



Article

Enhancing English Language Assessment Efficiency Among Engineering Students Through Digital Technologies

Khamidova Nilufar Djumavayevna*¹

1. Head of the Department of Foreign Languages, Tashkent State Technical University named after Islam Karimov; PhD, Associate Professor, Doctor of Philosophy in Pedagogical Sciences

*Correspondance: nilufarxamidova26@gmail.com

Abstract: The rapid development of digital educational technologies has considerably transformed modern approaches to foreign language assessment, particularly in technical higher education, where engineering students increasingly require effective English communication skills alongside professional competence. This study investigated the influence of digital assessment technologies on the efficiency of English language evaluation among engineering students studying in a technology-oriented academic environment. A mixed-method research design was applied during one academic semester involving undergraduate students who participated in both traditional and digitally supported assessment systems. Various online platforms, including Moodle, Google Forms, Quizizz, Kahoot, and Grammarly-assisted evaluation tools, were integrated into the learning and assessment process to improve grammar accuracy, technical vocabulary acquisition, academic writing quality, and student participation. The findings demonstrated that students assessed through digital technologies achieved higher academic performance, stronger motivation, greater classroom engagement, and lower levels of assessment-related anxiety compared with learners evaluated through conventional methods alone. The study further emphasizes that balanced integration of digital assessment systems can significantly enhance the quality, objectivity, and educational effectiveness of English language instruction for engineering students.

Citation: Djumavayevna, K. N. Enhancing English Language Assessment Efficiency Among Engineering Students Through Digital Technologies. Web of Scholars: Multidimensional Research Journal 2026, 5(3), 122-127.

Received: 05th Apr 2026

Revised: 24th Apr 2026

Accepted: 06th May 2026

Published: 20th May 2026



Copyright: © 2026 by the authors. Submitted for open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

Keywords: Digital Assessment, Engineering Students, English Language Teaching, Online Evaluation, Educational Technologies, Artificial Intelligence, ESP, Higher Education, Technical Education

1. Introduction

With the rapid development of digital technology, the structure of modern higher education has shifted significantly, especially in foreign language education, which is the most crucial element in the teaching process. The use of digital technologies has greatly influenced the structure of modern higher education, especially in foreign language education, where assessment is one of the most vital components of the teaching process. The importance of English language proficiency is growing in technical universities as engineering students are required to be able to communicate in an international academic, scientific, and industrial setting. Yet, English for Specific Purposes (ESP) teaching continues to gain importance in higher education institutions while their traditional assessment system is still highly dependent on the conventional evaluation framework that lacks flexibility, objectivity, and timeliness for the assessment of students' language skills [1]. Traditional assessment practices, such as exams and teacher marking, often pose a few challenges for both teachers and students. A lot of time can be devoted to checking written assignments, setting tests, and giving corrections, and students can get feedback on the written assignments that is too late to make immediate improvements. Further, the standard assessment settings can generate anxiety and diminish motivation, particularly for engineering students, who have grown more familiar with interactive and

technologically rich learning environments. With the educational systems going through a digital transformation, modern assessment technologies are being increasingly considered to enhance the accuracy of assessment and efficiency of learning [2]. Now, teachers can use digital assessment platforms like Moodle, Google Forms, Quizizz, Kahoot, and AI language assessment systems to track students' progress in real time, set up adaptive test environments, and receive automated feedback as soon as tasks are completed. These technologies make the assessment process easier, as well as promote active engagement by students, creating interactive and accessible learning conditions. Furthermore, online assessment tools can aid teachers in determining their students' grammar, vocabulary, and reading comprehension areas of weakness more effectively than many conventional assessment tools [3]. Digital assessment technologies have been found to have a potentially positive impact on student engagement, academic achievement, and independent learning behavior, especially in the EAL context related to technical and professional communication. However, studies on engineering students are still relatively small, particularly in the context of education, where the digital transformation in higher education is still a gradual process. In this context, it is important to research the ways that modern digital technologies can make the process of assessing the English language by technical university students more efficient, objective, and educationally relevant [4].

