

Utilizing Technology to Assess English Learning Outcomes of Students Based on a Competency-based Approach

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ABSTRACT

Keywords:

Competency-Based Assessment, Adaptive Learning, English Language Proficiency

This study addresses the research gap in the integration of technology in evaluating English language learning outcomes, aiming to improve efficiency, accuracy, and flexibility in competency-based assessments. The research employs a mixed-methods approach, using quantitative data from online assessments. Participants included educators and learners engaged in English language programs across various educational institutions. The findings indicate that adaptive learning technologies significantly enhance accessibility, scalability, and student engagement in English language assessments. However, challenges such as technological limitations, data privacy issues, and the need for comprehensive teacher training are highlighted. This research underscores the potential of technology to transform competency-based English language proficiency examinations while offering practical insights for educational institutions, policymakers, and ed-tech companies to optimize these advancements effectively.

Introduction

The advent of technology has fundamentally transformed the landscape of education, altering the dynamics of teacher instruction and student learning. Technology in education refers to the use of digital tools and resources to facilitate teaching and learning processes, enhancing educational experiences and outcomes (Pham et al., 2023). Technology has enabled more engaging and interactive learning opportunities and increased access to authentic language texts and resources, particularly in language instruction. Furthermore, according to Vo, T., Truong, D., & Nguyen, P. (2023), educational technology encompasses various applications, including software, hardware, and digital content, designed to support learning and improve educational efficiency. Specifically, in competency-based methods, technology has been instrumental in shaping language evaluation (. These strategies emphasize the practical application of language

skills and knowledge, and technology has facilitated the development of innovative evaluation techniques capable of accurately assessing a student's language competency in real-world contexts. These advancements necessitate an analysis of the impact of technology on assessment and language instruction.

Two important research concerns deserving of investigation are:

1. In what ways may using technology in language instruction improve students' language competency?
2. How well do the most successful competency-based assessment tools made possible by technology measure language competency compared to conventional assessments?

Examining these study issues can help one get important insights into the junction of technology and language education, thereby clarifying the effectiveness of technological integration and its effects on language teaching and evaluation. Eventually, this extensive research and study will help teachers and academics better understand the benefits and difficulties related to technology in language instruction. It will affect the direction of language instruction and evaluation as well as guide best practices.

Theoretical Framework

Key Concepts in Competency-Based Assessment

Since the 1990s, in Western countries, the competency-based approach has been taken into account in the methodologies of higher education. It has been proposed that constructive alignment principles be implemented in the development of study programs, where the greatest emphasis and role are preconditioned on desired learning outcomes of programs and study courses. The proposed principles of alignment of study elements have important grounds, coming from the same background as that of a competency-based approach in higher education. They solve problems related to the purposes of study programs and the need to improve the quality of teaching and learning activities. (Vitchenko et al., 2022; Gallardo, 2020)

Under a competency-based approach, one idea for assessing students' language skills and attitudes is to focus on assessing their knowledge of the language and their abilities and attitudes toward it. Teachers must change their focus from being the only source of knowledge to becoming mentors, helping students in their personal and professional lives acquire and use current language knowledge and skills. Teachers using this approach must turn their attention from learning to instructing. Furthermore, the need to measure students' practical language competency is emphasized here instead of only their academic knowledge. This shift in evaluation techniques fits the greater trend toward a competency-based approach in education overall (1923 Mirza et al.; 2020 Gallardo).

The framework offered in this paper offers a thorough manual for comprehending and using the mentioned solutions. Considering the issue's several facets will help readers clearly grasp how to handle the possibilities and difficulties. Moreover, this framework can serve as a guide in the

upcoming research. It can be used to make future plans for educational purposes. In short, it can perform as a navigation tool to address challenges in the field.

Integration of Technology in Language Assessment

Technological advances in language assessment have changed how diverse learners may access and engage with assessment resources. Technology makes assessments more accessible and flexible for pupils from all backgrounds and throughout the world (Godwin-Jones, 2021).

According to Villegas-Ch et al. (2021), thanks to the great support of technological language learning and testing platforms, language tests and many other forms of assessment can be adaptive, customizing for each student in a large pool of items and tasks that can bring about benefits for learning and achieving academic goals. Also, tests and assessments can be more engaging with gamification (Boudadi & Gutierrez-Colón, 2020). Most importantly, technology allows administrators and teachers to collect and build student's academic development documents. These can help instructors locate students' standing points and determine how far and how much support they need to reach their language goals in the most efficient ways (Shadieff & Yang, 2020).

