

ONLINE FORMATIVE ASSESSMENT PRACTICES AMONG TEACHERS

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Abstract

Online Formative Assessment is now an important aspect of school management in Malaysia in line with digital developments in the world of education. The purpose of Formative Assessment is to track the level of mastery of students through Assessment for Learning and Assessment as Learning which is carried out continuously in teaching and learning either through oral, written or observation methods. However, the implementation of online formative assessment presents challenges to teachers especially in the aspect of facilities and skills to apply digital technology. Accordingly, this concept paper aims to discuss the practices and methods of online assessment performed by teachers as well as identify the digital skills of teachers in the aspects of the implementation of online assessment. This concept paper is constructed based on a literature review of several domestic and foreign articles related to online formative assessment and teachers' digital skills in assessment. Based on the findings of the analysis from previous studies, formative assessment practices that are often used to assess students online are group discussions, portfolios, presentations and quizzes using Google Classroom, Google Meet, WhatsApp and Telegram applications while digital skills among teachers are at a moderate level. Thus, this concept paper also presents some suggestions for improving the quality of digital skills and teachers' strategies for online assessment.

Keywords: Online Formative Assessment, digital skills, practices, activities, methods

INTRODUCTION

Online formative assessment according to the definition of the Curriculum Development Division is still the same as the concept of face-to-face assessment in the classroom. However, the use of internet mediums, applications and communication equipment must be in place for the assessment to be carried out successfully whether assessed through oral, written and observation. Among the suitable communication equipment used for online assessment are telephones, computers, tablets, facsimile machines and so on. While communication applications are like messaging systems, voice, e-mail or video conferencing. Examples of applications that can be used are such as Google Meet, Telegram, WhatsApp and zoom. The Ministry of Education Malaysia also provides the Digital Educational Learning Initiative Malaysia (DELIMa) learning platform or other suitable learning platform and allows teachers to access Google Classroom as well as learning applications such as Quizizz, Kahoot, Word wall and Padlet. Various learning activities such as project work, quizzes, presentations, demonstrations and others can be done online using appropriate learning platforms (Curriculum Development Division, 2021). The Kearns study, (2012) lists five online assessment practices namely coursework, online discussions, fieldwork, quizzes or tests and presentations. Among the five categories, coursework is most often followed by online discussions, field studies, quizzes or tests and the least used is presentation while Meccawy et al., (2021) stressed that online assessment should use formative assessment through course work, projects and quizzes.

However, the transformation of the Malaysian Education system in Classroom Assessment (PBD) has challenged teachers in implementing it online (Maslan & Mohd Nor, 2020). Accordingly, the problems of internet access, physical and geographical distance with students as well as the need for technological equipment for communication are a concern to teachers in ensuring that assessment practices can be done accurately (Kearns, 2012; Maslan & Mohd Nor, 2020). This problem has made it difficult for teachers to implement the online assessment process because teacher-student interactions do not occur or are not face-to-face (Joshi et al., 2020; Perwitasari et al., 2021) compared to PdP in classrooms where all gestures and pupil behavior can be clearly observed (Beebe et al., 2010; Razali, 2021). Moreover, teachers are difficult to change, unskilled in computer maintenance and poorly integrate the use of technology to implement teaching and learning (Ismail, M. 2020; Ismail, S. 2016; Oriji & Amadi, 2016). Most prefer to use conventional methods as opposed to online teaching (Idris & Ali, 2011). As a result, many teachers have moderate levels of technology skills and less integrate technology in teaching and learning (Ambikapathy et al., 2020; Bebell & Kay, 2010; Hamzah et al., 2014). This has affected Malaysia's achievement for science subjects in Trends in International Mathematics and Science Study (TIMSS) 2019 where the achievement decreased due to the side effect of lack of use of digital technology in assessment among science subject teachers as shown in Figure 1. This effect occurs because they are more influenced by experimental activities involving hands-on using apparatus and materials existing in school laboratories (Ministry of Education Malaysia, 2019a).



