POWTOON PEDAGOGY: EMBRACING LABORATORY PRACTICES TO A VIRTUAL ENVIRONMENT

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ABSTRACT

PowToon undeniably has an enticing prospect in pedagogical methods. Nonetheless, its persuasiveness in online laboratory teaching and learning delivery is yet to be explored thoroughly by educators. This paper explores the application of PowToon on providing online instructional laboratory practices and assessments on students' return assignments in the form of digital laboratory reports. An animated whiteboard video feature in PowToon is applied to perform the digital content for the instructional laboratory safety guidelines and a step-by-step process of a laboratory experiment. A qualitative descriptive method was used in this study, in which four students were chosen purposively as the study sample. The data were collected using a simple set of questionnaires using the Google Form platform. The majority of the respondents favoured PowToon to be used in an online laboratory and preferred a digital laboratory report as a return assignment. It is highly envisaging that the critical contribution of this study is the solution it provides to address the use of PowToon in the transition of conducting practical works in the traditional laboratory work setting to a technology-enhanced creativity online platform.

Keywords: PowToon, laboratory, online learning, pedagogy, report assessment

1. INTRODUCTION

COVID-19 era has shaped the pedagogical methods into a new normal practice in the education system. It is noteworthy that the education system is experiencing a sudden transition from conventional learning to blended and e-learning. Academicians and students are slowly embracing information technology integration in education and asynchronous learning. In the post-COVID-19 period, a practical method must be integrated into online learning mode without disregarding the valuable hands-on exposure to such facilities and instruments in the laboratory. Hence, it is crucial to assess how universities are currently implementing online lab-based practical experiments to students in the post-COVID-19 period, to achieve learning outcomes while maintaining a high-quality educational experience. Interestingly, PowToon is unarguably a powerful tool in the e-learning platform. Its unique feature is an animated video maker, making it one of the educators' significant surges in usage, and supported by a previous study [1] corroborate that the interactive features in PowToon allowed students to improve their pronunciation.

None of the previous studies has evaluated the application of PowToon in addressing the strengths and limitations that arise in performing online instructional laboratory practices and in the making of digital laboratory reports. Most of the studies only address the advantages of PowToon in learning English in elementary school [1-2, 4-5] and social science [3]. Therefore, to fill the gap, this study would like to investigate the feasibility of PowToon as an e-learning platform in instructional laboratory practices and demonstrate its potential as an assessment tool for students' digital laboratory reports in tertiary education.

2. MATERIAL AND METHOD

2.1 PowToon Animated Whiteboard Video

2.1.1 Laboratory Safety Guidelines and Demonstration of Laboratory Experiments

We used an animated whiteboard video in PowToon as a narrator to briefly explain the instructions on laboratory safety guidelines. First, students performed a video shooting on safety precautions by addressing the 'do's' and 'don'ts' in the laboratory. Students also conducted a simulation on the step-by-step process of a laboratory experiment through video shooting (Figure 2 (A)). The video highlighted the basic use of a compound microscope and the correct technique to observe specimens. Next, all the shooting videos were edited and embedded in the PowToon whiteboard video. Short scripts were designed by the instructor with the help of the students and narrated by the animated whiteboard video corresponding to the shooting videos.

2.2 Submission and Assessment of Laboratory Report

All the inputs from the shooting videos throughout the laboratory session, including the video recording on the specimen observation using a microscope, were integrated into the PowToon whiteboard video. Students then created digital laboratory reports outlining the introduction, objectives, methods, results, discussion, conclusion, and references (Figure 2 (B)). The submission can be made in the form of MP4 and YouTube to the respective lecturer. The lecturer will be evaluating and giving assessment marks based on the designated rubric, which includes the originality of the e-contents, experimental skills, peer collaborations in the video, and creativity.

2.3 Students' Perception and Feedback

A qualitative descriptive method was used in this study, in which four students were chosen purposively as the study sample. The data were collected using a simple set of questionnaires using the Google Form platform as soon as they had created the digital e-content from the PowToon. Their responses were saved to Google Sheet and used to evaluate the application of PowToon as a learning and assessment tool in this study.

