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Scientific articles

Impulso a la certificación del idioma inglés mediada por la inteligencia artificial en estudiantes de nivel superior

***Boosting Artificial Intelligence-mediated English Language Certification in
Senior Students***

***Impulsionando a certificação de língua inglesa mediada pela inteligênci
artificial em estudantes de nível superior***

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Resumen

El objetivo del presente trabajo fue analizar el alcance de la certificación del idioma Inglés EnglishScore del British Council en estudiantes de nivel superior de una institución pública del estado de Tabasco. El análisis realizado a través del proceso de certificación demuestra que la obtención de una certificación enfocada en la empleabilidad sirve para evaluar los procesos de enseñanza-aprendizaje obtenidos en la asignatura Inglés de los programas educativos de la institución académica. Asimismo, optimiza el proceso de empleabilidad del estudiante en sus áreas profesionales al dominar una segunda lengua y tener un documento aprobatorio de esta. De la misma forma, demuestra que el uso de la inteligencia artificial en certificaciones de idiomas a través de dispositivos móviles es efectivo y garantiza la fiabilidad de los resultados de acuerdo con los protocolos de monitoreo de seguridad remota que se emplean en la aplicación del instrumento de evaluación.

Palabras clave: certificación del inglés, inteligencia artificial, enseñanza del inglés, evaluación educativa.



Abstract

The objective of this paper was to analyze the scope that English Language Certification EnglishScore of the British Council has in Senior Students of a public institution in the state of Tabasco. The analysis carried out through the certification process shows that obtaining an English language certification focused on employability serves to evaluate teaching learning-process obtained in the English assignment of the educational programs of the academic institution. Likewise, it optimizes the student's employability process in their professional areas by mastering a second language and having a document to approve it. Similarly, it demonstrates that the use of Artificial Intelligence in language certifications through mobile devices is effective and guarantees the reliability of the results according to remote security monitoring protocols that are used in the application of the assessment tool.

Keywords: English certification, Artificial Intelligence, English teaching, educational evaluation.

Resumo

O objetivo deste trabalho foi analisar o alcance da certificação de língua inglesa EnglishScore do British Council em estudantes de nível superior de uma instituição pública do estado de Tabasco. A análise realizada por meio do processo de certificação demonstra que a obtenção de uma certificação focada em empregabilidade serve para avaliar os processos de ensino-aprendizagem obtidos na disciplina de inglês dos programas educacionais da instituição acadêmica. Da mesma forma, otimiza o processo de empregabilidade do aluno em suas áreas profissionais, por meio do domínio de um segundo idioma e da posse de documento que o aprova. Similarmente, demonstra que o uso da inteligência artificial nas certificações linguísticas através de dispositivos móveis é eficaz e garante a confiabilidade dos resultados de acordo com os protocolos de monitoramento remoto de segurança utilizados na aplicação do instrumento.

Palavras-chave: certificação de inglês, inteligência artificial, ensino de inglês, avaliação educacional.

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Introduction

Nowadays, learning a second language is essential for the professional training of students enrolled in higher-level educational programs. However, there are few public institutions that integrate English subjects into their curricula as part of the transversal approaches to knowledge and mastery of a second language, which seek to contribute to the learning of thematic contents of the study programs.

In this environment of globalization, learning a foreign language has become essential in formation processes, since it serves as a channel for interactions between people and various academic and/or work spaces. In effect, learning a second language and connecting with other cultures can expand one's vision of the world, one's own life, and one's culture (Bjornson, 2019).

In fact, the benefits derived from mastering another language include significant learning in the professional field, since access to information in a second language facilitates a comprehensive exchange of knowledge and broadens the perspectives of internationalization of knowledge. In a nutshell, it is undeniable that fluency in English facilitates entry into the labor market. Therefore, obtaining a certification of proficiency in this language gives students a qualitative advantage, since this usually makes a difference compared to other candidates during hiring processes. Even if some entities do not require an official certificate to validate the candidate's competence, they generally prefer professionals who are fluent in English.

