UNIVERSIDAD HISPANOAMERICANA

Faculty of Education

Thesis Submitted to Obtain the Licentiate Degree in English Teaching

The effectiveness of applying interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.

Sustentant:

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TUTOR:

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August, 2025

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SWORN DECLARATION

Yo Pablo Andrés Ávila Quirós mayor de edad, portador de la cédula de identidad número 1-1777-0144 egresado de la carrera de Enseñanza del Inglés de la Universidad Hispanoamericana, hago constar por medio de éste acto y debidamente apercibido y entendido de las penas y consecuencias con las que se castiga en el Código Penal el delito de perjurio, ante quienes se constituyen en el Tribunal Examinador de mi trabajo de tesis para optar por el título de Licenciatura en Enseñanza del Inglés juro solemnemente que mi trabajo de investigación titulado: **The effectiveness of applying interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025** es una obra original que ha respetado todo lo preceptuado por las Leyes Penales, así como la Ley de Derecho de Autor y Derecho Conexos número 6683 del 14 de octubre de 1982 y sus reformas, publicada en la Gaceta número 226 del 25 de noviembre de 1982; incluyendo el numeral 70 de dicha ley que advierte; articulo 70. Es permitido citar a un autor, transcribiendo los pasajes pertinentes siempre que éstos no sean tantos y seguidos, que puedan considerarse como una producción simulada y sustancial, que redunde en perjuicio del autor de la obra original. Asimismo, quedo advertido que la Universidad se reserva el derecho de protocolizar este documento ante Notario Público. En fe de lo anterior, firmo en la ciudad de San José, a los 12 días del mes de agosto del 2025.

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Estimado señor:

El estudiante Pablo Avila Quirós, cédula de identidad número 1-17770144 , me ha presentado, para efectos de revisión y aprobación, el trabajo de investigación denominado **THE EFFECTIVENESS OF APPLYING INTERDISCIPLINARY AUDIOVISUAL PROJECTS AS ENGLISH, PRODUCTIVITY, AND DESIGN THROUGH THE CONTENT AND LANGUAGE INTEGRATED LEARNING APPROACH TO ENHANCE TECHNICAL VOCABULARY IN 12TH-GRADE STUDENTS FROM COLEGIO TÉCNICO PROFESSIONAL CIT DURING THE FIRST SEMESTER OF 2025 ,** el cual ha elaborado para optar por elgrado académico de Licenciatura en la Enseñanza del Inglés. En mi calidad de tutor, he verificado que se han hecho las correcciones indicadas durante el proceso de tutoría y he evaluado los aspectos relativos a la elaboración del problema, objetivos, justificación; antecedentes, marco teórico,marco metodológico, tabulación, análisis de datos; conclusiones y recomendaciones.

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Atentamente,

Jeffrey Montero Nuñez

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LETTER FROM THE READER

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San José, 28-08-2025

Universidad Hispanoamericana

Estimado señor(a)

El estudiante Pablo Andrés Ávila Quirós, portador de la cédula de identidad número 1-1777-0144, me ha presentado para efectos de revisión y aprobación, el trabajo de investigación denominado **"The effectiveness of applying interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025"** el cual ha elaborado para obtener su grado de Licenciatura en la enseñanza del ingles.

He revisado y he hecho las observaciones relativas al contenido analizado, particularmente lo relativo a la coherencia entre el marco teórico y análisis de datos, la consistencia de los datos recopilados y la coherencia entre éstos y las conclusiones; asimismo, la aplicabilidad y originalidad de las recomendaciones, en términos de aporte de la investigación. He verificado que se han hecho las modificaciones correspondientes a las observaciones indicadas.

Por consiguiente, este trabajo cuenta con mi aval para ser presentado en la defensa pública.
Atte.

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presentado y aprobado en el año 2025 como requisito para optar por el título de Licenciatura en Enseñanza del Inglés; **SI** autorizo al Centro de Información Tecnológico (CENIT) para que con fines académicos, muestre a la comunidad universitaria la producción intelectual contenida en este documento.

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Cordialmente,

Firma
Cédula: 1-1777-0144

DEDICATION

To my mother,

It has been two years without your presence, yet I feel your accompaniment with every step I have taken, every decision I've made, and every moment I´ve enjoyed.

I want to sing the praises of every moment I spoke to you from here, in the darkness, in my privacy, asking you for guidance on how to continue every day.

Just imagining how proud you would be of me for this achievement brings tears to my eyes — tears not born of sorrow, but of love and the hard-earned fruits of my devotion.

Not a day passes without you in my thoughts. I may never understand why you are not here to celebrate with me, but I have learned to accept it and cherish every moment we once shared.

Love you much!

Fondly,

Pablito.

ACKNOWLEDGEMENTS

The completion of this research goes beyond a mere requirement to graduate; it is a contribution to the field I'm proud to be in, education.

First, I would like to thank God: even in the toughest moments, I always received a light to navigate through the adversities, either a person, a moment, or even a laugh.

Secondly, I would like to honorably mention Jessica Segura, a mentor and motivator to pursue this degree. With a few days of knowing each other, you saw something in me and brought back my love for education.

Then, to my siblings, Daniel Ávila and Tatiana Ávila, who always try to take care of their younger brother and will always celebrate my achievements as theirs, both professional and academic.

Continuing, I would like to thank Jeffrey Montero, my thesis advisor, for your guidance and patience, which I know was a lot.

Finally, I want to thank every single person who was involved somehow in this process: from hearing me talk about it to giving me any piece of advice.

Thank you!

ABSTRACT

In a major globalized job market, bilingual skills are becoming essential for professionals in general. Nonetheless, students from technical/vocational high schools, as part of the Ministry of Public Education (MEP) curricula, are expected to graduate with a B2/C1 level of proficiency, in addition to their technical training in the target language. However, Costa Rican technical high schools face challenges in equipping students with the necessary English technical vocabulary, which limits their ability to access better job opportunities. Therefore, this study aims to investigate the effectiveness of interdisciplinary audiovisual projects as a strategy for enhancing technical vocabulary acquisition among 12th-grade students at Colegio Técnico Profesional CIT. By integrating the subject of English with Productivity and Design through the Content and Language Integrated Learning (CLIL) approach, the research seeks to determine how audiovisual projects can promote more meaningful and practical language learning experiences for both teachers and students.

This investigation is intended to analyze students' engagement, comprehension, and application of technical vocabulary in real-world scenarios using the audiovisual they have created. Data is collected through observations, student interviews, and analysis of project outcomes to assess the impact of the mentioned interdisciplinary projects on vocabulary retention and practical usage. The study also considers challenges related to resource availability, student motivation, and interdisciplinary collaboration between subject areas.

Furthermore, this investigation will provide more detailed information to Colegio Técnico Profesional CIT regarding the application of specific projects to enhance vocabulary retention, along with a starting point for a possible change of the technical evaluation criteria. Additionally, findings from this research will provide valuable insights into the role of audiovisual projects in technical education and their potential for improving bilingual competence in technical fields. By understanding the benefits and limitations of this approach, educators and administrators will be

able to make informed decisions on implementing innovative methodologies that meet the educational and professional needs of Costa Rica's future workforce.

Keywords: Interdisciplinary Learning – Audiovisual Projects – CLIL – Technical Vocabulary – Technical Education

RESUMEN

En un mercado laboral cada vez más globalizado, las competencias bilingües se vuelven esenciales para los profesionales en general. No obstante, se espera que los estudiantes de bachillerato técnico-profesional, como parte de los planes de estudio del Ministerio de Educación Pública (MEP), se gradúen con un nivel de competencia B2/C1, además de su formación técnica en la lengua meta. Sin embargo, los liceos técnicos costarricenses enfrentan retos para dotar a los estudiantes del vocabulario técnico necesario en inglés, lo que limita su capacidad para acceder a mejores oportunidades laborales. Por lo tanto, este estudio pretende investigar la efectividad de los proyectos audiovisuales interdisciplinarios como estrategia para mejorar la adquisición de vocabulario técnico entre los estudiantes de 12º grado del Colegio Técnico Profesional CIT. Mediante la integración de la asignatura de inglés con Productividad y Diseño a través del enfoque *Content and Language Integrated Learning* (CLIL), la investigación pretende determinar cómo los proyectos audiovisuales pueden promover experiencias de aprendizaje de idiomas más significativas y prácticas tanto para profesores como para alumnos.

Esta investigación pretende analizar el compromiso, la comprensión y la aplicación del vocabulario técnico por parte de los estudiantes en escenarios del mundo real utilizando el audiovisual que han creado. Los datos se recogen mediante observaciones, entrevistas a los estudiantes y análisis de los resultados de los proyectos para evaluar el impacto de los mencionados proyectos interdisciplinares en la retención y el uso práctico del vocabulario. El estudio también considera los retos relacionados con la disponibilidad de recursos, la motivación de los estudiantes y la colaboración interdisciplinar entre áreas temáticas.

Además, esta investigación proporcionará información más detallada al Colegio Técnico Profesional CIT sobre la aplicación de proyectos específicos para mejorar la retención de vocabulario, junto con un punto de partida para una posible reestructuración de los criterios de

evaluación técnica. Además, los resultados de esta investigación proporcionarán información valiosa sobre el papel de los proyectos audiovisuales en la educación técnica y su potencial para mejorar la competencia bilingüe en campos técnicos. Al comprender los beneficios y las limitaciones de este enfoque, los educadores y administradores podrán tomar decisiones informadas sobre la aplicación de metodologías innovadoras que respondan a las necesidades educativas y profesionales de la futura mano de obra de Costa Rica.

Palabras Clave: Aprendizaje Interdisciplinar - Proyectos Audiovisuales - Content and Language Integrated Learning (CLIL) - Vocabulario Técnico - Enseñanza Técnica

CHAPTER I: RESEARCH PROBLEM

1.1 Research Statement

Globalization has increased the demand for professionals with advanced technical skills and bilingual competencies, especially in English, which has become the predominant language in the global labor market, as presented by World Business Outlook (2025). In response, Costa Rica's technical education system has made significant progress in training qualified mid-level technicians in various productive sectors. However, a critical gap remains: despite the quality of technical training, many graduates lack proficiency in technical English, limiting their ability to compete in an increasingly globalized and competitive labor market.

English has moved from being a complementary skill to becoming an essential competence, especially in productive sectors. As noted by the Cambridge English Language Assessment (2016), although English is increasingly prevalent in workplaces globally, there remains little research on the specific language skills required by employers and potential gaps in those skills. This lack of information creates challenges both for employers seeking bilingual technicians and for students, whose job opportunities are reduced by their insufficient command of technical English.

The Costa Rican technical education system has not yet fully developed strategies that effectively integrate English language learning with technical training. Current efforts are limited and not adequately aligned with the specific language demands of each technical area. As highlighted by Putra et al. (2020), English not only serves as a communication tool but also facilitates adaptation to present and future work environments. Thus, there is a need to explore resources and strategies that promote the simultaneous development of technical and bilingual skills. Research into approaches such as interdisciplinary collaboration, particularly through audiovisual projects, could offer new insights into how to foster these skills more effectively within the framework of technical education in Costa Rica. This study seeks to examine how interdisciplinary audiovisual projects, which integrate the subjects of English, Productivity, and

Design through the CLIL (Content and Language Integrated Learning) approach, can improve the acquisition of technical vocabulary (Productivity and Design) in twelfth-year students at the CIT Technical Professional High School. By addressing this challenge, the research aims to provide possible concrete solutions that can bridge the gap between technical training and language learning, thereby contributing to better employment opportunities for graduates.

1.1.1 Background of the Problem

One of the primary challenges in Costa Rican education, specifically with vocational training, is connected to the technical English that is aimed to be accomplished by 12th-grade students. For instance, various curriculum frameworks state the addition of English for Specific Purposes (ESP) classes to achieve the learning outcomes presented in the same ones: following a vocational study program from the Ministry of Public Education (MEP), it is stated that “the four linguistic competences are worked on using the six levels of the Common European Framework of Reference (CEFR)… at the end of the twelfth grade, the student will become an English Independent User (B1) according to the Common European” (Ministerio de Educación Pública, 2021). On that note, Gamboa and Rodríguez (2021) state that “having professionals in the area of ESP… is an opportunity for Costa Rican citizens to learn specialized English properly” (para. 4); however, the change of certain programs and methodologies is necessary to enable the learning of those linguistic competencies. Finally, the authors, by stating examples of engineering students, concluded that speaking technical language is pertinent at the moment of being hired.