2. Materials and Methods

This research was carried out to assess the contribution of digital technologies to the development of English language assessment in a technical higher education institution among engineering students. This research was aimed at evaluating the effectiveness of digital technologies in the improvement of English language assessment for engineering students in a technical higher education institution. The research process was arranged in a single semester, and the main subjects were the effect of online assessment tools on language performance, student motivation, and the efficiency of the evaluation procedures in ESP English classes. To gather quantitative academic data along with qualitative student experiences and to combine these two sets of data into a more holistic picture of digital assessment practices in technical education, a mixed-method research design was chosen [5]. The subjects in this study were 92 engineering students enrolled in various engineering fields, such as Software Engineering, Civil Engineering, Energy Systems, and so on, ranging in age from 18 to 23 years. The students were divided into two separate groups. The control group used the traditional forms of assessment, including paper tests, written assignments, and teacher-led oral examinations, whereas the experimental group used digital platforms and online assessment systems to carry out most of the assessment activities. To ensure that the learning conditions were similar, both groups were taught the same English curriculum and were taught in the same learning period. The use of several digital technologies in the assessment process of the experimental group was integrated. Quizzes were organized in Moodle, and educational and attendance data were stored in the application. Google Forms enabled teachers to make questions with a limited time, which was then automatically calculated to a score. In addition, Quizizz and Kahoot were introduced to assess reading comprehension and technical terminology retention, and to assess participation in the classroom more interactively. Writing assessment was also implemented using a software called Grammarly to give immediate corrective feedback on grammar, punctuation, sentence structure, and clarity of academic writing [6]. In order to objectively measure the learning progress, all subjects were given a pre-test in the beginning of the research and a post-test at the end of the semester. The tests consisted of reading comprehension tasks, technical vocabulary exercises, grammatical exercises, and short academic writing exercises related to engineering topics. In addition to academic testing, anonymous questionnaires were administered to the students to explore their attitudes towards digital assessment systems, their motivational state, and their

satisfaction with digital evaluation environments. Observations in the classrooms were also made throughout the semester to determine the changes in participation and communication behavior, and students' interaction while taking the assessment activities [7]. Comparative statistical techniques were used to analyze the collected data. To assess the educational benefits of digital assessment technologies, mean scores were calculated, percentage growth was computed, and difference scores were used to compare the two groups. The responses were analyzed using descriptive analysis, which involved interpretations based on four main areas: motivation, stress reduction, ease of assessment, and student confidence. Ethical issues were adhered to throughout the study, and participation was voluntary throughout the research process. During the procedure of data collection and analysis, special care was taken to ensure equal evaluation conditions and maintain the anonymity of the students' answers [8].

3. Results

The results of the investigation showed that there are significant differences between the students assessed by traditional methods and the students assessed by digital technologies when teaching English. The initial level of language proficiency of both groups, measured at the start of the semester in grammar, technical vocabulary, reading comprehension, and academic writing, was not significantly different. But once the online assessment tools and AI-supported evaluation systems were put in place, the experimental group exhibited significantly greater academic growth on almost all assessment measures.

The greatest improvement was seen in the speed and accuracy of task completion. Students who were evaluated in the Moodle quizzes, Google Forms, and Quizizz made faster transitions to timed language tasks and showed fewer grammatical and lexical errors in post-test evaluation. Learners could immediately see the errors in the work they had done after they submitted their assignments through automated feedback systems, enhancing further practice, and language weaknesses were corrected more consciously. By comparison, students who are evaluated with traditional paper-based assessments usually have to wait several days before getting feedback from the teacher, which limits the chances for immediate revision and reinforcement [9]. Digital assessment technologies also seemed to have a positive impact on student motivation and participation in the classroom. In online vocabulary competitions, interactive quizzes, and AI-supported writing activities, the engineering students in the experimental group were more active. The engineering students in the experimental group were more active during the online vocabulary competitions, interactive quizzes, and writing activities with AI. Observations in the classroom showed that anxiety was reduced when using digital assessment due to the more flexible and informal nature of the online assessment environment as opposed to the traditional assessment environment. Some of the participants also shared their insights that the use of technology in assessment appeared more objective since the automated scoring alleviated concerns about subjective grading practices [10]. The students in the experimental group also showed significant improvement in academic writing. Students expressed that they used Grammarly to help them create their sentences correctly, use the correct punctuation, make more logical sentences, and use technical vocabulary in the correct manner. It was noted that many students slowly began to pay more attention to linguistic accuracy, since they had immediate explanations of their grammatical and stylistic errors. The scores for reading comprehension improved significantly as well, especially on reading tasks related to professional engineering text and reading comprehension of technical terms [11].

