PORTRAYING EDUCATOR'S UTILIZATION OF TECHNOLOGY IN POST-PANDEMIC ERA: A PILOT STUDY

Marisca Revani Putri

Bina Nusantara University

Email: mrputri@binus.edu

Abstract
This study is a pilot study that the aimed to capture an initial condition of educators in Indonesia towards the utilization of technology in post-pandemic era nowadays. There were 30 participants in this pilot study. The participants were educators who are varied in background. The participants are teachers, lecturers, and practitioners in the education sector. A brief survey was conducted on 3 July 2023 in order to capture the challenges faced by the educators in utilizing the technological tools in the classroom or during the teaching-learning process; to know the educator's familiarity with technological tools that are commonly used in the teaching-learning process; and to gain data of what technological tools have been used by the educators up till this time. This pilot study found that there were 12 challenges faced by the educators in utilizing the technological tools in the classroom or during the teaching-learning process. And it was concluded that all educators have utilized various technological tools that enable the students to have better learning experience in the classroom, especially in assessment phase.
Keywords: Pilot Study, Technology Enhanced Learning (TEL), Core Skills in Industry 4.0

INTRODUCTION

Education situation before and after COVID-19 pandemic era has change significantly (Kerres & Buchner, 2022). Different situations happened in education related to the utilization of technology. The research written by Kerres & Buchner noted that educators utilized technology in education setting were varied depend on their situation and condition. In some cases, technology were used partially, since not all intitution ready with the sudden & urgent situation at that time. As per result, the utilization of technology during pandemic was also influenced by the condition of socio-economic, cultural, national, as well as social condition of the nation. This research also found interesting findings that noted students with limitation in technology resources, both their ability as well as the lack of facilities were having loss in learning. After the pandemic, the teaching-learning process were encouraged to integrate the technology in the teaching-learning process in order to stimulate the collaboration among students. Further, Obloberdievna & Rustamovna (2022) also found that the overall transition into collaborative e-learning environment in the classroom has been satisfied the students in experiencing their learning. Obloberdievna & Rustamovna also emphasized that the utilization of technology in the learning setting of medical education were crucial for teaching resources.

With all the situations faced by the educators as well as students after the pandemic era, it is important to investigate the challenges faced by educators and students in conducting the teaching-learning process in the classroom.

Thus, this pilot study keens to find out the answers to the following research

questions:

Research Question 1: What are the challenges faced by the educators in utilizing the technological tools in the classroom or during the teaching-learning process?

Research Question 2: How is the educator's familiarity with technological tools that are commonly used in the teaching-learning process?

Research Question 3: What technological tools have been used by the educators up till this time?

Yet, this pilot study was limited to gain conclusions from the educator's side. While the student's perspective can be found out in the future.

LITERATURE REVIEW
Technology Literacy in Industry 4.0

Covid-19 Pandemic was a game-changer in many life sectors, as well as in education. The pandemic has quickened the urgency of technology utilization be implemented in the education setting in all aspects. As reported on the World Economic Forum in May 2023, there are various core skills needed in the future. The top 10 core skills that will need to be mastered are as follows:

Table 1. Top 10 Core Skills in World Economic Report 2023 (Zahidi, et al., 2023).

1) analytical thinking
2) creative thinking
3) resilience, flexibility, and agility
4) motivation & self-awareness
5) curiosity and lifelong learning
6) technological literacy
7) dependability and attention to detail
8) empathy and active listening
9) leadership & social influence
10) quality control

Looking at the report, technological literacy has become one of the top 10 core skills that need to be mastered. Thus, educators need to prepare the students to be ready to fight, survive, and win in society after they graduate and face the real jobs in industry 4.0.

Besides those top 10 core skills, the report also presented interesting facts about the job that is popular and the job that will vanish in the future as captured in the following table:

Table 2. Top 10 Popular Jobs in World Economic Report 2023 (Zahidi, et al., 2023).

AI & Machine Learning Specialists
Sustainability Specialists
Business Intelligence Analysts
Information Security Analysts
Fintech Engineers

Data Analysts and Scientists
Robotics Engineers
Big Data Specialists
Agricultural Equipment Operator
Digital Transformation Specialist

And the following table mentioned the lost job as reported in the World Economic Report May 2023:

Table 3. Top 10 Lost Jobs in World Economic Report 2023 (Zahidi, et al., 2023).

