

Online Free Tools for Teachers and Students to Hold Virtual Classes during COVID

ABSTRACT

In March 2019, the World Health Organization announced that the world had been struck by a global pandemic, the Coronavirus. This led to the closure of many private and government agencies organization, including educational institutions, whether schools or colleges. More than thirty countries in the world have enforced educational institution closures and switching to online virtual classes methods. Many countries have started setting up their educational platforms, which has led to students stopping their studies for long periods, while many countries went to search for free educational software to keep students continue with the virtual classroom method. Therefore, many educational institutions have turned towards free programs, due to the financial issues as a result of the Covid-19. Accordingly, this paper presented the effectiveness of using several online software in virtual classes during a single semester instead of using one software or traditional learning. The main purpose of applying several online software is to enhance the quality of engaging the online class and make students more interested in attending the class regularly. Moreover, assist the quality of the used learning and reaching software such as Nearpod, Mentimeter, H5P, and Wooclap for enhancing the learnability environment and greatly improve in understanding. The information used was obtained through the actual online software application during the semester, whether in the pre-class, during the class, or in the post-class. Moreover, the teacher interviews with students at the end of each class helped in developing and identifying the tool style that students prefer and would increase students' enthusiasm for learning. The results indicated that the use of the different online software tools had a greater impact on student's performance and participation than using a single software program or using traditional methods. This method contributed to increasing students' effectiveness and enthusiasm for learning in the pre-class, in-class, and post-class. The rate of student participation using modern methods was 96%, while it reached 70% using one software tool. However, one of the main disadvantages of using online teaching and learning tools is that the free accounts have limited storage that can only be expanded through an upgrade.

Introduction

This is a period of confusion, for educators as well as students, about how the process of studying will be going and how the teaching will proceed. Therefore, it would be essential to implementing a rapid response to overcome the boundaries of this new educational challenge due to the COVID-19. Since this period causes a sudden shift in the learning and the teaching system from the traditional way of teaching to online teaching methods, educators should include various ways of teaching and tools which can be beneficial in managing the learning and teaching process. The educational tools include learning systems and communication tools that can be used in accessing the educational content efficiently. These tools have been created to encourage collaboration, improve student's and teachers' communication and enhance the quality of the academic administration procedures.

Asynchronous learning style allows students and teachers to access the resources like materials and to communicate with each other at any time. The good about online teaching is that students can refer to the class anytime and anywhere. Flexibility in attending classes and interacting with students individually and in groups. Online tools include PowerPoint presentations, materials, videos, activities, a whiteboard for interaction, and screen sharing. The tools allow explaining, observing, and giving feedback simultaneously. Many online application tools provide excellent interaction and enough factuality. Supporting the online tools by using virtual classroom software like MS-Team, Zoom, BigBlueButton, and so on. These tools can be used to improve the online teaching experience and educators should be familiar with how these platforms are working to manage the required materials well. In addition, several software tools are to enhance the educational environment by efficiently implementing the activities considering the technology, infrastructure, method, and user. Moreover, it is really important to say that online tools implement effective communication which is considered to be the main key to effective learning and teaching. Communication platforms help in communicating with a wide number of groups either by messages, virtual rooms, audio calls, and so on. Therefore, educators should be aware of these tools for the sake of creating a better teaching experience and guiding students on how to use them effectively.

Any educational organization should present and design interactive virtual classrooms. With the rapid progress of digital media and its delivery of data on the public Internet, it would be really easy in managing a cooperative virtual classroom. This remote participant allows receiving live feedback and participating in the class by discussing and asking questions. The main aim is to provide a useful software toolset that would help in the teaching process away from the conventional way of teaching. Therefore, many teachers use various tools during their classes to successfully deliver the materials to students. This proposed paper will provide an analysis of different tools for better utilization and delivery.

Methods

This paper discusses a modern teaching method through a variety of use between modern and traditional teaching methods during one semester instead of using one method or one program. As it was applied during the 15-week semester, whether it was for preparing pre-class, in-class, or post-class.

Below is a review of the online software that was used during the different weeks of the semester along with the traditional methods of teaching.

