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Employing Virtual Self-Learning Resources to Improve Reading Skills in High School
Students of Costa Rica

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Employing Virtual Self-Learning Resources to Improve Reading Skills in High School Students of Costa Rica

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Abstract

Virtual self-learning resources have been positioned as transformative tools to improve English reading skills among high school students in Costa Rica. Virtual self-learning resources, including gamified learning apps and interactive e-books, offer a flexible, interactive and personalized approach, fostering critical reading skills crucial for academic success. Despite posing challenges such as digital equity and the need for teacher training, these tools can bridge gaps in traditional education. This essay underscores the need for strategic implementation, continuous assessment, and community engagement to maximize the benefits of digital tools and ultimately prepare students for a globalized, English-proficient workforce.

Keywords: critical thinking, curricular reform, English proficiency, reading skills, virtual self learning resources

Resumen

Los recursos virtuales de autoaprendizaje se posicionan como herramientas transformadoras para mejorar las habilidades lectoras en inglés entre los estudiantes de secundaria de Costa Rica. Los recursos virtuales de auto-aprendizaje, incluidas las aplicaciones de aprendizaje gamificadas y libros electrónicos interactivos, ofrecen un enfoque flexible, interactivo y personalizado, al fomentar habilidades de lectura crítica cruciales para el éxito académico. A pesar de presentar desafíos como la equidad digital y la necesidad de capacitación docente, estas herramientas pueden cerrar brechas en la educación tradicional. Este ensayo subraya la necesidad de implementación estratégica, evaluación continua y participación comunitaria para maximizar los beneficios de las herramientas digitales y, en última instancia, preparar a los estudiantes para el sector laboral globalizado y con dominio del inglés.

Palabras clave: comprensión lectora, dominio del Inglés, pensamiento crítico, recursos virtuales de autoaprendizaje, reforma curricular

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Introduction

The panorama in the field of education in Costa Rica is evolving rapidly, and with it, the methodologies to promote students' learning. According to the Ministry of Public Education (MEP, 2024), Costa Rica is undertaking a major curricular reform aimed at promoting critical thinking over memorization. The reform prioritizes citizenship and foreign languages, with the aim of engaging students as active learners and equipping them with skills relevant to society and the labor market. In today's digital age, where technology has become an integral part of daily life, addressing its potential in education is not only advantageous but necessary.

In Costa Rica, secondary education faces the challenge of providing students with solid reading skills essential for academic success in the acquisition of a second language as essential as English. Kadir et al. (2014) explained that "students with good reading comprehension skills could perform well in any subject/course because they have developed the critical reading skills to not only understand but analyze any text given" (p. 209). In high schools across the country, educators encounter the task of not only teaching subject specific topics, but also developing critical reading abilities that lay the groundwork for speaking, listening and writing skills, and therefore for future academic success.

It is irrevocable that traditional methods of teaching reading have served as the cornerstone of education for centuries, but they often fail to engage current technology-aware generations. Teachers now have an invaluable resource at their disposal to completely transform the way reading is taught and acquired through the development of virtual self-study resources. These materials are available on a variety of digital platforms, such as gamified learning apps and interactive e-books, and they are made to both engage students and meet their unique learning needs. Additionally, the flexibility and accessibility offered by virtual self-learning resources have the potential to bridge the gap between formal instruction and independent learning.

However, while the promise of virtual self-study resources for improving reading skills is stated, their successful implementation requires careful consideration and strategic planning. Teachers could face challenges such as digital equity, lack of training, and lack or need for instruction. For enhancing reading abilities, teachers need to ensure self-learning resources' effective application through thoughtful thought and deliberate preparation.

By addressing the importance of reading skills in language acquisition, the definition and types of virtual self learning resources, and their implementation and impact on evaluation reading skills, this essay will explore the critical role that virtual self-learning resources can play in addressing this challenge, specifically focusing on their potential to improve reading proficiency among high school students in Costa Rica.

Importance of Reading Skills in Language Acquisition

In Costa Rica, as in many other countries, the reading skill is directly linked with academic achievement since it enables students to understand, process, and criticize information. Students with strong reading abilities are able to follow complex instructions, grasp main concepts and analyze texts, leading to effective understanding in all the other subjects. Research has shown a positive correlation within the reading proficiency and academic success: Kadir et al. (2014) concluded that “teachers should employ the appropriate strategies in their method of teaching reading and they need to be creative and critical in their teaching activities to help students develop into better critical readers” (p. 208). For instance, a student who is proficient at reading is more likely to perform adequately in other subjects that require problem solving and critical analysis. Improving reading abilities can have an ongoing impact on students' performance throughout the curriculum while setting them up for success in both higher education and future workplace in Costa Rica.

