

MA in Technology-Mediated Language Teaching and Learning

The Use of Digital Escape Rooms for Vocabulary Acquisition in the EFL Classroom

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Table of Contents

| | |
|---|----|
| INTRODUCTION | 5 |
| THEORETICAL OR CONCEPTUAL FRAMEWORK | 9 |
| Digital games and English language learning | 9 |
| Digital escape rooms and education | 11 |
| Digital escape rooms in the EFL classroom | 12 |
| Vocabulary learning in EFL contexts | 14 |
| Vocabulary learning through escape rooms | 16 |
| OBJECTIVES & RESEARCH QUESTIONS | 17 |
| METHODOLOGY | 18 |
| Learning context and learner’s profile | 18 |
| Participants and needs analysis | 19 |
| Design of the application | 20 |
| THE PEDAGOGICAL APPLICATION/INTERVENTION | 21 |
| Pedagogical Application and Intervention | 21 |
| EVALUATION OF THE APPLICATION/INTERVENTION | 25 |
| CONCLUSIONS | 29 |
| REFERENCES | 30 |
| APPENDIXES | 34 |
| Appendix 1 | 34 |
| Appendix 2. Rules and Instructions | 35 |
| Appendix 3. | 35 |
| Appendix 4. | 36 |
| Appendix 5. | 37 |
| Appendix 6. | 38 |
| Appendix 7. | 39 |
| Appendix 8. | 39 |
| Appendix 9. | 40 |

Abstract

Vocabulary acquisition in foreign language learning poses distinct challenges, especially for low-stakes situations involving young multilingual learners. Similarly, the integration of digital tools within their educational framework has the potential to redefine the parameters of their learning experience, including significant enhancement in lexicon development acquisition. Among the emerging digital tools, digital escape rooms have garnered attention for their capacity to facilitate learning through challenges and progressive difficulty levels.

This paper seeks to explore the transformative impact of Genial.ly, identified as a highly viable tool for constructing digital escape rooms, on digital game-based vocabulary learning. The focal point of this project is the introduction of this innovative approach into a classroom of 17 students of 10th-grade with Spanish as their first language and levels ranging from A1 to B1+, who will actively engage with the specialized vocabulary within the field of arts as outlined in their educational curriculum. The project unfolds over seven sessions, structured into six distinct phases. Students are sequentially exposed to task presentation, vocabulary review, engagement with the digital escape room, and a comprehensive final assessment encompassing both individual student performance and project outcomes. By immersing learners in this novel pedagogical approach, the study aims to illuminate the meaningful impact of integrating a digital tool that combines diverse teaching methods for English vocabulary learning through Genial.ly. It focuses on the synergy of these methods for language development, particularly vocabulary acquisition. This project holds the potential to make significant contributions to research in the field of employing Information and Communication Technology (ICT) tools in English as a foreign language classrooms. Furthermore, it aims to contribute valuable insights to the research on vocabulary learning among young multilingual learners.

Key words: digital escape rooms, digital game-based, Genial.ly, language learning, multilingual learners.

Resumen

La adquisición de vocabulario en el aprendizaje de lenguas extranjeras plantea distintos desafíos, especialmente en situaciones de bajo nivel en jóvenes estudiantes multilingües. De manera similar, la integración de herramientas digitales dentro de su marco educativo tiene el potencial de redefinir los parámetros de su experiencia de aprendizaje, incluida una mejora significativa en la adquisición del de vocabulario. Entre las herramientas digitales emergentes, las salas de *Escape Room* han llamado la atención por su capacidad para facilitar el aprendizaje a través de desafíos y niveles de dificultad progresivos.

Este proyecto busca explorar el impacto de Genial.ly, identificado como una herramienta altamente viable para el diseño de *Escape Rooms*, en el aprendizaje de vocabulario basado en juegos digitales. El principal foco de este proyecto es la introducción de este enfoque innovador en un aula de 17 estudiantes de 4º de la ESO, todos ellos hablantes nativos de español y niveles que van desde A1 a B1+, quienes aprenderán el vocabulario especializado en las artes el cual está incluido en su plan de educativo. El proyecto se desarrolla a lo largo de siete sesiones, estructuradas en seis fases distintas. Los estudiantes están expuestos secuencialmente a la presentación de tareas, revisión de vocabulario, participación en la sala de escape digital y una evaluación final integral que abarca tanto el desempeño individual del estudiante como los resultados del proyecto. Al sumergir a los alumnos en este novedoso enfoque pedagógico, el estudio pretende determinar el impacto significativo de integrar una herramienta digital que combina diversos métodos de enseñanza para el aprendizaje de vocabulario en inglés a través de Genial.ly. Se centra en la sinergia de estos métodos para el desarrollo del lenguaje y, en particular, la adquisición de vocabulario. Este proyecto tiene el potencial de presentar contribuciones significativas a la investigación en el campo del empleo de herramientas TIC en las aulas de inglés como lengua extranjera. Además, su objetivo es aportar conocimientos valiosos a la investigación sobre el aprendizaje de vocabulario entre jóvenes estudiantes multilingües.

Palabras Clave: adquisición de vocabulario, aprendizaje de idiomas basado en juegos digitales, estudiantes multilingües, *escape rooms*, Genial.ly.

INTRODUCTION

In recent years, the need for innovation in learning methods has become increasingly visible (Gortaire et al, 2022). This shifted after the arrival of the COVID-19 pandemic, which made the need to create new learning environments imminent to provide students with a proper way to acquire a second language more independently from home. In this way, educators had to create resources and tools that would allow them to implement functional pedagogy extramurally. To address this challenge, teachers had to think creatively and innovatively, moving away from the traditional standard resources that were commonly implemented in the classroom, such as the use of books or worksheets, among others. This is not an easy task given the drastic change that this represents for professionals who have never faced online education before. As Moura and Santos (2019) comment, creativity as well as good academic training is needed to become an effective and innovative teacher adjusted to the learners' needs. Two main factors are necessary for these innovative approaches to be implemented in the classroom and overcome the possible lack of training: firstly, the teacher's conviction to overcome their barriers in order to provide their students with the best education and, secondly, at least basic training in digital literacies. This last point can become a great issue for those teachers who were not born in the digital age and who did not regularly use all the services offered by the network, as they would need to start from scratch to achieve decent management.

Considering the aforementioned growing need for innovation with appealing digital resources, this paper aims to show a learning tool based on a game of increasing popularity among adolescents, the well-known "escape rooms". Despite the multiple applications of this resource in a wide variety of fields and skills, this paper seeks to focus on vocabulary acquisition in the English as a Foreign Language (EFL) classroom. In order to develop the project, the target learners will be a class of 17 teenagers in the fourth year of secondary education in the Spanish system, who are between 15 and 16 years old.

