DIGITAL LEARNING ASSESSMENT: INVESTIGATING THE NEEDS OF LECTURERS AND STUDENTS IN TEACHER PROFESSIONAL EDUCATION PROGRAM

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Abstract

The advancement of technology demands that teachers use technological media and continuously explore their potential for making improvements in teaching. In line with this, the Teacher Professional Education Program (PPG) strives to bring about these improvements and is mandatory for prospective professional teachers to possess. Regrettably, the current PPG Program at FKIP Unsri lacks a digital assessment component. Hence, the significance of this research lies in identifying the needs of both students and lecturers for a digital assessment. The findings will contribute to the design of further developmental research, aiming to create a comprehensive set of assessment items tailored to the digital realm. The respondents were purposively taken based on one main criteria; they were active lecturers and students in the New Technologies for Teaching and Learning Course at PPG Unsri 2023. As the result, there were 2 lecturers and 46 students participating as research samples. A questionnaire was distributed to the respondents. It consisted of 16 questions divided into 5 aspects of data collection. The data obtained was then descriptively analyzed and interpreted. The result shows (1) students and lecturers require the development of interactive questions tools compared to those currently available in the LMS of PPG. (2) Students and lecturers agree that the developed product should be able to assess students' understanding in the cognitive/knowledge domain at various levels of Bloom's Taxonomy. Based on the assessment by lecturers, the development of questions will vary from level C3 to C6. However, it is not ruled out that there may be questions of LOTS level included. (3) Students and lecturers are familiar with the use of the LMS as a digital tool in assisting learning. Therefore, there should be a further research design in developing the digital learning assessment for the course.

Keywords: Bloom's Taxonomy, interactive questions, LMS, needs, and PPG

Introduction

The use of technology in learning is unavoidable. This occurs as a logical consequence of the development of information and communication technology. As a process of knowledge transfer closely related to the transfer of information and the use of communication, the connection between the advancement of Information and Communication Technology (ICT) and its use in teaching and learning becomes increasingly clear. In its application, learning technology develops with four main characteristics, namely: (1) implementing a systemic approach; (2) using learning resources as widely as possible; (3) aiming to improve the quality of human learning; and (4) being oriented towards individual instructional activities (Mukminan, 2012; Suparman, 2004).

The definition of learning technology itself has varied among experts over time. Initially, learning technology was associated with the use of audio-visual media. In the next stage, learning technology was defined as a systematic effort in designing, implementing, and evaluating the entire learning process for a specific purpose, based on research on the learning and communication processes of humans using a combination of human and non-human resources to make learning effective. Finally, the Association for Educational Communications Technology (AECT) translates learning technology as the theory and practice in the design, development, utilization, management, and evaluation of processes and resources for learning (Ramli, 2012). The evolution of these definitions implicitly indicates that learning technology is experiencing evolution. New technologies constantly emerge, leading to shifting definitions.

The unavoidable implication of this change is the necessity for every professional teacher to adapt and learn the new technologies. One real example is the widespread use of Learning Management Systems (LMS) as a learning platform. LMS allows the provision of learning materials online, interaction with learners, and efficient evaluation (Lien, 2023; Rauf et al., 2023; Suriaman et al., 2023). In the context of assessing the mastery of course materials by the Pre-Service Teacher Education (PPG) Prajabatan program LMS, the development of interactive assessments based on Computer-Based Testing (CBT) becomes crucial. When a teacher does not keep up with developments, they will be left behind. Therefore, in PPG Prajabatan, there is a course titled "New Technologies in Teaching and Learning" provided to equip students.