According to the British Council (2020), in Mexico, “the most common English language certifications are the TOEFL (Test of English as Foreign Language), IELTS (International English Language Testing System), CENNI or Cambridge in its versions KET, PET, FCE, CAE and CPE” (para. 4), among others. However, most of these assessment instruments focus on language knowledge in the academic field, that is, they examine students' language skills at the level of understanding specific topics in the academic field and not on aspects of the daily life.

On the other hand, the EnglishScore English certification from the British Council represents a proposal for evaluating English language proficiency focused on the linguistic skills necessary for communication in everyday and work situations. This global English for employability test is supported by employers, universities and governments in various countries. EnglishScore is a competency assessment that can be carried out from mobile devices, using remote security standards and making use of artificial intelligence. Therefore,



compared to other certifications available on the market, the administration of this test is faster and more accessible. Test results are presented according to the Common European Framework of Reference (CEFR A2-C1) along with a Numerical Index (0-599), which helps students understand their performance within a specific CEFR range. Additionally, this test is designed for students over 16 years and its results are typically used in work settings.

For all the above, the purpose of this document is to analyze the impact of the EnglishScore certification on higher level students to evaluate the knowledge acquired at the end of their educational programs. Likewise, it seeks to determine the viability and safety of the use of Artificial Intelligence in the process of obtaining this English language proficiency certification. Finally, the aim is to establish the advantages of obtaining this certificate in terms of employability for higher level graduates.

To this end, the guiding question was the following: is it viable to use the EnglishScore English language certification, supported by Artificial Intelligence, as a method to evaluate the mastery of English language in higher-level students?

Theoretical framework

There are multiple definitions for the concept *artificial intelligence*, although in general terms it refers to a field that combines computer science disciplines and robust data sets to solve problems. This field also encompasses subareas, such as machine learning and deep learning, which are frequently mentioned in conjunction with artificial intelligence.

For Manning (2020), artificial intelligence is defined as “the science and engineering of making intelligent machines” (p. 1). This implies that autonomous machine systems can plan and make sequential decisions to achieve a specific goal without constant human intervention. In addition, it seeks to improve the processes of daily life by increasing capabilities to address the social needs of humans and other living beings, researching and developing effective tools for society.

In this context, according to EnglishScore (2021a), “the EnglishScore English language certification is the only English language assessment supervised by artificial intelligence through a mobile device in the world” (p. 9), since in each exam the facial detection technology monitors the camera to ensure candidates keep their faces visible at all times. This technology also detects five types of behaviors in real time, that is:

- Face not visible.
- Face partially visible.



- Look away.
- More than one face detected.
- Face too small.

When a violation is detected during the examination, the process stops and a photograph is taken. These violation images are captured, stored and reviewed by a human supervisory team at EnglishScore as part of the certification evaluation process. Therefore, dashboard administrators can monitor AI-managed security protocols during exam administration when the tested student has consented to share their testing information with an institution.

In addition to monitoring the technology for potential violations, standard surveillance is performed on all secure sessions by capturing photographs at random intervals throughout each test session, ensuring a security check for each applicant. The resulting photographs are stored securely in accordance with GDPR (General Data Protection Regulation) and are only checked if the examiner decides to purchase a certificate or share their score with an official test application organization.

Additionally, upon completion of the administration of the evaluation instrument and passing through the AI security filters, the EnglishScore certification is reviewed by the official applicator of the academic institution. In this way, each certificate issued by EnglishScore undergoes an academic review before the language proficiency certificate is issued.

In the words of Rangel (2022), “one of the most important applications of AI in education is online proctoring, which has revolutionized the integrity and security of remote exams” (p. 2). This method is used to proctor students' exams in remote locations using advanced technology. AI-powered web analytics solutions offer numerous advantages, such as better performance, scalability, and cost-effectiveness. However, the main benefit lies in greater reliability and security in testing. AI algorithms can analyze large amounts of data to detect patterns and errors that might go unnoticed by human examiners, ensuring a fair and safe testing environment for all students.

