

ELECTRONIC TESTING AS A MOTIVATIONAL TOOL IN PRE-SERVICE TEACHER EDUCATION: A PILOT STUDY

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Abstract

Electronic testing has become an increasingly common component of higher education; however, its influence on the motivation and study strategies of pre-service teachers remains insufficiently explored. Attention should be paid to how students perceive e-tests during their preparation for credit assessments and whether this form of assessment supports learning processes, self-assessment, and regular study habits. This paper presents a pilot research study based on a questionnaire survey conducted among pre-service mathematics teachers in the Czech Republic and Slovakia. The study examines how students engage with electronic tests throughout the semester, to what extent they perceive them as a motivating factor, and which specific aspects of e-testing facilitate or hinder their study preparation. A comparative perspective is included to capture potential differences between the Czech and Slovak educational contexts. Initial pilot findings indicate recurring patterns in students' perceptions of electronic testing, particularly regarding the role of immediate feedback and opportunities for repeated practice. These factors appear to contribute to continuous study engagement and support learning-oriented use of assessment tools. The pilot study identifies key variables influencing the acceptance of electronic testing among future teachers and establishes a foundation for a broader follow-up investigation. The findings contribute to discussions on the effective integration of electronic testing into university teacher education and provide recommendations for the innovation of current assessment practices.

Keywords: *Electronic testing, student motivation, pre-service teachers, formative assessment, digital learning tools.*

1. Introduction

Electronic testing has become an integral part of contemporary education, particularly in higher education environments where digital tools are increasingly used to support both teaching and assessment. While electronic tests are often associated with summative evaluation, their potential as a tool for supporting learning processes, motivation, and self-regulation is gaining attention. However, the perception of e-testing among pre-service teachers remains relatively underexplored.

Future teachers play a key role in shaping educational practices, and their attitudes toward digital assessment tools may significantly influence their future classroom implementation. Understanding how pre-service teachers perceive electronic testing, especially in relation to motivation and study strategies, is therefore essential. This study focuses on identifying how electronic tests are used during the semester and whether students consider them beneficial for their learning.

2. Methods

The study was designed as pilot research based on a questionnaire survey. The participants were pre-service mathematics teachers studying at a university in the Czech Republic. The Slovak sample will be included in the subsequent phase of the research to enable a comparative analysis between the two educational contexts. Data were collected using a structured questionnaire focused on students' experiences with selected digital tools used for electronic testing, specifically Blooket and Wayground. The questionnaire included both closed-ended items using a Likert scale (1–5) and open-ended questions that allowed respondents to express their opinions on the advantages and disadvantages of these tools. The data were collected electronically, and participation in the survey was voluntary and anonymous. The research focused on several key areas: perceived usability of the applications, their impact on motivation and learning, and their potential use in future teaching practice. The data collection was conducted in November

2025 during the winter semester of the academic year 2025/2026. A total of 19 pre-service teachers participated in this pilot study.

3. Results

The results of the questionnaire indicate several recurring patterns in students’ perceptions of electronic testing tools. The analysis combined both Likert-scale responses and open-ended answers, which provided deeper insight into students’ experiences.

3.1. Usability and engagement

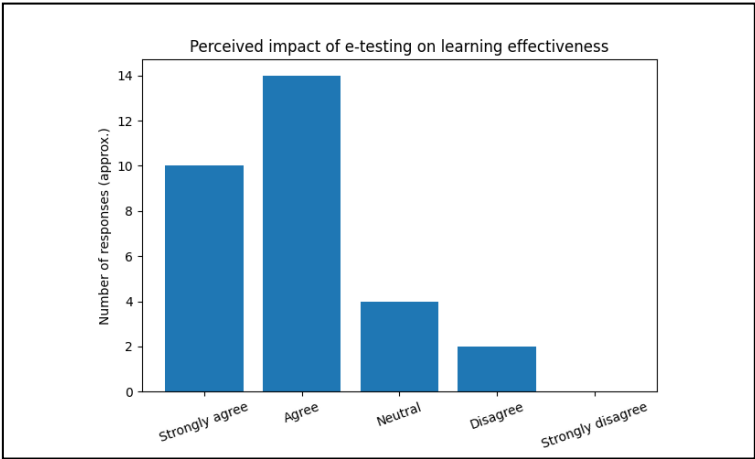
Most respondents evaluated both applications as intuitive and easy to use. Most students agreed that the applications were clear, well-structured, and user-friendly. At the same time, students frequently reported that working with these tools was enjoyable. The interactive and game-based nature of the applications, particularly in the case of Blooket, contributed significantly to increased engagement during learning activities.