In 2022, Lee addresses the importance of interdisciplinary collaboration in various professions, noting that this practice is valued for its ability to improve efficiency and optimize the use of public funds. In education, collaboration across disciplines is essential for the continuing professional development of teachers, especially those teaching English at the tertiary level, where course planning and assessment are maximized.

The study focuses on the perceptions and experiences of teachers who participated in an interdisciplinary teaching project. Through informal interviews, Lee collected the reflections of three teachers after the project, transcribing their comments for detailed analysis. This qualitative approach offers insights that quantitative studies often do not fully capture, providing valuable information for those interested in understanding and improving interdisciplinary collaboration in their educational practice.

The project allowed for the development of an essay critique system and the conduct of workshops for English language learners, where student feedback on the workshops proved to be mostly positive. Lee's analysis focused on identifying the benefits, problems, challenges, and key factors for successful interdisciplinary collaboration. Within these factors, practical aspects such as the costs associated with communication and the difficulties associated with publishing interdisciplinary work were considered.

Among the benefits observed, collaborators mentioned enrichment in terms of language skills and language teaching. They also highlighted the success of non-confrontational cooperation, which made it possible to achieve tangible results, such as the organization of workshops in a secondary school. Interaction with end-users in the field of technology was also an aspect that enhanced the success of the project. However, problems arose, mainly related to the difficulties of publishing and evaluating interdisciplinary works, which do not always meet the expectations of academic journals of a disciplinary nature. Complications in finding collaborators and concerns about the additional burden this collaboration might place on some colleagues were also mentioned (Lee, 2022).

For Lee, key factors that contribute to successful interdisciplinary collaboration include open-mindedness, flexibility, effective communication, and mutual respect. The author highlights the importance of regular meetings and continuous feedback as elements that support effective team functioning.

The conclusions of the study show that the challenges and success factors of interdisciplinary collaboration coincide with those indicated in the existing literature. Among the most relevant problems are the high cost of communication, which implies a significant investment of time, and the predisposition of some disciplines to collaborate more than others. To facilitate effective collaboration, it is suggested that practical support, such as fellowships and time off, be provided. Finally, Lee concludes that while interdisciplinary collaboration offers great benefits, English teachers must understand the challenges and particularities of the disciplines with which they collaborate to foster more effective cooperation (Lee, 2020).

In addition, the 2019 article written by Pande-Rolfsen and Heide titled "*Sounding Shakespeare: An Interdisciplinary Educational Design Project in English and Music*" addresses a relevant issue in the Norwegian educational environment. Although students begin studying English in the first grade, many do not encounter Shakespeare's texts until later grades, if at all. According to the authors, the experience students have with the playwright's works depends largely on teachers' own knowledge and appreciation of his texts, which in some cases may result in the perception of Shakespeare as an outdated and irrelevant author. However, Pande-Rolfsen and Heide argue that Shakespeare's plays address universal themes about humanity and constitute a valuable cultural, textual, and linguistic foundation. Therefore, they point out that future teachers must have meaningful contact with these plays during their professional training.

The Sounding Shakespeare project arises as a response to this need, integrating music as a pedagogical tool to explore Shakespeare's texts actively and creatively. This interdisciplinary approach seeks to provide student teachers with an experience that combines English language learning with an aesthetic approach, encouraging participation and deep learning through interaction with music.

To carry out this project, interdisciplinary workshops were organized for Norwegian student teachers in their third or fourth year of studies in areas such as English, music, and performing arts. The workshops, which took place outside of regular academic hours, focused on exploring excerpts from A Midsummer Night's Dream and served as a starting point for musical creation and linguistic play. Through Grounded Theory (GT) methodology, data obtained through questionnaires and video recordings were analyzed, allowing the authors to study in detail the progress, the collaboration between students, the creative process, and the final presentations. This qualitative approach revealed how participants were able to integrate different disciplines into the project, offering valuable insights into interdisciplinary learning (Pande-Rolfsen and Heide, 2019).

The results of the project demonstrated that music can significantly transform the experience of literary texts. Participants who began by working with music (group B) found Shakespeare's texts more “alive” and “assimilated” compared to those who began the process with textual analysis (group A). This difference evidences the positive impact of aesthetic and creative approaches on literary comprehension. Likewise, students in group A faced more difficulties when composing music after starting with a more text-analytic approach, suggesting important differences in the way meaning is constructed when working from music or text. However, while the musical approach favored greater creative interaction, it also presented some challenges for the participants.

One of the most salient findings was that the musical experience helped students overcome negative attitudes toward Shakespeare, making him more accessible and less intimidating. The authors conclude that integrating music into the study of literary texts enriches not only the educational experience but also the deeper understanding of the material, especially in the case of works considered difficult, such as those by Shakespeare.

The Sounding Shakespeare project made it clear that music can act as a key agent in guiding the experience of literary texts in a more meaningful way. Participants, who had initially reported negative experiences with Shakespearean texts, found a new way to interact with them by combining them with music. Rather than simply explaining the text verbally, the creative approach allowed students to practice and experience its meaning through creation and improvisation. Ultimately, the results suggest that active and aesthetic methods, such as those that combine music and English, have a profound impact on interdisciplinary teaching, providing a richer and more transformative learning experience.

Finally, in 2019, Stozhko explores the growing importance of interdisciplinary projects and Project-Based Learning (PBL) in various disciplines, from engineering to social sciences. The study highlights how these approaches foster collaboration between students from different majors, which not only enriches the understanding of complex concepts but also improves the ability to solve problems from multiple perspectives. Stozhko underlines that previous research has already shown that PBL increases student motivation and engagement, as well as developing key skills such as critical thinking, creativity, and teamwork. With the integration of information technologies, such as digital platforms and programming tools, the educational process is modernized, especially in the fields of STEM and STEAM. In this context, the implementation of Interdisciplinary Project-Based Learning (IPBL) not only boosts academic progress according to Bloom's taxonomy but also has a positive impact on the acquisition of professional skills and student satisfaction, as it allows them to face real problems during their training.

Stozhko's study was carried out using an experimental methodology, using control and experimental groups to evaluate the impact of IPBL on students' cognitive development. A revised version of Bloom's taxonomy was applied, which classifies knowledge into four levels: lower, basic, medium, and higher. The study was structured in three phases: verification, in

which the students' initial level is calculated; formative, which included educational intervention; and conclusive, where the results obtained were analyzed. Traditional methods were combined with IPBL in the experimental group, while the control group continued with a purely traditional approach. The sample included students of computer science and analytical chemistry, although the ages of the participants were not specified. Statistical tests were used to compare the cognitive performance of both groups, allowing the impact of the educational intervention to be assessed.

The results revealed that the students in the experimental group, who participated in the IPBL, achieved a significantly higher cognitive level than those in the control group. Although both groups started from similar levels of knowledge, the students who worked with IPBL demonstrated a greater understanding and ability to apply the knowledge acquired at the end of the experiment. These findings confirm that IPBL improves academic performance and facilitates deeper learning, particularly in computer science students. As for the results of the second part of the study, the analytical chemistry students, initially homogeneous in their abilities, also showed significant improvements in their cognitive levels after using the IPBL approach in combination with CALS. The experimental group achieved 90% at the basic, intermediate, and advanced cognitive levels, compared to 65% achieved by the control group. This reinforces the idea that IPBL not only improves academic performance but also enhances the application of interdisciplinary knowledge.

Stozhko concludes that the integration of Interdisciplinary Project-Based Learning (IPBL) has a significant positive effect on the cognitive development of students, both in IT programs and in those considered "experts". IT students improved their performance by 2.3 times more than the control group, while "experts" in analytical chemistry did so by 1.4 times more. In addition to these improvements in academic performance, IPBL also favors the development of intellectual and practical skills, leading to recommending its implementation in universities and

colleges that offer IT programs. Stozhko suggests that interdisciplinary projects can be a powerful tool to enrich academic training in various areas of knowledge, opening the door to deeper and more meaningful learning for students.

1.1.2 Problematization

Nowadays, globalization has generated a growing demand for professionals with advanced technical skills and, at the same time, bilingual skills, especially in English, which is considered the predominant language in the global workplace. Costa Rica's technical education system has responded to the need to train qualified mid-level technicians in various productive areas. However, despite the quality of technical training, many graduates fail to develop an adequate command of technical English, which limits their opportunities for insertion in a highly competitive and globalized labor market. For instance, Summa Magazine (2022) showcases that there is a significant gap between the English proficiency of people of professional age and the positions demanded by the market. Costa Rican government and industries have successfully attracted foreign investment and generate new jobs, yet a great number of positions exceed the proficiency in the target that professionals have.

English has ceased to be a complementary skill and has become an essential competence, especially in productive sectors. Even though English is becoming more widespread in the workplace, the Cambridge English Language Assessment (2016, p. 4) states that there’s still not much in-depth research on what specific language skills employers look for in different industries and countries. On that note, several inquiries arose; for instance, what level of English do they expect, are there gaps in English skills, or do employees with better English get more benefits? Therefore, the lack of resources, strategies, and research to incorporate English as an integral part of technical training in Costa Rica has generated a significant gap in preparing technical students. This situation affects both employers, who are

looking for bilingual technicians, and the students themselves, who see their employment and professional mobility possibilities reduced.

Costa Rica's technical education system still lacks strategies to promote this interconnection effectively. Currently, efforts to improve the level of English in technical education are limited and not sufficiently aligned with the specific demands of each technical area. As stated by Putra et al.:

> We were starting from education, business, (and) politics, to technology. The importance of learning English in today's times cannot be underestimated or ignored seeing English as the language spoken in most parts of the world. English does not only play a role as a communication tool but can also make it easier for us to adapt to the environment and work in the present and future. (2020, para. 4).

Therefore, there is a need to investigate resources and strategies that can contribute to the development of simultaneous bilingual and technical competencies and how these possible approaches could be effectively implemented within the country's technical education system.

Following the presented ground, Angulo (2023) states that by analyzing CINDE's statistics, the Costa Rican Investment Promotion Agency, 11% of the population present proficiency in the language; additionally, if the same agency has successfully captured companies and brought them into the country, why hasn't the importance been given to speaking English as a tool that can reduce inequality?

For the presented reasons, this position and in harmony with the current necessity provided by employers, this research focuses on implementing appropriate strategies using interdisciplinary audiovisual projects through the Content and Language Integrated Learning (CLIL) approach. These projects aim to teach technical vocabulary in English related to the

Productivity and Design curriculum to 12th-grade students at Colegio Técnico Profesional CIT during the first trimester of 2025. This initiative addresses the need for effective language integration in technical education, promoting the development of bilingual mid-level technicians in Costa Rica's evolving educational landscape.

1.1.3 Justification

This study responds to a growing need within the Costa Rican technical education system: the effective integration of technical English in the training of students. Globalization has significantly increased the demand for bilingual technicians in various productive sectors, where English is no longer an optional skill but an essential skill. However, a notable gap persists in the training of Costa Rican technical graduates, who, despite receiving solid preparation in technical skills, lack the necessary command of technical English to compete effectively in the global labor market.

Despite the efforts made by educational institutions, current programs are not sufficiently aligned with the specific linguistic demands of the work environment. This situation affects both employers, who require personnel with technical skills and English proficiency, and students, whose employment opportunities and professional mobility are limited. The lack of interdisciplinary strategies that promote the acquisition of technical vocabulary in English is one of the main causes of this gap.

Therefore, the proposed research has a dual relevance. First, by exploring the implementation of interdisciplinary audiovisual projects that integrate the subjects of English, Productivity, and Design through the CLIL (Content and Language Integrated Learning) approach, the study will offer an innovative perspective on how to improve the teaching of technical English in the context of technical education. Secondly, the proposal seeks to provide viable and applicable solutions that can contribute to improving the competitiveness of technical

graduates in the labor market, thus promoting alignment between the demands of the productive environment and the academic training of students.