PPG is a program initiated by the Ministry of Education, Culture, Research, and Technology in an effort to implement the National Teacher Education Standards (Menteri Riset, Teknologi, dan Pendidikan Tinggi, 2017). After completing the program, prospective teachers are expected to be able to fulfill their primary role in cultural transformation within school activities, particularly in student interactions with various learning resources to achieve targeted learning outcomes (Direktorat Pendidikan Profesi dan Pembinaan Guru dan Tenaga Kependidikan Direktorat Jenderal Guru dan Tenaga Kependidikan, 2023; Indiati & Sumardiyani, 2010; Usman, 2006). In the South Sumatra Province, Sriwijaya University has been designated by the Ministry of Education as one of the three Teacher Education and Training Institutes or known as LPTK or *Lembaga Pendidikan Tenaga Kependidikan* (Direktorat Pendidikan Profesi Guru (PPG), 2023)

In its implementation, the PPG classes at FKIP Unsri follow the curriculum guidelines issued by the Directorate of Teacher Professional Education (Direktorat Pendidikan Profesi Guru, 2023). One of the offered courses is "New Technologies in Teaching and Learning or *Teknologi Baru dalam Pengajaran dan Pembelajaran*" which is designed for students at all levels with aim of exploring and integrating new technologies, media, and learning strategies. Unfortunately, upon checking the LMS

page for this course, the research team found that the course currently lacks a series of interactive Computer-Based Testing (CBT) assessments that can automatically measure students' mastery of the material. This can be understood as the PPG Program at FKIP Unsri is in the process of transitioning from the LMS managed by the Ministry of Education to the Unsri e-learning platform (Tim Revitalisasi LPTK Universitas Sriwijaya, 2023). This situation certainly contradicts the initial mission mentioned, where professional teachers should be individuals with the ability to adapt to the latest technological developments. Therefore, the research team deems it appropriate to change this condition. Based on the information presented, the research team concludes that the LMS of PPG FKIP Unsri needs a series of questions with reliability, differentiation, and difficulty index, all based on technology/LMS. This research is based on numerous studies indicating that the use of Learning Management Systems (LMS) in education can enhance the quality of student learning. Particularly, during the Covid-19 pandemic a few years ago, LMS became an effective means of distance learning, facilitating educators and students to share materials, engage in discussions, complete assignments, and so on (Adawiah, 2022; Fauzi, 2018; Mahfudhillah, 2022). While these studies targeted the use of LMS as a medium for teaching and assessment in non-professional study programs, there hasn't been specific research addressing assessments on LMS for students in professional study programs such as PPG. Therefore, the researchers identified a research gap that needs to be addressed.

Nevertheless, to bring about the digital assessment product, researchers must undergo various research and development stages. Therefore, considering the background and urgency outlined, the research team unanimously decided to conduct a study to investigate the students' and lecturers' needs of interactive assessment on the New Technologies for Teaching and Learning Course. The detailed findings of needs' analysis, in which discussed what the students' and lecturer's perspectives and needs about digital assessment for the New Technologies for Teaching and Learning Course, are expounded upon in this article, representing a smaller segment of the overall stages conducted.

Literature Review

Interactive Assessment: CBT Based

CBT or Computer Based Testing is an evaluation system which utilizes computer to help educators, including teachers, lecturers, trainers, and others. They use CBT to evaluation processes, for instance test administrations, scoring, and giving feedback (Luecht, 2016; Novrianti, 2014; Parshall & Guille, 2016). Furthermore, the CBT system is explained as a derivative of the development of the Computer Assisted Instructional (CAI) system, which is described as computer-assisted learning specifically for the assessment field, covering a set of questions and automated scoring processes (Bennett & Zhang, 2016; Murniati, 2017).

In its implementation, CBT provides more convenience for both administrators and users, including (Davey, 2011) & (Dolan & Burling, 2018):

- Computer-Based Testing provides a richer and more realistic test experience (such as test-takers having the opportunity to listen to audio media on a laptop), which is not found in paper-based testing so that allowing for more complex and targeted measurement.
- Computer-Based Testing can improve the precision and efficiency of measurements.
- Computer-Based Testing enhances the comfort of both participants and test administrators, such as self-supervision, instant scoring at the end of the test, integrated data management systems, and so on.
- Computer-Based Testing is capable of assessing learners for greater depth of knowledge and skills.

