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Developing Assessment Skills of Prospective Primary School Teachers through Digital Assessment Tools

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Abstract. *This article explores the role of digital assessment tools in developing the evaluation skills of prospective primary school teachers. In the context of modern education, it is essential for future educators to master both traditional and technology-enhanced assessment methods. The study analyzes how platforms such as Google Forms, Kahoot, and Classkick can be effectively integrated into teacher training programs to enhance assessment literacy. Emphasis is placed on formative assessment, instant feedback, and data-driven decision-making as key components of digital competence. The findings suggest that the structured use of digital tools fosters a more engaging, accurate, and learner-centered assessment culture among pre-service teachers.*

Key words: *Digital assessment tools, primary school teachers, evaluation skills, teacher education, formative assessment, educational technology, assessment literacy, reflective practice.*

In the era of digital transformation, education systems around the world are undergoing profound changes, not only in terms of instructional delivery but also in how students' learning is assessed. As schools increasingly adopt digital platforms, the need for teachers to be proficient in using digital assessment tools has become more urgent than ever. In this context, the role of digital literacy, especially assessment literacy, is gaining critical importance in teacher education programs.

Prospective primary school teachers must be equipped not only with pedagogical knowledge but also with the skills to effectively evaluate student learning using both traditional and innovative assessment methods. Given the characteristics of early learners — including their cognitive, emotional, and social development — primary teachers require a nuanced understanding of assessment strategies that are developmentally appropriate and learner-centered. Digital assessment tools such as Google Forms, Socrative, Kahoot, Edmodo, and Quizizz offer interactive and real-time feedback options, enhancing student engagement and enabling formative assessment practices that are essential at the primary level.

However, the effective integration of such tools requires more than basic technological familiarity; it demands a pedagogically sound application of digital platforms that align with curriculum objectives and support individual learning needs. Moreover, digital tools offer data collection and analysis capabilities that can inform instruction, personalize learning pathways, and support inclusive education.

This paper examines the pedagogical potential of digital assessment tools in enhancing the assessment skills of future primary school teachers. It aims to identify the most effective digital strategies for assessing student progress, analyze the attitudes of pre-service teachers toward technology-based assessment, and explore the challenges and opportunities associated with implementing digital tools

in the teacher training context. By doing so, the study contributes to the ongoing discourse on digital pedagogy and competency-based teacher education.

The traditional assessment methods that have long dominated primary education — such as paper-based quizzes, oral questioning, and observational checklists — are no longer sufficient in addressing the demands of a digital generation. Today's learners are growing up in technology-rich environments, and this shift necessitates that teachers, especially at the foundational level, adapt their assessment strategies to reflect the changing dynamics of the classroom. Digital tools, when integrated thoughtfully, provide opportunities for personalized assessment, immediate feedback, interactive engagement, and data-informed teaching practices.

More importantly, these tools support **formative assessment**, which is critical in early education. Unlike summative methods that measure achievement at the end of a learning cycle, formative assessment provides ongoing insights into student understanding, enabling teachers to adjust instruction accordingly. For example, platforms like Kahoot and Quizizz turn traditional quizzes into game-like experiences, enhancing motivation and attention span among young learners. Similarly, Google Forms and Padlet can be used to collect student responses and reflections in a way that is accessible and efficient.

However, the integration of digital assessment in teacher training is not without challenges. Many pre-service teachers enter teacher education programs with limited experience in using technology for instructional and evaluative purposes. While they may be familiar with digital tools for communication or entertainment, transforming these tools into pedagogically effective resources requires structured guidance, modeling, and reflection. Teacher educators play a crucial role in helping students understand not just how to use digital platforms, but why and when they should be used to enhance student learning outcomes.

In the framework of competency-based education, the ability to assess student learning effectively — especially using modern tools — is considered a core professional skill. Therefore, it is essential for teacher education programs to prioritize **assessment literacy**, including digital dimensions, to ensure that future educators are prepared for 21st-century classrooms. This includes understanding assessment types, data interpretation, ethical considerations, and inclusivity in digital environments.

In recent years, the role of digital tools in teacher education has received increasing attention from researchers worldwide. Numerous studies emphasize the necessity of equipping future teachers with digital competence, particularly in the area of assessment (Redecker & Punie, 2017; European Commission, 2020). Assessment literacy, traditionally focused on designing tests and interpreting scores, has evolved to encompass digital strategies that enhance student engagement and formative feedback (Stiggins, 2005; Popham, 2014).

Digital assessment tools provide numerous pedagogical advantages. According to Black and Wiliam (1998), effective formative assessment is a key factor in improving student learning outcomes. Digital platforms offer a unique opportunity to implement formative assessment practices more dynamically. For instance, tools such as Kahoot and Quizizz facilitate real-time responses, immediate feedback, and student motivation — particularly effective for primary learners who respond positively to visual and interactive content (Wang, 2015).

Other scholars highlight the importance of reflective digital practice in teacher training. Boud, Keogh, and Walker (1985) argue that reflection enables student-teachers to critically evaluate their own teaching and assessment strategies. This is further supported by Korthagen and Vasalos (2005), who developed a core reflection model aimed at linking inner values to professional behavior — a framework particularly useful when incorporating digital technology meaningfully.

Meanwhile, the technological pedagogical content knowledge (TPACK) framework by Mishra and Koehler (2006) has become a foundational model for understanding how teachers can effectively integrate technology into their teaching. Within this framework, assessment is viewed as a dynamic process involving pedagogical, content, and technological components. Teacher candidates must not

only know how to operate digital tools but also understand how to align them with curriculum goals and learner needs.