Bank Tellers and Related Clerks
Postal Service Clerks
Cashier & Ticket Clerks
Data Entry Clerks
Administrative & Executive Secretaries
Material-Recording & Stock Keeping Clerks
Accounting, Bookkeeping, and Payroll Clerks
Home Appliance Installers and Repairers
Legislators and Officials
Statistical, Finance, and Insurance Clerks

From Table 2 and Table 3 above we may conclude that the top 10 popular skills required the top 10 core skills as in Table 1. While the lost job list doesn't require people to master the top 10 core skills. Interestingly, the top 10 lost jobs are lost because of the presence of technology literacy as needed in Industry 4.0 era.

Technology Enhanced Learning

The utilization of technology in teaching-learning process is not a new thing. Yet, Casanova, Moreira, & Costa noted that the successful implementation of technology in the education setting was affected by careful planning, design, reflection, and assessment (2011). Shea et. al (2003) on Casanova, Moreira, & Costa (2011) mentioned that there are seven aspects that should be fullfilled by an online learning, as follows:

Table 4. Seven aspects of successful online learning Shea et. al (2003) on Casanova, Moreira, & Costa (2011)

Interaction between students and lecturer/teacher
Collaboration among students
Constructive feedback
Time on task
Active learning techniques
Communication towards expectation
Respects among students

Aligned with the Report of World Economic Forum May 2023, Casanova, Moreira, & Costa (2011) also noted that the teaching-learning process that utilized technological tools in the classroom should promote the developments of decision-

making, problem-solving, manipulating, interpreting, hypothesizing, and experimenting in order to master the top 10 core skills that will be needed in the future.

METHODOLOGY

According to Paulin-Graf & Mandel (2019), there are three types of preliminary study, namely pilot work, feasibility study, and pilot study. Each type of preliminary study has its own features as follows:

Pilot work aims to gather background information from various aspects of a whole study that was conducted before feasibility study or pilot study. In its practice, data collection and data interpretation may be included in the process of pilot work. Further, the aspect of pilot study in preliminary study is fostered in feasibility study. The feasibility study aims to examine the viability of a study in anticipation of conducting a whole scale study. Different from those two types of preliminary study, pilot study is a small-scale study that involves a small number of people that will be examined in the larger group of study. In pilot study, researchers may define the effectiveness of data collection and analysis in the planned research. Thus, in pilot study, hypothesis or research problems can be built. Further, in pilot study, assessment of outcomes and feasibility testing can be included as well. Yet, those three types of preliminary study may contain qualitative data or quantitative data (Doody & Doody, 2015).

Hence, this study is categorized as a pilot study since the aim of this study is to capture an initial condition of educators in Indonesia towards the utilization of technology in post-pandemic era nowadays. There were 30 participants in this pilot study. The participants were educators who are varied in background. The participants are teachers, lecturers, and practitioners in the education sector. A brief survey was conducted on 3 July 2023 in order to capture the challenges faced by the educators in utilizing the technological tools in the classroom or during the teaching-learning process; to know the educator's familiarity with technological tools that are commonly used in the teaching-learning process; and to gain data of what technological tools have been used by the educators up till this time.

Data tabulation using Microsoft Excel was conducted in order to ease the data categorization and data interpretation.

FINDINGS AND DISCUSSION

Based on the data categorization and data interpretation of this pilot study, there were 12 challenges faced by the educators in utilizing technological tools during the teaching-learning process, namely:

Table 5. Challenges faced by the educators in utilizing technological tools during the teaching-learning process

Challenges
1. Fit the technology with classroom's needs
2. Students can be tricky while using technology
3. Teacher's ability in operating the technology
4. Internet Connection
5. Student's ability in operating the technology
6. Technical problem on device

7. Student's insecurity in utilizing the technology
8. The lack of facilities from the institution
9. Too focus on the utilization of technology rather than the LO's achievement
10. Troubleshooting ability
11. Difficulties in multitasking
12. Adaptation time for using a new technology