- Computer-Based Testing provides a true picture of learners' abilities.
- Computer-Based Testing assesses learners more fairly.

In addition to the mentioned advantages, some other equally important functions are that computer-based testing offers secure implementation, openness to innovation, and simpler testing equipment requirements compared to paper-based testing (Ejim, 2017).

In relation to interactivity, CBT will be able to provide feedback directly at the end of the test, allowing test-takers to understand the mistakes made and take note of suggested improvements through the system. The LMS program PPG has a feature for providing comments on each answer submitted by participants. In its implementation, CBT is similar to the process of learning using a computer. Generally, this activity will be centered around computer laboratories connected to the internet (Luecht, 2016; Murniati, 2017). To smoothly implement CBT, the administrators must meet several requirements, such as (1) the number of computer devices corresponding to the number of users, (2) adequate internet connection, (3) the availability of supporting software if needed, and (4) the availability of complete supporting computer accessories, such as headsets, mouse, and others.

Teacher Profession Education Program, FKIP, Universitas Sriwijaya

The PPG program at the University of Sriwijaya is managed under the FKIP administration. Referring to website of Direktorat Pendidikan Profesi Guru (2023), there are two categories of learning systems: In-Service Teacher Education Program (PPG Daljab) and Pre-Service Teacher Education Program (PPG Prajabatan). PPG Daljab is intended for teachers who already have a NUPTK (Teacher Registration Number), while PPG Prajabatan is designed for fresh graduates who have not obtained NUPTK but aspire to become professional teachers. PPG Daljab employs a fully online learning method with the assistance of a Learning Management System (LMS). Meanwhile, PPG Prajabatan utilizes a blended learning method that combines face-to-face classes with LMS. The LMS referred to here is a facility provided by the Directorate of PPG. Similar to other educational programs, the PPG program targets specific learning outcomes encompassing four essential aspects: pedagogical, personality, social, and professional. To achieve these targets, LPTK (Teacher Training and Education Institution) develops a curriculum based on the principles of an activity-based or experience-based curriculum. Therefore, the PPG program does not use the term 'courses' but rather 'learning activities'. The LPTK organizing the PPG program, FKIP Unsri, implements a curriculum that includes the development of learning tools through workshops, field experience practices (PPL), and reflections on PPL activities (PPG FKIP Universitas Sriwijaya, 2023)

Courses in the PPG Prajabatan Program are divided into two categories: core courses and selective elective courses. The course discussed in this research is one of the twelve selective elective courses offered to PPG PGSD (Elementary School Teacher Education) and PPG PAUD (Early Childhood Education Teacher Education) students. Referring to the course structure published by the Directorate of PPG and its socialization video on YouTube PPG GTK Kemdikbud (Direktorat Pendidikan Profesi Guru, 2023 & PPG GTK Kemdikbud, 2023), the New Technologies in Teaching and Learning course has a weight of 2 credit hours with seven topics. The seven topics covered in this course are as follows: Technological, media, and learning method developments; 21st century learning environments, innovative technologies, and changes in learning; Designing technology and media for learning; Utilizing digital devices or digital devices; Web tools in learning;

Technology and media for distance learning; and Enhancing learning quality with new media and multimedia.

Equipped with the above topics, after accomplishing a semester module of the New Technologies in Teaching and Learning Course, PPG program participants are expected to be able to: explain the development of technology, media, and learning strategies; analyze the characteristics of 21st century learners, adapt to 21st century learning environments, adapt to innovative and renewable technologies, understand the responsible and ethical use of digital devices, be prepared to make changes in learning, design technology and media for learning, practice instructional design with the ASSURE approach (Hardianto, 2022).