The study will not only generate new knowledge in the field of interdisciplinary integration of language and technical skills but will also identify more effective educational practices for teaching technical English in professional contexts. By addressing the interrelationship between technical vocabulary and English language skills through audiovisual projects, the research is expected to provide new pedagogical strategies that can be adopted by other technical institutions in the country.

The main side to benefit of this study will be, first, the students, who will have the opportunity to develop technical and linguistic skills simultaneously, improving their employment and mobility prospects in a globalized environment. Secondly, employers will benefit from having better-prepared graduates with the technical English proficiency necessary to adapt to the challenges and opportunities of the international labor market. This improvement in the technical-bilingual training of students contributes to closing the existing gap between the educational offer and the demands of the productive sector, benefiting in the long term both the industry and the socioeconomic development of the country.

1.2 FORMULATION OF THE PROBLEM

1.2.1 Research Question

What is the impact of applying English, Productivity, and Design as part of interdisciplinary audiovisual projects with the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Profesional CIT during the first semester of 2025?

1.3 OBJECTIVES OF THE INVESTIGATION

1.3.1 General Objective

To analyze the effectiveness of applying interdisciplinary audiovisual projects such as English, Productivity, and Design with the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Profesional CIT during the first semester of 2025.

1.3.2 Specific Objective

1. To analyze the process of technical vocabulary retention by implementing interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.
2. To describe the process of acquisition and enhancement of technical vocabulary by participating in interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.
3. To examine the students' perceptions regarding the application of interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.

1.4 SCOPE AND LIMITATIONS

For this purpose, a series of scopes and limitations are established to delimit the scope of the expected results and the challenges associated with the implementation of this pedagogical proposal.

1.4.1 Scope

Among the main scopes, it should be noted that the project addresses a crucial problem in Costa Rican technical education: the lack of bilingual competencies, especially in technical English. By focusing on a specific group of students, an in-depth and detailed analysis of the effectiveness of interdisciplinary audiovisual projects in teaching technical vocabulary is possible. This approach can improve both the linguistic and technical skills of students, areas that are increasingly in demand in a globalized job market. In addition, the implementation of the CLIL approach introduces an innovative methodology that combines the learning of technical content with that of a foreign language, providing a modern pedagogical solution that, if proven effective, could be replicated in other technical institutions in the country.

Since the implementation of this investigation is focused on Colegio Técnico Profesional CIT, the first and only private vocational institution in the country, the primary beneficiaries will include 10th-, 11th-, and 12th-year students, as the approach enhances technical training through a bilingual methodology. Additional beneficiaries include teachers of English and technical subjects, as well as the institution itself, which will gain a more competitive educational profile aligned with national and international market demands. Additionally, if presented, the Ministry of Public Education (MEP) could pilot similar initiatives that extend beyond language and technical training to reduce the workload for both students and teachers.

1.4.2 Limitations

In the following section, several limitations and research hinder were encountered. For instance, due to the nature of the population and time, the investigation was limited to a single educational setting, technical/vocational, and one grade, 12th grade: these situations limit the generalization of the findings provided in the research. Another limitation, connected to the long-term measurement, is that since the instruments and methodology were applied within the first

semester of the school year, it cannot be assessed whether the retention of the vocabulary will still be in the future.

Due to the qualitative approach, some responses could have been connected to subjective factors such as preference or prior knowledge. Moreover, regarding the openness from colleagues, some fellow educators, mainly teachers who are accustomed to traditional methods, are not willing to apply such methodologies or even allow students to combine the subjects.

Finally, connected to previous research and foundation to present prior to the application of the research, the topic of interdisciplinarity is still quite new and innovative: sources to explain the characteristics of the methodology were limited, making the theoretical framework complicated to justify.

CHAPTER II: THEORETICAL FRAMEWORK

2.1. Introduction

The purpose of this chapter is to provide the theoretical framework to back up the investigation about the use of interdisciplinary audiovisual projects as a pedagogical support to enhance the learning of technical vocabulary among technical high school students, such as those of the Colegio Técnico Profesional CIT, in Costa Rica. Technical and professional education is challenged with training future workers with basic technical skills while also addressing the linguistic competencies that allow them to enter into a bilingual and globalized workforce in an increasingly globalized world, Such context triggers us to design new teaching pathways, for example, the implementation of the Content and Language Integrated Learning (CLIL) approach, where language learning is embedded in certain disciplines.

As it is described in the given literature review, the theoretical framework consists of several important blocks: Interdisciplinary Projects —on why the interrelation of disciplines is crucial to develop broad competencies; Audiovisual Projects —on the significance of visual and auditory materials for technical education; and, lastly, the Content and Language Integrated Learning (CLIL) approach —the methodological cornerstone of this proposal and its applicability for building up technical İnglish vocabulary.

2.1.1. Background of the Institution

Colegio Técnico Profesional CIT —Vocational High School CIT— is the first private, technical high school located in Belén de Heredia, Costa Rica, founded in 2014 by Mrs. Jeannette Cortés, present General Director of the institution. According to Prado (*n.d*, para. 3), the institution started with 24 students, and it currently reported over 1000 students among the three academic divisions —bilingual preschool, scientific primary, and technical high school— with over 290 workers in the entire facility. The institution provides a comprehensive range of technical programs alongside academic subjects, aiming to equip students with both the knowledge and practical skills necessary for the modern workforce.

According to the official website of the institution, Cybersecurity, Digital Design and Development, Software Development Informatics, Industrial Electronics, Productivity and Quality, Management and Logistics, and Distribution are the ongoing technical offerings, along with the exploratory workshops in the third cycle (Colegio Técnico Profesional CIT, 2025). Additionally, Prado expresses that the institution also works hand in hand with certification processes, including TOEIC, Get Connected, IOT, Python programming, Cisco, and AWS, which allow students to complement their training.

Ms. Cortés highlights that the institution is relatively new but has a highly valuable academic and human team, achieving significant accomplishments, explains Prado (para. 12). Among the institution's notable achievements are the honorary mentions awarded by the Ministry of Public Education (MEP) as the technical school with the best results in the national Baccalaureate exams: the school has also excelled in both national and international robotics competitions, such as the MICIT-WRO National and World Robotics Olympiads, where they secured first place nationally and 9th place globally in the OPEN category. Additionally, a team from the institution won first place for the best project at Aula Labora in Lithuania, with their project SIBU ORGANICS, along with several other recognitions.

This complex - part of the Campus Educativo Belén (CEB) - has demonstrated an early commitment to educational transformation by adopting distinctive approaches among its academic areas, all under a private, quality, innovative, technologically applied education approach: these approaches are designed to prepare students with quality and innovation, responding proactively to the constant demands of the productive/labor sector, the same approach on which interdisciplinarity is based.

2.2. English Teaching in Costa Rica

2.2.1. Characteristics of Costa Rica's Educational System

Costa Rica's educational system is recognized for its strong emphasis on accessibility and quality, underpinned by a legal framework that guarantees free and mandatory education. For instance, the OECD (2017) describes the country as the pioneer of quality education in Latin America due to its leadership in the matter. Given progress, a result of the abolishing of the military in 1948, allowed the foundations for the country's strong socioeconomic growth over the last few decades.

Regarding the country's structure and organization, the OECD continues explaining each level - preschool, primary, secondary, and higher education - presented by the Ministry of Public Education (MEP), the institution that oversees and regulates the curriculum, infrastructure, and outcomes of every educational institution of the country, both public and private. Preschool education, divided into two cycles, prepares students for primary education. Primary cycles are mandatory and serve as the foundation for basic literacy and numerical abilities. High school, or secondary education, is divided as well into two major sections, providing undergraduates with general academic training. Finally, higher education in Costa Rica refers to universities, both state and private, that foster research and innovation in specific fields of interest (2016).

Focusing specifically on secondary education, Costa Rica, and its needs to evolve in order to respond to rising expectations, emerging challenges, and changing skill demands from the current market, and to provide social mobility to certain populations has integrated theoretical knowledge with practical skills tailored to different industries offered mainly through Colegios Técnicos Profesionales (CTPs) -Vocational High Schools. According to Garnier (2016), in the vocational/technical curricula of secondary education, students not only complete their academic studies and earn a high school diploma but also specialize in a chosen technical

field, obtaining a mid-level technical degree. Compared to academic institutions, technical high schools require a sixth year to complete the curricula since it includes workplace training in the relevant field, preparing students for both higher education and the technical job market through exploratory workshops and other experiences and training given.

As previously presented, Costa Rica is seen as a pioneer and constant improver of education in the region; therefore, the country, in response to globalization and labor market demands, the Costa Rican education system has increasingly promoted bilingual education, particularly in English. Mentioned interest from MEP has demanded the implementation and reshaping of curricula aimed at enhancing English proficiency, recognizing it as a key factor for employability and economic growth. As stated in the last curricula reshaping, “Educating for a New Citizenship”, presented by MEP (2016), the English curriculum reform was driven by four key concerns. First, there was a need to modernize the curriculum to ensure that students develop the necessary knowledge, skills, and abilities to communicate effectively in diverse contexts. Second of all, despite receiving English instruction for over a decade, many students were not reaching the expected proficiency levels due to a lack of clear learning goals and instructions, classroom mediation, and testing. Additionally, the changing demands of the global workforce require individuals to process a greater amount of information, often presented in the target language. Finally, the reshaping follows the concept of education for a new citizenship, whose main goal is prepping students who will be active participants in the globalized world.

Finally, following the OECD report, it is imperative to analyze the Costa Rican education system in terms of access and learning outcomes to understand how these factors impact students' ability to succeed. In terms of access, the OECD states that “Costa Rica’s constitution requires public education spending to represent 8% of the gross domestic product and states that education should be compulsory and free-of-charge from preschool to the end of upper secondary school” (p. 37). Additionally, the report showcases that longer study time has

translated into higher levels of qualification overall. Regarding the learning outcomes, the report presents that given expansion of access to primary education “has contributed to high rates of basic literacy. Some 98% of young people and adults in Costa Rica are reported to have basic literacy skills, defined nationally as the self-declared ability to read and write” (p. 40). This data highlights the progress Costa Rica has made in expanding educational access and improving literacy rates, while also emphasizing the need for continued efforts to enhance learning outcomes and ensure that all students, regardless of their background, can fully benefit from the education system.

2.2.2. English as a Second Language Instruction in Costa Rica

English as a second language instruction within the country represents a crucial role in the national education system; therefore, providing its historical context is imperative to contextualize current and future changes within the field of study since global economic and political matters shape the teaching/learning processes.

Costa Rica has always been a country that relies merely on patriotic relationships, which impulse social mobility and progress among the population: as Solano (2012, p.167) presents, “English teaching in Costa Rica started as early as the mid-nineteenth century and was first institutionalized in 1825 in the internal bylaws of the Casa de Enseñanza Santo Tomás”. Taken decision was made since Costa Rica, by that time, was already taking part in commerce with countries, such as England, and the need to acquire the language for commercial and productivity purposes was necessary. Moving forward, Marín (2012) retells that “records of English instruction in primary schools go back to the 1940s, but English classes were already included in academic programs upon the founding of the “*colegios primario-secundarios*” in 1887 (p.14); additionally, it was also stated that English classes were originally instructed by foreigners, likely native English speakers. It was not until 1954 that the Universidad de Costa

Rica (UCR) held its first training program for English teaching professionals in response to the need.

The Ministry of Public Education (MEP) governs teaching in public and private schools, aligning the curriculum with the Common European Framework of Reference for Languages (CEFR) in the case of English or other target languages. As presented by MEP (2016), this framework serves as a standardized base for designing language content and curriculum guidelines, choosing textbooks, and creating assessment tools. Within the CEFR, it is outlined the required skills and competencies that language learners must demonstrate at various proficiency levels and grades. Additionally, it establishes a shared terminology that can be applied to all languages and educational settings, ensuring consistency and adaptability among institutions in the country.