1. Nearpod

The Nearpod is a free online platform used for the visual teaching method. The lecturer creates the presentation using the tools available on the program, whether slides or activates. Then the presentation can be shared with students or other lecturers by sending them the link or a special code number to participate by using smartphones, laptops, or any other smart device. This platform includes many different educational tools that help to present the lesson innovatively.

The Nearpod software has been used in different weeks by importing pre-available PowerPoint slides and including different activities such as write reflections, games, drawing, etc. as shown in figures 1 a, b, c, and d.

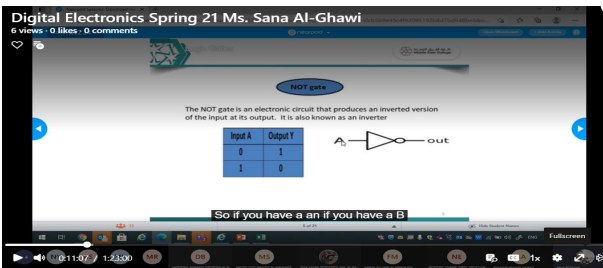


Figure1 (a) : Import pre-available PowerPoint slides

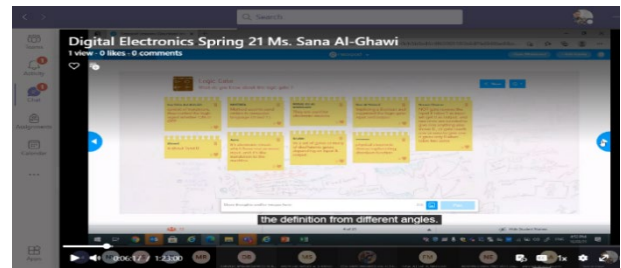


Figure1 (b): Pre-class- Test knowledge before conducting the class



Figure1 (c): In class - the student’s participation

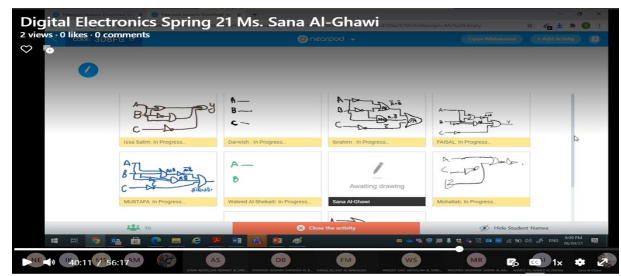


Figure1 (d): Post-class- Formative assessment involvement

2. Mentimeter

Mentimeter is a powerful interactive and easy-to-use online presentation tool. It can be used for creating any fun and interactive occasion or event such as presenting lectures at schools and universities, conducting innovative workshops, performing formative assessments. Moreover, this software is suitable for presenting lectures in all types of educational institutions, either in primary school or higher education. This program can be used easily by

preparing the presentation by including many activities such as slides, images, games, videos, and then display the presentation to the audience to participate using the smart device. It has been used for preparing pre-class, in-class, and post-class, as it showed in figures a, b, c, and d.