Figure 1: Malaysia's Achievements in Science (MOE, 2019a)

In addition, Kent and Giles, (2017) revealed that 95% of teachers are unsure of their ability to use technology while teaching. This proves that not all teachers have the potential to use technology to be incorporated into their teaching (Baker et al., 2012; Oriji & Amadi, 2016). Therefore, to ensure that teachers have high confidence in implementing online assessment, teachers should receive technology professional development training that focuses on online strategies, methods and techniques so that teachers' self-efficacy in implementing online teaching using technology can provide results. positive to pedagogical practice (Razali et al., 2020; Simmons, 2021). Thus, high teacher effectiveness will guarantee the commitment of teachers to perform a task to ensure effective school management (Gobalakrishnan & Ambotang, 2019; Jusoh et al., 2020). Accordingly, this concept paper aims to discuss formative assessment practices and identify teachers' digital skills in implementing online assessment.

SIGNIFICANCE OF THE STUDY

Studies related to online assessment are important because the Twelfth Malaysia Plan (2021-2025) has stated that the quality of education in the Malaysian Education system should be improved. Several things need to be reviewed, especially from the aspect of student performance assessment. To that end, the existing assessment system will be reviewed on an ongoing basis to enable more exploratory learning opportunities to be incorporated into teachers' teaching and student learning strategies. In the meantime, the Malaysian Education Development Plan (2013-2025) states that the assessment of students should be conducted holistically that includes knowledge, skills and values. In this regard, in line with the development of technology in the world of education, the Ministry of Education Malaysia (MOE) will launch the Digital Education Policy. This policy focuses on the use of digital to produce a digitally fluent and competitive generation (Che Kassim, 2021) and increase students' mastery of digital technology, enrich quality digital content, empower teacher competencies, and cultivate the use of digital technology among educational leaders (Jidin, 2021). Therefore, educators need to be sensitive and in line with national goals so that educational objectives achieve the goals and can produce quality students.

RESEARCH METHODOLOGY

This study uses a literature review approach to the latest research findings on online formative assessment. The literature sources referenced are from domestic and foreign journal articles in the field of formative assessment. The steps of conducting this study are as shown in Figure 2:



Figure 2: Steps of Conducting the Study

The methodology of this study was conducted based on Systematic Literature Review (SLR) with the use of terms relevant to the study that has been conducted by researchers through several leading journal databases. This study looks at the elements of online formative assessment practice orally, in writing or observation and the digital skills of teachers in facing the world of virtual education. A literature review was conducted covering journals and previous research articles in and outside the country to identify the main components of online formative assessment practice. This concept paper is conducted based on the review and analysis of literature review research.

First, the research was conducted using the Google search engine. Table 1 shows the terms used to search for journals in leading databases. The use of terms such as ‘online formative assessment practices’, ‘assessment activities’, ‘assessment methods’, and ‘digital skills’ were used. However, the information obtained is very limited. Therefore, a search for terms in English is also done to obtain various sources such as ‘online assessment’, ‘online assessment practices’ and ‘digital competencies’. The Boolean search operator ‘AND’ is used to focus the results of the article being searched. The referenced databases are Google Scholar, Scopus, Sci-Hub, Dimension and Eric. The third step is that the selected articles are in the range of publication from 2007 to 2021. The results of the articles found were analyzed according to the theme of the discussion of this study, namely from the aspect of online formative assessment practices and digital skills of teachers. The search terms below are applied to each database source by displaying the number of articles available on it.

Table 1: Terms used to search for articles in leading databases

Terms	Scopus	Eric	Dimension	Google Scholar
“ <i>Pentaksiran formatif</i> ” AND “ <i>atas talian</i> ”	-		-	25
" <i>Amalan pentaksiran formatif</i> " AND " <i>atas talian</i> "	-	-	-	5
"Online formative assessment"	18	67	1584	2430
"Online assessment practices "	18	76	76	184
" <i>Kemahiran digital</i> " AND " <i>guru</i> "	-	-	-	42
“Digital competencies of teachers educational environment”	-	3374	53520	250 000
"Digital competencies" AND "teacher"	192	59	5390	5750

In addition, the main reference of the researcher is also the Second Edition Online Classroom Assessment Implementation Guide issued by the Curriculum Development Division (BPK, 2021). Although the resources obtained were numerous in the database, only a few articles were selected for use in the concept paper.