The above demonstrates that the use of AI in an English language certification exam, such as EnglishScore, is viable, as it allows the testing program to verify the identity of the candidate and ensure that they are a pre-registered student. Additionally, facial recognition is used throughout the test to ensure that the same person is present and active throughout the

exam. This helps prevent fraud, a significant problem in many traditional English language certification exams.

Materials and methods

The data analyzed in this study were collected during the first EnglishScore English language certification process, carried out between April and May 2023 at Universidad Politécnica del Golfo de México. The study population included 100 graduates of various educational programs, corresponding to the 2019-2022 period.

The main objective of this investigation was to determine the scope of the British Council's EnglishScore English language certification in higher-level graduate students. In addition, it sought to analyze the advantages of using AI in the supervision of remote tests for the certification of a foreign language. Likewise, an attempt was made to determine the impact that an officially valid domain certification focused on employability has on the graduate's profile.

In this first process, the level of English language proficiency achieved by the participants was evaluated in accordance with the Common European Framework of Reference for Languages (CEFR). In addition, the effectiveness of using remote AI proctoring of the test via mobile devices was analyzed. This analysis was carried out through the Dashboard, a control panel that shows the images obtained during the remote supervision of the test by the AI, which allows the user to be identified and verify the correct application of the security protocol in the test. remote test. Likewise, the Dashboard determines the level of proficiency achieved by the student and its equivalence with other English certifications.

In order to determine the feasibility of using the AI-mediated EnglishScore English Language Certification to measure language proficiency results in higher-level students, it was necessary to carry out the first English language certification process, which was conducted with the following population of graduates from various educational programs at Universidad Politécnica del Golfo de México:

- Petroleum Engineering: 10 students.
- Financial Engineering: 8 students.
- Agrotechnology Engineering: 2 students.
- Industrial Automation and Control Engineering: 23 students.
- International Trade and Customs Engineering: 47 students.
- Bachelor's Degree in Physical Therapy: 10 students.



The certification carried out by the students was the EnglishScore Core Skills Test, which evaluates listening comprehension skills (~~listening comprehension~~), reading (~~reading~~) and grammar (~~grammar~~). According to EnglishScore (2021b), “the Core Skills ability provides evidence of competence in the understanding and use of English in everyday life and in the workplace” (p. 4), since these skills are commonly developed in the subject of English from the university's academic programs.

In addition, EnglishScore is based on the sociocognitive model of language use, which originated in the language examination and validation in 2005. This theoretical framework suggests that “the use of language through *speaking* and *writing skills* is based on the knowledge of vocabulary and grammar” (p. 6). Reference level descriptions for English are used to guide the selection of vocabulary and grammatical structures that will be assessed in the test.

However, the *reading* and *listening sections* focus on five operations that involve expert readers and listeners: decoding, word recognition, analysis, meaning construction, and discourse construction. Thus, the test questions represent a hierarchy of difficulty in terms of the cognitive load imposed by different processes or levels of reading and listening, while questions directed at the lower levels of the CEFR tend to be limited to decoding, recognition of words and analysis, while those aimed at higher levels imply greater attention to the construction of meanings and discourses. The same AI uses the transition of these patterns when identifying the student's level of competence based on errors and successes during the test.

Consequently, graduates of the 2019-2022 generation were able to take their exam through their mobile devices during the period from April to May 2023 remotely, by respecting the certification security protocols. It is worth mentioning that the EnglishScore certificate is linked to technological tools and is related to *m-learning* (mobile learning). This is because the student or user who wishes to take the certification does so through a downloadable application on Android and iOS operating systems, which allows flexibility in time management and student availability. Therefore, the period from April to May was established to complete the certification, validation and delivery of results process.