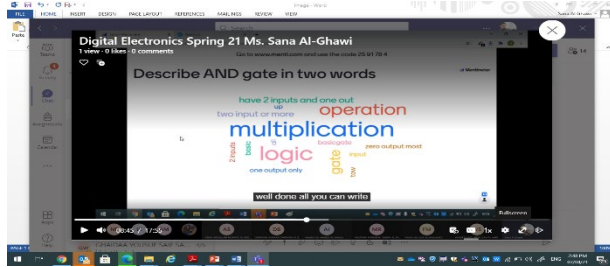


Figure 2 (a): Pre-class- Test knowledge before conducting the class

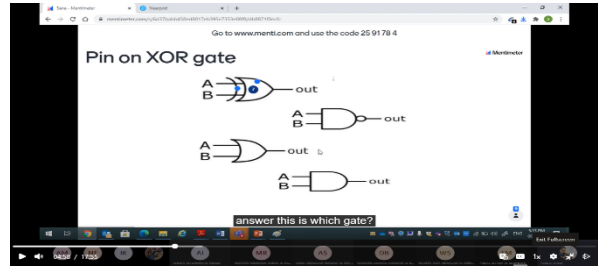


Figure 2 (b): In-class - Using Pin on activity

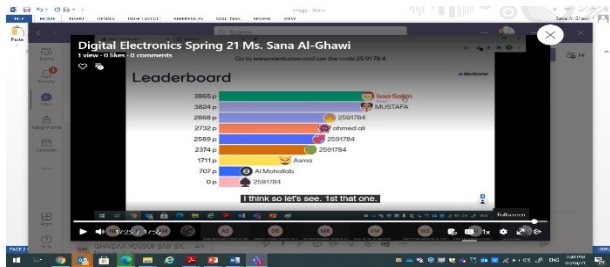


Figure 2 (c): In class - the students participation

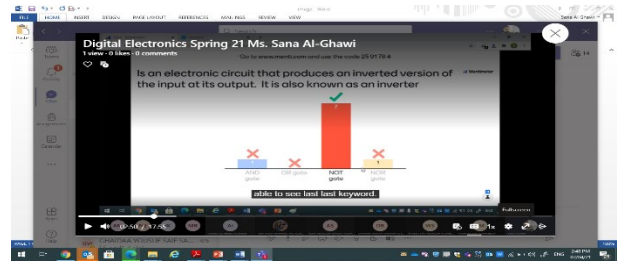


Figure 2 (d): Post class- formative assessment involvement

3. Wooclap

Wooclap is a virtual learning environment and an interactive platform used for improving student engagement in pre-class, during class, and post-class. It can be used along with existing technologies such as Moodle, PowerPoint, PDF files, etc. It includes many interactive elements such as sheets, games, videos, images, and slides. It is a web-based application. Therefore, the participants can log in to the class by signing up using their existing accounts in Facebook, Google, LinkedIn, without downloading any application.

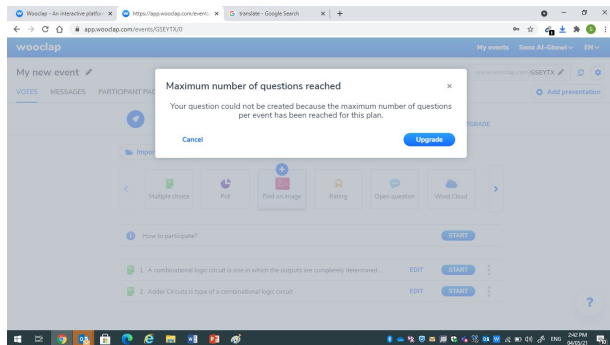


Figure3 (a): Pre-class- Test knowledge need for an upgrade

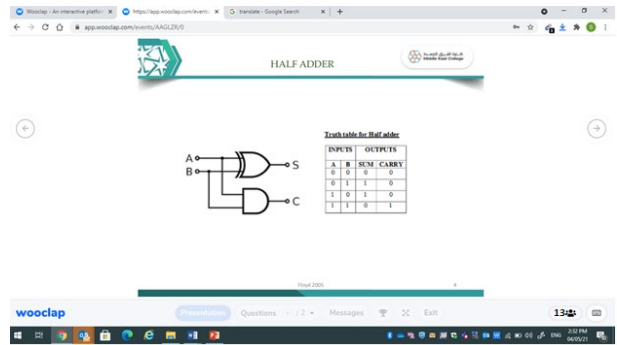


Figure 3 (b): In-class – display of the PowerPoint Explained the content by normal PowerPoint slide with MS-Team.