When English is learned as a foreign language, critical reading skills are crucial for mastering speaking, writing, and listening skills. Deane (2020) clarified that critical reading involves the ability to analyze texts, infer meanings, synthesize information, and

other aspects that build and justify interpretations of texts, which are key to effective communication in English. In contrast Rochman (2017) stated that students with poor reading skills will lack comprehension abilities, face distraction, difficulties in expression, misinterpretations of the text, deficits on accuracy and fluency, among others. For example, by analyzing a dialogue in a text, students can improve their speaking skills by deciphering correct pronunciation and intonation of words. Similarly, understanding complex sentences is correlated with listening skills since students can follow spoken language. In writing, critical reading helps students to apply correct grammatical structures, use advanced vocabulary, and construct coherent arguments. Therefore, in Costa Rican secondary schools, promoting critical reading can lead to comprehensive language development.

Reading is also necessary for the development of analytical and cognitive abilities. Par (2018) found that students with difficulties in developing reading skills are more prominent to fail to detect the main ideas of texts, purpose, inference meaning, draw conclusions, make comparisons, identify causes and effects of situations, use thinking skills... Hence, these mental exercises foster critical thinking abilities and analytical skills which are also honed through reading, as students learn to evaluate arguments, identify biases, and draw evidence-based conclusions. Okkinga et al (2018) showed that since reading comprehension is a fundamental skill in many school subjects, difficulties can have serious implications for students' educational success and, consequently, for their later societal careers. In this digital age, where information is abundant, reading is necessary for the development of analytical and cognitive abilities. For Costa Rican students, developing these skills through focused reading instruction can improve their general intellectual abilities and prepare them for future challenges.

Virtual Self-Learning Resources: Definition

Virtual self-learning resources are digital tools and platforms designed to facilitate independent learning. Ibabe and Jauregizar (2010) describe them as self assessment or self rating tools found online where students can access diverse self-learning exercises and

teachers can track and evaluate results. Thus, self-learning resources are tools that enable students to access educational content, practice skills, and receive feedback without direct teacher intervention. On the other hand, Hiemstra and Brocket (2009) also explained that self-directed learning is achieved when the person, in this case the student and/or the teacher, the process (the development of reading skills), and the context (the school and community) are in balance. In other words, this process is established by instilling students to take control of their own learning, identifying their goals and areas to improve, as well as the sociopolitical context and the environment must support the process. In this case, the educational community must provide students with the necessary tools for the application of virtual self learning strategies. Pratibha (2017) emphasized that self learning can also be termed as self taught, self study, self-directed, lifelong learning, informal learning, distance learning, personal learning, etc.

These resources have key characteristics that make them highly effective and sought after. Pratibha (2017) also stated that self-learning is gaining prominence in every field of academics because of its range of benefits; some of them include learning by oneself at one's own pace, place, and time. Gligorea et al. (2023) explained that most virtual learning tools use adaptive algorithms and artificial intelligence to adjust content and activities to the student's level of proficiency and learning pace; those aspects maximize students' engagement to the resources, and therefore, academic outcomes will be successful. In addition, referring to time, virtual self learning resources can be accessed from various devices, including computers, tablets and smartphones, allowing learners to enter them anytime, anywhere.

Interactivity also stands out; these resources often incorporate elements such as questionnaires, games and simulations to engage students in an entertaining way. Reyes et al. (2022) showed some advantages: "Features of adaptive e-learning environments can be identified through 'diversity, interactivity, adaptability, feedback, performance, and predictability' (p. 11). Furthermore, the use of multimedia elements, such as videos, audio and visuals, caters to different learning styles: "Student characteristics of learning style are

recognized as an important issue and a vital influence in learning and are frequently used as a foundation to generate personalized learning experiences” (Reyes et al., 2022, p. 11).

Commitment is another advantage; interactive and gamified elements make learning more fun and motivating, which can increase students’ willingness to participate and persist in their studies. However, this matter relies on the quality of resources teachers provide to their students. According to Nieto et al. (2016), designing virtual tasks in a self-paced manner can foster student’s motivation, both extrinsically and intrinsically as they are engaging and improve academic achievements.