Despite these advancements, several challenges persist in English education in Costa Rica. Referring to Costa Rica's educational landscape, Sevilla (2017) explains that "it is not uncommon to hear the open accusation that students' failure to master basic language skills in English is the result of inadequate teacher preparation and faulty methodological choices" (p.154). Additionally, Tellier (2023, para.11), referring to general education, mentions that high dropout rates in both school and tertiary education represent one of the main challenges: "many students in Costa Rica struggle to complete their education due to various factors, including economic constraints, lack of support systems, and the need to work and support their families." Moreover, "another significant challenge is the inequality in access to preschool and higher education", in which failure to both early education and access to higher education represents a possible underdevelopment of the student.

2.3. Approaches to Teach English

2.3.1. Approaches in the Process of Learning English as a Foreign Language

Worldwide, the process of learning a new language, English for instance, has evolved, shaped by linguistic theories that arise, and educational needs presented by society: these changes influence methodologies, learning outcomes and expectations, and teacher/student interaction. In the following section, the stipulated approaches to English teaching, according to MEP, will be developed.

As part of the restructuration of the curriculum established by the Ministry of Public Education, English classes must follow an Action-Oriented Approach. According to the Council of Europe (*n.d*, para.1), this approach's foundation "is rooted in a constructivist paradigm and takes task-based learning to a level where the class and the outside world are integrated in genuine communicative practices. In addition, the approach emphasizes learner agency"; in order senses, it promotes the pedagogical mediation to be based on realistic scenarios, which lead up to a final interpersonal task or assignment.

Furthermore, tasks within the English classroom represent a relevant approach/mediation. According to MEP (2016, p.26), these tasks are "any purposeful action considered by an individual as necessary in order to achieve a given result in the context of a problem to be solved, an obligation to fulfill, or an objective to be achieved": these are provided enclosed by a context that students might face in a daily situation, and its purpose must be focused on the ability of the learners to demonstrate what they "can do" using the target language through structures, vocabulary, functions, among other aspects presented in the study program.

Additionally, to provide students the opportunity to take responsibility for their learning process and demonstrate it with a final product, the Project-Based Learning (PBL) approach

contributes to the expected student-centered process. According to MEP (p. 27), “projects allow students to be in contact with authentic language and learning experiences that go beyond the classroom setting”; nonetheless, this approach must be presented differently from regular class projects. In the PBL approach, “the project is the vehicle for teaching the important knowledge and skills students need to learn. The project contains and frames curriculum and instruction”, explains Buck Institute for Education (*n.d.* para. 6).

Despite having mentioned the approaches presented in the content program from MEP in English teaching, there are other second language learning approaches. For instance, the direct method, grammar-translation approach, the communicative approach, and the interactive method, among others. Bruno and Scarborough (2025), in regard to the rapid updating and creation of approaches, describe that “it feels like our profession has been in hyperdrive recently. Classrooms look different, lessons look different, pedagogy looks different, and teaching strategies look different”: in order senses, everything connected or influential to education changes, and as a result, the change within paradigms, methodologies, and approaches that affect the teaching/learning processes.

2.4. Content and Language Integrated Learning Approach

2.4.1. Features of the Content and Language Integrated Learning Approach

Several core elements define the Content and Language Integrated Learning approach, all of which contribute to its unique ability to integrate language and content seamlessly -they are referred to as the “The Four Cs of CLIL”. To begin with, the approach is relevant to the content since its essence is merely connected to integration. As presented by Martínez (2011), this integration has a dual focus: “Language learning is included in content classes (e.g. math, history, geography, etc.), and content from subjects is used in language-learning classes. The language teacher incorporates the vocabulary, terminology, and texts from other subjects into his or her classes” (p. 96).

Additionally, according to Darn (2019), communication is also a key element when it comes to the approach. Communication goes beyond the speaking macro skill; therefore, Corwin (2024), in reference to the approach, mentions that “communication is key, as students practice speaking, listening, reading, and writing in real, meaningful contexts” (para. 16) that are provided by the education with a settled purpose.

Continuing, Darn expresses that cognition, while planning or applying the CLIL is relevant. Spratt and Baker (2022) state that “CLIL focuses on developing cognitive skills, especially High Order Thinking Skills (HOTS), as a steppingstone to higher-level critical thinking… cognition aims should be based on our subject aims and focus on developing the cognitive skills required by the subject and individual tasks” (para. 50).

Finally, culture/citizenship is hooked up to the approach due to the “idea that we are all connected to one another in a variety of ways and have responsibilities as well as rights in every setting” (Spratt and Baker, 2022, para. 54). The reasoning behind this element relies upon on the relationship between identity and culture in CLIL contexts, focusing on aspects related to culture, identity, and ideology. As stated by Oprescu (2015), the approach “starts from the statement that “culture is a form of knowledge” and an intrinsic part of our culture, language being an important part of an individual’s identity, transmitting cultural elements, which are ideologically laden” (p. 35).

These four key elements—content, communication, cognition, and culture—represent the foundation/base of the CLIL approach, shaping the way lessons are created and delivered. When properly applied, it creates a holistic learning environment that integrates language skills with subject knowledge, critical thinking, and cultural awareness, going beyond the learning outcomes to a more complete teaching technique.

2.4.2. Roles of the Teacher in the Content and Language Integrated Learning Approach

The Content and Language Integrated Learning (CLIL) approach requires teachers to play a multifaceted role, balancing subject-specific content instruction with language development. As previously presented, educators willing to apply this approach must integrate both content and language seamlessly; moreover, they have to ensure that learners understand and comprehend both competencies: “CLIL teacher should have the ability to teach one or more subjects in the curriculum in a language other than the usual language of instruction and teach that language itself”, explains Papaja (2025, p. 147).

Among the responsibilities of the educator, Papaja (2025) continues detailing that language development is a key aspect of CLIL, as teachers serve as language models by demonstrating correct pronunciation, grammar, and discourse patterns. Additionally, these figures must act as mediators, providing interactions and opportunities, and promoting autonomy in language use among students.

On the other hand, prior to the mediation itself, educators’ roles target the methodology selection and planning. Pavón and Ellison (2013, p. 75) suggest while planning “eight areas of CLIL teacher competence: learner needs, planning, multimodality, interaction, subject literacies, evaluation, cooperation and reflection, context, and culture”: as seen, the preparation of the weekly/monthly/yearly guidelines within the approach enclose a considerable number of decisions and processes for teachers. Additionally, within the beforehand planning to create, assess and material development, aspects that are the responsibility of the educator, also play a crucial part; therefore, Papaja (2025, p. 149) states that teachers must have the “ability to adapt and exploit materials, the ability to select complementary materials on a given topic, and the ability develop and implement evaluation and assessment tools”, in order to successfully apply the approach.

2.4.3. Roles of the Student in the Content and Language Integrated Learning Approach

As previously presented, and confirmed by Zanoni (2021), the “CLIL is an educational setting that allows learners to use the L2 as a tool to acquire new information and competencies”. In these senses, the Common European Framework of Reference for Languages (2003, p. 9) explains that learners and users must be seen “as ‘*social agents’*, i.e. members of society who have tasks (not exclusively language-related) to accomplish in a given set of circumstances, in a specific environment and within a particular field of action”; additionally, MEP (2016), within its revamped study program, states that is imperative to focus the mediation on the student.

One of the aspects of student involvement in this approach is active participation. According to Rashmi (2024, para. 8), “given their active role in the classroom, students use the target language in authentic, meaningful contexts, which improves their language skills”: students are expected to interact with both language and content. By doing this, learners can “reinforce language retention and fluency. Regular exposure to the language through various subjects enhances listening, speaking, reading, and writing skills (para. 8)”, other words, they work with subject matter content, strengthening both cognitive and linguistic development.

Another critical role learners have is connected to their individualism or autonomous learning: “student-centered approaches, as such, expect autonomy, allowing students to take ownership of their learning, which increases motivation and engagement,” explains Rashmi (para. 11). This autonomy is crucial in ensuring that students remain motivated and proactive in their language and content acquisition journey.

Moreover, learners must also have a transversal responsibility as collaborators. Rashmi details that, beyond contributing to the completion of a given task, learners also cooperate in the teaching/learning process among themselves as peers: “students learn from each other, enhancing their ability to communicate effectively and work collaboratively in a diverse

environment" (para. 13). Additionally, since they collaborate, soft skills, such as teamwork and assertive communication, are developed.

Finally, students are supposed to act as critical thinkers and problem solvers, skills required in the 21st century. Rashmi explains that "students are encouraged to explore, question, and analyze content in a different language, which develops their critical thinking and problem-solving skills. Likewise, engaging in projects and inquiries helps students develop the ability to think critically and creatively" (para. 10): since the integration of language and content can present cognitive challenges, learners must develop problem-solving strategies to navigate complex material in a foreign language.

2.4.4. Advantages of the Content and Language Integrated Learning Approach

The Content and Language Integrated Learning approach has developed and gained a relevant reputation in diverse educational contexts because of its ability to combine language learning with a wide range of content. Various benefits to students, educators, and institutions are provided by the dual-focus nature of the approach. Before listing the main benefits/outcomes of applying the CLIL, Yufrizal (2024) states, regarding the approach's scope, that is not a simplification of content or reteaching of this one, but the classes must "should truly integrate the language and content to be successful and success is determined when both the subject matter and language is learned" (p. 12).

CLIL provides students with the desired immersive language-learning environment, exposing them to authentic/contextualized and meaningful language use; therefore, according to Sanako Blog (2024), "one of the primary benefits of CLIL is its ability to enhance language proficiency while simultaneously deepening subject knowledge… This dual focus can lead to improved academic performance in both the language and the subject being taught" (para. 5).

Diving deeper into cognitive responses, engaging with subject content in a foreign language, such as English, presents a cognitive challenge that stimulates mental agility for non-English-speaker students. Continuing with Sanako Blog, it explains that “research has shown that learning through a second language can enhance cognitive flexibility, problem-solving abilities, and critical thinking skills. These cognitive benefits are not limited to language learning but extend to other areas of academic and personal development” (para. 6): in other words, the approach’s impact extends to certain soft/interpersonal skills that complement their basic training, exceeding the expectation from future employers.

Additionally, Zemach (2024, para. 10) highlights that students enrolled in CLIL programs tend to perform better in both language acquisition and content subjects compared to those in conventional ESL programs. The improved language proficiency can be attributed to increased engagement and motivation, as students apply the language in meaningful, real-world contexts. Meanwhile, stronger academic performance in content areas is likely linked to the cognitive advantages of bilingualism. In those senses, while interconnecting languages and content, teachers might ensure that students not only acquire knowledge but also learn how to apply it across contexts or given situations.

In terms of the scope of the curriculum while applying this approach, according to UNESCO (2024, para. 7), “adjusting curricula and content of the lessons to provide knowledge about the world and the interconnected nature of contemporary challenges and threats” is a priority. Additionally, UNESCO’s foundation for global citizenship education targets a vision for an education in which learners are prepared for the 21st century’s challenges: “supports the development of curricula and learning materials on global citizenship themes tailored for diverse cultural contexts. Studies the positive impact of learning across subjects and builds linkages between sectors and spheres” (para. 14). Considering the previous quote, one of the outcomes of applying such an approach is connected to the extension of the curricula to feasible

mandatory/relevant content; in addition, Twig Education (2023, para. 4) also states that the CLIL approach helps educators to “Diversifying methods & forms of classroom teaching and learning and integrating language into the broader curriculum”.

Finally, following one of the fundamental key elements of the approach, and entering the social/cultural impact it might have on learners, Sanako Blog expresses that the CLIL approach goes beyond and promotes cultural sensitivity and knowledge. “By learning content through a foreign language, students gain insights into different cultures and perspectives. This cultural exposure fosters a more inclusive and global mindset, preparing students for the increasingly interconnected world” (para. 7). As presented, the benefits/outcome of applying the Content and Language Integrated Learning dives beyond student learning of the matter itself: it also enhances the development of soft skills, required by the 21st-century student, the understanding of cultural aspects, and the extension of the current curricula that is being used.

2.4.5. Disadvantages of the Content and Language Integrated Learning Approach

While the Content and Language Integrated Learning (CLIL) approach offers numerous benefits, it also presents several challenges. Since each approach focuses on specific aspects of language acquisition, each of them has certain areas of improvement to consider while mediating the teaching/learning process. Following these ideas, Cambridge English (*n.d*) categorizes them as several participants in the process.