A Selective Course of PPG: New Technologies for Teaching and Learning

The courses in PPG Prajabatan are divided into two categories, namely core courses and selective courses. Furthermore, the course investigated in this research is one of the twelve selective courses offered to the students in the PPG PGSD (*Pendidikan Guru Sekolah Dasar* or Primary School Teacher Education). Furthermore, referring to the course structure published by the Directorate of PPG (2023) and its socialization video on YouTube PPG GTK Kemdikbud (2023), the New Technologies for Teaching and Learning course has a weight of 2 credit hours with seven discussion topics. The seven topics covered in this class are as follows (Hardianto, 2022):

- Technological, media, and learning method developments;
- 21st century learning environment, innovative technologies, and learning changes;
- Designing technology and media for learning;
- Utilization of digital devices;
- Web tools in learning;
- Technology and media for distance learning;
- Enhancing the quality of learning with new media and multimedia.

With all the topics mentioned, students in the PPG Program are expected to be able to explain the development of technology, media, and learning strategies, analyze the characteristics of 21st century learners, adjust to the 21st century learning environment, adapt to innovative and renewable technologies, understand the responsible and ethical of digital devices, be prepared to make changes in learning, design learning technologies and media, and practice instructional design with the ASSURE approach.

Methodology

Research design and approach of the study

This research is a part of development study (design research), categorized under qualitative methods. In its implementation, the researchers modified the development stages based on the Dick, Carey, and Carey instructional design theory (Dick et al., 2015). The modifications include (1) general instructional needs analysis, (2) conducting instructional analysis, (3) writing specific instructional objectives. The research utilizes instruments such as (1) questionnaires containing general instructional needs analysis and (2) literature reviews as the foundation for the research

method in the stages of writing specific instructional objectives and developing learning assessment materials.

Research site and participants

This research was conducted at the Teacher Training and Education Institution (LPTK) PPG, FKIP, Universitas Sriwijaya, Palembang, South Sumatra, located at Jalan Ogan, Bukit Besar, Palembang 30128, Phone: (0711) 580085. The study involved participants from students and lecturers in the Pre-Service Teacher Education Program (PPG Prajabatan) in the Elementary School Teacher Education (PGSD) study program for the Odd Semester of the active academic year 2023-2024. The purposive sampling technique was implemented in this study. The researchers selected the samples through one main criterion, in which the lecturers and students must be actively enrolled themselves in the New Technologies for Teaching and Learning Course. Therefore, the participants for this research were 2 lecturers who were teaching the course and 46 students who were taking the course. The research was carried out following the timeline of the revitalization grant guidelines, spanning 4 months from August 2023 to November 2023.

Data collection and analysis

This research is implementing survey design which means the researchers conducted methodologies in quantitative research to gather information from samples. Through surveys, the researchers aim to understand and describe the attitudes, opinions, behaviors, or characteristics of the target samples (Creswell, 2012). The instrument used in this research was a questionnaire that was distributed to the respondents, both students and lecturers, through online media. The questionnaire distributed to students consists of 16 questions divided into 5 aspects of data collection, including personal information, PPG participants' perceptions, experiences in the New Technologies in Teaching and Learning course, technology in learning, and students' needs for assessment in learning. Meanwhile, the questionnaire distributed to lecturers contains 18 items covering 4 aspects of data, namely personal information, assessment of the New Technologies in Teaching and Learning course in the PPG Prajabatan Program at FKIP Universitas Sriwijaya, students' problem-solving abilities, and student motivation. The questionnaire contained both close-ended and open-ended questions. The researchers used two studies Özden et al. (2004) and Ramadhani et al (2022) as guidance to produce the questionnaire items. In addition, the questions underwent expert validation to ensure the instrument's appropriateness in measuring the phenomena. Finally, to interpret the data, the researchers conducted a descriptive analysis of the questionnaire's responses.

Findings and Discussion

Results analysis on students' needs of interactive assessment on the new technologies for teaching and learning course

After collecting data, the researcher found that 65% of program participants stated that the New Technologies in Teaching and Learning class was interesting, while 24% found it very

interesting. The remaining 11% stated that the course was quite interesting. Not a single respondent considered the course uninteresting. This is because they believe that this learning experience brings positive impacts to them, such as acquiring new knowledge related to technology, gaining skills with technology relevant to 21st-century student skills, and recognizing the professional obligation of teachers to enhance knowledge of 21st-century technology. Regarding the difficulties faced by students during the course, 82.6% of students stated that they did not encounter significant difficulties. However, there were still 12.4% of students facing various challenges.