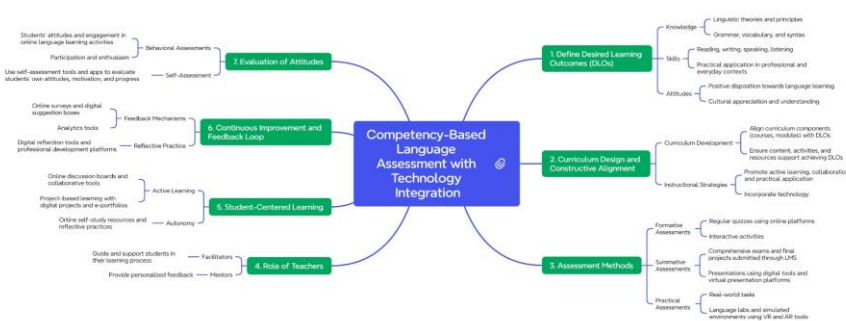
Suggested theoretical framework

The following framework for competency-based language assessment is a synthesis of many teaching and learning theories and principles to address challenges in current educational contexts. It is widely recognized that higher education now puts a sharp focus on competency-based approaches, according to Vitchenko et al. (2022). Hence, this suggested framework emphasizes that expected learning outcomes should be set in advance, and the beautiful orchestration among curriculums, syllabi, and assessments should be highly respected. If teaching is blended in assessments, learners can find it achievable to reach their language goals.

Mirza et al. (2023) underline in behavioral and self-assessments for framework evaluation that the need for knowledge, abilities, and attitudes in technology lets one provide a thorough language education catered to every student. Modern technologies and academic standards are followed in this competency-based language training strategy.

Figure 1

Competency-Based Language Assessment with Technology Integration Framework



Technological Tools for Assessment

Online Assessment Platforms

Online assessment in Vietnam is hampered by internet access and students' requirement to bring their own equipment to test. Exam answers shared by students in private conversations create security issues and emphasize the need for tight management. To prevent problems, you have to understand the system and its operation before evaluating students. While selecting Vietnamese online evaluation platforms, consider cost, supporting services, and internet security. By perfectly integrating online assessment tools into Vietnamese education, their efficiency and effectiveness increase (Le et al., 2022; Van & Thi, 2021).

In education, online assessment tools are often used to measure pupils' knowledge and skills. Teachers may simply prepare and deliver examinations on the platform, allowing students to take them on cellphones, tablets, and PCs. These platforms offer a wide range of pre-built exam questions and allow teachers to generate their own questions that the system can grade (Liu et al., 2020).

Numerous online assessment tools serve instructors' and students' various requirements. APEZ, Blackboard, Canvas, Examview, Formative, Google Classroom, Moodle, Panopto, Proctorio, Respondus, Schoolbox, Top Hat, Unicheck, and Turnitin are popular platforms. These systems make evaluation efficient and accurate with complete tools and functions (Chirikov et al., 2020). Apart from the well-known sites, there are other practical ones used abroad. Schoology; Semantik; Surpass; Thinkific; EasyPron; Portal Pendidikan Maritim Malaysia; UjiOnline; Hadi; eTestZone. Although less well-known, certain platforms have a lot of users because of their simple interfaces and special qualities.

Local teaching resources have improved Vietnam's online assessment mechanism. Cho Thanh Online, Test-maker, and Test Yourself are notable platforms that have gained popularity in Vietnam for their effectiveness in online assessment. These platforms offer Vietnamese educators and students a valuable tool to facilitate the assessment process, providing a comprehensive and reliable solution (Mattsson & Pastorek, 2023).

Overall, online assessment platforms play a vital role in modern education, revolutionizing the way assessments are conducted. With their flexibility, accessibility, and robust features, these platforms empower educators to design meaningful assessments and enable students to demonstrate their knowledge and skills conveniently. As the field continues to evolve, we can anticipate further advancements and the emergence of new and innovative assessment platforms to meet the ever-changing needs of the educational landscape.