To understand the reasons why escape rooms are to be used as an educational tool, it is important to understand when and how they began to become popular. The history of escape rooms does not go back many years, the first game considered as such opened in 2007 in Kyoto. Since then, sales and interest in this type of entertainment have increased, and nowadays, according to the Escape Room Directory, there are about 4,096 escape rooms divided between about 68 different countries, a figure that continues to increase (Heikkinen & Shumeyko, 2016). Understanding the concept of escape rooms is crucial for analyzing their potential impact on education, although there is no universal definition, experts like Nicholson (2015) define it as a game in which the participants have the ultimate goal of escaping from a room or place by solving various challenges that include tests such as puzzles or understanding clues, among many others. Academics such as Taraldsen et al. (2022) claim that there are “opportunities for the use of escape rooms as a didactic tool in primary and secondary education and in teacher education” (p. 1).

In the realm of language learning via escape rooms, its viability hinges on several factors, namely immersion, engagement, and motivation. The requirement to have a specific role within the narrative significantly heightens both the responsibility and curiosity on students. This, in turn, as Ricketts (2020) claims, “fosters engagement in the designated activities, achievement of the game's objectives, and ultimately, the attainment of the learning goals” (2020). Furthermore, integrating escape rooms into the language classroom not only enhances students' language proficiency but also cultivates crucial soft skills such as time management, collaboration, critical thinking, problem-solving, and adaptability. This holistic approach contributes to a well-rounded learning experience, striking a balance between knowledge acquisition and skill development. Additionally, it can significantly amplify peer-learning opportunities, fostering a dynamic and cooperative educational environment (Yang, 2011).

Furthermore, other general objectives that are intended to be achieved through this project are: (1) present various types of materials and resources that can help teachers increase students' motivation and engagement; (2) share good practices for the use of escape rooms in the English classroom.

The project is motivated by various professional observations. Firstly, the

limitation derived from a lack of technological literacy , leading to challenges in adapting to online education through the pandemic, creating digital resources, and dealing with technological issues. Secondly, the observation of students' unconventional use of technology highlighted the need for comprehensive technology education. Students' struggles with technical problems and distractions from personal platforms created skepticism about online activities' effectiveness and engagement. Addressing these issues requires fostering learners with enhanced technological literacy and an open mind towards this new implementations in their academic life. Furthermore, the focus on vocabulary is derived from a need for new learning systems in the lexical field. The need for vocabulary learning is paramount as it is the basis of effective communication. Without words and a robust vocabulary, meaningful communication becomes an impossibility (Nation, 2013). Working as an English teacher, often one of the most difficult points at basic levels is memorization and the use of vocabulary. Due to the reduced instruction time and the extensive curriculum to be taught, it is difficult for teachers to employ the required time for proper word learning in the classroom, so the responsibility for working on the lexicon often relies on extramural work. Techniques have been mostly based on traditional methods as flashcards, wordlists, extensive reading programs and focus-on-forms activities among others. For instance, a customary used technique in traditional language learning is the listing system. This method, due to the large content load forced by inexperienced adolescents and its condensation with a lack of level hierarchy and gradual learning, apart from being ineffective, is far from motivating. This phenomenon is based on the belief that non-native speakers ought to learn a wide variety of lexical items in order to communicate effectively in English, however, this may not be essential in the long term (Nation, 2013). However, education is changing, and one interesting development is the increasing use of escape rooms in classrooms. This makes learning more engaging for students. The goal is to make language acquisition easier by presenting information in small, meaningful chunks and considering how much information students can handle at once. This approach, known as scaffolding, involves tailoring the entire learning resource to fit the specific context.

As Gortaire Diaz et al. (2022) claims “traditional learning methods allow teachers to decide how they will convey information to their students, but online learning provides more flexibility and gives students control over their education” (p. 4), which would be

the perfect combination between teacher guidance and student independence.

The tool selected to carry out this project is Genial.ly. This platform is constantly evolving, and its popularity is increasing due to the large number of possibilities it offers regarding the creation of interactive visual resources in all areas, especially in education. This software allows for the creation of presentations, infographics, games, interactive images and content. In the case of escape rooms, several completely modifiable pre-made templates can be found and tests or basic questions are included. However, others can be easily added to these challenges thanks to the ease of interaction that Genial.ly provides with movable elements, hyperlinked slides or direct access to other platforms such as Google tools. Apart from this multitude of options available to teachers, this tool has been chosen for the project due to its great ease of use. Any teacher who does not have much experience in the creation of online resources can use this platform to create material as attractive as an escape room, without the need for long training programmes. While it is true that there are other platforms that allow the same type of resources to be created with comparable ease, the main difference resides in its free access, meaning that it does not impede those professionals who deal with a low or no budget.

That said, the present paper is divided into the following chapters: first, the theoretical framework will be presented, which will cover the already existing research on the research topic. In the objectives and research questions section, the goals of the project will be specified as well as the different steps to be taken. Next, the methodology applied will be developed by identifying the context, the target learners as well as their needs analysis, and a thorough description of the instruments that will be used. Then, the description of the pedagogical intervention will be included with relevant information about the procedure and how to integrate the instruments into the teaching project. Afterwards, an evaluation of the intervention will be carried out. Finally, some conclusions will be drawn to summarize the main points of the project focusing on the vocabulary learning assessment on students.

THEORETICAL OR CONCEPTUAL FRAMEWORK

Digital games and English language learning

The integration of digital games and ICT in the EFL classroom has become increasingly recognized as a valuable tool for language learning. Vanduhe et al. (2020) present compelling evidence supporting the efficacy of these tools, particularly in the acquisition of new vocabulary. This finding underscores the potential of digital games to enhance the learning process, providing a dynamic and engaging method for students to expand their lexical repertoire.

One notable advantage of incorporating digital games in the EFL classroom, as emphasized by Garcia et al. (2022), is the transformative impact on the class atmosphere. The use of technology not only makes the class more fun and dynamic but also captures students' attention and creates a perception of a flexible learning environment where making mistakes is not only accepted but encouraged. This shift in perspective contributes to a student-centered approach, fostering an environment that nurtures learning through exploration and experimentation.

The interactive nature of digital games motivates students to persist in their language learning journey. This persistence is crucial in language acquisition, and games provide a context in which repetition becomes an engaging and enjoyable aspect of the learning process. As Yang (2011) notes, this engagement allows students to practice the target language (TL) not only during class hours but also extramurally, promoting continuous and self-directed learning.

However, the successful integration of digital tools in the EFL classroom heavily depends on the role of teachers. Smith and Hanson (2000) emphasize that teachers are central to the effective utilization of technology in education. Without proper integration by educators, digital games and ICT tools may remain underutilized technological equipment. Hence, it is imperative for teachers to embrace these tools and incorporate them seamlessly into the curriculum, ensuring that they enhance and complement the learning experience rather than serving as mere additions to the classroom setting. To achieve this goal, it is imperative that educators systematically consider all phases essential for class preparation, encompassing planning, design, execution, monitoring,

and feedback, as delineated by Hernández (2011).