Even though education must be focused on the learners, teachers are still a crucial pillar for the mediation of the classroom. In these senses, Cambridge English details that many educators lack the necessary training, both linguistic skills and content, to effectively apply the approach: “they need to feel confident about their knowledge and skills related to the subject they are going to teach” (para. 4). Moreover, it is required additional professional development, which is often limited in availability, particularly in public schools and rural areas.

On the other hand, the learner, or in other senses, the protagonist of the approach applies within the education process. Cambridge English explains that a great number of new learners need “support in the first two years of CLIL courses. Most teachers do not know how long learners will take to do tasks, complete worksheets or understand instructions and explanations until they have used materials for the first year” (para. 6), similar to a diagnostic and accommodation period. Additionally, “learners are all different” (para. 6); therefore, students with lower English proficiency may struggle to grasp subject matter content, leading to frustration and learning gaps. This can result in reduced motivation and lower academic performance in both language and subject areas, a situation that must be avoided.

Moving on, the lack of material represents another fundamental aspect of the approach, both for linguistic and content acquisition. Implementing CLIL successfully requires access to appropriate materials, bilingual textbooks, and technological support. As stated by Cambridge English, in common cases, the material is nonexistent; therefore, educators must this one, situation that requires extra time out of schedule.

Finally, each approach is intended to facilitate significant learning among students; therefore, its assessment is imperative. Cambridge English explains that “teachers are unsure whether to assess content, language, or both” (para. 15): evaluating both content knowledge and language skills simultaneously can be complex; consequently, teachers must balance subject-specific evaluation with language proficiency assessment, which requires specialized tools and methodologies that may not always be available.

2.5. Interdisciplinary Audiovisual Projects

2.5.1. Main Definition

Audiovisual projects are educational tools and activities that combine audiovisual elements to convey ideas, present information, or tell stories. These projects use different forms of media

such as images, video, sound, music, and spoken word to create immersive and dynamic experiences that increase comprehension, engagement, and retention. Krupahtz and Werner (2021) commented that an audiovisual project can take various forms and serve diverse purposes. In particular, fictional projects often involve a creative process, which includes distinct phases, steps, and specific tasks that are assigned to a project team in which students develop both soft/professional and linguistic skills. Unlike traditional text-based projects, audiovisual activities allow students to interact with content on multiple sensory levels, promoting a more effective learning outcome.

The educational value of audiovisual programs lies in their ability to develop a variety of cognitive, technical, and social skills. As stated by KPMS (2024), “among the most impactful advancements are audiovisual (AV) teaching aids, which have revolutionized how educators deliver content and engage with students. These tools offer a dynamic and interactive approach to learning, enhancing students’ understanding, retention, and overall academic performance” (para. 1). In other words, the learning process is richer when applying a diversification of approaches and methodologies, such as the creation or usage of audiovisuals. Finally, as presented by Hernandez (2024), in terms of motivation and learning/social response from students, “these project-based learning assignments are intrinsically motivating. Students care about the result, know their hard work will help others, and are given the agency and responsibility to do so, which thereby elevates the quality and integrity of their work” (para. 12).

On the other hand, interdisciplinary projects, in the education setting, involve bringing together knowledge, skills, and methods from different fields of practice to address complex problems or add more value to the learning experience. In contrast with the more conventional ways of teaching that are usually focused on a single subject, interdisciplinary projects utilize multiple viewpoints to enhance the understanding of a specific issue. In terms of definition, the Indian School of Business & Finance (2024) defines the concept as the action or methodology

of combining knowledge, approaches, and perspectives from different disciplines to explore far complex matters: “unlike traditional education, which often compartmentalizes subjects, interdisciplinary projects encourage students to make connections between different fields, fostering a more integrated and comprehensive understanding of the subject matter” (para. 2). Therefore, it is much easier for students to learn about the more complicated aspects of issues because it is seen as holistic. The concept of interdisciplinarity is based on the idea that real problems do not reside within a single discipline; for example, in educational settings, interdisciplinary projects provide students with opportunities to make meaningful connections/solutions across disciplines by applying principles from mathematics, language arts, science, and more to solve real-world problems. In the process, students build a solid understanding while developing the learning flexibility to address complex situations holistically.

2.5.2. Types of Audiovisual Projects

Audiovisual projects enclose a variety of formats that combine visual and hearing elements to convey a message, facilitate communication, and foster creativity: Kapur (*n.d*, para. 1) explains that these audio-visual materials are seen as aids for instruction, which contribute to the teaching-learning process through the use of audio, visual or both audio-visual formats. In educational settings, particularly within interdisciplinary and CLIL-based approaches, audiovisual projects might serve as dynamic tools that promote engagement, content understanding, and language development; hence, the purpose of the investigation. Kapur continues by explaining that the “elicit attention of the learners, motivate them to be part of the learning process, sustain their attention and motivation, ultimately achieving the end goals desired by the teacher or the facilitator” (para. 1). Nonetheless, these goals might set the type of audiovisual material to use.

As the main type of audiovisual resource, informative videos involve the creation of short videos that explain a process, concept, or technical term. For instance, according to Alawani

(2016, p. 3), this can be seen within three interactive elements: “interactivity with content by thinking, implementing concepts or note taking, engagement by hooking student in most cases, lastly, knowledge transfer and memory by storing concepts in their memory longer and better than any other type of instructional media.” When contextualizing it in English, these videos help consolidate technical vocabulary and improve public speaking skills, among other perks.

Documentary-style projects encourage deeper investigation into real-world issues or processes within the students’ technical field. Strategic Finance (2022) explains that “documentaries often relate real-life examples to the course materials, making the approach much more effective than a traditional textbook and lecture approach to teaching” (para. 6). These projects may include interviews, narration, on-site footage, and infographics. Creating a documentary demands research, critical thinking, teamwork, and the structured use of academic and technical language in English. For instance, instead of just presenting their article, creating a short documentary based on Doody, Kalinowski, and Armson’s (1993) study offered a more engaging and accessible way to explore its findings: as presented, this kind of format made the study’s implications clearer and more memorable than just reading the academic text.

As a way to involve storytelling, dramatization of work situations, or simulations of real-life workplace scenarios along with technology, short films or role plays benefit the teaching/learning process. For instance, Kabadayi (2012) expresses that these multimedia activities are effective and useful for the enhancement of memorization and comprehension. Additionally, these specific audiovisuals “enable the student to remember the subjects easily and create expression richness. It supports creative thinking. Thanks to its time, its story is created briefly and economically and this provides focus on the desired subject” (p. 317), a necessary aspect for the sake of the investigation. By writing scripts and acting out scenes, students practice contextualized language and terminology.

By engaging in any of these audiovisual formats, students are encouraged to apply both language and content knowledge in a meaningful context. Additionally, such projects promote collaborative work and digital literacy, essential components in 21st-century technical education, as presented by Redecker (2017).

2.5.3. Characteristics of the Audiovisual Projects

Audiovisual projects are dynamic instructional tools that integrate visual and auditory elements to facilitate the transmission of information and enhance communication. In fact, McCann Systems (*n.d*) expresses that “an engaging educational experience is one that’s interactive and holds the participants’ attention. AV (audiovisuals) and tech have been proven to dramatically improve the learning experience by achieving this aim through compelling content and visual aids” (para. 4), following the idea that around 65% of people are visual learners. These projects are designed to foster creativity and engagement and reinforce subject-specific content and language learning through meaningful, context-rich experiences, as presented throughout the research.

One of the defining characteristics of audiovisual projects is their multimodal nature. According to Anstey & Bull (2010), the definition of multimodal products refers to the combination of visual (images, text, movement) and auditory (speech, music, sound effects) modes, creating a rich, layered communication platform. This multimodality allows learners to engage with content in diverse ways, enhancing comprehension and retention.

Along with it, depending on the type of audiovisual to produce, a transversal feature of narrative structures is present since information needs to be conveyed, ideally, in a creative and eye-catching manner. As a matter of fact, McCann Systems (*n.d*, para. 5) continues presenting that some issues like short attention spans, boredom, and low engagement can affect learners at any level our students. However, with advanced audiovisual technology, lessons and

meetings (in a professional setting) can become more dynamic and engaging, helping to boost focus, participation, and interaction. This structure enhances emotional engagement and allows for a better understanding of complex or abstract concepts.

As a way to target the development of soft skills, necessary for the future work environment, many audiovisual projects are characterized by developing collaborative efforts, which helps develop communication, teamwork, and project management skills: education, as a way to answer the call from the productive sector, should aim not only to provide graduates with professional knowledge but also to develop a range of essential skills, “including critical thinking, creativity, emotional intelligence, interpersonal communication, team leadership, negotiation, and adaptability”, expresses Kostikova (2021, p. 399). This characteristic makes them particularly valuable in educational settings, where collaborative learning is a key strategy.

2.6. Process of Learning English as a Foreign Language

2.6.1. Skills in the Process of Learning English as a Second Language

While learning a second language, the process encloses the maturing of a wide range of skills that go beyond memorization of structures or lexicon. Spence (2022, para. 4) explains that, from a more neurological and biological perspective, speaking two or more languages fluently affects people on a cognitive level. Additionally, These skills are often categorized into receptive and productive language skills, as well as cognitive, metacognitive, and socio-affective skills, all of which play a crucial role in achieving communicative competence.

As part of the skill indirect set to develop, language learning involves the development of both receptive skills and productive skills. According to VUS (2021), “receptive skills refer to the ability to understand and interpret spoken or written language. There are two primary receptive skills: listening and reading” (para. 2): on the other hand, “productive skills involve expressing oneself using language. These skills focus on generating spoken or written content. There are

two main productive skills: speaking and writing" (para. 3). In these senses, and as language teachers, this concept is traditionally acknowledged through the distinction between active and passive language knowledge, especially when it comes to vocabulary acquisition. It is generally understood that learners are expected to recognize and understand many more words than they can actively use. In second-language learning, it is widely accepted that new vocabulary typically becomes part of a learner's receptive skills before it is integrated into their productive use, explains Richards (2015, para. 3).

Continuing with the skill set regulated in the process of learning a new language, the cognitive and metacognitive skills are indirectly developed. To further understand the processes, the comprehension of the concepts is imperative; for instance, the cognitive processes refer to "any of the mental functions assumed to be involved in the acquisition, storage, interpretation, manipulation, transformation, and use of knowledge", according to the American Psychological Association (2018). On the other hand, Ackerman and Thompson (2017) express that the metacognitive process refers to the "ongoing thought processes and control the allocation of mental resources" (para. 1). Saks and Leijen (2018, p. 2) represent the connection between both processes while learning a second language: cognitive and metacognitive strategies are closely interconnected in the learning process. While cognitive strategies involve the direct manipulation of learning materials, metacognitive strategies operate at a higher level, guiding and regulating the use of these cognitive techniques. In this way, metacognitive strategies rely on knowledge of cognitive processes to help learners choose, apply, and adjust their cognitive strategies more effectively, ultimately enhancing learning outcomes and fostering greater learner autonomy; therefore, students who actively reflect on their learning tend to be more successful in acquiring a foreign language.

Nonetheless, the environment also affects the acquisition process of a second language, specifically the socio-affective skills. For instance, Fandiño (2010, p. 146) expresses that

“language teaching has indicated that affective factors, such as attitudes, motivation, anxiety, and self-esteem, have a great influence on the success of language learning”: mentioned factors can either facilitate or impede the learning process for some scholars. Additionally, peer collaboration, emotional regulation, and anxiety management are essential components that affect learner engagement and retention, continues explaining Fandiño.

2.7. Technical Vocabulary in the Process of Learning English as a Foreign Language

2.7.1. Acquisition of Technical Vocabulary as Part of the Process of Learning a Foreign Language

Technical vocabulary represents a fundamental learning objective in general technical education, as it shapes and provides students the basis to engage in a specialized conversation in a given field. According to the Uttarakhand Open University (*n.d*), technical vocabulary refers to “the specialized vocabulary of any field which evolves due to the need for experts in a field to communicate with clarity, precision, relevance and brevity” (p. 1). Nonetheless, technical vocabulary acquisition represents an advanced ability for language learners. For instance, continuing with the Uttarakhand Open University, the institution adjoins that before developing the technical lexicon, targeting the general foundations of the language, basic vocabulary is imperative. Additionally, “the thirst to learn new words, should be a continuous process; whenever you learn new words, try your best to use them while you communicate so that the words register in your mind”, expresses the institution (p. 1).