The twelve challenges faced by the educators were aligned with the research result conducted by Asalla, Putri, & Pradipto (2017). They studied the critical success factors of e-learning in higher education setting and found 17 success factors that influence the success of e-learning conduct. Aligned with the results of the study, challenges number 3-Teacher's ability in operating the technology, 4-Internet Connection, 6-Technical problem on device, 8-The lack of facilities from the institution, and 11-Difficulties in multitasking in this pilot study as also noted on the previous study conducted by Asalla, Putri, & Pradipto in 2017 before the pandemic struck our earth. The research found that factors such as the readiness of the educators & students in using the technological tools put an impact on how successful e-learning may be conducted. The research found that the location or demographics of the e-learning process takes place also matters since different places may have different internet quality or strength to facilitate the e-learning process. Further, the facilities and support from institutions also play important roles in the successful conduct of e-learning activities to be carried out.

Further, answering the next research question, whether the educators were familiar or not toward the utilization of technological tools that can be used in various teaching-learning phases or not can be drawn through findings on Table 5.

Table 6. Familiarity of educators toward the utilization of technological tools in various teaching-learning phases

Technological Tools/Apps	Usage	Percentage
Google Forms	Assessment	23%
Quizizz	Assessment	19%
Kahoot	Assessment	17%
Padlet	Brainstorming, Presentation/Lecturing, Assessment	15%
Mentimeter	Assessment	9%
Trello	Brainstorming, Presentation/Lecturing	8%
Microsoft Forms	Assessment	6%
Miro	Brainstorming, Presentation/Lecturing, Assessment & Portfolio	4%

From Table 2 above, it can be seen that mostly educators used technology to help them in assessing the students. Moreover, during the discussion during the data gathering, there was an educator who asked for a technological tool that may prevent the students from cheating. This question was related to the challenges faced by the educators on Table 5, especially challenge number 2 about how tricky the students can be. Table 6 also indicated that only a few educators used technological tools for brainstorming, presentation/ lecturing, and building portfolio. This situation might be triggered by the nature of assessment in which

students assessments were seen as an integral stage in measuring the student's learning result (Obloberdievna & Rustamovna, 2022). Thus, Obloberdievna & Rustamovna stateg that extablishing assessment through technology tools is an advantageous teaching strategy.

Yet, the next findings of the last research questions of what technological tools have been used by the educators up till this time showed on Table 7 that the educators also utilized technological tools for various purposes.

Table 7 Various technological tools that were used by educators up till now

Technological Tools/ Apps	Usage	Percentage
Telegram	Communication/ Educational Access	12%
WhatsApp	Communication/ Educational Access	16%
Google Classroom	Presentation/ Lecturing/ LMS	12%
Microsoft Teams	Presentation/ Lecturing/ LMS	12%
Google Meet	Presentation/ Lecturing	12%
Gather-town	Presentation/ Lecturing	8%
Flipgrid	Presentation/ Lecturing & Assessment	8%
LINE	Communication/ Educational Access	4%
Worldwall	Presentation/ Lecturing & Assessment	4%
Orai	Presentation/ Lecturing & Assessment	4%
Quizlet	Assessments	4%
ChatGPT	Learning Resources	4%

From Table 7 above, it can be implied that the educators have utilized technology for various purposes though the distribution of the total number of educators who implemented was still not evenly distributed well. Yet, the good news is that all educators already have awareness on the importance of technology utilization in the teaching-learning process.

CONCLUSION & RECOMMENDATIONS

The findings and discussion have answered the research questions of this pilot study. To conclude, there are 12 challenges faced by the educators in utilizing the technological tools in the classroom or during the teaching-learning process. The challenges faced by the educators in utilizing the technological tools in the classroom or during the teaching-learning process were aligned with the research conducted by Asalla, Putri, & Pradipto (2017) about the critical success factors of e-learning in higher education setting. Answering the research question 2, the educators were highly familiar with technological tools that are used in assessment phase during the teaching-learning process, such as Quizizz, Kahoot, as well as Padlet for formative assessment. And for research Question, there were 12 other technological tools that have been used by the educators up till this time to facilitate the student's learning experience in the classroom.

Since this is a pilot study, the future study needs to conduct this study in a larger scale with a larger number of participants from various cities in Indonesia. So that, the whole condition of challenges and practice of technology enhanced learning in Indonesia can be captured well from Sabang to Merauke.

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