For instance, Gortaire Díaz et al. (2022), have sought to explore the impact of technology on vocabulary acquisition. The central focus of their investigation was to evaluate the effectiveness of integrating online games into vocabulary learning. Administering 105 surveys to students and 29 to EFL teachers, the study revealed a significant improvement in students' learning performance, particularly in linguistic competence. The incorporation of gamification strategies in vocabulary instruction proved beneficial, fostering heightened competence among students in both traditional and extracurricular settings. Students demonstrated an increase when acquiring and mastering vocabulary through interactive gamified experiences, with technology playing a pivotal role in stimulating critical thinking skills. Overall, students reported an enhanced sense of competence, attributing it to interactive vocabulary practice and personalized ownership of their learning. Positive student perceptions proved the successful integration of online gamification into the teaching-learning process, fostering focused learning, autonomous behaviors, and the development of critical thinking skills within a dynamic educational environment.

Digital escape rooms and education

Digital escape rooms have emerged as innovative and engaging tools in various educational contexts, providing a dynamic and immersive learning experience. Inspired by the physical escape room concept, digital escape rooms leverage technology to create challenging and interactive puzzles that students must solve to "escape" or achieve a specific educational objective. This gamified approach to learning has gained popularity due to its ability to foster collaboration, critical thinking, and problem-solving skills (Sánchez Lamas, 2018).

One key feature of digital escape rooms, as Makri et al. (2021) highlight, is their adaptability across different subjects and educational levels. Educators can design escape rooms to align with specific learning objectives, making them versatile tools for teaching various topics. Whether used in mathematics, language, arts, science, or other subjects, digital escape rooms provide a platform for students to apply their knowledge in a fun and engaging way (Gritsenko, 2023).

The collaborative nature of digital escape rooms promotes teamwork and

communication skills among students, too. To successfully navigate the challenges within the escape room, students often need to work together, share ideas, and delegate tasks. This collaborative aspect not only enhances the social dynamics of the learning environment but also encourages students to tap into each other's strengths to solve complex problems (Fotaris & Mastoras, 2019).

Moreover, digital escape rooms offer a sense of autonomy and motivation for learners. The interactive and game-like elements capture students' interest, making the learning experience more enjoyable. The intrinsic motivation to "escape" or accomplish a goal within the digital setting can drive students to actively participate and persist in their problem-solving efforts, too (González-Yubero et al., 2023).

As technology continues to play a prominent role in education, digital escape rooms stand out as a creative and effective tool for educators seeking to enhance student engagement, critical thinking skills, and subject-specific knowledge in a variety of learning environments.

Digital escape rooms in the EFL classroom

The versatility of digital escape rooms extends seamlessly into the EFL classroom, providing educators with a powerful tool to enhance language learning. Incorporating escape rooms into EFL instruction brings a gamified approach that aligns with the principles of effective language acquisition. The interactive and immersive nature of escape rooms creates an environment where students are not only engaged in solving language-related puzzles but are also motivated to apply their linguistic skills in a practical context (Fotaris & Mastoras, 2019) which allows students to engage with language in a meaningful way (Roig et al., 2023).

Escape rooms within the EFL classroom provide a unique and captivating platform for immersive language practice and reinforcement. The challenges presented in these escape rooms seamlessly incorporate various language elements, including vocabulary, grammar structures, and language functions (Speaker, 2021). This integration compels students to actively use English as they navigate through intriguing scenarios. This contextualized approach goes beyond standard drills, creating a more authentic and lasting learning experience as it was claimed by the Norwegian

Directorate for Education and Training (2020), true competence within a topic is demonstrated when knowledge is applied to solve tasks.

The collaborative nature of escape rooms is particularly beneficial in the EFL context. Students are encouraged to communicate in English to solve puzzles and overcome challenges collaboratively. This collaborative language use mirrors real-life communication scenarios, fostering not only language proficiency but also interpersonal skills.

Furthermore, escape rooms in the EFL context cater to diverse learning styles. Visual, auditory, and kinesthetic learners can all benefit from the varied challenges presented in an escape room. By solving a riddle, deciphering a coded message, or listening for specific language cues, students engage with English in ways that cater to their own strengths, enhancing overall language comprehension and retention (Vnuko & Klimova, 2023).

Moreover, incorporating escape rooms into EFL instruction is not only about language practice but also about creating a cultural bridge (Miró Vilà, 2021). Escape rooms often incorporate elements that expose students to the cultural nuances of the English language. This immersive experience allows learners to navigate language within authentic cultural scenarios, contributing to a more holistic language learning journey.

To assess the effectiveness of incorporating escape rooms into language learning, various studies have been undertaken, though the available body of research is limited. Despite the paucity of extensive investigations, the existing instances demonstrate significant advantages for the acquisition of EFL through the integration of escape room elements. For example, Llumiquinga (2022) conducted a noteworthy study exploring the impact of escape rooms on the development of oral skills in an EFL context. This investigation involved four fifth-grade classes exposed to diverse pedagogical approaches, incorporating activities commonly found in escape rooms, such as solving problems through clues, interpreting audio-visual hints, and engaging in quiz-type games like Kahoot. The results clearly demonstrated that students within the experimental group not only exhibited heightened motivation and engagement but also showcased notable advancements in their communicative skills. This underscored their inclination towards utilizing diverse games and a range of environments as effective tools for language

acquisition. Similarly, Rosseli (2023) conducted a case study in a Norwegian secondary school to investigate the influence of escape rooms on grammar learning in an EFL setting. In this scenario, students participated in a digital escape room supervised by their English teacher. The findings highlighted the efficacy of digital escape rooms in grammar instruction, enhancing not only knowledge retention but also motivation. However, the study identified drawbacks, including the time-intensive process of designing these activities and the need for additional pre-made templates and school resources. Consequently, while the application of escape rooms at the secondary level proved highly satisfactory, the study underscored the importance of carefully considering the time and resource invested in their implementation, as highlighted by the designing teacher.

All in all, digital escape rooms seamlessly integrate into the EFL classroom, providing a dynamic and immersive platform for language practice and cultural exploration. The gamified approach enhances engagement, motivation, and collaboration, making escape rooms a valuable addition to the diverse toolkit available to educators seeking to create enriching language learning experiences for their students.

Vocabulary learning in EFL contexts

Vocabulary learning is a crucial component of language acquisition, playing a fundamental role in the overall language proficiency of learners (Wilkins, 1973). The process of acquiring and expanding one's vocabulary in a foreign language involves various strategies and considerations.