From several received responses, it can be concluded that students' constraints are quite diverse, ranging from practical issues, facilities, to the Learning Management System (LMS) used. This certainly notes that students indeed require hands-on practice, and the indication for future evaluations would involve questions leaning towards the analysis level, demonstration, and operational verbs at the C4 level and above. Interestingly, despite facing challenges, all participants or 100% of students still share the same perspective that the New Technologies in Teaching and Learning course addresses the changes and developments in current technology. Participants agree that the teaching profession today is inseparable from the use of technology both inside and outside the classroom. Moreover, the expectation to create digital students will likely be fulfilled because the process of creating digital teachers is also ongoing through PPG classes.

Table 1. *Students' Perceptions*

No	Findings	%
Classroom experiences		
1	The New Technologies in Teaching and Learning class was very interesting.	24
2	The New Technologies in Teaching and Learning class was interesting.	65
3	The New Technologies in Teaching and Learning class was quite interesting.	11
Challenges		
1	Students did not encounter significant difficulties.	82.6
2	Students faced various difficulties.	12.4
Perception		
1	the New Technologies in Teaching and Learning course addresses the changes and developments in current technology.	100

Continuing with the questionnaire, respondents were also asked to explain the assessment process conducted by lecturers in the class. Unfortunately, the data shows a somewhat concerning trend regarding assessments, where 67% of participants stated that class lecturers did not provide written assessments. Meanwhile, only 33% of participants stated that lecturers had ever given written assessments. This could be explained by the field experience in PPG classes where classes are required to use the ministry's LMS, which has not significantly provided clear assessments to participants. If lecturers only rely on the PPG LMS, students will rarely be exposed to written assessments. Additionally, some respondents stated that the assessment activities conducted by lecturers are generally self-reflective in nature. Answers like these become strong reasons why the

development of interactive questions in the New Technologies in Teaching and Learning course is mandatory.

Furthermore, 33% of participants who stated that lecturers had given written assessments explained that assessment activities were filled with written questions, but the variety of test formats was not very diverse. Regarding feedback, 52% stated that they did not receive feedback from class lecturers on the tasks they submitted on the LMS. The remaining 48% stated that they received feedback, but with some comment notes. For example, students did not immediately receive feedback after submitting assignments. They had to wait for some time or days until the lecturer finished providing feedback. However, participants actually want an interactive assignment pattern similar to computer-based testing (CAT). When they submit their answers, they want to know whether each answer is correct or incorrect. The follow-up question in the questionnaire for students is about the frequency of lecturers giving written assessments in one semester. If connected back to the previous item where only 33% of students stated that lecturers had ever given written assessments, it can be concluded that the respondents answering this frequency level are very few. Respondents' answers vary widely; some stated that lecturers always give assessments at every meeting.

Table 2. *Students' experiences*

No	Findings	%
Assessment practice		
1	Lecturers did not provide written assessments.	67
2	Lecturers had ever given written assessments.	33
Lecturers' Feedback		
1	Students did not receive feedback.	52
2	Students received feedback.	48

Some respondents appear to be unsure about how many times they are given assessments by lecturers in one semester. This is because they recently joined the PPG, so it has only been a few weeks. However, respondents stated that they received assignments from lecturers as outlined on the PPG LMS, which usually have been implemented 2 to 5 times. The next item is about the use of technology in the classroom. 91.3% of respondents agree that lecturers have utilized technology in the learning process in the class, such as the PPG LMS, websites deemed important for teaching, online discussion spaces, and other productivity applications. However, there are still 8.7% of respondents who find that the use of technology has not been found in their classes. Nevertheless, they did not specify why. This data implies that lecturers have accustomed students to the use of LMS in learning. This means that if lecturers provide interactive test products with real-time feedback when submitting assignments, students will not be confused about the operation later. This will be an effective activity for both PPG participants and lecturers because it does not consume much time to correct each question individually. Additionally, students do not have to wait long to see the results of their assignments, satisfying their curiosity.