3.2. Motivation and learning

The findings suggest that electronic testing tools have a positive impact on student motivation. Many respondents indicated that the use of these applications made them more willing to participate in learning activities and encouraged them to engage with the content more actively. Students also reported that repeated interaction with questions helped them better remember the subject matter. The motivational aspect was often linked to elements such as competition, immediate feedback, and the possibility of repeated attempts. These features appear to support continuous engagement and contribute to a more active learning process.

Figure 1 presents students’ perceptions of the impact of electronic testing tools on learning effectiveness. Most respondents expressed a positive attitude, indicating that electronic testing supported their understanding and retention of the subject matter. Only a small number of students reported neutral or negative perceptions, which suggests that these tools are generally perceived a beneficial for learning processes.

Figure 1. Perceived impact of electronic testing on learning effectiveness (pilot data).

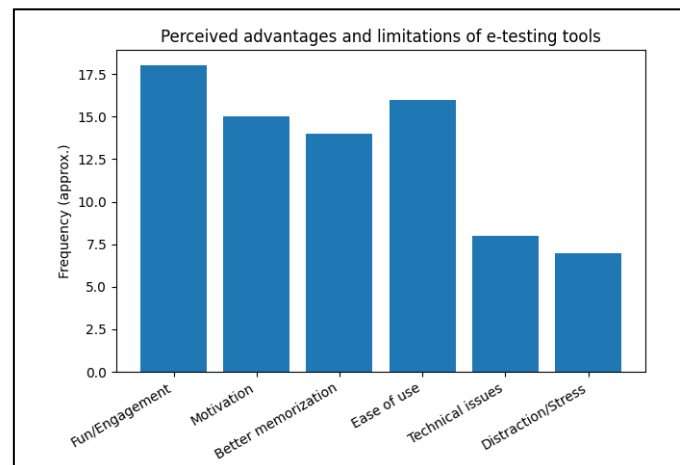


3.3. Advantages and limitations

The qualitative analysis of open-ended responses revealed several frequently mentioned advantages and limitations of the evaluated tools. Among the main advantages, students most often highlighted the entertaining and interactive nature of the applications. Many responses emphasized increased engagement, improved attention, and the opportunity to practice the material repeatedly. Ease of use and accessibility were also commonly mentioned as important benefits. On the other hand, several limitations were identified. Students pointed out technical issues, such as occasional application instability or insufficient access to digital devices in classrooms. Some respondents also noted that the competitive elements might lead to stress or distraction, especially in more dynamic classroom environments. Additionally, the preparation of high-quality question sets was perceived as demanding for teachers.

To provide an overview of these findings, Figure 2 presents the most frequently mentioned categories of advantages and limitations identified in the responses.

Figure 2. Perceived advantages and limitations of electronic testing tools (pilot data).



4. Discussion

The findings of this pilot study suggest that electronic testing tools can serve not only as assessment instruments but also as effective tools for supporting student motivation and learning. The positive perception of interactivity, immediate feedback, and repeated practice corresponds with current approaches emphasizing formative assessment and active learning. At the same time, the results indicate that the effectiveness of these tools depends on their appropriate implementation. While game-based elements can enhance engagement, they may also introduce distraction or stress in certain contexts. Technical limitations and unequal access to devices also remain important factors that can influence their successful use. The results presented in Figure 1 and Figure 2 highlight the dual nature of electronic testing: on the one hand, it increases motivation and supports learning, while on the other hand, it requires careful pedagogical and technological consideration.

5. Conclusions

This pilot study provides initial insights into how pre-service teachers perceive electronic testing tools in the context of their learning. The findings indicate that these tools are generally perceived as beneficial, particularly in terms of motivation, engagement, and support for repeated practice. However, their implementation should be approached thoughtfully, considering potential limitations such as technical issues and classroom management challenges. Future research, including the planned Slovak sample, will allow for a broader comparative analysis and contribute to a deeper understanding of the role of electronic testing in teacher education.

Acknowledgments

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