FINDINGS AND DISCUSSION

Online Formative Assessment Practice (Observation)

Observational assessment is conducted using appropriate applications such as Google Meet, Telegram, WhatsApp, zoom, or other applications to enable teachers to observe and assess the work process of students in each subject (BPK, 2021). In addition, students can make video recordings of the process of performing a task such as activities and experiments given by the teacher. Teachers provide feedback or make assessments based on video recordings. However, this method still presents constraints and difficulties for teachers to assess, guide and communicate with students online (Goliang et al., 2020). However, teachers can still provide feedback or make assessments based on video recordings, discussions via Whatsapp and Telegram (Quah, 2020). According to Alhunaini et al., (2020) the practice of assessment through observation can thus help teachers increase the opportunity to assess students' thinking and feedback in learning. This is because the appropriateness of the feedback given by the student is a reflection of his or her abilities. In the same vein, teachers also need to ensure and plan lessons that are appropriate to students' level of achievement so that they are able to provide appropriate feedback (Koloji-Keaikitse, 2012; Muñoz & Palacio, 2012).

Online Formative Assessment (Oral)

Next, for the oral assessment, the teacher held a question-and-answer session and provided oral feedback to the students about their learning. In three studies conducted by Naim and Isa, (2000), (2019), as well as Isa, (2020), oral questioning was used to assess students' basic science process skills i.e., communication skills. Oral assessment can also help teachers to track and identify students' level of mastery and understanding during PdP (Çimer, 2007). Among the oral activities that can be applied are such as presentations that are evaluated online whether it happens directly or indirectly through video transmission. This is the best alternative because students can be actively involved and shape experiences in learning (Hussin et al., 2021). Thus, online

discussion, portfolio, self -assessment, peer assessment are methods that can be used to assess students online (Gaytan & McEwen, 2007)

However, the study of Jamil and Said, (2019) found that the level of verbal scoring practice among teachers is at a low level. They are not clear and do not understand the scoring criteria of the Performance Standards to determine the level of student achievement that has been set in the Curriculum and Teaching Standards Document (DSKP). According to Winke, (2019) oral assessment is a difficult process compared to other methods. He stressed that teachers need to be given guidance, training and monitoring from the authorities in order to implement oral scoring accurately. Accordingly, teachers are encouraged to use their professional judgment to determine students 'level of mastery through discussion and collaboration of other teachers based on students' cognitive and socio-emotional characteristics (Allal, 2013; Südkamp et al., 2018). Professional judgment requires teachers to make ethical and responsible decisions about students 'level of mastery, based on analysis and summarization of information on learning (Curriculum Development Division, 2019b). Accordingly, the accuracy of teacher judgment can also be enhanced from facial expressions and students 'responses to questions asked, as long as the assessment is aligned with learning objectives (Thiede et al., 2015). Thus, if the teacher is not skilled, they will make scoring based on their own understanding and perception as long as it does not conflict within the scope of DSKP and is significant for continuous assessment practice (Tan, 2013). Therefore, teachers can ask effective questions to elicit students 'understanding of something they have learned by using various appropriate online applications such as Google Meet, Microsoft Teams, Zoom, WhatsApp, Telegram or other applications that can be used to assess students' answers orally (Curriculum Development Division, 2021).

