comfortable asking questions than orally. The study concluded that the tool meets the diverse needs of students.

According to researchers, Mentimeter was easy because it did not require additional software or hardware (Funnell, 2017; Van Daele et al., 2017). Wood (2020) revealed that academics' experiences with Mentimeter depended on their teaching approaches and previous familiarity with the instrument. He also stressed that Mentimeter should be included throughout the curriculum so students and teachers can easily use the tool.

Mentimeter has proven its potential to increase student engagement, interaction, and a sense of inclusion in the classroom. However, existing literature points to potential limitations, including the need for a stable internet connection (Funnell, 2017) and help-of-hand gadgets (Wood, 2020). Educators have voiced concerns that anonymity makes it harder to gauge students' engagement and motivation (Van Daele et al., 2017). According to Kuritza et al (2020), the anonymity feature may encourage some students to be free riders and may be reluctant to provide answers.

Discussion

Mentimeter as a Preferable Tool

Mentimeter is an online platform that enables students to participate actively in real-time lectures. To better understand the advantages and disadvantages of Mentimeter as a teaching tool, Pichardo et al (2021b) decided to use it in their lessons and conduct an evaluation. According to the study, the Mentimeter significantly increased student engagement and enthusiasm for coursework. Kahoot, Mentimeter, Socrative, Wooclap, and Quizizz were all tried, but only Mentimeter was considered the most exciting.

Kahoot and Mentimeter were studied by Gokbulut (2020) for their educational applications. Gokbulut (2020) claims that Mentimeter encouraged teachers to acquire new digital competencies and appreciate the need to incorporate technology into the classroom. Using Mentimeter, he saw a marked improvement in his online students' participation in class debates and their overall level of academic engagement.

The increased flexibility and additional features allow educators to try new teaching approaches with a broader range of questions and activities. Mentimeter is an excellent tool for students and teachers because of its attractive and user-friendly interface, which can be

accessed from any internet-enabled device (phone, tablet, or computer) with no additional software required (Pichardo et al., 2021a).

Using Mentimeter, instructors can prepare their lectures with a few engaging questions designed to assess students' prior knowledge and familiarity with essential themes. In order to keep the classroom atmosphere lively and to encourage students' comprehension, the lecturer provided interactive questions at various points in the presentation. When there was a wide gap in students' responses to a question, the instructor would ask the same question again, but this time the students would have to discuss it in pairs first.

The word cloud is the most valuable feature, but the data also showed that the tool aided lecturers in teaching complex topics, which was made possible by the student's eagerness to learn and their engagement in the debate. Consistent with the results of a prior study by Kuritza et al., it was also helpful in preparing students for examinations and conducting regular formative evaluations to monitor their learning (2020). When it comes to learning and comprehending the unit requirements, Mentimeter is the best program available. Effectively getting pupils to stop multitasking and devote their full attention to their work is made much easier with Mentimeter (Brimble, 2016). An Engaging and Informative Educational Adventure, The dry nature of academic information can make teaching research-based topics difficult and tedious (Sillaots, 2014). Their academic outcomes were contingent on their resiliency in the face of adversity (Hosny and Fatima, 2014). As a result, it was clear that the introduction of the interactive tool has assisted in meeting their requirements.

Students' Experience Using Mentimeter

Students, however, clearly saw Mentimeter's use in this lesson as a game-based tool that brought great excitement and delight to the classroom. Mentimeter was a brilliant innovation that breathed new life into dry lecture halls. The Mentimeter-based interactive lecture was a compelling way to learn. This finding supports the conclusion reached by earlier studies: the tool successfully increased students' motivation and enjoyment of learning (Skoyles & Bloxsidge, 2017).

Students responded favorably to the tool's facilitation of visual representation through word clouds, adding an extra dimension of excitement to the already engaging lectures. This confirms the results of a recent study by Funnell (2017), which showed that the Australian higher education system is very different from that in other Asian countries (Wang et al., 2015). Results from this study indicate that international students will receive the interactive tool. International students' anxiousness throughout the adjustment period hinders their academic progress (Yu & Wright, 2016).

As a result of the complications, students may lose self-assurance and focus, which can lead to academic withdrawal and distraction (Cowley & Hyams-Ssekasi, 2018). The Quiz Function's Contribution to Active Learning Mentimeter's quiz feature boosted student learning and offered a more exciting and interactive learning environment. A quiz is a great way to break up the monotony of the classroom with some thought-provoking questions for teachers to ask their students (Funnell, 2017). Mentimeter's quiz feature allowed instant assessment of student comprehension (Kuritza et al., 2020).