One key aspect of EFL vocabulary learning is the recognition of the multifaceted nature of words. It extends beyond the mere memorization of isolated words and includes understanding their meanings, usage in context, and syntactic relationships (Nation, 2013). Teachers often employ diverse methods, such as contextual learning, word association, and thematic grouping to facilitate a more holistic and meaningful understanding of vocabulary. Moreover, the process of acquiring vocabulary in a foreign language encompasses a complex set of challenges influenced by various factors. While the disparity between the learner's native language (L1) and the TL remains a significant

consideration, other intralinguistic components also play a crucial role. Webb and Nation's (2017) examination of five dimensions —form-meaning correspondence, form characteristics, collocational patterning, receptive and productive use, and the deliberate presentation of words— reveals the intricate dynamics involved in vocabulary acquisition. The connection between languages emerges as a crucial facilitator, easing the learning burden. Notably, the ease of understanding cognates, the interpretive assistance provided by recognizable morphology, and the enhanced recognizability and memorability of words due to similarities in writing and pronunciation all contribute to this facilitation. This interplay of linguistic factors emphasizes the intricate nature of word learning and underscores the significance of considering multiple dimensions in the process (Yang et al., 2021)

Repetition is one of the most fundamental principles in vocabulary acquisition (Webb & Nation, 2017). Regular exposure and practice with words contribute to their retention in long-term memory. This can be achieved through activities like flashcards, word games, and interactive exercises that encourage students to use newly learned words in different contexts.

Similarly, contextual learning is another effective strategy in EFL vocabulary instruction (Shen, 2003). Words are better understood and retained when introduced within meaningful contexts. Teachers often incorporate real-life situations, authentic texts, and multimedia resources to provide students with opportunities to encounter and use new vocabulary in relevant scenarios. This approach enhances the practical applicability of the presumably learned words, making them more likely to be retained and effectively utilized by learners.

Furthermore, the integration of technology, such as language learning apps, online resources, and educational software, has revolutionized the landscape of vocabulary learning and teaching in EFL instruction. These tools offer interactive and personalized learning experiences, allowing students to practice and reinforce their vocabulary skills outside the traditional classroom setting. The flexibility and accessibility of digital resources enable learners to engage with vocabulary materials at their own pace, fostering a more individualized and self-directed learning approach (Vnucko & Klimova, 2023).

EFL vocabulary learning is thus a dynamic and multifaceted process that involves a combination of strategies, including repetition, contextual learning, and the integration of technology. By employing diverse and effective instructional methods, educators can create an environment that not only facilitates vocabulary learning but also promotes a deeper and more nuanced understanding of the English language.

Vocabulary learning through escape rooms

In the realm of EFL vocabulary instruction, the incorporation of escape rooms represents an ambitious yet promising endeavor. Building on the understanding that vocabulary acquisition is a multifaceted process (Butler, 2019), escape rooms offer a dynamic setting for learners to engage with words in a meaningful context. This approach aligns with the principles of repetition and contextual learning (Webb & Nation, 2017), addressing the challenge of navigating the vastness of the English language. Additionally, the strategic goal-setting within the escape room framework emphasizes the importance of prioritizing high-frequency, mid-frequency, and low-frequency words (Nation, 2013) based on their practical utility, ensuring a purposeful vocabulary acquisition experience.

Jerry and Yunnus (2021) conducted a study using VocScape, a digital escape room, involving 100 students with diverse proficiency levels in a school setting to check the efficacy of escape rooms for vocabulary learning. Employing both quantitative and qualitative methods, pre-and post-test results provided insights into vocabulary acquisition, and showed that VocScape, an adaptation of the “escape room” concept for younger learners, was beneficial for English vocabulary acquisition. The platform’s task-oriented approach guides students through a progressive learning path, reflecting their evolving proficiency.

OBJECTIVES & RESEARCH QUESTIONS

This project encompasses the following objectives: first and foremost, it aims to shed light on the meaningful impact of using a digital tool that combines various

teaching methods for learning English. The focus is on understanding how these methods work together, creating a synergy that benefits language development and, specifically, vocabulary acquisition. Another important aim is to offer a wide range of teaching materials, carefully selected to empower educators in boosting student motivation and involvement in EFL learning. It is aimed to inspire and energize educators, encouraging them to embrace technological innovations in their classrooms and to stay attuned to the unique interests and needs of their diverse group of students. Additionally, the intention is to share valuable insights about incorporating escape rooms into English classrooms, providing teachers with practical strategies to enhance their teaching practices.

Hence, the primary focus of this project is to address the following research questions: (1) How should digital escape rooms be used to enhance vocabulary learning in an EFL context? And (2) How can educators strategically navigate challenges when crafting digital escape room materials and integrating them into their classroom practices?

Through these research questions, the project aims to provide practical insights and guidance, offering a roadmap for educators seeking to harness the potential of digital escape rooms to enrich vocabulary learning experiences in EFL settings.

METHODOLOGY

Learning context and learner's profile

In relation to the external context, this project is slated to unfold within a public school situated in Talavera de la Reina, a quaint village near Toledo, in the region of Castilla-La Mancha, Spain. The familial constituents of this secondary education school predominantly hail from the echelons of the middle to upper socioeconomic strata.

English serves a purely academic role for these students, encompassing a total of four lessons per week, each lasting approximately 55 minutes. The curriculum adheres to the guidelines set forth by the Spanish government's law LOMLOE. The instructional sessions are flexibly crafted and delivered by the English teachers, allowing for a dynamic and tailored learning experience. Notably, collaborative projects involve multiple teachers overseeing distinct groups within the same course. Concerning the

internal context, the institution encompasses an academic spectrum spanning from primary education to baccalaureate levels. Specifically addressing the course-year and classroom allocation for the project, grade 10 is stratified into three distinct academic trajectories, with an approximate total student enrollment of 55. The selected classroom is oriented toward the humanistic branch, comprising a cohort of 17 learners. Notably, within the humanitarian resource framework, each subject benefits from dedicated specialist educators.

Additionally, the classroom is equipped with a range of material resources that facilitate the implementation of the project, particularly with respect to ICT facilities. Within the classroom setting, the instructor has access to a projector and a whiteboard. Furthermore, the institution provides a mobile cart equipped with laptops, available for teachers to request and integrate into their sessions. Moreover, students are endowed with personal accounts furnished by the institution, affording them Internet access and profiles on platforms such as Drive, Classroom, or Microsoft Teams.

Participants and needs analysis

The project targets a group of 17 grade 10 students, with Spanish as their first language. There is a diversity of proficiency levels in English, ranging from two students with an A2 level to B1 or B2 levels for the rest, based on the Common European Framework of Reference (CEFR). Additionally, the cohort includes students with special needs, such as selective mutism and ADHD, requiring customized instructional approaches.

The needs analysis reveals a vocabulary deficiency among the entire student selection, affecting both intermediate and beginner language proficiency levels. This inadequacy is evident in various tasks, including written production with prevalent spelling errors and word choice mistakes, along with challenges in oral expression and reading comprehension. Furthermore, a significant deficit in motivation complicates the overall language-learning process.