Nonetheless, the teaching/learning process in the Field of TESOL (Teaching English to Speakers of Other Languages) has its complexity. For instance, Kourieos (2020) expresses that aside from the common challenges of learning a foreign language, “the acquisition of L2 vocabulary is generally a difficult process as simply recognizing the meaning of a word” (p. 4): just recognizing or searching for meanings does not ensure the solid retention -significative learning- of the student. Therefore, “it is essential for the language instructor to equip learners

with independent vocabulary learning strategies, which will allow continuous learning once the course is finished" (p. 4). In other words, providing the necessary technical training to ESL teachers is a must while betting on technical vocabulary: teachers are not meant to be specialized in the matter, but the comprehension of the same one is imperative, a necessity to be solved with the accompaniment of technical teachers.

Continuing with the concept, the technical lexicon links to the receptive and productive vocabulary, each of them focusing on specific aspects of language proficiency. For instance, Kourieos, citing Hedge (2014), defines receptive lexicon as the student's ability to recall and utilize multiple aspects of words when encountered in any of the skills. On the other hand, productive vocabulary refers to the ability a learner has to recall vocabulary from memory and use it in a specific skill. In other senses, the receptive (*passive*) concept connects to the comprehension and understanding of a given word, while the productive (*active*) explores the ability to recall and apply appropriate lexicon in spoken or written form in the target language correctly.

2.7.2. Importance of Technical Vocabulary as Part of the Process

"Vocabulary is important because it's the basis of all language. It's the raw building blocks that we can use to express our thoughts and ideas, share information, understand others, and grow personal relationships" explains Text Inspector (2022, para. 4). Nonetheless, contextualizing it in the technical field, by providing learners with this specific lexicon, educators can ensure future professionals that can be unwound in multilingual contexts.

In terms of outcomes, the importance of technical vocabulary relies on the globalized, technological-growing society: Liu and Lei (2019, p. 9) share that, in analyzed research, it was "demonstrated that knowing technical vocabulary is indispensable for developing subject knowledge… longitudinal study of undergraduate education majors' learning and use of subject knowledge in education reveals the high importance of understanding technical vocabulary".

Finally, Kourieos (2020) comments on the current problematic students present while learning or advancing in the learning process of a second language, the limited vocabulary teachers might teach, or students might grasp from their learning processes. For instance, it was stated that inferring the meaning of technical terms from context can be challenging, particularly for less proficient learners who have a limited vocabulary due to lower language competence since it is limited their ability to comprehend the context in the first place. Another challenge in learning technical vocabulary arises from the fact that certain everyday words - commonly used by learners - already have established general meanings, making it difficult for students to grasp the specific meanings and uses of these words within a particular discipline. Therefore, by addressing the appliance/teaching of technical vocabulary, educators, from vocational institutions, can ensure students are trained with idiomatic tools in their area. Technical vocabulary is a vital component in this specific branch of education; as a result, constant training on the subject is imperative for both teachers and students.

CHAPTER III: METHODOLOGICAL FRAMEWORK

3.1. Research Type

3.1.1. Applied Purpose

Due to the nature of the research, it follows an applied approach/research style. The investigation focuses on addressing a specific educational challenge: enhancing technical vocabulary among students through interdisciplinary audiovisual projects using a specific approach. On that note, Baimyrzaeva (2018) expresses the following:

> Research that takes place in an everyday context to solve specific problems of individuals, organizations, and/or industries is called “applied research.” Applied researchers do not usually seek to solve big unanswered questions about the universe or society. Rather, their goal is to simply generate answers to solve specific down-to-earth problems that someone is facing using sound evidence and thinking. (p. 3).

As presented and contextualized to the current investigation, this applied study directly engages with classroom practices, seeking to implement strategies that can be immediately applied to improve teaching and learning outcomes: it goes beyond the pure theoretical gathering of information.

3.1.2.Temporal Dimension

Regarding the temporal dimension, the present research follows a transversal (cross-sectional) approach since it focuses on measuring the immediate effectiveness of interdisciplinary projects in the selected population. The study captures a snapshot of the participants' acquisition and learning outcomes within a limited timeframe.

According to Thomas (2023, para. 1), “a cross-sectional study is a type of research design in which you collect data from many different individuals at a single point in time. In cross-sectional research, you observe variables without influencing them”. Additionally, comparing it with a longitudinal approach, a study that can take months or years, the cross-sectional provides an output more appropriate for the nature of the current investigation.

Among the advantages of applying such an approach, Thomas (2023) continues explaining that a cross-sectional study is the most practical option—especially when time or budget constraints limit your ability to collect more extensive data, or when the available data was collected at just one point in time. Because these studies are generally more affordable and quicker to conduct than other research methods, they offer a convenient way to gather data that can serve as a foundation for future investigations. As seen, those reasons substantiate the transversal temporal dimension as the selected approach to follow since the investigation can generate further inquiries / starting points, positive or negative, to develop in future research.

3.2. Framework

The framework of this study is structured around the Mega-Macro-Micro approach, providing a comprehensive explanation to situate global, national, and localized contexts that are linked to the investigation.

3.2.1. Mega

"This level includes stakeholders who are connected with the school, but who may not be involved on a day-to-day basis. This includes government bodies, alumni, parents, and others who can be engaged to as partners in promoting academic integrity," explains Eaton (2020, p. 3) concerning the mega level of the general research. Contextualized to the current investigation, the study aligns with the global educational priorities presented by the governmental institution that manages education within public, private, academic, experimental, and vocational, among other institutions of the country, Ministerio de Educación Pública (MEP).

3.2.2. Macro

For the macro division, Eaton (2020, p. 3) explains that educational institutions, such as colleges or schools, play a key role in shaping the overall direction and culture surrounding academic integrity. This involves establishing clear and consistent policies and procedures that ensure fairness across the organization. Leaders at this level also have the opportunity to model and promote values that influence the integrity standards of the entire institution. On that note,

the mentioned level focuses on Costa Rica's technical high schools, such as Colegio Técnico Profesional CIT, for the purpose of this investigation. These institutions play a crucial role in overall education, preparing learners for the workforce.

3.2.3. Micro

Finally, the micro viewpoint is represented by the people involved in the appliance and results of the given investigation (Eaton, 2020): in other words, the framework focuses on the specific setting of the study and its participants, both subjects and applicators of the methodologies and approaches. Contextualized in the present research, the primary participants are 12th-grade students from the specialty of Productivity and Design.

3.3. Nature of the Research

Due to the purpose of the study, the current research adopts a mixed-methods approach, merging both qualitative and quantitative methodologies to comprehensively explore the implementation of interdisciplinary audiovisual projects through the CLIL (Content and Language Integrated Learning) approach. Since it focuses on assessing both the measurable and experiential dimensions of the research problem, the mentioned approach was selected. Shorten and Smith (2017) explain that mixed methods are a research strategy that involves gathering and examining both numerical (quantitative) and descriptive (qualitative) data in a single study; therefore, it combines the advantages of each method, enabling researchers to gain a broader understanding of complex issues and to identify connections within the different aspects of their research questions. On that note, the quantitative component of the research is focused on the pre-test that will be administered, measuring students' vocabulary knowledge before the implementation of the project, with its corresponding analysis on the matter. The purpose of this initial testing is to establish students' initial knowledge of technical vocabulary to contextualize the nature of the projects to develop.

On the other hand, the qualitative counterpart delves into understanding the experiences and perceptions of students involved in the project. Observations will be conducted to gather

insights into how the interdisciplinary audiovisual projects influence students' overall teaching-learning process. As presented by Udemy (2020), qualitative research is commonly employed to deepen the understanding of the core principles behind a topic. It emphasizes exploring people's views and motivations. Along with the pre-test, these qualitative components provide input into the perceived changes and the effectiveness of the project in practice from both teachers and students. This type of research aims to provide insight into the issue being studied and takes a more subjective approach, often without relying on concrete data like statistics.

3.3.1. Character of the Research (Exploratory, Descriptive, and Correlational)

The character of the following investigation delves into three subareas, exploratory, descriptive, and correlational, reflecting the dual purpose of uncovering new insights and providing a detailed account of the research phenomenon. First, the exploratory approach, since the work seeks to investigate the integration of interdisciplinary audiovisual projects with the CLIL (Content and Language Integrated Learning) approach, an area that remains underexplored in the context of Costa Rican technical education. According to Stewart (n.d), "exploratory research investigates topics or questions that lack established frameworks or extensive prior study… The primary goal is not to provide definitive answers but to develop hypotheses and identify key relationships" (para. 3).

Secondly, the research has a descriptive approach since it aims to detail the design of the interdisciplinary tasks, the integration of English and Productivity and Design content, the strategies employed to teach technical vocabulary, and the observed impacts on student learning and engagement. Stewart (n.d) explains that descriptive research is a methodical approach used to gather, examine, and present information about real-world situations in their natural setting. Its main purpose is to describe what is observed through empirical data. This type of research focuses on outlining the traits of a specific group, event, or condition, aiming to offer a comprehensive overview rather than determine cause-and-effect relationships.

Finally, the research also incorporates a correlational component by examining the relationship between the implementation of audiovisual projects and students' technical vocabulary acquisition. This research section aims to establish a connection between the intervention and its outcomes, providing quantitative evidence to support the study's findings. Cherry (2023) explains that a "correlational study is a type of research design that looks at the relationships between two or more variables. There are three possible outcomes of a correlation study: a positive correlation, a negative correlation, or no correlation" (para. 1).

3.4. Subjects and Sources of Information

3.4.1. Subject of Study

The current investigation focuses on showcasing the effectiveness of interdisciplinary audiovisual projects in the English and Productivity and Design curriculum through the CLIL (Content and Language Integrated Learning) approach to enhance technical vocabulary acquisition among 12th-grade students at Colegio Técnico Profesional CIT; therefore, its subject of study focuses on areas such as language learning and the appliance of the mentioned approach. As presented by the International Encyclopedia of Education (2010), the "subject of study refers to the specific topics or areas of focus that are explored and researched within a particular field or discipline, such as reading, language, science, mathematics, and the arts" (para. 1).

This subject was chosen due to the rising importance of technical vocabulary proficiency in the country's technical educational system. By considering and examining these elements, the study aims to provide insights into the efficacy of interdisciplinary audiovisual projects in technical education, addressing both the challenges and opportunities of this approach.

3.4. Sources of Information

While researching, the backup of the information presented is a requirement to factually state the given data. Glendale Community College Library (n.d) provides different definitions to the concept; nonetheless, while paraphrasing some of them, a source is considered a piece of

evidence or information that supports arguments, claims, or research, that is credible, accurate, and reliable. Referring to academic research, sources can be divided into primary, secondary, and even tertiary, according to the College Library.

Table 1

Firsthand sources used in the research process.