Virtual self-learning resources are superior to traditional learning approaches in a number of ways. In a traditional class, students must understand what their teacher explains in real time, which leaves those who need more reflection time at a disadvantage, but with these digital resources, the classes are left in the hands of those who learn since they can analyze the information at their convenience, especially for those with different learning styles (Cordero & Núñez, 2017). However, this effectiveness depends on the teacher’s ability to customize these resources to meet each student’s unique needs and create individualized learning experiences, which is also a noteworthy advantage of personalization. Furthermore, the availability of a wide range of learning materials and activities that may not be accessible in traditional classrooms ensures that students encounter resources to support their learning. By targeting the distinct strengths and weaknesses of each student or population, these tailored strategies can improve academic achievements.

Types of Virtual Self-Learning Resources

There are several types of virtual self-learning resources available on the Internet. One of the most common tools of this sort are gamified learning apps which integrate a game-based approach to make learning interactive and enjoyable. Chen and Zao (2022) described gamified learning apps as the combination of mobile learning with the use of game elements such as vocabulary competitions, study groups, and rewards, which

enhance motivation and language learning in students. One of the most popular examples of this type of resource is Duolingo, which is an app that incorporates aspects such as levels, rewards, challenges, scores, and other features which improve the effectiveness and enjoyment of language learning (Nushi & Eqbali, 2017).

Additionally, there are interactive e-books and e-libraries, which students can use to read digital texts that contain multimedia elements such as videos, images, audios, and activities. Al Saadi et al.'s (2017) research showed that through the use of interactive links, sound, and images, students can improve language acquisition and these characteristics increase student engagement, enhance learning results, and make it easier for people to share resources and ideas, creating collaborative learning environments. These types of virtual self learning resources often include clickable elements; for example, if a student needs a definition or synonym, they can click the word they do not know and search for its meaning. Students can explore a variety of topics on interactive library apps such as Epic! and Kindle, which offer a collection of books and information in an interactive manner.

Likewise, there are virtual self learning resources with adaptive features, which students can use to learn at their own pace and choose their preferences. Maaliw (2020) described them as self-learning resources with an adaptive model that personalizes education by tailoring content and methods to individual student preferences and learning styles. By utilizing technology to adjust in response to ongoing feedback and data analysis, this method improves efficiency and enjoyment while also advancing learning objectives. In his study, he provided Moodle as an example of self learning resources with adaptive features, which is a learning management system often used by universities or language learning academies. These kinds of apps work by using algorithms such as in social media, in order to discover and personalize the features according to the user.

Implementation of Virtual Self Learning Resources in Costa Rican High Schools

Over the years, the educational sector in Costa Rica, specifically in the case of English language teaching, has faced a series of adversities and drastic changes, which

consequently has invoked the need to adapt education to new technological resources. Charpentier (2013) explained that the use of “technology promotes autonomous learning on the three main areas of autonomy: choosing materials, defining objectives and evaluating or learning outcomes” (p. 455). Ballou (1996) provided a report on educational finances and according to his conclusions most urban schools invest in resources such as computers, physical and digital book platforms, internet access, among others. However, rural schools often lack technological infrastructure, leading to disparities in access to digital tools and resources.

Private schools in Costa Rica often have more resources than public schools, Hernández and Del Valle (2013) concluded that analyzing school-related factors, private schools that have computers, books and laboratories acquire higher grades compared to public schools. These digital tools come in the form of learning platforms, digital textbooks and educational software to enhance traditional teaching methods. However, the investment on these resources is only worth it if teachers are willing to use them and are equipped with the right training to apply them in classes (Charpentier, 2013).

Digital equity is a key aspect in the successful implementation of virtual self-learning resources in schools. In a study conducted by Torres-Calderón (2018), it was concluded that both in the private and public sector, there is still a lack of materials and training regarding language teaching, and the existing ones are often outdated. Also, she showed that even when high schools do have the resources needed, teachers are not able to give them proper use since they lack training or information to use them correctly, but rather they gave a rudimentary use to a mechanism with great potential.

Each institution must invest in workshops for parents, students and teachers, as well as technological devices such as computers, tablets, an Internet connection, among others, necessary for the application of self-learning resources. Gumbo (2020) made emphasis that “teacher education should involve the ongoing re-skilling and up-skilling of teachers. Professional development training, which mainly happens through workshops, is an important strategy for achieving this” (p. 68). In the public sector, it should be ensured

that every student has the tools to participate in digital learning to help bridge the gap between different regions and socioeconomic groups. This type of training should focus on promoting understanding of the various characteristics of the resources to be used, so that teachers can apply it in their daily work. Talks about specific educational software, the creation of interactive digital content, and the management of virtual classrooms are essential.