Table 3. *Technology in learning*

No	Findings	%
	Technology in classroom learning	
1	Lecturers have utilized technology in the learning process in the class	91.3
2	Lecturers haven't utilized technology in the learning process in the class	8.7
	Digital assessment implementation	
1	Very often	45.7
2	Often	19.7
3	Sometimes	19.7
4	Never	15.2
	Kinds of technology used	
1	LMS only	65.2
2	Other (such as Google Classroom, Canva, YouTube, Zoom)	34.8
	Assignment format	
1	Project	82.6
2	Short essays	8.7
3	No assignment given	8.7

For digital assessments, 45.7% of respondents answered that lecturers use them very often because lecturers teach using the PPG LMS, and within it, there are assignments to be implemented. 19.7% of participants stated often. For the "sometimes" category, there were 19.7% of participants. The remaining 15.2% stated never. When continued with the question about the question format, 82.6% of participants answered project assignments, and generally, this type of assignment is already integrated through the LMS. The rest answered short essays (8.7%) and never had assignments (8.7%). This condition is a factual reason why various question formats must be provided in the LMS, not just in the form of project assignments. After all, the more diverse assessments given to students, the better the learning process. 65.2% of class participants say that classroom activities do not use other technologies or applications during the learning process, but the remaining 34.8% use Google Classroom, Canva, YouTube, and Zoom as alternative applications besides LMS. As a follow-up, the research team asked participants about their need for interactive assessments beyond just assignments with time-consuming feedback, or sometimes no feedback at all. The result is that 80.4% of participants feel the need for specific development related to interactive assessments. Furthermore, respondents believe that the development of interactive assessments can truly measure students' understanding of the material presented. Additionally, the development of this product is expected to reduce the waiting time for participants to receive the results of the assessments, making the interaction between lecturers and students more interactive.

Table 4. *Students' needs for digital assessment*

No	Findings	%
1	Participants feel the need for specific development related to interactive assessments.	80.4

Results analysis on lecturers' needs of interactive assessment on the new technologies for teaching and learning course

Not only PPG students were asked to fill out the questionnaire, but also class lecturers. In this study, two lecturers returned the forms, both of whom are from the PGSD study program. From the answers provided, the researcher can conclude that the lecturers consider the entire activities of the New Technologies in Teaching and Learning course to have been going well and in accordance with the guidelines in the PPG LMS. The two lecturers also agree that the assessments carried out are formative and summative, where each assessment is conducted at different times and in accordance with the timeline in the PPG.

Lecturers also agree that the assessments conducted are in line with the learning objectives of each meeting. However, addressing the issue of interactivity, one of the lecturers suggests that the PPG LMS should have a feature where students can comment in response to the feedback provided by the lecturer. In addition, the types of assessments given are considered relevant to the needs and characteristics of students, effectively measure learning achievements, and are well-integrated with technology.

Responding to the interactivity issue mentioned by the lecturer earlier, the development of interactive CBT-based assessments on the LMS is considered the best current method for measuring students' theoretical understanding. However, due to the demands of PPG that only allow lecturers to teach following the central PPG LMS in detail, both lecturers find it somewhat challenging to develop questions for the class independently. Moreover, a lack of understanding of interactive assessments is cited as another reason why lecturers have not attempted to develop their own questions. Lecturers also assess that there are still students who are not proficient in using technology as a learning medium in class because they are considered unfamiliar.