Language Learning Apps

Although language learning apps have several advantages over conventional resources for learning a language, previous adoption is highly advised by instructors and students to fully evaluate the simplicity of use and accessibility of these tools. Students should definitely

consider a wide spectrum of elements and factors, including but not limited to compatibility with their present devices, the availability of administrative support, the possibility for scalability, the simplicity of downloading and usage, and the affordability of submitting tests. These factors, taken together, seek to simplify and streamline the procedures teachers and students use. Concurrently, teachers are strongly advised to ensure the language learning applications they select completely fit the Learning Management Systems (LMS) used at their colleges. This is a crucial point, as it helps pupils track their personal development in learning. Teachers provide a coherent and effective learning environment by deftly including the language learning applications into the LMS (Alturki & Aldraiweesh, 2021; Chang et al., 2022).

Language learning apps have exploded and become especially easily available for people trying to widen their linguistic horizons by acquiring vocabulary and grasping the foundations of building fundamental sentences in a new language, given the fast and exponential increase in the usage of modern smartphones and innovative tablets. Although depending just on these amazing apps for the thorough acquisition and mastery of a language can present its own set of difficulties, reputable and visionary technology behemoths like Duolingo, Babbel, Rosetta Stone, and other esteemed entities have emerged as prominent players in the field, empowering countless individuals who aspire to communicate seamlessly with people from diverse cultural backgrounds with a newfound sense of confidence and proficiency. The well-known Communicative Language Teaching (CLT) approach forms the basis of these creative and modern applications. Carefully crafted to describe the particular skills and talents language learners should be able to acquire on their path to becoming more fluent, they were Alamer and Al-Khateeb, 2023; Loewen et al., 2020. At the same time, these amazing apps provide unmatched adaptability since they can be easily used across a variety of different operating systems, meeting the different needs and preferences of a remarkably varied student base, and they also enable accurate and careful tracking of each individual development. Moreover, the on-board revision and testing tools of these innovative language learning applications are quite helpful since they let eager students strengthen their command over the language, consolidate their knowledge, and clearly show their newly acquired language ability. Furthermore, these advanced tools are indispensable tools for conscientious teachers who want to closely monitor and assess the language acquisition process, carefully modify their pedagogical strategies, and offer individualized direction to help every student grow and develop personally (Hirumi et al., 2022; Shi & Fan, 2021).

Challenges and solutions

This section addresses the challenges and solutions associated with integrating technology in competency-based language assessments, aligning with the theoretical framework presented earlier. The framework emphasizes accessibility, scalability, and flexibility, which are crucial for effective language assessment. However, implementing these technological solutions also presents significant challenges. By examining these issues, we can better understand how to overcome barriers and maximize the benefits of technology-enhanced assessments.

Accessibility and Equity Issues

A similar contrast is also seen in technology-based assessment instruments. The well-publicized skills of children raised in high-resource homes or districts suggest that richer districts are achieving higher learning standards than poorer ones merely because they can afford computers and other access to ICT. Consequently, these students will be more familiar with the test materials and delivery, thus performing better because they have had years of practice with similar texts. Tests like SETT and SICO codes will not only require heavy background technical knowledge about computing but also require a heavy financial cost in time directly related to the acquisition of computers and software. If the desired characteristics are not possessed or available, students may become victims of the new technological distinctions. (Greene, 2021; Reich, 2020)

However, technology's effects are circumvented if a dual educational system exists. Most often, technology benefits middle- and upper-class students. The other half of the population, the poverty-stricken, does not have the same opportunities. Financial constraints prevent schools from providing their students with the latest instructional resources. As a result, students who can afford computers and the necessary resources end up with a learning advantage. Further, computer-based learning programs also lag in guidance and components that normally nurture self-worth, such as positive critical feedback and acceptance from caring teachers. Thus, computer instruction can alienate a number of students, destroying initiative and motivation. Once students, particularly those from lower socioeconomic levels and attending poorly funded rural districts, fall behind, they then begin to see the technology as antagonistic and intrusive (Bathmaker, 2021; Kotkin, 2023).

In the digital age, technology can significantly impact societal access to literacy development, learning, and the means to educational attainment. Through technology, students are offered open access to a host of resources they may not have easily had available. With the aid of digital resources, learning can now occur at any time or place. Common accessibility barriers such as poverty, inaccessible transportation, and physical disabilities are now overcome through the use of computers, CD-ROMs, the web, online resources, simulated virtual communities, and e-mail communications. These technologies, on the one hand, allow students to exhibit their mastery of tough, standardized content; on the other hand, they enable the learners to participate, negotiate, and transform learning materials to accommodate their learning style, environment, and individual pace (Shadieff & Yang, 2020; Wei et al., 2021).