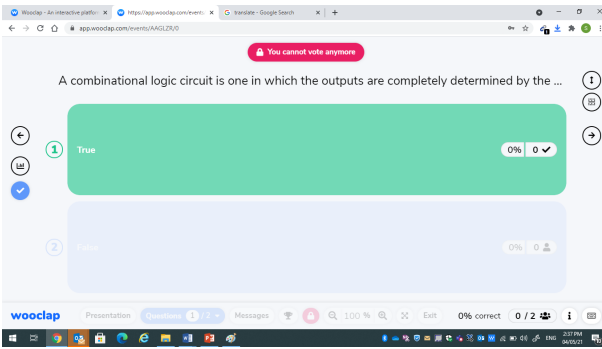


Figure 3 (c): In class - the student's participation

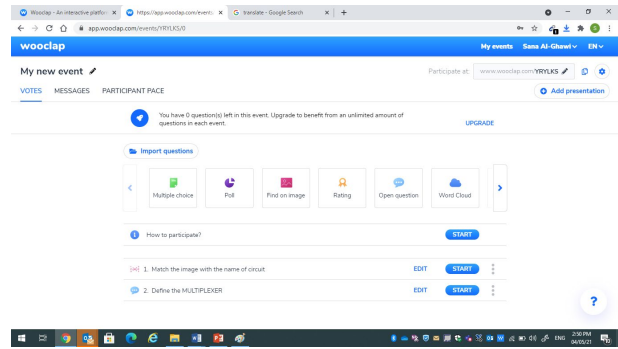


Figure3 (d): Post-class- formative assessment involvement

4. H5P

HTML5 Package is called H5P which is one of the important tools used in education through Moodle. Allowed the teacher to create different activities such as presentation slides, quizzes, interaction videos and implemented three types of strategies (pre-class, in-class, and post-class). H5P is an open tool, free, and licensed with the Massachusetts Institute of Technology (MIT) license. It can use multi interactive content activities and shared them with the students to involve with the activities.



Figure 4 (a): Pre-class- add the interactive question after each topic in the video to test knowledge



Figure 4 (b): In-class - Upload the H5P included the unit

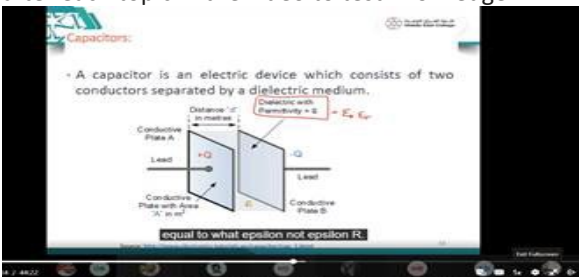


Figure 4 (c): In-class - Explained the content by normal PowerPoint slide with MS-Team to teach the content without using H5P slides.

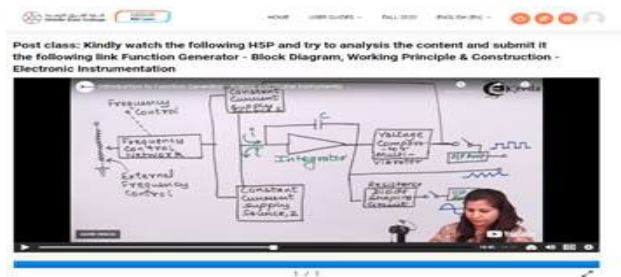


Figure 4 (d): Post-class Formative assessment activities- check the student's understanding of the topic.

Discussions and Results

The results indicated that using the online program had a greater impact on student's performance and participation than the traditional method during the pre-class, in-class, and post-class. Where the tools were examined on students before each class by including some activities and slides. Below is a review of the result obtained by applying the new method in the pre-class, in-class, and post-class.

- Pre-class:

Using the online software in the pre-class contributed greatly to improving students' knowledge and motivating them to search for answers to the topics they missed. This led the students to become aware of the topics that will be discussed in the class before engaging in class discussion. The experience result showed that the Nearpod program has a higher rate of student participation compared with Mentimeter, H5P, and Wooclap. Despite this, other programs also achieved a high participation rate compared to the traditional method, in which the participation rate does not exceed 20%.