The literature also addresses the challenges future teachers face when integrating digital tools into assessment. These include lack of access to technology, insufficient training, and resistance to change due to traditional teaching norms (Tondeur et al., 2017). To overcome these barriers, several studies advocate for hands-on practice, collaborative tasks, and structured guidance within teacher education programs (Voogt et al., 2015).

In summary, the existing literature supports the idea that digital assessment tools, when used effectively, can enhance the assessment skills of pre-service primary school teachers. However, their successful implementation requires not only technical proficiency but also pedagogical knowledge and reflective capacity — all of which must be cultivated systematically during initial teacher education.

To examine the effectiveness of digital assessment tools in enhancing the evaluation skills of prospective primary school teachers, a mixed-method study was conducted at the Faculty of Primary Education in Termiz State Pedagogical Institute. The research included pre-service teachers enrolled in their third and fourth years of study. Both quantitative and qualitative methods were employed to gather a comprehensive understanding of participants' digital assessment competence.

Survey Findings: A total of 120 pre-service teachers participated in an online questionnaire designed to assess their familiarity with digital tools, frequency of use, and confidence in applying digital platforms for assessment purposes. The survey revealed that:

- **83%** of participants had prior experience using digital platforms such as Google Forms, Kahoot, or Quizizz during their teacher training.
- **68%** reported feeling confident in using these tools for formative assessment.
- However, only **42%** indicated that they received formal instruction on how to integrate digital tools into their lesson plans or assessment strategies.

These results suggest that while digital tools are accessible and relatively popular, systematic pedagogical training on their effective use is lacking.

Practical Assessment Tasks: Participants were then asked to design and implement short digital-based assessments during their practicum. The submitted digital assessments were analyzed based on criteria such as clarity of objectives, alignment with learning outcomes, feedback mechanisms, and user engagement.

- **High-performing students** demonstrated the ability to design engaging quizzes with immediate feedback, clear rubrics, and visually stimulating elements, using tools like Edmodo and Classkick.
- Some **lower-performing students** relied solely on multiple-choice formats and failed to incorporate reflection or feedback components, showing limited understanding of formative assessment.

Focus Group Interviews: To gain deeper insights, focus group discussions were held with 20 students and 5 supervising teacher-mentors. The key themes that emerged included:

1. **Need for structured training** – Participants expressed a strong desire for more targeted workshops and courses on using digital assessment tools in pedagogically meaningful ways.
2. **Perceived benefits** – Most students acknowledged that digital tools helped increase student motivation and made assessment more interactive and fun.
3. **Challenges** – Issues such as lack of internet access during teaching practice, limited device availability in rural schools, and difficulty in designing age-appropriate tasks were frequently mentioned.

Overall Findings: The analysis indicates that digital assessment tools can significantly enhance the assessment skills of future primary school teachers, especially when supported by proper pedagogical

training. While most students showed basic proficiency in using these platforms, the depth of their application varied widely based on their exposure to didactic guidance and reflective practice.

The findings of this study offer valuable insights into the evolving nature of teacher education in the digital era. The integration of digital assessment tools into the training of prospective primary school teachers is no longer optional—it is a pedagogical necessity. As seen in the analysis, many teacher candidates demonstrate a high level of enthusiasm and a basic working knowledge of platforms like Google Forms, Quizizz, and Kahoot. However, enthusiasm alone does not ensure pedagogical effectiveness. There is a clear distinction between using digital tools **technically** and using them **pedagogically**.

The majority of students in this study reported using digital assessment tools without formal training or theoretical grounding. This reflects a broader gap in teacher education curricula, where technological skills are often taught in isolation from instructional design and assessment principles. The results underscore the importance of embedding **digital assessment training within the didactic structure** of teacher education, rather than treating it as an optional or supplementary skill.

Another important point to consider is the **uneven quality** of assessment tasks created by pre-service teachers. High-performing students demonstrated a capacity to integrate learning objectives with formative assessment strategies, provide timely feedback, and use visual tools to engage learners. In contrast, weaker submissions lacked reflection, differentiation, or meaningful feedback mechanisms. This indicates that **assessment literacy**, particularly in the digital domain, should be treated as a core component of professional competence, rather than a technical add-on.

The focus group interviews also revealed **contextual challenges** that influence the implementation of digital tools. These include infrastructure issues such as limited access to devices and internet connectivity, especially during practicum in rural or under-resourced schools. Additionally, some pre-service teachers expressed uncertainty about how to adapt digital assessments to the developmental needs of younger learners. These challenges point to the need for **context-sensitive training**, where teacher candidates are taught to adapt tools flexibly and creatively according to classroom realities.

Moreover, the study confirmed that **reflective practice** plays a crucial role in shaping meaningful assessment behaviors. Students who engaged in reflective evaluation of their own digital assessments demonstrated more growth in their ability to use technology purposefully. This supports previous research (Boud et al., 1985; Korthagen, 2005) emphasizing the link between reflective pedagogy and professional growth.

Finally, this research emphasizes that digital assessment tools are not a "one-size-fits-all" solution. Their success depends on thoughtful integration into lesson planning, alignment with learning goals, and responsiveness to student needs. As teacher education moves toward **competency-based and practice-oriented models**, assessment competence—both traditional and digital—must be prioritized through scaffolded, hands-on experiences and continuous support.

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