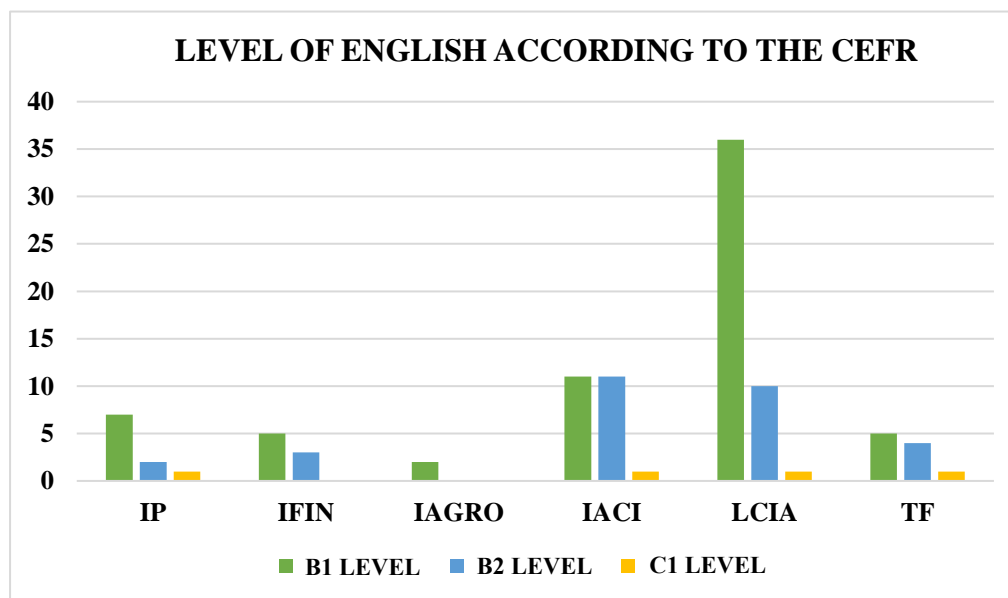
In short, the EnglishScore English language certification made it possible to identify the level of language proficiency obtained by the students of the 2019-2022 generation. Likewise, it was possible to deduce the linguistic skills acquired during the completion of the English subjects in their academic training process. Finally, it should be noted that the

students did not receive a preparation course prior to the test, which makes the validity of the results obtained more precise, since they allow the exact identification of the linguistic skills acquired and the level of proficiency achieved.

Results

The results obtained in the first English language certification process, carried out between April and May 2023 through EnglishScore's CoreSkill certification, demonstrated the level of competence achieved by graduates according to the standards established by the Common European Framework of Reference (CEFR) in English proficiency.

Figure 1. Frequency of English language proficiency level results obtained by the educational program of Universidad Politécnica del Golfo de México during the April-May 2023 period.



Source: self-made

Figure 1 details the results achieved according to the level of English language proficiency of the graduated students based on the CEFR. As you can see, the most representative level of English is B1.

Discussion

The results of this research demonstrate that the EnglishScore Core Skills English language certification instrument, monitored by artificial intelligence and subjected to feasibility analysis, is intrinsically related to the levels of mastery expected by students graduating from the various educational programs from Universidad Politécnica del Golfo de México. During the analysis of the data collected, a trend was observed towards the B1 proficiency level, which is expected by students upon completing their academic program, in accordance with the study programs and objectives of the English subject in the university.

However, it is worth highlighting that the main objective of the results of this first application was to determine the use and knowledge of the English language by the students through the certification of their scores, which helps them demonstrate their skills to potential employers. Therefore, it is concluded that this remote certification, supervised by AI, is feasible in terms of measurement results.

Furthermore, this research suggests that the results obtained are highly relevant and supported by previous studies, such as that of Frąckiewicz (July 18, 2023), who concluded that “AI-based proctoring solutions can handle multiple exams simultaneously, which allows institutions to conduct large-scale evaluations without the need for additional human resources” (para. 1). This provides additional evidence to claim that this test is feasible in terms of security, as all data collected is encrypted and stored securely.