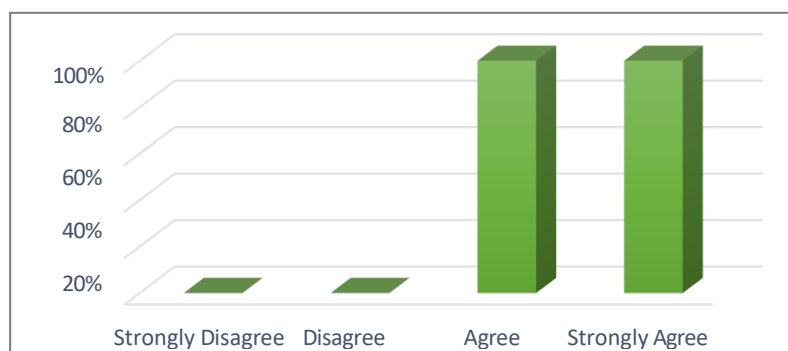## 3. RESULTS AND DISCUSSION

Figure 1: Feedback of Respondents Agreed to Digital Laboratory Reports as Return Assignment

As summarized in Table 2, the main cause of partial familiarity with PowToon application amongst the students could be due to major exposure to the excessive application of typical digital platforms such as Google Meet, Edmodo, Zoom, and Cisco Webex, which may hinder the creativity of the students to engage in the active learning platform. Apparently, it is about time for educators to deploy an effective teaching mechanism that could promote and stimulate interactive learning for students. This is also one of the preparations for Education 4.0, which is derived from Industrial Revolution 4. As COVID-19 still poses threat to global health due to the possibility of more worrisome variants, the open-distance learning (ODL) is still ongoing as a safety measure. Hence, it is crucial to get ready with a rigid plan.

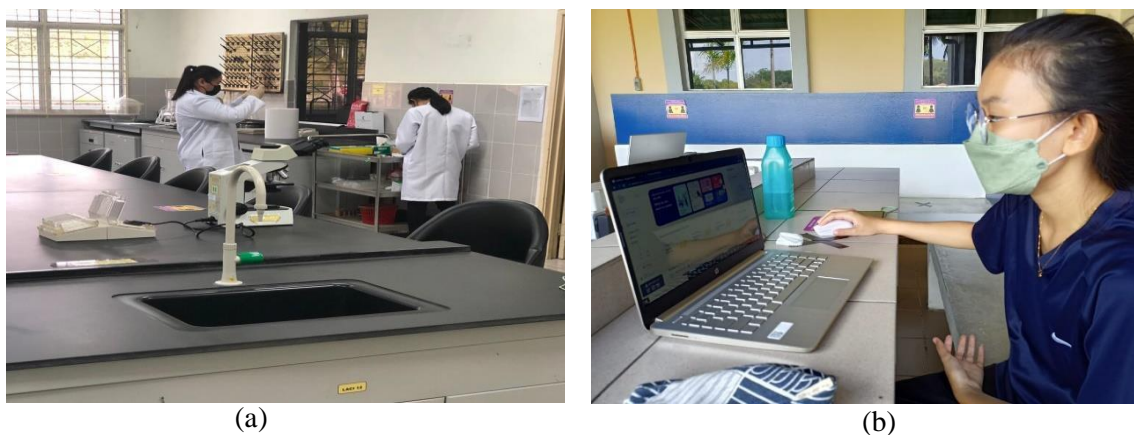(a)   (b)

Figure 2: (a) Video Shooting for Laboratory Experiment Simulation; (b) Students Composing a Digital Laboratory Report using the PowToon Animated Software

Table 2: Summary of Student's Feedback

Indicator	Feedback
Degree of familiarity with PowToon application	All of the students were partially familiar with the application of PowToon application
The best feature of the PowToon application in the virtual online laboratory experiment	All of the students were agreed that PowToon need to apply in an online laboratory with the following justifications; • The animated video makes the learning process easy to understand • It is an ideal tool for creating a video presentation with engaging contents • Interactive features that help for information processing • Help to reinforce motivation in learning activities
Preferences on PowToon to be integrated into a virtual online laboratory experiment	All of the students agreed that PowToon should integrate into a virtual online laboratory experiment
Preferences on laboratory report in digital form using PowToon digital content	All of the students preferred a laboratory report in digital form using PowToon