Online Formative Assessment (Written)

For written assessment, teachers review and check the results of student writing such as essays, project reports, written exercises and so on through various online applications such as Telegram, Zoom, WhatsApp, or other applications. Teachers prepare worksheets or upload assignments along with notes using the Google Docs, Google Slides, Google Forms or appropriate applications and use equipment such as computers, laptops, mobile phones and tablets. (Thannimalai & Baloh, 2021). According to Jong and Kim Hua, (2021) students are motivated and have fun when Padlets are used to assess them. The use of Padlets allows teachers to review and provide feedback on student writing progress. Thus, students have the opportunity to practice the use of online learning and self -assessment platforms. Thus, the use of Padlets in written assessment provides a platform for a student - centered learning environment. Accordingly, students also gave positive feedback that written activities could enhance their learning and teachers could directly make assessments (Vogt et al., 2020). Among the written activities that can be done online is e-portfolio. According to Kabilan and Khan, (2012), e-portfolios help the transformation of teachers in assessing students online. In addition, this practice can enhance linguistic abilities and at the same time can enhance the creativity and technological skills of teachers in providing assessment activities (Zenouzagh, 2019).

In addition, students can also submit written work through applications used by teachers or other equipment such as cameras, videos and scanners. Teachers also review students 'written work by providing feedback through appropriate applications and mediums (Curriculum Development Division, 2021). Therefore, Sulaiman et al., (2019) have concluded that to assess students' knowledge and skills, teachers need to implement several assessment instruments such as writing tests, projects, assignments, simulations, portfolios, journals, exhibitions, observations, interviews, examinations verbal, and peer assessment. This action is necessary so that the achievement and development of students can be identified and teachers can determine the level of mastery of each student. Overall, the findings on the practice of online formative assessment can be summarized as **Figure 3**.