Upon identifying the students' needs, a purposeful decision was made to create a comprehensive project. Through active engagement within the classroom, students

shared their diverse interests, uncovering a widespread enthusiasm for video games, including popular titles like Minecraft, Fortnite, and GTA. Considering this shared passion, the initial escape room project concept evolved into a digital counterpart. This strategic adaptation not only met educators' requirements but also seamlessly integrated with the inherent appeal of ICTs, significantly influencing student motivation and implementing the technological competency also required by the curriculum. This way, the project could bridge the knowledge gap while cultivating a more enthusiastic environment for effective vocabulary acquisition.

However, it is crucial to emphasize that some students have unique needs requiring careful consideration in engaging with this autonomous ICT-based methodology. Acknowledging the diversity within the student body, dedicated efforts have been made to provide additional support to these individuals. Teachers pay a pivotal role in ensuring that students with special requirements receive the necessary assistance, highlighting a commitment to inclusivity.

Design of the application

The project involved a meticulous evaluation of platforms for developing an escape room, with Genial.ly selected based on insights from the needs analysis, training considerations, and available resources. Genial.ly's cost-free accessibility aligned with budget constraints, and its extensive resources streamlined the development process with templates. The platform's versatility in incorporating multimedia elements, and aligning with cost considerations and pedagogical goals, made it the optimal choice.

To expedite the creation of the escape room, Genially offers a multitude of features that significantly enhance the design process. Firstly, the inclusion of templates proves to be an invaluable resource. While adjustments are necessary to align the resource with the teacher's objectives, the incorporation of graphics, such as maps and pre-designed rooms, streamlines the overall process. Furthermore, Genially provides pre-made and fully customizable interactive gadgets, facilitating seamless transitions from one screen to another and contributing to the creation of a truly immersive experience. The inclusion of questionnaires and carousels within the platform has proven to be exceedingly valuable in the construction of this escape room. These features not only contribute to a realistic and

immersive experience but also offer a streamlined approach for seamlessly incorporating all desired elements in a series of simple, user-friendly steps. The option to integrate questionnaires enhances engagement by prompting students to actively participate, while the carousels provide an effective means to present information in a dynamic and visually appealing manner. Together, these functionalities significantly enhance the overall design process, ensuring a comprehensive and realistic portrayal within the escape room environment. Notably, the platform offers convenient features like the ability to incorporate "codes or passwords" on different slides, enhancing the challenge for students as they seek keys or solve riddles to progress to the next room. These user-friendly elements collectively contribute to a faster and more efficient escape room design using Genially. Furthermore, the incorporation of hyperlinks has proven exceptionally beneficial, serving as a strategic tool to guide students seamlessly to Google Forms where they can actively engage in fulfilling challenges that involve composing written texts. This feature enhances the interactive aspect of the escape room, providing a well-integrated and efficient means for students to participate in tasks that require thoughtful composition and response.

THE PEDAGOGICAL APPLICATION/INTERVENTION

This comprehensive project is structured to unfold across six distinct sessions, each spanning approximately one hour except for one which will consist of 120 minutes. The well-paced schedule encompasses three sessions per week.

The methodology meticulously employed throughout these phases is outlined below, showcasing a deliberate and systematic approach to each stage. Uniformity and routine are actively fostered to ensure consistency. The sessions adhere to a standardized format, commencing with a purposeful warming-up segment that sets the tone for engagement. This is seamlessly followed by the main part, where the core content is explored in depth, ensuring a comprehensive learning experience. Culminating each session is the essential wrapping-up phase. This final segment serves as a valuable moment for reflective dialogue, enabling participants to discuss the activities undertaken during the session and seek clarification for any queries that may have arisen. This recurrent and thoughtful approach adds an element of cohesion to the overall structure, enhancing the effectiveness of each learning session.

| PHASE | NUMBER OF SESSIONS |
|-----------------------------------|------------------------|
| Phase 1: Project presentation | 1 |
| Phase 2: Platform introduction | 1 |
| Phase 3: Vocabulary review | 1 |
| Phase 4: Escape room day | 2 (120 minutes) |
| Phase 5: Feedback | 1 |

Phase 1: Project presentation (1 session of 60 minutes)

The inaugural session is dedicated to introducing students to the upcoming task, marking the culmination of the didactic unit entitled "What is art?", which focuses on artistic vocabulary. Serving as a comprehensive review of the unit's content, this initial session aims to set the stage for the subsequent activities.

The journey begins with a brief oral warm-up centered around the intriguing concept of escape rooms. The teacher initiates a dialogue by posing questions related to the topic, utilizing Appendix 1 as a guide to gauge students' existing knowledge. Following this engaging discussion, the teacher seamlessly transitions into an exposition

of the upcoming task that will unfold in the subsequent days.

The primary aim of this initial session is to meticulously elucidate all operational facets of the project, fostering a sense of ease among students and proactively averting any potential future delays or complications arising from an insufficient foundation. To achieve this, a visually engaging trifold containing fundamental rules and instructions will be meticulously presented (see Appendix 2) and discussed, with each element addressed sequentially. This interactive approach not only ensures a thorough understanding but also provides an opportunity to address potential uncertainties, thereby crystallizing a comprehensive image of the procedural framework.

To conclude the session, students will engage in a brief Google Forms test (Appendix 3) assessing their pre-existing vocabulary knowledge, specifically emphasizing the lexicon essential for completing the escape room challenges. This serves as a preliminary assessment for the teacher, enabling a thorough evaluation of the escape room's impact on vocabulary acquisition.

Phase 2: Platforms introduction

The objective of this second session is to familiarize students with the various websites essential for successfully navigating the escape room. From this point onward, the escape room narrative will be introduced and sustained throughout the project. In this session, each student will be equipped with an institution-provided laptop. The discussion kicks off with a brief exploration of students' typical technological usage, delving into their laptop activities, preferred online platforms, and overall digital preferences.

Following this insightful discussion, the teacher, employing the projector to display the laptop screen, will guide the students through the initial steps. Firstly, a collective login process will be executed for new students, utilizing their individual accounts and passwords. Subsequently, all students will synchronize their personal Google Classroom accounts to ensure accessibility on their laptops.

The session then transitions into a hands-on experience with a simulated escape room with vocabulary from previous units (see Appendix 4). Students will access the link to the Genial.ly webpage where the escape room is hosted, mimicking the same procedure they will follow on the actual day of the activity. This hands-on activity,

conducted in collaboration with the teacher, serves as a structured exploration of the key functions and procedural steps necessary for navigating their own escape room. The goal is to impart a thorough understanding of the tools and procedures essential for the upcoming project.