Students appreciated the opportunity to test their knowledge in real-time and receive immediate feedback. One of the fascinating aspects was the Mentimeter's interaction with real-time quizzes. The lecture quizzes helped students retain information and get involved in discussions. Mentimeter's quiz functionality has been highlighted as an added benefit in most previous research (Funnell, 2017). Results show that students were more engaged in learning and had more fun participating in class activities, thanks to the quiz function. Allowing for Real-Time Feedback and Conversation Between Teachers and Students the Mentimeter app has gained popularity due to its ability to protect users' anonymity. This feature is highly valued in classes where students are anonymously contributing because of the respect it inspires both students and instructors. Mentimeter provides a simple method for students to pose inquiries to teachers in private (Van Daele et al., 2017).

Mentimeter in Teaching and Learning Platform

Using many bits of intelligence teaching approach, Pichardo et al (2021a) discovered that Mentimeter was highly effective. As a result of the flexibility provided by a wide range of questioning situations, educators may better meet the needs of students with a wide range of learning styles, resulting in greater classroom participation and interest. Students are more invested in the learning process while using Mentimeter since their contributions are not limited to random questions tossed out in class but are the product of deliberate thought about the optimal format and type of question to employ for each learning objective (word cloud and text open-ended questions).

According to Walss (2021), for evaluation to be helpful as a training tool, it must provide students with information to evaluate and adjust their learning. Technology like Mentimeter enables teachers to include evaluation in their lessons by expediting the feedback and assessment procedures. Questions can evaluate a student's capacity for assimilating new information. Teachers can identify areas where their students need help, even when the students themselves or their peers cannot do so. This includes conceptual clarity, practical application, and underlying relationships. It allows for continuous evaluation of the learning process by both the instructor and the learner. The anonymous character of the quizzes was praised by both professors and students, who said, "It lets me see if I have comprehended the theory."

When an interactive tool is used, it shows that students feel safe approaching their instructors with inquiries. This interactive tool resulted in better communication between educators and their pupils. The ability to express questions without fear of repercussion greatly relieved the overseas pupils. According to the students' feedback, Mentimeter made it easier for them to have meaningful conversations with their teachers and classmates.

Conclusion

Mentimeter's price is its biggest downside. However, despite the company's educational pricing strategy, few educational institutions buy licenses for their faculty. Class teachers would have to pay cash if they wanted to use the product. A free license of Mentimeter is available for educators to try out, but it only comes with two question slides and five quiz slides. As a result, several instructors who had never used Mentimeter before found it to be a steep learning curve. Several problems arose, e.g. B. in creating slides, displaying results, and integrating slides into Moodle (Pichardo, 2021b).

However, the collaborative, team-based strategy implied that this would be a well-supported effort. Some educators were initially reluctant to use the program because of these issues, but after seeing it being used in the classroom, they began to appreciate its benefits. Some teachers said the interface wasn't as user-friendly as Kahoot, which they preferred for quizzes and competitions because of Kahoot's audio and visual enhancements. Students also seemed to lose some of their initial interest and enthusiasm for using Mentimeter in the classroom over time. Instead of using the full functionality of the program, some teachers used only two or three types of questions.

Several ways the software could be improved were suggested. The ability to modify formulas with LaTeX has been extended to cover both the question and the answer, more fonts and sizes have been made available, and open-ended questions with a more significant character count have been added. In contrast, some educators made extensive use of Mentimeter, with one of them being singled out as a heavy user by application team members.

Students have benefited from the introduction of interactive technology, but there are still areas that could be improved. Effective use of technology required training and education for both students and educators. Recent research by Hof (2020) suggests providing teachers with adequate digital support to make meaningful use of Mentimeter in the classroom. Even if only a few students use it, Mentimeter is not always the ideal choice. Free riders and the unmotivated could not be singled out due to the anonymizing nature of the program. This problem might have been avoided if students entering quiz tournaments were required to use their legal identities instead of aliases. A potential downside of interactive technology is that it can prevent students from practicing verbal explanations and communication skills. Incorporating small group discussions and oral presentations into assessment tasks can help students overcome this deficit.

Technological advances have increased student engagement in the classroom and willingness to speak up during discussions (Skaik and Tumpa, 2022). Based on the results of this study, technological developments are accelerating the transition from an emphasis on the trainer to an emphasis on the learner. Academic honesty and student learning efforts have improved with the help of technology.

Mentimeter's flexibility makes it easy to organize not only what content is presented, but how it is presented (Moorhouse and Kohnke, 2020). Educators can better tailor their teaching to the needs of their students when they receive immediate feedback on their performance. Most educators felt that the program helped them better understand their student's individual learning needs, assess their understanding and performance, and reflect on their pedagogical methods and materials.

However, Mentimeter needs improvement in the area of inclusion to better serve students with visual impairments and other forms of functional diversity. The positive responses from educators and students to the Mentimeter educational application suggest that we explore its other capabilities, how to address the difficulties, and capitalize on the opportunities that Information and Communication Technologies (ICT) offer in the classroom. It would be interesting to see how this compares to other free and paid educational tools in future studies.

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