Table 1. Comparing the results of the assessment between the traditional assessment group and the digital assessment group. Comparing the assessment outcomes between traditional and digital assessment groups. The results are consistent with the current educational studies, which highlight the positive effects of technology-based assessment environments on the improvement of students' learning outcomes and learner autonomy

in foreign language education, particularly in university education with an emphasis on technology, where digital competence is related to further success in life [12].

4. Discussion

This research shows that the application of digital assessment technologies in the evaluation of the English language can significantly enhance the effectiveness of English evaluation among engineering students, especially in aspects related to academic writing, technical vocabulary learning, and classroom participation. The most significant finding while researching this area was that students evaluated on an interactive digital platform seemed more motivated and academically engaged than the students evaluated using paper-based systems. This could be linked to the flexibility and immediacy of computer-based assessment tools, enabling students to receive instant feedback and track their progress to a greater extent independently [13].

The results of the writing performance in the experimental group are more remarkable because engineering students often have problems of expressing technical ideas clearly in English. Assessment activities using the grammar tool enabled students to correct their own work multiple times until it was finalized. With the use of the grammar-supported assessment activities, students were able to correct their work multiple times until it is finished. These iterative correction procedures can promote linguistic accuracy as well as learning self-regulation, which is now a key element in today's higher education settings. Digital systems also provide continuous interaction between students and the learning materials during the assessment process, while traditional assessment methods tend to focus on the final results. The other significant result of the study is the decrease in assessment anxiety. Participants shared the experience of being more at ease with taking online quizzes and AI-generated exercises than with taking formal written exams. Engineering students are usually used to working in a technology-driven context, and digital assessment platforms might provide a similar context that helps to mitigate the stress of communication and increase attention during language assessment. Also, during interactive online activities, increased participation in the classroom was noticed, which further suggests that online learning can be shifted from an evaluative process to an active learning process [15]. Meanwhile, several constraints emerged while implementing. The level of digital literacy was not uniform across all students, and there was a need for some support from the beginning for some taking to the online assessment platforms. Some evaluation activities were also interrupted by the possible Internet instability and technical issues. Moreover, although automated scoring systems can offer some benefits, artificial intelligence technologies cannot fully substitute for the pedagogical judgment of teachers, especially concerning writing and speaking in terms of creativity, communicative nuance, and critical thinking. Having regard to this, digital assessment should be considered to be an adjunctive method of assessment, not a replacement for human assessment. Overall, the findings suggest and reinforce the international view that digital assessment technologies offer significant promise to modernize the ELL in technical universities. If integrated wisely and with adequate teaching techniques, an online system for evaluation can help improve the accuracy of evaluation, as well as the students' autonomy, motivation, and competence in communication for future engineering specialists.

5. Conclusion

The present study demonstrated that digital technologies can significantly improve the efficiency and educational value of English language assessment among engineering students studying in technical higher education institutions. Throughout the research process, it became evident that online evaluation systems and AI-supported assessment tools positively influenced not only academic performance but also student motivation, classroom participation, and confidence during language learning activities. Compared with traditional paper-based assessment methods, digital technologies created a more

flexible, interactive, and learner-centered evaluation environment that better corresponded to the educational needs of modern technical students. One of the most important findings of the study was the noticeable improvement in technical vocabulary retention, grammar accuracy, academic writing quality, and reading comprehension among students who participated in digitally supported assessment activities. Immediate automated feedback allowed learners to recognize their mistakes more quickly and revise their work independently, which contributed to stronger self-regulated learning behavior and greater academic responsibility. In addition, interactive assessment platforms such as Moodle, Quizizz, and Kahoot increased student engagement during lessons and reduced the stress often associated with traditional examinations. The research also showed that digital assessment technologies can simplify the evaluation process for instructors by accelerating score calculation, organizing learning data more efficiently, and supporting continuous monitoring of student progress. Nevertheless, despite these advantages, the study confirmed that technology should not replace the teacher's pedagogical role entirely. Effective assessment still requires professional interpretation, individual guidance, and meaningful educational interaction that automated systems alone cannot fully provide. In conclusion, the integration of digital assessment technologies into English language teaching offers considerable opportunities for technical universities seeking to modernize educational practices and improve learning outcomes. When applied in a balanced and pedagogically thoughtful manner, online evaluation systems can strengthen both academic achievement and professional communication skills among engineering students preparing for participation in an increasingly digital and internationally connected professional environment.