Upon acquiring a comprehensive understanding of the impending tasks, the next step involves the formation of pairs. Given the diverse range of learners, including those with specific needs and varying proficiency levels, the responsibility falls on the teacher to meticulously curate the pairs. This process is designed to be considerate of individual requirements and skill levels, with a deliberate effort to balance the capacities of each pair as much as possible. The objective is to create collaborative partnerships that not only accommodate diverse learning needs but also enhance the overall effectiveness of the collaborative learning experience.

Phase 3: Vocabulary Review (1 session)

In this session, the focus is dedicated to reviewing the unit vocabulary, ensuring that the foundational lexicon is crystal clear. This strategic approach aims to provide a balanced mix of familiar and unfamiliar words, fostering a learning environment that stimulates curiosity rather than overwhelming the students. To achieve this, an engaging Jeopardy Game will be conducted through the "Factile" platform (see Appendix 5), a familiar tool for the students. For those not acquainted with the platform, a brief explanation will be provided on accessing a panel which is presented by the teacher through the projector where they will work on teams made by themselves and they can choose categories which have point values assigned. The game's rules are straightforward: points will be awarded for correct answers, while incorrect responses will result in deductions from their score markers.

The victorious participant in the Factile competition will be entitled to an exclusive "bonus" during the escape room experience – the valuable assistance of the teacher in the room of their choosing. Subsequently, any lingering questions will be addressed, ensuring clarity and understanding. To conclude, a gentle reminder emphasizing the importance of thorough revision for the upcoming escape room will be delivered, underlining the significance of preparation for a successful and enjoyable

endeavor.

Phase 4: Escape room day (1 session)

On the day of the escape room, each pair of students will be provided with laptops, ensuring one per pair for collaborative engagement. The teacher, projecting their computer, will guide the class through the procedural steps: logging into the computer, accessing the designated Google Classroom where the escape room link is located to access the Genial.ly creation, and initiating the task (see Appendix 6). While it is expected that students are familiar with these steps, the teacher's visual guidance aims to preempt complications, redirecting the focus towards the primary objective of vocabulary learning rather than technological nuances.

Once all pairs are immersed in the escape room, they will progress at their own pace. The teacher's presence in the classroom becomes pivotal as they actively monitor students' needs, address questions, and welcome suggestions. Throughout the extended duration of the session, intentionally prolonged to ensure completion within a single class period, the teacher assumes a continual and proactive role in guiding and assisting the students. It is imperative for the teacher to consistently monitor each student, ensuring they are adhering to instructions and progressing through the assigned steps. In instances where certain vocabulary may not be readily recalled, subtle hints can be discreetly provided (for instance "have you checked the spelling of the password?"). However, a delicate balance is maintained to prevent excessive reliance on instructor assistance, thereby averting potential conflicts between pairs. This approach encourages independent problem-solving while still fostering a supportive learning environment during the escape room activity. Additionally, the teacher will have a laptop readily available to swiftly address any technological difficulties that may arise during the escape room, ensuring a seamless and uninterrupted learning experience.

Phase 5: Feedback (1 session)

In the concluding session, dedicated to gathering students' perspectives on the project, the teacher will initiate an informal discussion. Students will express their feelings about the experience, discuss achieved outcomes, reflect on the engagement level, and share insights on potential improvements or alternate approaches they might

have considered. This pivotal final stage is imperative not only to proactively address potential issues in the future but also to conduct a comprehensive assessment, ensuring a clear and thorough evaluation of the application's success.

Subsequently, students will complete a self-assessment survey (see Appendix 9) to provide a structured reflection on their participation in the activity and self-evaluate their performance. The teacher will emphasize to students the critical importance of approaching their self-evaluation with a discerning mindset, urging them to avoid false perfection. Emphasis will be placed on the understanding that self-evaluation does not contribute to their final grade but serves as a valuable tool for ongoing learning and refining teacher strategies.

EVALUATION OF THE APPLICATION/INTERVENTION

The formative assessment during the escape room activity involves vigilant observation of students' participation, motivation, engagement, and collaborative efforts. The teacher's role includes guiding individual work, offering advice, and providing constructive feedback to ensure alignment with the intended path. Collaboration is emphasized as a crucial aspect of the evaluative process, with a concise descriptor rubric available for comprehensive assessment (see Appendix 8). While the formative assessment will not impact summative evaluation, it serves as detailed feedback for future interventions and continuous improvement, offering a roadmap for further development.

Transitioning to the 'summative assessment', the conclusive phase of the evaluation process, the focus shifts to discerning whether the objectives have been met. This involves a meticulous assessment of students' vocabulary knowledge utilizing a detailed rubric. This summative evaluation aims to encapsulate the culmination of their efforts and proficiency. This assessment will specifically target the second and final challenge of the escape room. The second challenge, tailored for students to furnish descriptions utilizing specific vocabulary, will be evaluated using a descriptors rubric (see Appendix 8). The results of this challenge will be cross-referenced with the outcomes of the last one, where the concluding screen offers diverse final settings. The last challenge assessment will not be assessed by a rubric but by their performance on the task which is shown by the end of the Escape Room. This comprehensive approach

enables the teacher to thoroughly assess the knowledge demonstrated in the last task. The project results will constitute a 5% contribution to the student's overall final term evaluation.

In the realm of self-assessment, specific targets will be employed as benchmarks. Each group is tasked with providing self-feedback on critical aspects such as vocabulary use, collaboration dynamics, and motivation levels (see Appendix 9). This reflective exercise empowers students to actively engage in evaluating their own performance, fostering a sense of responsibility and ownership in their learning process.

When it comes to the DER outcomes, the project is intended to provide an engaging and inventive strategy for acquiring vocabulary in the EFL classroom, introducing various strengths. The incorporation of gamification in these virtual scenarios reshapes the process of vocabulary learning, turning it into an interactive challenge. As seen in the Needs Analysis, the video game-like structure serves as a source of motivation for students, injecting dynamism into the acquisition of new words. Furthermore, collaboration to decode messages improves vocabulary skills at the same time it nurtures meaningful language interactions, contributing to oral development. In addition to the central focus on vocabulary, this project yields supplementary benefits, including the development of grammar. As students naturally encounter and apply grammatical structures within the challenging context, they reinforce language rules practically and contextually. The versatile nature of the online escape room, encompassing vocabulary, collaboration, and ancillary aspects like grammar and oral development, positions it as a powerful tool for crafting an engaging and comprehensive EFL vocabulary learning experience.