For virtual self-learning resources to be effective, they must be integrated and adapted with the existing curriculum and teaching practices in schools. This requires careful work for teachers to ensure the alignment of digital tools with the curricular objectives and the results expected from the students, which meet their specific needs. By incorporating these resources into the reading skills curriculum, they become a natural part of the learning process, enhancing traditional teaching methods rather than replacing them.

While it is true that many schools and teachers may lack the resources or training necessary to implement virtual self-learning resources effectively, teachers can develop their own virtual self-learning resources in apps such as Canva, which allows for interactive teaching features. Puspita et al.'s (2022) study proposes developing application-based learning tools, specifically using Canva to enhance reading comprehension skills. Canva is an online design platform that offers various templates and tools, which can increase teacher creativity and facilitate technology-based learning. Additionally, creating guides and tutorials can help both teachers and students navigate new technologies independently.

Lastly, it can be challenging to keep students interested in using online resources for self-study. Reading skills study can be enhanced by adding gamification techniques such as scoreboards, rewards, and certifications. Teachers can also motivate students by giving them insightful feedback and constantly evaluating their progress. Peer-to-peer learning and collaborative projects via digital platforms can help students feel more connected. Costa Rican secondary schools can effectively employ virtual self-learning resources to improve reading skills and overall academic achievement by addressing these problems through strategic planning and support.

Measuring the Impact of Virtual Self Learning Resources on the Reading Skill

To measure the impact of virtual self-learning resources on reading literacy, a variety of assessment tools and techniques can be used. Teachers must ensure that they design tests to evaluate the reading and reading comprehension levels of their students, which must be applied periodically to measure the performance and effectiveness of the resources. It is important to point out that the effectiveness of self learning resources on reading skills depends on the engagement students find in their application. If students can notice the outcomes of their own work, relying on their proficiency in the language performance, they can make decisions about which choices to make and for how long to pursue that choice (McKenna et al., 2017).

Most self learning applications provide an integrated analysis of student performance, as well as their strengths and weaknesses. Digital learning platforms provide a large amount of data that teachers can take advantage to evaluate reading competence. For example, in the case of Moodle, Rodríguez (2018) explained that teachers can adapt the work to the expected needs of their students, so the application can show an automatic evaluation, as well as cooperative and personal evaluation. This allows teachers to stop being seen as an imposition of knowledge and become a facilitator who supports his or her students, who will be able to analyze the procedures that led to their successes or failures. Due to their software, the platforms can track several metrics, including time spent on reading activities, completion times, accuracy in comprehension exercises, and engagement levels. Teachers can use this data to monitor progress and adapt content to improve instruction. Measuring the impact of virtual self-learning resources involves a combination of evaluation methods, analysis of research results, and feedback from both educators and students

Future Directions and Recommendations

Educational institutions should ensure the successful implementation of virtual self-learning resources in Costa Rican secondary schools and advocate for support at national and local levels. It is important to prioritize the integration of digital tools into the curriculum by establishing guidelines for their use. It is imperative to encourage schools in Costa Rica to adopt innovative teaching methods that incorporate technology, emphasizing the importance of digital literacy alongside traditional academic skills. Additionally, policies must address issues such as digital equity and the digital divide, ensuring that all students have equal access to necessary technology and resources.

It is critical to investigate new advances in educational technology if teachers want to remain at the merge of educational advancements. In order to ensure that digital resources continue to develop and satisfy the needs of educators and students, the results of these kinds of research can be used to determine future effectiveness rates.

In addition, teachers should encourage students to boost their learning experiences by creating their own virtual self learning resources. Hayes et al. (2017) explained that these environments increase students' motivation and fulfill their curiosity by enabling them to take charge of their own learning at their own pace and develop their own learning strategies. To motivate students to design their own self-learning tools, teachers and educational centers must facilitate workshops and practical sessions where students can experiment with different digital tools to collect, reflect, connect and publish information. Hayes et al. (2017) also mentioned that teachers should emphasize the value of ongoing reflection and adaptation and assist students in frequently reviewing their resources to match their interests and learning objectives. This commitment will allow students to take charge of their education, which will increase motivation and actively promote lifelong learning abilities.

Finally, high schools need to involve parents, communities and stakeholders in supporting digital learning. The successful implementation of virtual self-learning resources depends on the participation of the entire educational community. By taking advantage of self learning resources to improve reading skills, teachers will be able to provide the next generation with the essential literacy skills required to succeed in an increasingly

interconnected world. As Hayes et al. (2017) stated: "We, as teachers, need to use multiple means of communication in order to encourage our students to learn and to be the researchers of their own knowledge" (p. 58).

