Impact of E-tools in Teaching and Learning for Undergraduate Students

Kiran Kumar Poloju and Vikas Rao Naidu

Abstract Education technology has reached the greater heights after the intervention of various e-tools and interactive media in order to enhance teaching and learning experience in higher education. Generally, students show interest to participate and involve in the activities rather than listening to faculty lecture during class and flipped teaching plays a vital role to achieve this. The newly joined undergraduate students feel bit difficult to understand the concept of core modules as they don't have any prior knowledge of those modules. This paper shows possible ways to encounter the problem using Socrative and PlayPosit to enhance student performance in their modules during the class. These methods create learning environment among students. The effectiveness of using these practices in teaching is measured through student feedback using Padlet, and it is concluded based on their responses that many advantages are found by using these practices like students enhanced their interest in their modules, and students are able to score good marks in their end semester examination, improved their understanding skills and relational abilities.

Keywords Flipped teaching · Socrative · PlayPosit · Padlet · E-learning · Active learning

1 Introduction

Most of the facilitators in higher colleges use traditional way of teaching to exhibit their knowledge while instructing also called teacher-centered learning. Fry [1] suggested, it is unfortunate, but true, that some academics teach students without having much formal knowledge of how students learn students. As per Biggs and Tang [2], students are not capable of listening to class for more than 15 min which says lectures are often viewed as ineffective learning experiences. To overcome this issue and to

K. K. Poloju (✉)
Department of Civil Engineering, Middle East College, Muscat, Oman
e-mail: kpoloju@mec.edu.om

V. R. Naidu
Vivekananda Global University, Jaipur, India
e-mail: vikasrn@gmail.com

make students to engage for long time, the teacher has to conduct few activities during class by using various e-tools as a part of flipped teaching. Keppell et al. [3] explained that the technology-improved learning expanded student's cooperation in flipped classroom exercises. Smith [4] proposed that learning isn't only a component of individual endeavors to get data and information all things considered and assimilate it. Generally, students in a class are categorized into different groups As per VARK, [Visual (V), Auditory (A), Read/write (R), Kinesthetic (K)], they have their own learning styles. According to Kim et al. [5] research, the use of flipped learning improves student self-awareness and skills of undergraduate students of Korean university. Samantha Corcoran [6] suggested discussion in classrooms makes students to be more active and it is an instrument to be utilized as a part of teaching during class. When it is effectively utilized, it expands students' satisfaction in the class and enhances students' comprehension of ideas which help the greater part of the students in a classroom. Tsang [7] said that discussion "is a trade to exchange ideas where all individuals from the groups have a chance to take an interest and are required to do as such to some degree". As indicated by Ibrahim [8], a mix of various academic methodologies and learning methodologies could be considered by educators to enhance the way toward instructing and learning. This was reliable with Karlson and Janson [9] who found that various learning strategies and specifically in class gaming were helpful and added to the important learning knowledge. The incorporation of classroom addresses with innovation-based strategies was characterized by McCallum et al. [10] as mixed realizing where students have encountered learning in manners by which they are generally agreeable. As indicated by Garrison and Kanuka [11], students demonstrated a normal of 35% more grounded learning results for students educated in blended format in contrast to those learned by face to face teaching. Flipped learning method which can be called as flipped classroom means that student learning activities are flipped Slomanson [12]. In flipped learning method, students involve in the activity and understand the content at anywhere and discuss in which there are many studies revealed that flipped learning is very effective for improving student learning Bergmann and Sams [13]. Teacher can easily reach his/her expectation from student perspective, and students can build their own learning styles which lead to increase in motivation, interest and enthusiasm toward learning. Over the years, the use of Open-source software has grown in various areas including the field of teaching and learning. It is a better way to use software with a lower cost than available market tools, as well as being able to customize the same tool to suit an organization (or a specialization). By integrating the methods and techniques used in collaboration with the open-source tools [14]. Through combining the collaboration methods and techniques with the personalized open-source resources, the students and teachers would be able to achieve more efficient collaborative teaching and learning as well as the teacher would have a better way to deliver the learning outcomes through the software. It is also crucial that whatever learning style is adopted, it is necessary not only for teacher interaction with students to disseminate the information but also as a collaborative learning environment for enhanced learning experience among peers [15].