While the project presents distinct advantages for enhancing vocabulary acquisition in the EFL classroom, it also comes with inherent challenges. One notable issue is the dependency on technology, which may become problematic if students face technical glitches or lack access to suitable devices. To alleviate this concern, preemptive measures such as a comprehensive orientation session can be implemented. In the case of the inaccessibility to devices, a physical escape room can be designed by modifying the current challenges (for instance, creating the descriptions in a paper instead of the Google form). Another potential drawback is the risk of distractions in the online environment, diverting students' focus from their linguistic objectives. To address

this, clear guidelines, regular check-ins, and effective time management strategies must be employed to minimize disruptions and maintain a concentration on language learning. Additionally, the collaborative aspect of online escape rooms might result in uneven participation, with some students adopting a more passive role. To remedy this, rubrics of collaboration and performance have been included as well as proper teacher vigilance is required. Lastly, language barriers may surface due to varying levels of proficiency. These challenges can be met by offering support through scaffolding, and supplementary materials, and fostering a collaborative atmosphere that encourages mutual assistance among students. A proactive approach to tackling these weaknesses ensures seamless and efficacious integration of this online escape room for vocabulary acquisition.

Genial.ly has proven to be an exceptionally viable tool for crafting educational resources, particularly in the creation of an escape room for this project. Its diverse range of interactive options facilitates the seamless integration of completely editable rooms, activities, and challenges within the escape room setting. The abundance of easily accessible graphics that align with the narrative not only enhances effectiveness but also serves as a valuable time-saving feature for creating visually appealing projects. The user-friendly transition from one slide to another simplifies the immersive experience for students at the same time it streamlines the handling and design process for teachers. Additionally, the convenience of free access to materials without the necessity for individual student accounts presents a significant time-saving advantage. This feature not only caters to institutions with limited budgets but also empowers them to develop captivating materials, such as these escape rooms, without incurring in any costs.

These myriad features collectively simplify the attainment of the primary objective: vocabulary acquisition. The inherent dynamism, the inclusion of different types of challenges, the element variety providing an easiness for all learning styles and visually striking components within Genial.ly have synergistically contributed to the overarching goal of rendering vocabulary learning a more enjoyable experience for learners. Furthermore, this platform's efficacy extends beyond mere enjoyment; it significantly enhances retention through the incorporation of visual information, thereby fortifying the impact and durability of the acquired vocabulary for students. Without the use of this

technological tool, reaching the same immersive level, akin to being part of the game and eliciting the genuine enthusiasm of playing “video games” would be a near-impossible feat. Genial.ly allows learners to seamlessly blend the joy of gameplay with the educational process, effectively overshadowing the typically perceived tedium of learning as a mandatory task. Consequently, students find themselves effortlessly immersed, forgetting the sense of obligation and embracing the learning experience as a rewarding endeavor. This inadvertent shift in perspective leads to the unconscious internalization of vocabulary, as they engage in the educational journey with a sense of delight and curiosity rather than obligation.

CONCLUSIONS

In conclusion, the primary objective of this project is to study the efficacy of online escape rooms through the Genial.ly tool in enhancing secondary education students' vocabulary acquisition. To develop this project, an online escape room with three distinct challenges has been created, featuring test-type questions, image description and reading comprehension. This project is intended to be developed in three weeks with a total amount of 6 sessions devoted to it. The instruments to evaluate the learner's improvements are mainly three: Google forms for initial evaluation as well as final self-assessment and students' perceptions of the activity; formative assessment to gauge the students' engagement throughout all the stages of the project; and summative assessment for written task performance.

Building upon existing studies in the field, the project aspires to yield outcomes aligned with prior research, including increased motivation (Fotaris & Mastoras, 2019; González-Yubero et al., 2023; Rosseli, 2023), positive impacts on vocabulary learning (Roig et al., 2023; Vanduhe, et al., 2020; Yunnus, 2021) and heightened enthusiasm for creating teacher resources. Nevertheless, the innovative nature of this field necessitates further exploration as previous studies failed to quantify vocabulary improvement through this application. Furthermore, it is worth noting that the existing body of research is more extensive in areas such as grammar skills rather than vocabulary development.

The potential of Genial.ly to enhance vocabulary acquisition among secondary education students remains untested, prompting a need for a thorough examination of its

effects on various facets of language learning. The project aims to provide practical insights into applying this tool in a classroom setting, with the goal of enriching students' lexical knowledge, boosting self-esteem in EFL, and assisting teachers in addressing common lexicon deficiencies in an innovative manner. Having meticulously anticipated potential challenges, identified preemptive solutions, and outlined the specific steps and resources required for effective implementation, this project has been thoughtfully designed to seamlessly adapt to various classroom settings resulting in a successful learning experience.

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APPENDICES

Appendix 1. Escape Room's Warm-up Questions

Escape the Museum



Warm-up questions. Let yourself flow with the discussion, here are some ideas to guide it.



1. What is an escape room, and how would you describe the concept to someone who has never been to one?
2. Have you ever participated in an escape room game? If so, share your experience. If not, would you be interested in trying one?
3. What do you think makes a good escape room? What elements or features do you consider important for an enjoyable experience?
4. How important is teamwork in solving escape room puzzles? Can you share an example of a time when effective teamwork played a crucial role in your escape room experience?
5. Do you prefer escape rooms with a specific theme (e.g., mystery, adventure, horror)? Why or why not?
6. What challenges or obstacles do you think are commonly encountered in escape rooms? How do you approach overcoming them?
7. How do you handle time pressure in an escape room? What strategies do you use to stay focused and manage your time effectively?
8. How does the design and layout of an escape room impact the overall experience? Can you recall a particularly well-designed escape room that stood out to you?
9. In your opinion, what is the ideal group size for an escape room, and why? Have you experienced any challenges with group dynamics in an escape room setting?
10. How do you feel about using hints in escape rooms? Do you prefer to solve puzzles independently, or do you appreciate the guidance provided by hints?

Appendix 2. Rules and Sportmanship



STEPS

- The School's laptops will be used under supervision.
- The platforms to be used are: Google Classroom, Genial-ly & Google Forms.
- All the steps will be taken during class hour except for vocabulary revision.
- The teacher will be the main guidance, do not worry about asking!

BEWARE!

- If rules are not followed your group won't be able to participate in the escape room.
- You must have your institutional account available.
- Failing to attend the sessions will mean changing the testing method, no escape room may be retaken.




RULES

- Respectful Behavior
- Teamwork
- Language Use
- Time Management
- Digital Etiquette
- Instructions
- Sportmanship
- Tech Support
- Post-Game Reflection

Appendix 3. Pre-test to check previous vocabulary.