Author or Authors	University or Organization	Country	Year
Baten, K., Cuypere, L., & Van Heil, S.	Adam Mickiewicz University	Poland	2020
Engström, H. & Lyu, R.	Journal of University Teaching & Learning Practice	Sweden/China	2020
Femi, O. & Asabe, E.	Kaduna South Local Government Area	Nigeria	2019
Krupahtz, J. & Werner, L.	Universidade do Estado de Santa Catarina	Brazil	2021
Lee, C.	Reflections on English Language Teaching	Not specified	2022
Liu, D. & Lei, L.	Routledge	UK	2019
Martínez, M.	Huarte de San Juan	Spain	2011
Pande-Rolfsen, M. & Heide, A.	Norwegian University of Science and Technology	Norway	2019
Plancarte, S.	Instituto para el Futuro de la Educación	Mexico	2020
Putra, E., Teknologi, I., & Nopember, S.	Institute of Technology Sepuluh November	Indonesia	2020
Stozhko, N.	Research in Learning Technology	Not specified	2015

Table 2

Secondhand sources used in the research process

Author or Authors	University or Organization	Year
Bell, R. F., Orozco, I. I., & Lema, B. M.	UNIANDES Episteme	2022
Castellano-Risco, I. & Alejo-Gonzáles, R.	Elsevier	2020
Dougherty, K. & Bravo, M.	Reading Rockets	2019
Kourieos, S.	Not specified	2020
Morton, T.	PADRES Y MAESTROS	2019
Peña, M. & Talens, R.	Universidad Católica de Valencia	2015
Theodoridis, T.	Not specified	2020
Vélez, W.	Ciencia y Sociedad	2013
Zemach, D.	Bridge Education Group	2024

Table 3

Thirdhand sources used in the research process

Author or Authors	University or Organization	Year
Britannica	Lifestyle, Social, and Education	2024
Cambridge English Language Assessment	Cambridge English	2016

Cornell University	Assessment & Evaluation	2024
Corwin, S.	Europass Teacher Academy	2024
Diplomatic Language Services	Language and Cultural Training	2023
Epistemic Fluency	WordPress.com	2016
Hernandez, M.	Edutopía	2024
Indian School of Business & Finance	University of London	2024
KPMS	Virtue Technologies	2024
New York Times Licensing	New York Times	2022
Sanako Blog	Sanako Blog	2024
Team XQ	XQ Institute	2024
Text Inspector	Text Inspector	2022
Twig Education	il Studios	2023
UNESCO	UNESCO	2024
Uttarakhand Open University	Not specified	n.d.

3.5. Sample Selection

3.5.1. Population

Due to the nature of the investigation, the population of this study consists of 40 12th-grade students from Colegio Técnico Profesional CIT (Vocational High School CIT) from the specialties of Productivity and Design and English teachers from the same institution.

3.5.2. The Sample

A research sample is a smaller group selected from the larger population that accurately represents its key characteristics. This group is used to analyze and study information, making it possible to draw conclusions without examining the entire population: to ensure that those conclusions are reliable results, it is crucial to select a sample that accurately represents the entire population, a process known as sampling (McCombes, 2019).

Due to the specific purposes of the research, it was necessary to work with a sample that only included the 12th grade instead of using the whole high school population. Since the high school has a vocational approach, the sample selected meets the requirements of having Productivity and Design as their technical counterpart.

3.5.3. Probabilistic or Non-Probabilistic Sample

When researching, there are two main methods for gathering a sample: probability sampling and non-probability sampling. Probability sampling involves random selection, allowing researchers to make strong statistical inferences about the larger group. In contrast, non-probability sampling relies on non-random selection based on convenience or specific criteria, making data collection simpler and faster but with less generalizability (McCombes, 2019).

On one hand, non-random sampling techniques (Non-Probability Sampling) “involve researchers deliberately choosing or selecting items or individuals for the sample, based on specific criteria and/or the specific research objectives. Examples of non-probabilistic sampling include convenience sampling, purposive sampling, and snowball sampling” explains the University of Bath (n.d).

On the other hand, random sampling techniques refer “to any sampling method which involves researchers using some form of random selection of items or individuals, rather than

deliberate choice. Examples of probabilistic sampling include random sampling, stratified sampling, and cluster sampling" (University of Bath, n.d).

For this investigation, the non-random sample is used due to the main purpose and needs of the research and because it was important to work with a specific population, in this case, 12th graders from Productivity and Design, that met specific requirements. Additionally, it is necessary to apply the non-probability sampling method due to the lack of time it was more appropriate to work just with a sample of high school instead of the whole high school population.

3.5.4. Techniques and Instruments to Collect Information

The recollection of data is one of the most crucial sections of every investigation since it will help the researcher gather all the relevant information related to the research topic to eventually analyze and resolve the initial main purpose. Jain (2024) expresses the following on the data collection process:

> Data collection is the process of collecting and evaluating information or data from multiple sources to find answers to research problems, answer questions, evaluate outcomes, and forecast trends and probabilities. It is an essential phase in all types of research, analysis, and decision-making... During data collection, researchers must identify the data types, the sources of data, and the methods being used. (para. 3).

Depending on the nature of the research, qualitative or quantitative, the instruments and techniques may vary; nonetheless, the most common instruments are observations, interviews, surveys, questionnaires, diagnostic tests, and focus groups. For the present research, two specific instruments were selected with the purpose of obtaining greater results: those instruments are a pre-test and interviews with experienced language educators.

3.6. Variables

Content and Language Integrated Learning approach with interdisciplinary audiovisual projects such as English, Productivity, and Design approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Profesional CIT during the first semester of 2025.

3.6.1. Variables Chart

General Objective: To analyze the effectiveness of applying interdisciplinary audiovisual projects such as English, Productivity, and Design with the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Profesional CIT during the first semester of 2025.

Specific Objectives	Variable	Conceptual Definition	Instrumental Definition	Operational Definition
To analyze the process of technical vocabulary retention by implementing interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and	Initial technical vocabulary knowledge before applying interdisciplinary audiovisual projects.	The current amount of technical vocabulary that students in 12th-grade students from Colegio Técnico Professional CIT have before applying interdisciplinary	Instrument: Pre-test. In this initial testing to measure prior-to-project technical vocabulary knowledge, a Google Forms with related terminology to each specialty is presented. In	In this instrument, the variable is valid through this instrument if 70% of the students answered correctly in 70% of the items. It means that there is a gap within the school year

Language Integrated Learning approach in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.		audiovisual projects.	these ones, learners needed to choose the most appropriate word to complete given sentences based on the context.	and preparation in the technical field with the current vocabulary proficiency.
To describe the process of acquisition and enhancement of technical vocabulary by participating in interdisciplinary audiovisual projects as English, Productivity, and Design through	To describe the acquisition and enhancement of technical vocabulary while participating in interdisciplinary audiovisual projects as English, Productivity, and Design in 12th-grade students	The process by which learners internalize and refine technical vocabulary through contextualized learning from the educator's viewpoint.	Instrument: Teachers' interviews. In this first set of interviews, all 10 questions were presented as "open-ended", and each educator was expected to reply from experience of	In this instrument, the variable is valid through this instrument if 70% of the responses of the educators positively supported the methodology applied to enhance the

the Content and Language Integrated Learning approach in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.	from Colegio Técnico Professional CIT.		applying the methodology of interdisciplinary projects.	acquisition of technical vocabulary. It means that, from experience and open observation, educators noticed the improvements of using such a methodology with the vocabulary acquisition purpose.
To examine the students' perceptions regarding the application of interdisciplinary audiovisual projects as English,	To examine learners' perceptions after applying interdisciplinary audiovisual projects as English, Productivity, and	Learners' attitudes, beliefs, and reflections on the relevance and impact of the interdisciplinary audiovisual projects.	Instrument: Students' interviews. In this second set of questions, all 10 questions were "open-ended" to establish the	In this instrument, the variable is valid through this instrument if 70% of the responses of the learners positively

Productivity, and Design through the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.	Design in 12th-grade students from Colegio Técnico Professional CIT.		learners' viewpoint of applying such projects.	supported the methodology applied to enhance the acquisition of technical vocabulary within their fields. It means that, from experiencing these projects, learners noticed the improvements of using such a methodology in both the acquisition of the target language and motivation in class presented as a future scenario to experience.

Chapter IV: Analysis and Interpretation of Data

4.1. Analysis and Interpretation of Data

In the following section, the data analysis of the research will be presented. As explained by Couchbase Product Marketing (2023, para.1), “data analysis is the process of cleaning, transforming, and interpreting data to uncover insights, patterns, and trends. It plays a crucial role in decision-making, problem-solving, and driving innovation across various domains”; therefore, in order to provide a holistic overview of the scope of the presented approach and research, the data analysis of the insights is a must for its replicability within similar high schools.

Since the approach of the research is mixed, both qualitative and quantitative, the data, as already presented, were collected through interviews and testing: given the fact that those are the two main protagonists in the teacher/learning process, besides the content, Hecker and Kalpokas (n.d.) explain that interviews can provide a different input to the studied subject from an individual viewpoint, allowing in-depth information that other techniques might not obtain. On the other hand, specifically with students, testing offers the possibility to elicit data from individuals regarding their knowledge, attitudes, skills, and/or preferences, as presented by Olajide (2018), characteristics that fit the current research.

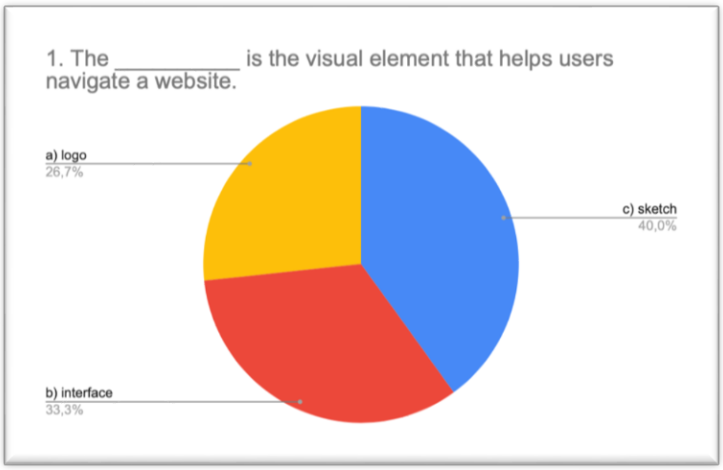
4.1.1. Tests

The testing was presented virtually to 26 students from 12th grade using Google Forms: 15 students were from the specialty of Design, and 11 students were from the specialty of Productivity. The objective of the testing was to measure the initial proficiency of technical vocabulary that students from both specialties have after 3 years of English for Specific Purposes classes without using audiovisual interdisciplinary projects. Each test had 15 questions regarding technical vocabulary. The results of the testing will be divided into specialties and presented below.

4.1.1.1. Design

Figure 1

Item 1

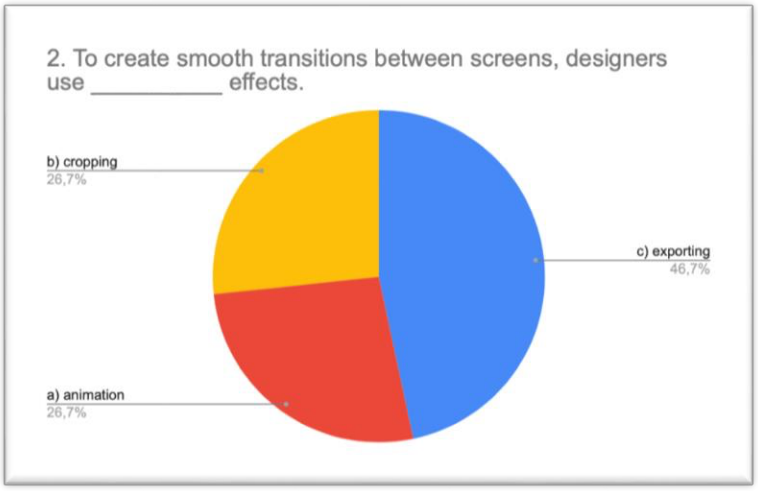


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 1, the correct terminology was “interface”, and only 33,3% of the students correctly responded. The remaining 66,7% chose either “logo” or “sketch” as the concept presented. It can be seen that over 65% of the students from the specialty of design have problems with the terminology, which must be targeted in their technical training.

Figure 2

Item 2

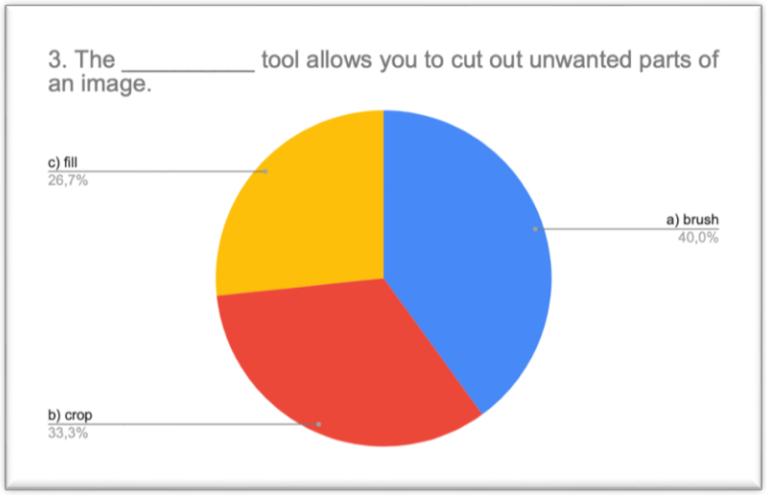


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

For figure 2, the correct terminology was “animation”, and only 26,7% of the students correctly responded. The remaining 73,3% chose either “cropping” or “exporting” as the concept presented. It can be seen that over 70% of the students from the specialty of design have problems with the terminology, which must be targeted in their technical training.