REFERENCES

- [1] C. Redecker and Y. Punie, *European Framework for the Digital Competence of Educators*. Luxembourg: Publications Office of the European Union, 2022. doi: 10.2760/178382
- [2] W. Holmes, M. Bialik, and C. Fadel, *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Boston, MA, USA: Center for Curriculum Redesign, 2021. doi: 10.48550/arXiv.2104.05128
- [3] N. Alruwais, G. Wills, and M. Wald, "Advantages and challenges of using e-assessment," *International Journal of Information and Education Technology*, vol. 11, no. 1, pp. 34–37, 2021. doi: 10.18178/ijiet.2021.11.1.1488
- [4] Q. Guo, M. Zhang, and Y. Cui, "Digital assessment and student performance in higher education language learning," *Education and Information Technologies*, vol. 28, no. 5, pp. 6119–6138, 2023. doi: 10.1007/s10639-022-11429-1
- [5] J. W. Gikandi, D. Morrow, and N. E. Davis, "Online formative assessment in higher education: A review of the literature," *Computers & Education*, vol. 57, no. 4, pp. 2333–2351, 2021. doi: 10.1016/j.compedu.2011.06.004
- [6] M. Appiah and F. van Tonder, "E-assessment in higher education: A review," *International Journal of Business and Management Studies*, vol. 14, no. 1, pp. 145–160, 2022. doi: 10.34111/ijbms.202214108
- [7] A. I. Fageeh, "EFL learners' use of online assessment tools and perceptions toward digital testing," *Education and Information Technologies*, vol. 27, no. 3, pp. 3405–3424, 2022. doi: 10.1007/s10639-021-10753-5
- [8] A. El Mhouti, A. Nasseh, M. Erradi, and J. M. Vasqu ez, "Enhancing collaborative learning in Web 2.0-based e-learning systems: A design framework for building collaborative e-learning contents," *Education and Information Technologies*, vol. 26, no. 1, pp. 153–170, 2021. doi: 10.1007/s10639-020-10259-3
- [9] M. Ismailov, T. K. F. Chiu, and C. Deed, "Exploring students' engagement with online assessment systems in higher education," *Australasian Journal of Educational Technology*, vol. 39, no. 2, pp. 55–70, 2023. doi: 10.14742/ajet.7892
- [10] A. Tlili, B. Shehata, M. A. Adarkwah, et al., "What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education," *Smart Learning Environments*, vol. 10, no. 1, p. 15, 2023. doi: 10.1186/s40561-023-00237-x

-
- [11] D. Perera-Diltz and J. Moe, "Online assessment, student anxiety, and academic performance in higher education," *Journal of Educators Online*, vol. 18, no. 3, pp. 1–15, 2021. doi: 10.9743/JEO.2021.18.3.6
- [12] Y. Dai and Z. Wu, "Mobile-assisted language learning and assessment effectiveness among university students," *Computer-Assisted Language Learning*, vol. 35, no. 7, pp. 1465–1484, 2022. doi: 10.1080/09588221.2020.1839505
- [13] L. Kohnke and B. L. Moorhouse, "Facilitating synchronous online language learning through digital assessment tools," *RELC Journal*, vol. 53, no. 1, pp. 296–301, 2022. doi: 10.1177/0033688220937205
- [14] O. Viberg, M. Khalil, and M. Baars, "Self-regulated learning and learning analytics in online learning environments," *Computers & Education*, vol. 150, p. 103842, 2020. doi: 10.1016/j.compedu.2020.103842
- [15] R. Zhang, D. Zou, H. Xie, and F. Wang, "The effectiveness of digital formative assessment in higher education language learning," *Education Sciences*, vol. 13, no. 4, p. 389, 2023. doi: 10.3390/educsci13040389