Conclusion

The integration of virtual self-learning resources in secondary schools in Costa Rica was shown as an efficient approach to improve reading skills in English. After reviewing pertinent studies on the subject throughout this essay, it has been shown that reading skills not only represent the knowledge base to master the other skills in English: listening, writing, speaking, but they also allow students to grow throughout the entire academic process and future success in the labor sphere.

In the context of Costa Rica, where there is a need to comply with educational reforms to achieve standards that the English language currently needs, taking advantage of virtual self-learning resources can bridge existing gaps in traditional teaching methods and address disparities to promote quality education adapted to students and their learning environment.

Virtual self-learning resources represent a transformative approach to education because of their adaptability, interactivity, and accessibility. These tools are found in several learning forms such as gamified learning apps and interactive e-books or libraries to create more engaging spaces for students with different needs, learning styles and proficiency levels. Besides, the utilization of adaptive algorithms, clickable buttons, and multimedia elements enhances students' interests and engagement, which are key factors towards success when learning a second language. Because of these resources' flexibility, students can learn at any time from any location, which promotes a more independent and self-directed environment, in which teachers' knowledge is not seen as an imposition, but as a facilitator of the learning process.

However, it is worth highlighting that the implementation of virtual self-learning resources in Costa Rican schools entails challenges that require strategic planning and

support. One of these challenges refers to digital equity, which is an important concern due to the disparities in access to technology presented by urban and rural, public and private schools. Furthermore, to ensure the effective use of these tools, a substantial investment in teacher training and professional development is required to ensure that teachers can plan the implementation of these resources efficiently according to their student population. Furthermore, the curriculum needs to be properly aligned with the intended use and the capabilities of the selected digital tools ensure that they complement and enhance traditional teaching methods rather than replacing them.

The majority of existing virtual self-learning platforms have the ability to monitor student progress, identify their strengths and weaknesses, and provide information on the effectiveness of the application. Analyzing the data provided by digital platforms is necessary to evaluate the effectiveness of virtual self learning resources on mastering English reading skills. Similarly, to maximize the educational importance of these tools and improve their use, continuous evaluation and feedback processes are required.

Looking ahead, educational institutions and policymakers in Costa Rica must prioritize the integration of new digital tools into the education system. This includes establishing clear guidelines, addressing digital equity, and fostering a culture of innovation and continuous improvement. In addition, it is pertinent to engage the educational community, including teachers, parents, and stakeholders to guarantee a successful implementation of these resources.

Finally, virtual self-learning resources have the potential to transform the teaching and learning of Costa Rican highschools. By employing these tools, educators can provide students with essential reading abilities needed for both academic and future opportunities in a globalized society. The strategic implementation of virtual self learning resources to improve reading skills will encourage highschools in Costa Rica to meet the demands of the digital era we currently live in, thereby preparing students to become proficient citizens equipped to thrive in the Costa Rican labor sphere, where English proficiency is indispensable.

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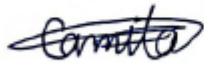
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DECLARACIÓN JURADA

Yo, Camila Dobles Bianco, cédula de identidad 118130169, estudiante de la Universidad Nacional, declaro bajo fe de juramento y consciente de la responsabilidades penales de este acto, que soy autor intelectual del Trabajo Final de Graduación Titulado "Employing Virtual Self-Learning Resources to Improve Reading Skills in High School Students of Costa Rica" , para optar por el grado de Maestría en Educación con énfasis en Aprendizaje del Inglés.



Heredia, a los 26 días del mes de Agosto del año 2024.

Refrendo

Los abajo firmantes avalamos el Trabajo de Graduación de la estudiante Camila Dobles Bianco, cédula 118130169, que lleva como título **Employing Virtual Self-Learning Resources to Improve Reading Skills in High School Students of Costa Rica**, dado que cumple con las disposiciones vigentes y la calidad académica requerida por el posgrado.

JUAN PABLO ZUÑIGA VARGAS (FIRMA)
PERSONA FÍSICA, CPF-04-0103-0569.
Fecha declarada: 01/10/2024 07:18:42 p. m.
Esta es una representación gráfica únicamente,
verifique la validez de la firma.

Juan Pablo Zúñiga Vargas
Profesor Tutor
Maestría en Educación

Firmado por RITA MARIA ARGUEDAS VIQUEZ (FIRMA)
PERSONA FÍSICA, CPF-01-0734-0005.
Fecha declarada: 05/10/2024 05:07 PM
Razón: Ref Camila Dobles
Lugar: Maestría Contacto: Dayana

M. Ed Rita Arguedas Víquez
Coordinadora
Maestría en Educación