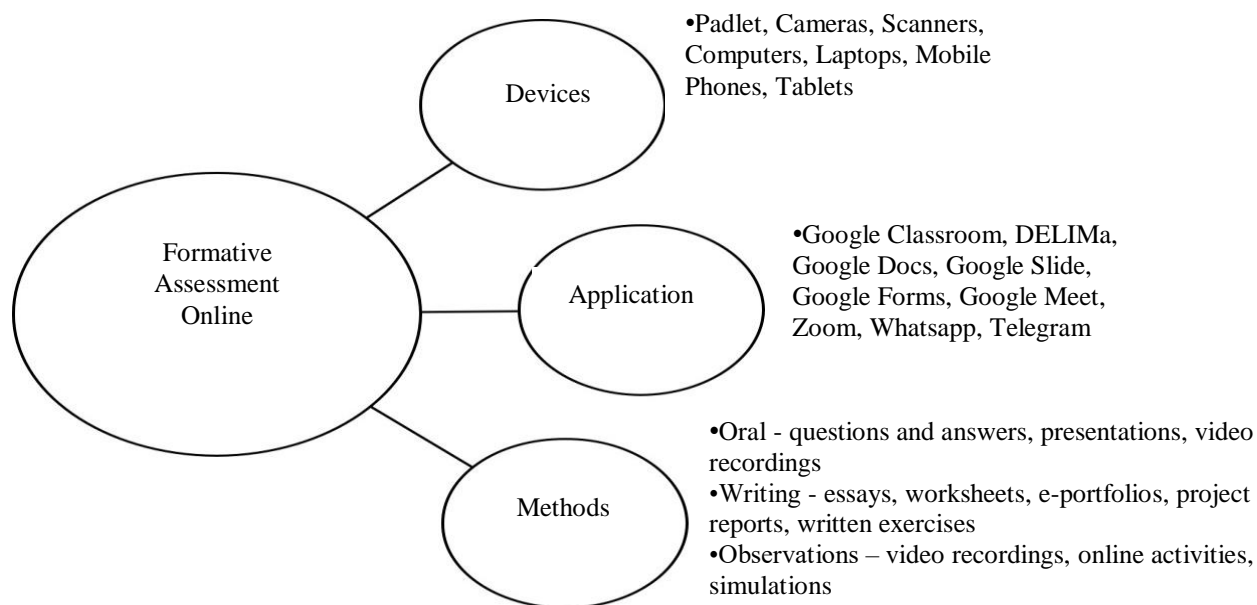


Figure 3: Tools, applications and Methods of Online Formative Assessment

DIGITAL SKILLS

The findings of previous studies found that not all teachers are open -minded and utilize technology in the world of education (Baker et al., 2012; Ismail, S. 2016; Ismail, M. 2020; Oriji & Amadi, 2016). Thus, in order to adapt online assessment techniques, stakeholders should consider teachers' digital skills factors to ensure the development of a community of students involved in online PdP (Beebe et al., 2010). However, these findings contradict Raman et al., (2019) who stated that technology integration among teachers is at a high level but not among administrators or principals. Since there is no significant relationship between principals' technology leadership and teachers' technology integration then principal preparation programs should be conducted and focus on technology -based leadership to enhance technology integration in the classroom.

However, according to Khan, (2020) principals and headmasters are ready to assume the role of digital leaders in schools who also successfully promote and empower teachers through innovation and professional learning environment to absorb digital resources in improving student learning. In addition, virtual teaching and learning (PdP) using technology applications has had a positive impact on teachers and students during the discussion and question and answer process (Hassan et al., 2021; Khlaisang et al., 2021; Tang et al., 2020). Furthermore, the results of Tondeur et al., (2017) show that teachers achieve two types of Information Communication and Technologies (ICT) competencies namely the ability to use ICT to facilitate students' learning efficiency using ICT and the ability to manage ICT for their own teaching purposes. Based on these findings, teachers will teach and assess students online. This direct effect will improve digital skills among teachers and students (Joshi et al., 2020). Overall teachers should be equipped with technological skills to prepare and equip themselves for online teaching and assessment (Ma et al., 2021). Overall, teachers' digital skills in dealing with online assessment are shown in Table 2.

Table 2: Findings of teacher digital skills literature review

Authors	Findings	Description
Joshi et al., (2020).	Digital skills among teachers and students are increasing	Digital skills are on the rise
Khan, (2020)	Principals and head teachers are ready to assume the role of digital leaders in schools who also successfully promote and empower teachers through an environment of innovation and professional learning to absorb digital resources in improving student learning.	Principals and head teachers are ready to take on the role of digital leaders in schools
Hassan et al., (2021) Khlaisang et al., (2021) Tang et al., (2020)	Virtual teaching and learning using technology applications has had a positive impact on teachers and students during the discussion and question and answer process	The application of technology has had a positive impact
Raman et al., (2019)	Technology integration among teachers is at a high level but not among administrators or principals.	Technology integration is increasing among teachers

Baker et al., (2012) Ismail, M. (2020) Ismail, S. (2016) Oriji & Amadi, (2016)	Not all teachers are open -minded and take advantage of technology in the world of education	Negative feedback about technology.
Ambikapathy et al., (2020) Bebell & Kay, (2010) Hamzah et al., (2014).	Many teachers have a moderate level of technology skills and do not integrate technology in teaching and learning	Teachers' digital skill levels are moderate and low
KPM, (2019a)	Malaysia's achievement for science subjects in Trends in International Mathematics and Science Study (TIMSS) 2019 where the achievement decreased due to the side effect of lack of use of digital technology in assessment among science subject teachers	This effect occurs because they are more influenced by experimental activities involving hands-on using apparatus and materials existing in school laboratories

STUDY RECOMMENDATIONS

Based on this study there are 3 main recommendations that need to be considered. The first recommendation is for the MOE to continue with workshops, courses or training on Classroom Assessment (PBD), especially on formative assessment conducted online. This is necessary so that the development of ideas and creativity as well as innovation among teachers in the aspect of assessment is always continuous and students can be assessed with a variety of activities either orally, in writing or observation. In addition, the MOE also needs to upgrade existing training programs to ensure that teachers master ICT literacy. This aspect is important so that digital knowledge and skills are in line with the needs of the global education world to ensure that all teachers are able to apply digital tools and applications for teaching and assessment purposes. Next, aspects of internet access and device supply need to be emphasized especially for rural locations and poor families. This should be taken into account so that teachers can implement online teaching and assessment smoothly while all students can be assessed fairly and equitably.

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