As depicted in Figure 1, the received responses are overwhelming. The students provided dominant answers and positive perceptions that laboratory reports should be digitalised. This result agrees with the study [6] that formative assessment, which includes making digital laboratory reports via PowToon, can address the teaching and learning's strengths, weaknesses, and efficacy. Creating a digital lab report to fulfill formative assignments will allow students to be more creative in creating expository and persuasive e-content [6], grasp instructions accordingly, and be proactive in task executions. Students were motivated and keen to explore the audio, attractive template, and animation in PowToon [7]. As conventional laboratory reports are burdensome, composing digital lab reports using the e-content from PowToon is perceived as the other alternative for the students in the pandemic era. Making a conventional laboratory report from scratch is not a cup of tea for students. They do not enjoy doing a laboratory report while the other assignments from the other lecturers are piling up. The scenario will result in less motivation and lead to late submission of the laboratory report, or the worst the case scenario is poor execution of laboratory reports.

The application of PowToon also makes the lecturers' task easier to build e-content for their lecture. By providing an animated video from PowToon, which highlights the simulation of safety guidelines and a step-by-step of conducting laboratory experiments, students could get a clear picture of what to do next despite being unable to attend the laboratory physically. The digital content of PowToon can be saved and used in future classes. It could be used for the upcoming semesters, subject to changes. With a designated PowToon assessment rubric, it is effortless for the lecturers to assess the student's digital laboratory report. During the pandemic, lecturers face difficulties conducting face-to-face laboratory experiments and somehow postpone the lab session and resort to drastic assessment by merely asking students to watch any relevant YouTube video for their laboratory experiment.

This investigation, however, disregards the drawbacks of the PowToon as students are still not able to experience hands-on practice in the laboratory work setting. Preparing a digital lab report could be troublesome as it demands an internet connection and limited access to Pro features in PowToon [7]. Lecturers may find it task-demanding as they need to prepare from scratch and learn to explore PowToon. Instead, they use Google Meet, Skype, Edmodo as one-way interaction with students and are not willing to invest their time to establish an interactive e-learning platform. Nevertheless, lecturers need to know how to diversify and spice up the teaching and learning atmosphere using the PowToon application. Indeed, this newly proposed mechanism requires the lecturer's strong commitment, dedication, and passion for initiating enjoyable teaching and learning culture.

4. CONCLUSION

Based on this study, it can be concluded that the key contribution of this study is the solution it provides to address the use of PowToon in the transition of conducting practical works in the traditional laboratory work setting to a technology-enhanced creativity online platform.

REFERENCES

[1] A. Syafitri, A. Asib and S. Sumardi, An application of powtoon as a digital medium: enhancing student's pronunciation in speaking. IJMMU, 5(2) (2018) 295-317.

[2] C. Semaan and N. Ismail, The effect of using Powtoon on learning English as a foreign language, Int. J. Curr. Res. 10(05) (2018) 69262-69265.

[3] Y. D. Puspitarini, M. Akhyar and Djono, Development of video media based on powtoon in social sciences, Int. J. Educ. Res, 4(2) (2019) 198-205

[4] K. W. Hari, Powtoon for teaching English in the second language in the second grade, Int. J. English. Lit, 3(3) (2019) 21-27.

[5] P. Yulianti, The use of powtoon as media to enhance EFL student's English skill, Int. J. Educ, 1(1) (2021) 32- 42. Proceedings of the tenth conference on applied linguistics and the second English language and technology conference

[6] C. R. Ramachandran and M. M. Mahmud, The role of powtoon as formative assessment tool for higher education institutions, 2nd International Conference on Educational Assessment and Policy (ICEAP), ISBN: 978-602-259-182-5 (2019).

[7] Y. Purnamasari and E. H. Maolida, Students' voices on the use of powtoon as a tool to optimize their skills in designing presentation, Proceedings of the Tenth Conference on Applied Linguistics and the Second English Language Teaching and Technology Conference, ISBN: 978-989-758-332-2 (2018).