Students Response During The pre class

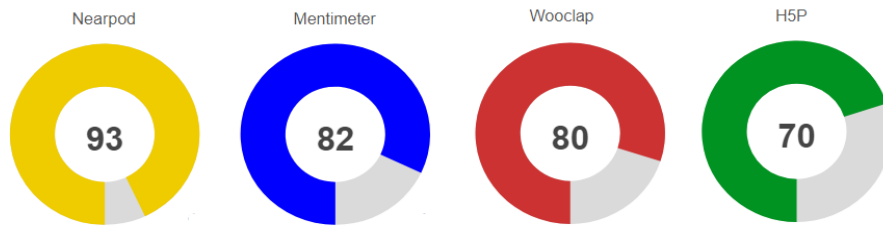


Figure1: Students response during the pre-class

- In class

The students 'prior understanding of the topic contributed to saving a lot of time, which led to the instructors concentrate more on challenging topics during the class. Moreover, it has been observed that the students asking higher-level questions during class and that helps the instructor to gauge student understanding and moderating the class discussion. The experience result showed that the Nearpod software has a higher rate of student participation compared with Mentimeter, H5P, and Wooclap due to the variety of available activities. Despite this, Mentimeter, H5P, and Wooclap also have a high participation rate compared to the traditional method, in which the participation rate does not exceed 45%.

Students Response During The class

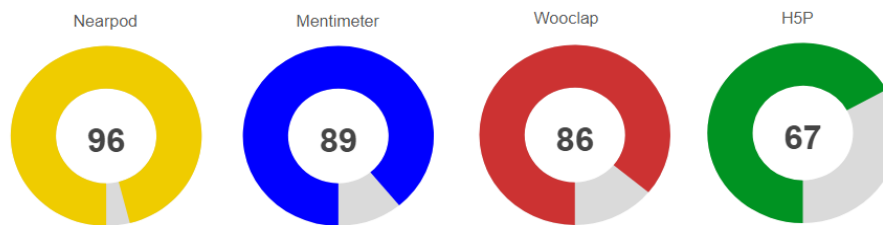


Figure2: Students response during the class

- Post-class

Usually, the post-class is conducted in the form of questions only to test the student's understanding. Using different online software at post-class helped a lot in developing the student's self-discipline and submitting the assigned homework, assignment before the target time. The experience result showed that the Mentimeter software has a higher rate of student participation compared with Nearpod, H5P, and Wooclap. Notwithstanding this, Nearpod, H5P, and Wooclap also have a high participation rate compared to the traditional method, in which the participation rate does not exceed 40%.

Students Response During The post class

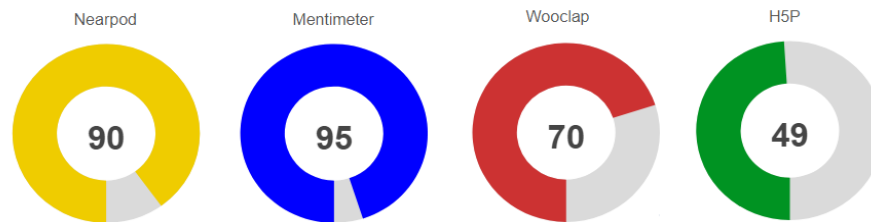


Figure3: Students response during the post-class

Conclusion

Developing the online learning environment in any educational institution is to increase the interaction between the learners and teachers and enjoy the teaching and learning. Also makes the learners remain dedicated to attending the class. The decision of selecting different tools and implemented them during the class is to replace the previous plan which depends more on explaining the contents without any enthusiasm. Use different activities allows the teacher for innovative flexibility in and out of the class and helps the students to reach the learning outcomes most easily. In addition, apply online activities makes the teacher set up different scenarios and request the students to respond. Also, it allows enhancing the eliciting critical thinking of the students. Results of implementing the tools in the class help to understand the ongoing progress of each student. The teacher can enhance the types of strategies pre-class, in-class, and post-class in an efficient way. It allows the teacher to evaluate the students individually. The good practice found in some of the tools like neared is the drawing option which makes the students use an interactive whiteboard and share the individual contribution to the entire class.

Limitations

Several potential limitations were faced during the application of this method by the students, the instructors, and the tenured faculty. However, these limitations are not major obstacles as they can be mitigated through good management. The main challenges that have been faced are that free accounts have limited storage space and features that can only be expanded through an upgrade, more time is required for organizational preparedness as well as for the students to access the online learning environment.

Acknowledgments

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