On the other hand, it is relevant to mention the work of García *et al.* (2020), who determined that “the use of AI can help improve educational supervision practices” (p. 14), since currently this work generates many doubts for various reasons. In this way, supervision activities can acquire significant meaning in terms of feedback and improvement of educational processes.

Finally, and based on the analysis carried out, it is deduced that the EnglishScore certification is a safe instrument for evaluating the English language that, with the help of AI, facilitates the measurement of mastery of a foreign language through mobile devices, which guarantees the reliability of the results for both users and higher educational institutions. In addition, it allows students to optimize hiring processes in the workplace by mastering a second language and having a document that certifies this mastery.

Conclusion

Obtaining a language certification has significant relevance at the end of the teaching-learning process of a foreign language. In fact, at the level of higher education, it is essential for students to obtain a document that guarantees their command of the English language, since this can facilitate their insertion into the labor market in accordance with their graduation profile. In other words, when a university program includes English subjects in its academic curriculum, it is crucial to manage the certification of said language to validate the knowledge acquired during the students' academic stage.

Therefore, the objective of this work was to analyze the feasibility of using the British Council's EnglishScore English language certification in higher-level students from a public institution in the state of Tabasco. In this sense, the analysis carried out through the certification process demonstrated that obtaining an English language certification focused on linguistic skills in both daily life and work served to evaluate the teaching-learning processes applied in the subject of English in the educational programs of Universidad Politécnica del Golfo de México. Likewise, it made it possible to optimize the student's employability process in their professional areas by mastering a second language and having a document that endorses their command of the language.

On the other hand, it was shown that the implementation of AI in an English language certification exam through mobile devices guarantees the reliability of the results in accordance with the Common European Framework of Reference (CEFR), along with the security of the remote monitoring protocols used in the application of this evaluation instrument.

Therefore, it can be stated that English certification represents a valuable asset that significantly benefits graduates in their career prospects, educational opportunities and personal growth in an interconnected world, as this allows them to be more versatile and adaptable in diverse work environments.

Likewise, it can be determined that AI and language learning have enormous potential to revolutionize the way we learn and certify languages, as it can make them more efficient, attractive and accessible for higher-level students. In other words, the EnglishScore English language certification represents an alternative to optimize professional growth, effective communication and access to job opportunities, as it provides higher-level graduates with demonstrable language skills and the confidence necessary to thrive in a changing world.

increasingly interconnected and multicultural thanks to the command of the English language.

Future lines of research

English language certification mediated by artificial intelligence in higher-level students is a constantly evolving field that presents several promising areas for future lines of research with which the scope of the spectrum of the problem of the present work can be improved and expanded. Some of them are listed below:

1. Improving the accuracy and validity of remote English language certifications: Articulated intelligence can be used to develop more accurate and valid evaluation systems. Therefore, researchers can focus on improving speech detection, grammar, reading comprehension, and other key language skills for more reliable results on language certification tests.
2. Personalization of learning: AI has the potential to tailor testing and learning content to each student's individual needs and abilities. Therefore, investigating how to use AI algorithms to personalize the certification process could improve the efficiency and effectiveness of language learning and certification.
3. Assessment of communication skills: English language certification often focuses on written skills, even though oral skills are equally important in a globalized environment. Therefore, it would be valuable to develop AI systems that can evaluate and provide feedback on pronunciation, intonation, and oral fluency.
4. Data analysis and machine learning: AI can be used to analyze large amounts of data generated by students in their learning activities and assessments. Consequently, investigating how to extract meaningful insights from this data and how to apply machine learning to improve certification quality is a promising avenue of research.
5. Intercultural skills assessment: In an increasingly interconnected world, English language certification could also include the assessment of intercultural skills. AI could therefore help measure cultural understanding and adaptability, which is essential for effective communication in international contexts.
6. Social and ethical impact: As AI plays a more prominent role in English language certification, it is critical to investigate and address the potential social and ethical impacts of its implementation. This includes equity in access to certification and ensuring that AI does not perpetuate cultural or linguistic biases.

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