This paper describes teaching methodology using various e-tools during class and intended to achieve improvements in student consideration and concentration by redesigning approaches to teaching, learning and assessment of offered courses to accommodate fascinating method for learning styles and interesting way of learning styles. The importance of this paper is to determine the effectiveness of e-learning as a part of flipped teaching and active learning during class for undergraduate students. Moreover, benefits with using various e-tools, like PlayPosit, Socrative and Padlet, during class help to enhance student skills and understanding level.

2 Methodology

2.1 Problem Identification

During the implementation of flipped learning, there were few issues and hindrances faced by students. The most basic issue raised by the students were various reasons to class saying that don't have enough time to watch videos and come to class. This issue is considered as the most basic one and the practices specified beneath have acquired changes in student's state of mind and enthusiasm toward flipped teaching methodology. There are few e-tools like Socrative, and PlayPosit helps to assess student knowledge on topic. These practices help to overcome the problem in most of the modules and helps students to focus more on the topic and get interest on the module.

2.2 Teaching, Learning and Classroom Practice

Students don't have much knowledge of the module, and it is turned out to be more troublesome them to get it. In this strategy, facilitator utilizes different technologies and e-tools to encounter the threshold. To do so, various e-tools are implemented during class other than traditional way of teaching. Instructor shall upload relevant videos on learning management system (LMS) and conducting different activities using activity sheets, conducting live activities during class like quiz using e-tools like Socrative and PlayPosit, etc.

2.3 Details of Practice

Nowadays, flipped teaching and learning system has been executing in most of the colleges throughout the world. Various methods were implemented/implementing

during the classes. This report is focused on few e-tools as a part of flipped teaching to enhance student's learning and understanding capabilities.

2.4 Methodology Implemented

Relevant self-recorded videos from YouTube are uploaded to students through Moodle, and facilitator can ask critical questions at any part of video as any mode of question like multiple choice, fill in the blank or short answer, etc. Students have access to view all the questions while watching the video and answer the questions. This makes students to understand the concept of topic, and finally, results are exported from these e-tools and facilitator can know how many number of students are watched and answered all questions.

Finally, during class a quiz is conducted using few e-tools like Socrative to assess student knowledge on topic. In order to reduce the paper usage to collect feedback on practice, Padlet is used to collect instant feedback.

2.5 Enhancing Faculty and Student Learning Styles of Understanding

Since the point of the instructing was to increase awareness of the decent variety of learning styles for students and educators.

For staff, it was vital that they understood the variations of learning styles that existed among students in their modules.

For students, it was vital that they knew and comprehended their own favored learning style, but it was also important to give them information on how they might work around differences between their learning style and the teaching they received.

3 Effectiveness of the Practice

Students' Anonymous Feedback: We trust that student feedback is vital to a specific end goal to assess the execution. It is essentially utilized as a reason for development. Besides, it was noticed that good relationship between student and teacher also enhances the nature of students' work and recognizes the regions of improvement. It is very useful technique. Most the student enjoyed these practices during class and they are completely involved in the activity. The feedback from students is noticed very positive and effective.

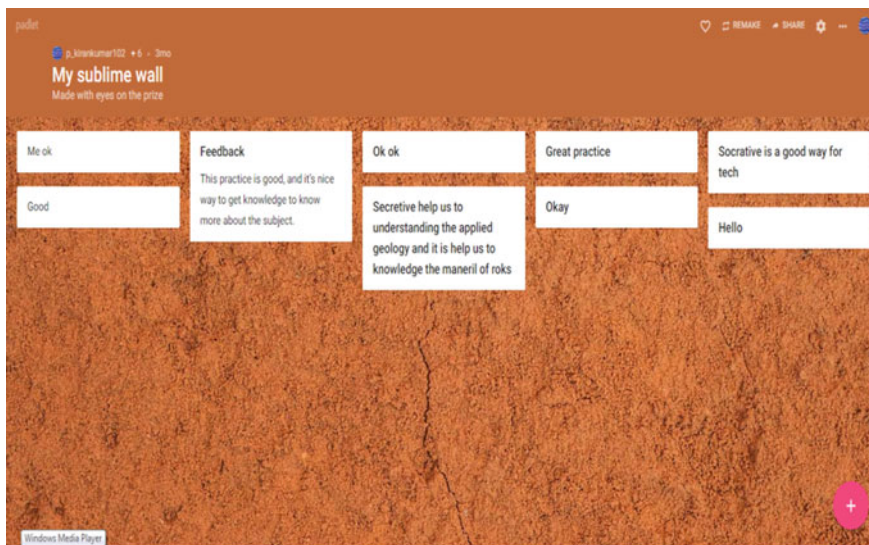As seen from Figs. 1, 2, 3, 4, 5, 6, 7, feedback from students is measured using