Regarding the possible development of questions, the researcher also inquired about the cognitive/knowledge domain level of students in the Bloom's Taxonomy categories. Unfortunately, lecturers stated that students fall into the category of "less capable" of discussing questions at the Higher Order Thinking Skills (HOTS) level. They generally still operate at the C3 level, where in the revised version, this level involves using ideas and concepts learned to solve problems in real situations. The application here can be interpreted as the application or use of laws, formulas, methods, and principles in a different context or situation. The sub-category of applying processes includes applying, calculating, dramatizing, solving, discovering, manipulating, modifying, operating, predicting, implementing, and solving (Nafiati, 2021). Despite this, students still show motivation to learn well.

Answering the research questions, it was agreed among students and lecturers that they need the existence of interactive assessment on the New Technologies for Teaching and Learning Course. This finding underscores the growing recognition of technologies. They are the most favorable option for in-class activities. Some studies discussed about the implementation of technologies for teaching and learning processes. For example, Jannah, Mahardikha, and Istiningsih (2023) proposed Quizizz Paper Mode to Improve Fifth Grade Students' Learning Motivation. From their study, it was found that Quizizz Paper Mode had significant contribution towards the students learning motivation so that this simultaneously improved the study results as well. Furthermore, Wahyuningtias, Azzahra, Sodik, and Muizzah (2023) claimed that technologies drove the users to practicality context. This eventually took the form of procedures that utilize existing and adequate

in-classroom technologies to generate learning ideas. So, it is not surprising if 100% respondents thought the New Technologies in Teaching and Learning was interesting. Learning or Teaching with the help of technologies was proven helpful and dynamic. This positive perspective was regarded as improvement signal for the classroom activities. The researchers believe it was a vocal reason for us to continue the R&D process.

Not only students, lecturers also had the same perspective toward technologies in classroom activities. They agreed that the New Technologies class had been administered as assigned by the Directorate PPG guidelines so that the students can later be ready to function technologies in practical classroom procedures. This condition of course affirms many studies regarding the use of technologies to help teachers, starting from professional development, classroom teaching, and so on. For example, a study from Sinaga, Harefa, & Alexander (2023) talked about the utilization of technological advances and motivation in learning activities at school to improve teacher professionalism. They described that technologies were not only beneficial for the students but for the teachers as well.

Relating the concept of "digital native", "net generation", "millennials", or even "i-generation", where those terminologies were used differently by certain authors Oblinger, Oblinger, & Lippincott (2005), Prensky (2001), Rosen (2011), and Tapscott (1998), researchers can conclude that respondents, both students and lecturers, were all classified into digital natives, despite of their ages. 82.6% students claimed that they have not faced any difficulties on technologies used in classroom. They can implement the technologies well and it is supported by the lecturers' responses. They explained that there were only few students who were not sufficient technology users. Therefore, the class could run smoothly when the lecturers invited the students to access PPG LMS, supporting websites, and other online tools. The students can receive information regarding digital technologies pretty fast. They don't get troubles in parallel process and multi-task as long as technologies are available to help.

These digital skills of course require more challenges of classroom interactivity through technology used. Not only the teaching and learning, but also the evaluation process. Unfortunately, the data shown that students felt lack of interactivity, starting from variety of test format, immediate feedback of tests done, and the range of measurement applied. The lecturers encountered this condition due to the PPG LMS used. They did not have a chance to develop their own assessment products since the LMS still has feature limitation. For example, one of the lecturers thought that PPG LMS should have a feature where students can comment in response to the feedback provided by the lecturer. Luckily, LPTK at FKIP Unsri has initiated to upgrade the internal LMS which can be an alternative for lecturers and students to have more interactive learning, teaching, and evaluation processes.

As described earlier, the development of varied questions is highly needed for classes in PPG. This is evident from the 67% of respondents who stated the absence of written assessments provided by the lecturers. Generally, lecturers only follow the guidelines from the central LMS, which has determined both the material and assignments. Unfortunately, this is also what causes students to feel monotonous during learning because of the lack of variety. Isn't it true that many studies suggest that to keep the class motivated, teachers must provide a variety of activities in the class (Indragani et al., 2021; Wahyuningsih, 2021), including assessments? Therefore, agreeing with the opinions of student and lecturer respondents, the development of questions is not only about creating variety but also creating a measure of cognitive understanding for the participants. The

creation of questions is focused on the C4 level and above. However, there are still some questions created within the C4 level and below.