Data Security Concerns

Data security concerns are of utmost importance in these projects. One key issue arising from these projects is the meticulous collection, sharing, and storage of the raw audio details and the analyzed speech features. Consequently, the activities necessitate being recorded in private and

serene conditions to obtain the finest quality listening and speaking samples. (Alavi et al., 2022)

To uphold data security and privacy, students are well-informed that their audio data is collected solely to enable them to express any concerns they may have regarding the use and confidentiality of their personal information. It is paramount for students to understand that they have the freedom to provide spoken answers in any language spoken within their family while also comprehending that the assessment primarily focuses on evaluating the quality of their English language expressions. (Sinaga and Oktaviani, 2020)

However, it is crucial to emphasize that even though the primary intention behind sharing the spoken data is educational, it is essential to meticulously plan transcript preparations and storage to ensure all students' privacy rights. Presently, the main sources used to guarantee the security of student speech data are the general data protection regulations and the relevant Taiwan personal data watch guidelines. These regulations and guidelines act as solid safeguards, reinforcing the importance of protecting the privacy of the students and their personal information. (Hasal et al., 2021).

Best Practices in Technology-Enhanced Assessment

This section explores best practices for implementing technology-enhanced assessments, closely aligning with the theoretical framework presented earlier. The framework emphasizes the critical aspects of accessibility, scalability, flexibility, and integration with educational objectives. To maximize the benefits of technology in competency-based language assessments, it is essential to adopt strategies that ensure these tools are effectively integrated into the educational system. This includes aligning technological tools with the curriculum, providing adequate teacher training, ensuring the technology is user-friendly, and understanding its impact on pedagogical practices.

Alignment with Curriculum

Language assessment technology should be closely related to the curriculum to ensure students are assessed on curriculum-specific abilities and knowledge. Technology that is aligned with the curriculum enhances language assessment accuracy and focus. This ensures that the evaluation assesses students' academic knowledge rather than just their usage of technology (Farrell and Jacobs, 2020).

By aligning language assessment methods with course requirements, we may build a more unified language acquisition and evaluation framework. By employing technology to augment language courses, students can showcase and improve their language skills in a manner that aligns with the curriculum's learning objectives and goals. Technology can help increase the relevance and attractiveness of language evaluation for teachers and students (Lawrence et al., 2020).

By matching language assessment tools with the curriculum, kids may acquire digital literacy skills—a growingly vital ability. In curriculum-aligned language assessment activities, students may develop and demonstrate their ability to use technology to improve language learning and assessment. This enables students to develop language and computer literacy in preparation for success in a technologically advanced society (Polizzi, 2020).

Adequate Teacher Training

It is high time every teacher got professional training in employing technology-based assessments. They need to be technology-literate in order to help students gain academic progress. Teachers need to get a lot of training on how to help students learn English. This training aims to give them the skills, information, and abilities they need to use these review methods. Education professionals can guarantee the highest degree of precision and dependability when evaluating students' English language proficiency and accomplishments (Jannah et al., 2020).

Investing in substantial teacher training programs that focus on technology-integrated assessment can improve English language instruction. These programs equip teachers to help students succeed and learn. Thus, educational institutions can foster improved assessment methodologies (Lee et al., 2022).

Teacher training is essential for effectively using new technology-based evaluation methods. Through extensive and specialized training, teachers learn how to integrate technology into their lessons. This integration correctly and completely measures students' language learning (Sailer et al., 2021).

Comprehensive teacher training helps educators adapt to changing technologies. Language acquisition assessment approaches develop with technology. Teachers must keep up with technology to give pupils relevant and comprehensive exams. Thus, instructors need ongoing training in the latest technology and evaluation methods (Burns, 2020).

Teacher training also boosts trust in technology-integrated assessment. When teachers feel competent and prepared, they are more likely to use sophisticated evaluation methods in English language education. Confidence boosts student motivation, engagement, and learning. Students gain substantially when teachers are trained to use technology-integrated assessment approaches (Anderson and Putman, 2020).

User-friendly and appropriate technology

In this learning environment, a key component of teacher training is the comprehensive and intensive development of knowledge. This ability goes beyond a simple grasp of theoretical ideas to encompass real applications and knowledge using a broad spectrum of advanced platforms and tools. By providing instructors with the requisite information and competence, they may proficiently assess and evaluate the English language proficiency of their pupils. Incorporating these cutting-edge and dynamic technologies into the educational process

improves the overall efficacy of English language training and creates new prospects and advantages for educators and learners alike. By incorporating current technology into the evaluation process, teachers might gain a lot of knowledge about the development of their pupils and areas of need for aid. So, students can be assured of being exposed to the high-quality teaching environment and reaching their desired level of English proficiency if the teaching methodology is focused on an individualized teaching approach (Voithofer & Nelson, 2021; Saubern et al., 2020).