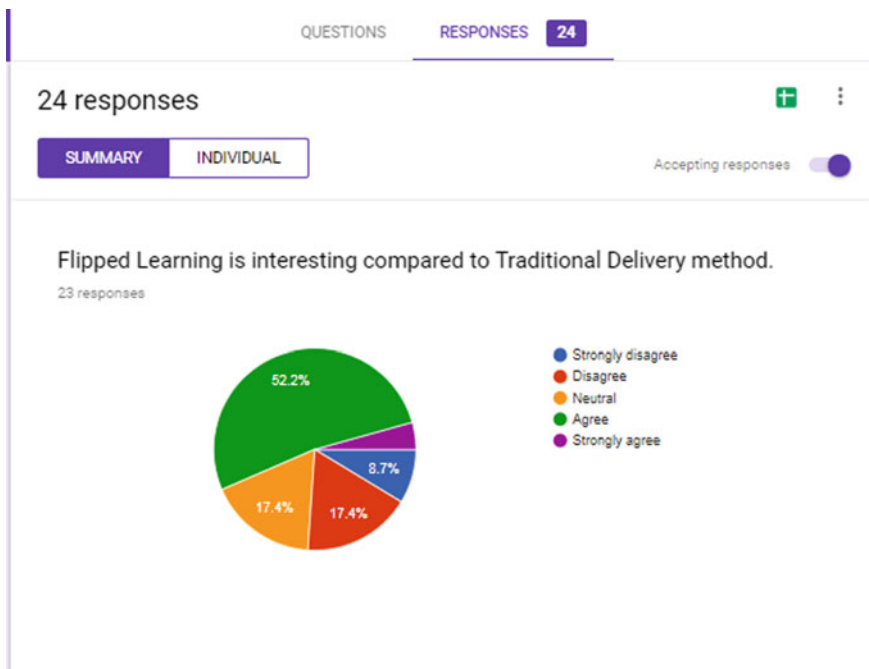**Fig. 1** Student feedback on Padlet

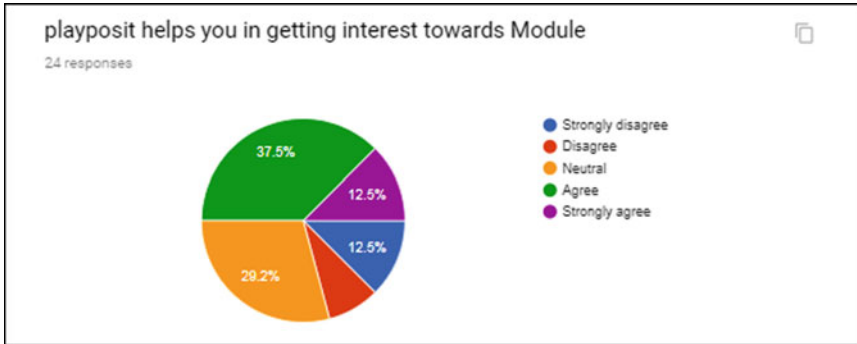**Fig. 2** Student response on PlayPosit

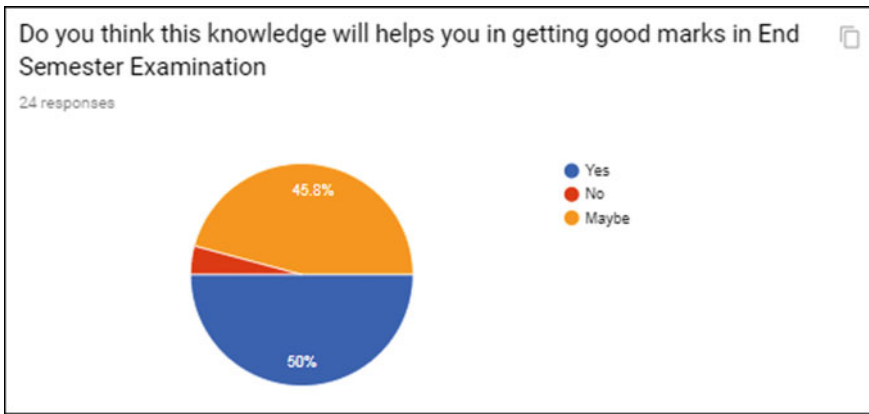**Fig. 3** Student response on PlayPosit

Fig. 4 Student response on PlayPosit
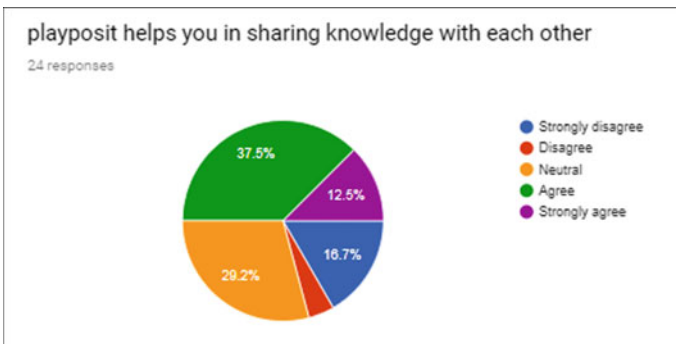

Fig. 5 Student response on PlayPosit

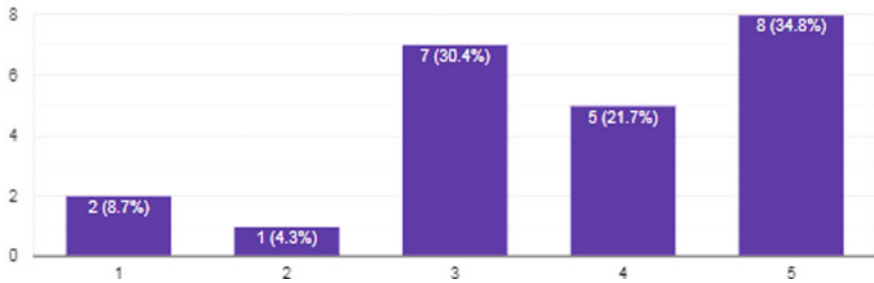## How much you rate this method of learning

23 responses

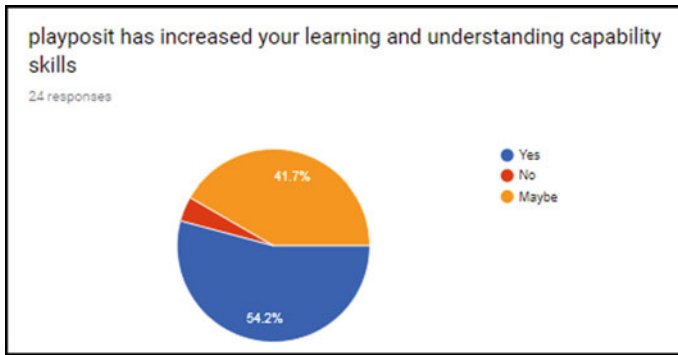**Fig. 6** Student response on PlayPosit

Fig. 7 Student response on PlayPosit

google forms and Padlet (instant feedback), which has resulted in a very positive output.

4 Conclusion

It is observed from the student's feedback that appropriate use of technologies made classes more fun filled and helped a lot in motivating them toward module. It helps in recalling as well as linking their lesson with their study. Students can easily correlate and understand the topic easier. Most of the students are happy with their improved speaking skills and their end semester results. Overall experience through the implementation of this flipped teaching technique was found to be commendable.

However, there are several tools available in the online platform for easy access and download in order to introduce various innovative methods in teaching and

learning. Various free and open-source tools have opened up further opportunities in order to prepare teaching and learning content with an ease.

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