Since this study was a part of R&D designs, which is constructing items for interactive digital assessment of the New Technologies for Teaching and Learning course, the researchers found it crucial to construct the TIU (*Tujuan Instruksional Umum*) based on the open-ended questionnaire results. TIU can be translated as General Instruction Objectives. It was then constructed such as the following: "Students are able to identify, analyze, compose, compare, create, evaluate, and assess materials on New Technology in Teaching and Learning."

Meanwhile, for TIK *(Tujuan Instruksional Khusus)* can be described into points. They are described in Table 5. Following the instruction objectives, the responses showed that the variety of test formats were also needed by the students. Project assignments were dominantly given by lecturers, 82.6% students said so. Therefore, they agreed that various format of questions need to be develop so that they can have access to more interactive assessment, such as multiple choices and matching question. In relation to the next stage of R&D design, researchers would consider the test or question format suggested by the research samples as the interactive digital assessment items.

Tabel 5. *Specific instructions objectives*

No	Objectives
1	Students are able to identify, analyze, compose, compare, create, evaluate, and assess materials from Chapter 1 in the course of New Technology in Teaching and Learning.
2	Students are capable of identifying, analyzing, composing, comparing, creating, evaluating, and assessing materials from Chapter 2 in the course of New Technology in Teaching and Learning.
3	Students are capable of identifying, analyzing, composing, comparing, creating, evaluating, and assessing materials from Chapter 3 in the course of New Technology in Teaching and Learning.
4	Students are capable of identifying, analyzing, composing, comparing, creating, evaluating, and assessing materials from Chapter 4 in the course of New Technology in Teaching and Learning.
5	Students are capable of identifying, analyzing, composing, comparing, creating, evaluating, and assessing materials from Chapter 5 in the course of New Technology in Teaching and Learning.
6	Students are capable of identifying, analyzing, composing, comparing, creating, evaluating, and assessing materials from Chapter 6 in the course of New Technology in Teaching and Learning.
7	Students are capable of identifying, analyzing, composing, comparing, creating, evaluating, and assessing materials from Chapter 7 in the course of New Technology in Teaching and Learning.

However, this study was only limited to narrow scope of participants, which may have restricted the depth and comprehensiveness of the identified needs. By focusing solely on a specific group of participants, the research may have not captured the full range of perspectives and experiences related to the topic under investigation. Consequently, the findings may lack

generalizability to broader populations. It is of course limiting the applicability of the research outcomes. Thus, it is recommended to broaden the scope of respondents to include a more diverse range of individuals, such as students and educators from different departments and semesters.

Conclusion and Implications

Here are some conclusions drawn from the survey results from students and lecturers. Both students and lecturers express the need for the development of interactive question tools compared to those currently available in the existing PPG LMS. There is an agreement among students and lecturers that the developed product should effectively measure students' understanding across various cognitive/knowledge levels in Bloom's Taxonomy. Based on the evaluation from lecturers, the development of questions will vary from level C3 to C6. However, there is a possibility of including questions at the LOTS (Low Order Thinking Skills) level. Students and lecturers are already familiar with the use of the PPG LMS as a digital tool to aid in learning. Therefore, the development will continue to use the LMS as a platform but will shift to the Universitas Sriwijaya LMS. The research team will develop questions based on student suggestions, including multiple-choice questions, complex multiple-choice questions, and matching questions. Each developed question item will be integrated into the Universitas Sriwijaya LMS for easy access by PPG students from various departments taking the Technology in Teaching and Learning course. Based on the findings and conclusions, it is recommended to gain data from a more diverse range of participants, such as students and educators from different departments so that the development of digital assessment can be done comprehensively. Disclosure statement

Disclosure statement

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