It is evident that a comprehensive development of competence is of the utmost importance in this specific learning environment, as evidenced by this fundamental component of teacher preparation. This comprehensive and extensive knowledge extends beyond the realm of theoretical principles to encompass the practical execution and the cultivation of the necessary skills to effectively navigate a diverse array of technological tools and sophisticated platforms. The educational process will be revolutionized by providing teachers with a comprehensive range of knowledge and competency, which will enable them to fairly evaluate and assess the English learning results of their students (Durrant et al., 2021; Schmitt et al., 2020).

Modern technology in the classroom lets instructors and students flourish while also raising English language instruction. Teachers can evaluate student development and pinpoint areas needing work by use of technology and accepted pedagogy. Technology guarantees students obtain an outstanding education and acquire their desired English language competence level, therefore enabling a customized and specialized approach to teaching. The AI algorithms' detailed feedback ensures that students receive precise ideas to improve their weaknesses, which boosts the possibility of continuous progress. This evaluation method helps students enhance their language abilities thoroughly and precisely using advanced linguistic models and machine learning techniques. This might lead to individualized, inclusive education. Assessment technology's fast growth and investigation offer endless potential for language acquisition and personal development (Kwak, 2023; Musa, 2024). This groundbreaking artificial intelligence investigation previews the future of education when language barriers are abolished, and students may talk confidently in global society. The expansion and enhancement of these artificial intelligence systems will facilitate the success of students in a global context and improve their learning experience. Artificial intelligence's exceptional capabilities empower students to modify their language acquisition trajectory with each assessment. This creativity has a significant impact that extends beyond the classroom. In a various and linked world, it might mold personal life and open fresh opportunities. Using sophisticated AI algorithms, teachers can produce a cohort of confident, fluent, and culturally flexible people ready to welcome the complexity and opportunities of an always shifting global world (Alam, 2021).

Impact on Pedagogical Practices

Several changes in the field have impacted teaching techniques. Everything has changed because of technology, including education. With the use of technology, teachers may adapt their lessons to the needs and abilities of individual students. Therefore, according to Rafiola et al. (2020), the process of acquiring knowledge and skills becomes more tailor-made for each student based on their personal interests and learning styles.

What is more, teachers can now provide learners with instant feedback due to the support of technology. They can see students' academic progress through any online learning system, so assisting or navigating students' learning tracks becomes doable thanks to continuous online assessments. Students can also be informed about their strengths and weaknesses, as well as strategic plans to upgrade their study results in the shortest time frame (Deeva et al., 2021; Hooda et al., 2022).

Due to social development, the teaching practice has been vastly modified. Teachers and schools strive to create inclusive classrooms with diverse backgrounds, talents, and learning needs. This requires implementing programs and providing instruments to ensure that all students have equal access to high-quality education and personal development (Landsman & Lewis, 2023; Sanger, 2020).

Conclusion

In conclusion, there has been constant and outstanding success in evaluating and testing English language competency via the use of creative and cutting-edge technologies. Innovative technology outperforms traditional approaches by zeroing in on critical competencies; as a result, comprehensive assessments of pupils' language skills are guaranteed to be incredibly accurate and dependable. This innovative device will be very helpful to teachers and other involved parties as it provides a bird's-eye view of the language competency of their students. Consequently, it considerably enhances education and provides pupils with a boost in their future endeavors by means of the English language.

Further studies could explore the long-term impacts of these technologies on language learning outcomes, investigate the effectiveness of different technological tools across diverse educational settings, and examine ways to address the challenges associated with technology integration, such as data privacy and equitable access. Additionally, research could focus on developing and testing new adaptive learning technologies to further personalize and improve language assessment and instruction.

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Biodata

Duong Thi Thu Huyen, a Ph.D. candidate, focuses on language education, assessment, and educational management. Specializing in applied linguistics, she delves into English language pedagogy, assessment methodologies, and educational administration. Committed to teaching English and enhancing language skills, she also ensures fair language assessments. Huyen's research interests include academic English proficiency, cultural intersections in language education, and effective educational management. Through her work, she aims to enrich language teaching practices, advance assessment strategies, and contribute to educational management, fostering a holistic approach to language education and assessment.