<https://forms.gle/cGifAePCWursKzyDA>



The World of Art: Vocabulary

Choose the correct answer to check your vocabulary knowledge

mherediamar@uoc.edu [Switch account](#)

Not shared

A painting, drawing, or photograph of a person is called a

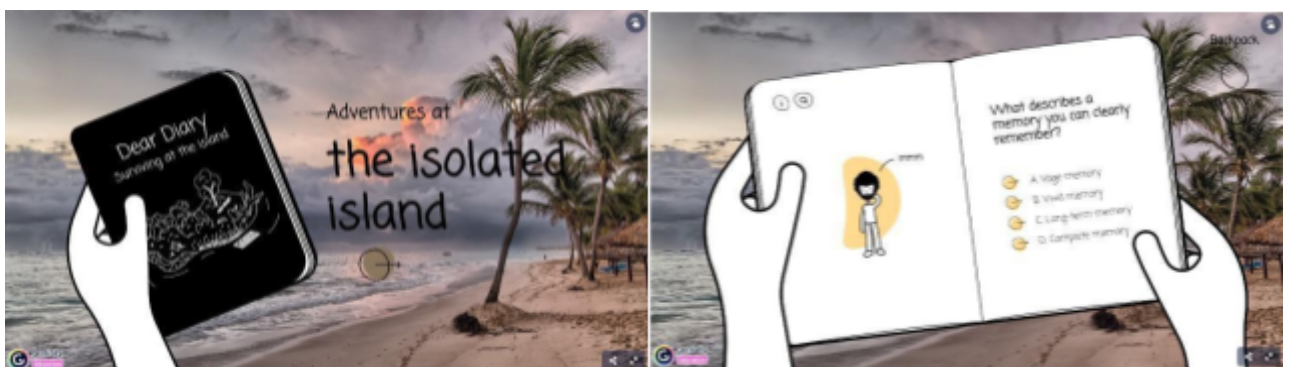
- a) Portrait
- b) Landscape
- c) Still life
- d) Abstract

The technique of shading to create a sense of three-dimensional space on a two-

Appendix 4. Simulated Escape Room on Previous Content.

<https://view.genial.ly/638f1c61cd5ac7001ba3c39a/interactive-content-scape-island-maria-heredia>

Password to enter mission number 5: MATCHES



Appendix 5. Vocabulary Review through Factile.



Appendix 6. “Escape the Museum”. Project’s Escape Room.

<https://view.genial.ly/659a7a26e46d0a0014e56aac/interactive-content-escape-room-museo>

Password to access “room 2”: PORTRAIT

Password to escape the “basement”: STAGE



Appendix 7. Escape Room Challenge 2, image description rubric

| Criteria | Excellent (4) | Proficient (3) | Basic (2) | Limited (1) |
|---------------------------------------|--|--|---|--|
| Vocabulary and Language Use | Utilizes rich and varied vocabulary with accurate language structures. | Uses a good range of vocabulary and appropriate language structures. | Limited vocabulary with some inaccuracies. | Minimal vocabulary and frequent inaccuracies. |
| Grammar and Sentence Structure | Demonstrates mastery of grammar and varied sentence structures. | Shows control of grammar and diverse sentence structures. | Adequate control of basic grammar, but errors are noticeable. | Struggles with basic grammar, leading to confusion. |
| Content and Relevance | Descriptions are highly relevant, providing a thorough exploration of the image details. | Descriptions are mostly relevant and contribute to understanding of the image. | Some relevance to the image, but may lack depth or focus. | Descriptions lack relevance to the image; content is unclear. |
| Organization and Coherence | Well-organized with a clear structure and smooth transitions between ideas. | Organized with a logical structure and transitions between ideas. | Some organization, but transitions may be awkward. | Limited organization; ideas are disjointed. |
| Adherence to Instructions | Fully adheres to the given task and effectively addresses all elements. | Generally follows instructions, but may miss some details. | Partially follows instructions, may miss key elements. | Strays significantly from the given task; fails to address some aspects. |
| Creativity and Expressiveness | Demonstrates creativity in language use, providing an engaging and vivid | Shows some creativity in language use, contributing to engagement. | Limited creativity; relies on basic language. | Minimal creativity; descriptions are dull and uninspired. |
| Language Proficiency Growth | Clearly displays growth in language proficiency through the description. | Shows improvement in language proficiency throughout the task. | Demonstrates some improvement, but inconsistencies are evident. | Limited improvement; language skills remain stagnant. |
| Overall Impressions and Impact | Leaves a lasting and positive impression; the description enhances | Leaves a positive impression and contributes to understanding. | Leaves a somewhat positive impression; may lack impact. | Leaves a minimal or negative impression; fails to engage. |

Appendix 8. “Escape the Museum” Summative Assessment Rubric

| Criteria | Excellent (4) | Proficient (3) | Basic (2) | Limited (1) |
|-----------------------------------|---|--|---|---|
| Teamwork and Communication | Consistently communicates and collaborates with team members, | Effectively communicates and collaborates with team members, | Communicates adequately with the team, but may not actively engage | Communication is minimal, and there is a lack of collaboration. |
| | actively contributing ideas and | contributing ideas and suggestions. | in collaborative efforts. | |
| | facilitating discussion. | | | |
| Role Fulfillment | Takes on assigned roles and responsibilities effectively. | Successfully fulfills assigned roles and responsibilities. | Partially fulfills assigned roles; may need reminders. | Struggles to fulfill assigned roles and responsibilities. |
| | | | | |
| Problem-Solving Skills | Consistently demonstrates | Effectively contributes to solving | Offers ideas for problem-solving, | Struggles to contribute ideas or |
| | exceptional problem-solving skills | problems and overcoming challenges. | but may not actively engage in the | lacks problem-solving skills. |
| | and contributes to solutions. | | process. | |
| Critical Thinking | Applies critical thinking skills effectively in deciphering clues | Applies critical thinking skills in deciphering clues and making | Demonstrates some critical thinking skills, but may struggle with | Limited critical thinking skills; relies heavily on others. |
| | and making decisions. | decisions. | complex tasks. | |
| | | | | |
| Respect for Teammates | Demonstrates respect for all team members, valuing diverse perspectives | Shows respect for most team members and values diverse perspectives. | Shows occasional respect for team members but may have conflicts. | Disregards the opinions and contributions of team members. |
| | and opinions. | | | |
| Time Management | Effectively manages time, ensuring steady progress throughout the game. | Manages time effectively to progress steadily through the game. | Demonstrates some awareness of time constraints but may need reminders. | Struggles to manage time effectively, leading to delays. |
| | | | | |
| Adaptability | Demonstrates flexibility and | Adapts to unexpected challenges and | Shows limited adaptability in response to unexpected | Resists change and struggles to |
| | adaptability in the face of unexpected | changes in the escape room scenario. | scenarios. | adjust to new situations. |

Appendix 9. Self-Assessment Google Forms Questionnaire.

<https://forms.gle/S35aMQnXTxRstXNy7>

Teamwork and Communication: *

- I actively communicated and collaborated with my team members.
- I contributed ideas and suggestions to the group discussions.
- I facilitated communication and ensured everyone's voices were heard.

Role Fulfillment: *

- I fulfilled the assigned roles and responsibilities effectively
- I actively engaged in tasks related to my role.
- I supported my team members in fulfilling their roles.

Problem-Solving Skills: *

- I actively participated in solving problems and overcoming challenges.
- I applied critical thinking skills to decipher clues and make decisions.
- I contributed valuable insights to the problem-solving process.