Figure 3

Item 3

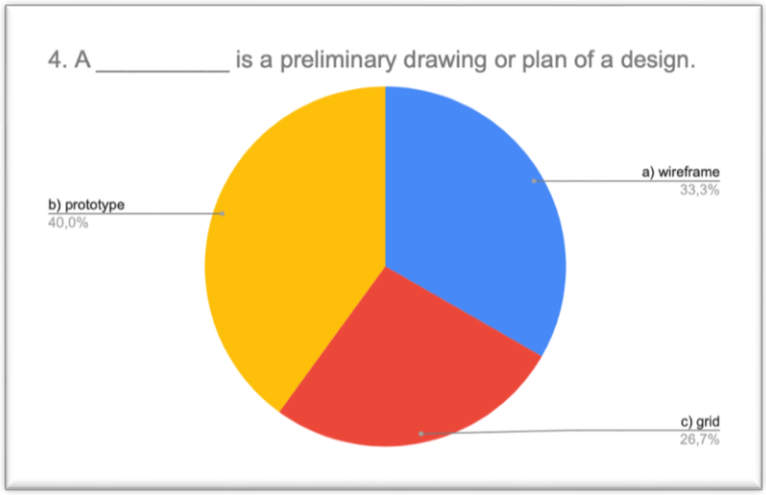


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 3, the correct terminology was “crop”, and only 33,3% of the students correctly responded. The remaining 66,7% chose either “fill” or “brush” as the concept presented. It can be seen that over 65% of the students from the specialty of design have problems with the terminology, which must be targeted in their technical training.

Figure 4

Item 4

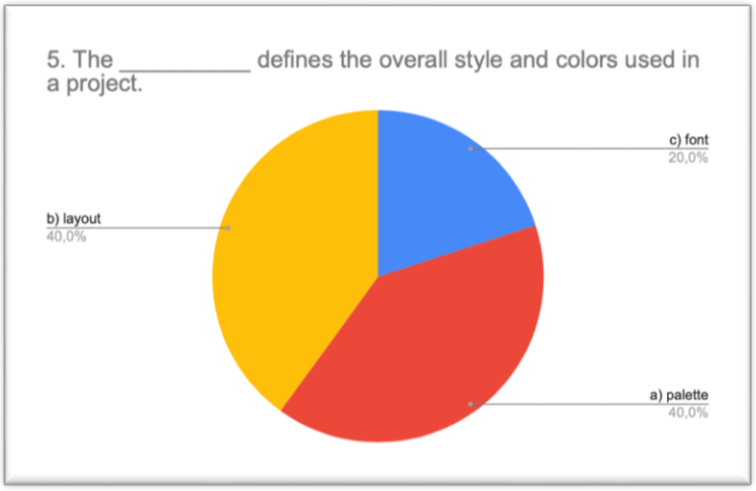


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

The correct terminology for figure 4 was “wireframe”, and only 33,3% of the students correctly responded. The remaining 66,7% chose either “prototype” or “grid” as the concept presented. It can be seen that over 65% of the students from the specialty of design have problems with the terminology, which must be targeted in their technical training.

Figure 5

Item 5

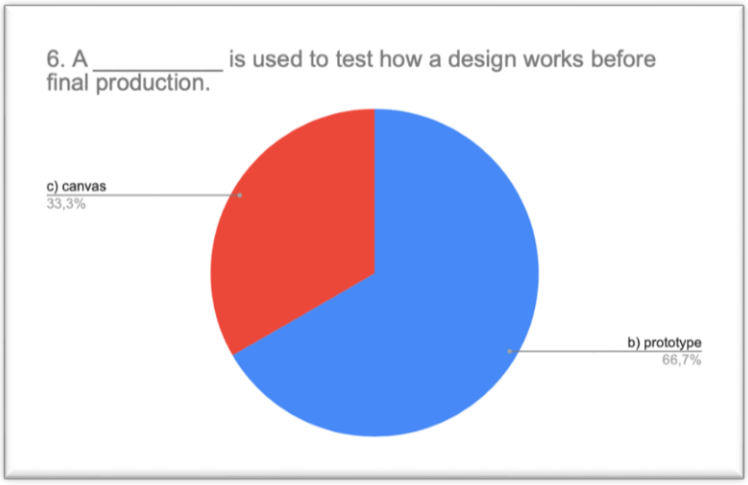


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

As for figure 5, the correct terminology was “palette”, and a 40,0% of the students correctly responded. In this case, a phenomenon can be observed since “layout” also had a 40,0% of the responses, leaving “font” with 20,0% of the overall. Now, if both concepts are semantically analyzed, a palette refers to “a collection of colors in a piece of visual media”, explains Heckmann (2025, para.7). On the other hand, a layout refers to “the process of arranging visual and textual elements on-screen or on-paper to grab a reader’s attention and communicate information in a visually appealing way”, as presented by MasterClass (2021, para.1). Therefore, one is connected to color and style to be used (*palette*), and the other one as how and where to use it in the final product (*layout*).

Figure 6

Item 6

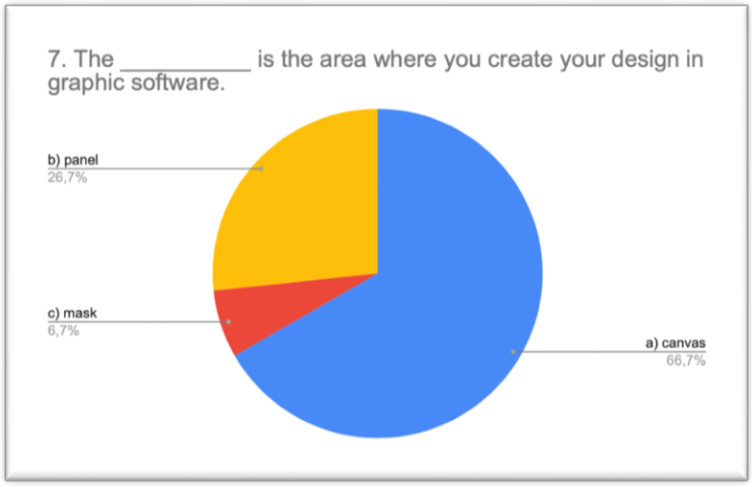


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

Within figure 6, it can be seen that the correct terminology was “prototype”, and only 66,7% of the students correctly responded. The remaining 33,3% ”canva” as the concept presented, leaving the option “export” with no responses. While the “canva” refers to the area in which the product is being created, the “prototypes” refer to “early models of a product that simulate its design and functionality. They are created… before the final product is developed”, explain Interaction Design Foundation (2019, para.1).

Figure 7

Item 7

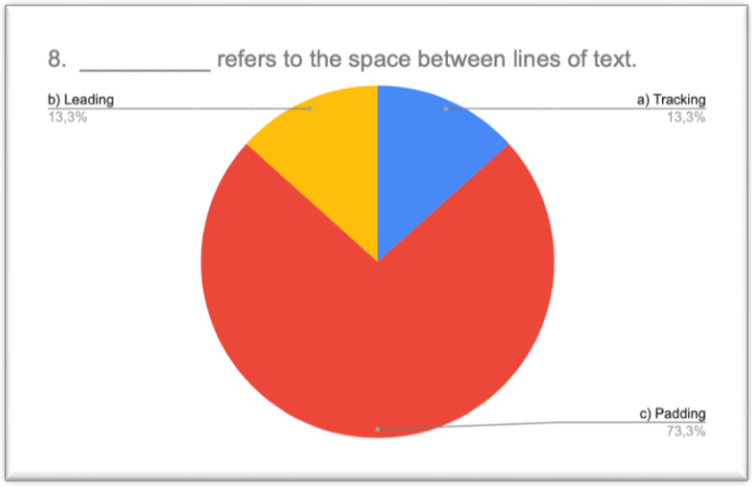


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

For figure 7, the correct terminology was “canvas”, and 66,7% of the students correctly responded. The remaining 66,7% chose either “panel” or “mask” as the concept presented. By comparing this question to question 6, which also included the word “canvas” as an option, the percentage of students who responded with “canvas” in question 6 is the remaining part of the population for question 7 that responded with a different option. It will be important to analyze the idea of students changing their options after reading this specific question.

Figure 8

Item 8

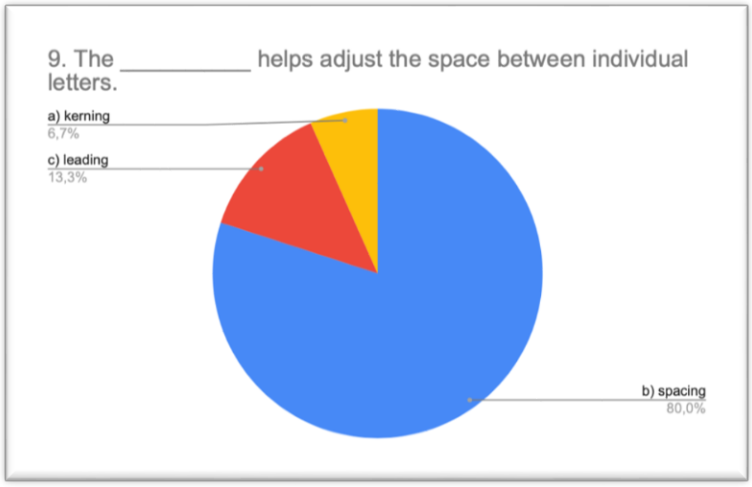


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 8, the correct terminology was “leading”, and only 13,3% of the students correctly responded. The remaining 86,6% of the students chose either “padding”, 73,3%, or “tracking”, 13,3%. This question represents a major concern since over 85% of the students incorrectly used the concept.

Figure 9

Item 9

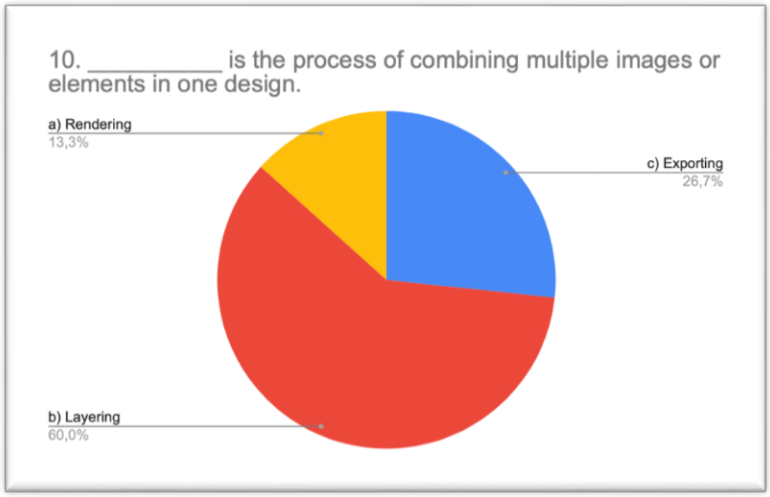


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

As for figure 9, the correct terminology was “kerning”, and 6,7% of the students correctly responded. The remaining 93,3% of the learners answered with either “leading” or “spacing”. By analyzing the data and meanings of words, most likely a student will have problems with this concept due to the word “space” in the statement given; nonetheless, Bryson (2024, para.4) explains that it “refers to the empty areas between elements in a layout. This includes the space between text, images, buttons, and other UI components.” Therefore, more than just referring to the space between letters, it focuses on the space of the elements in a product.

Figure 10

Item 10



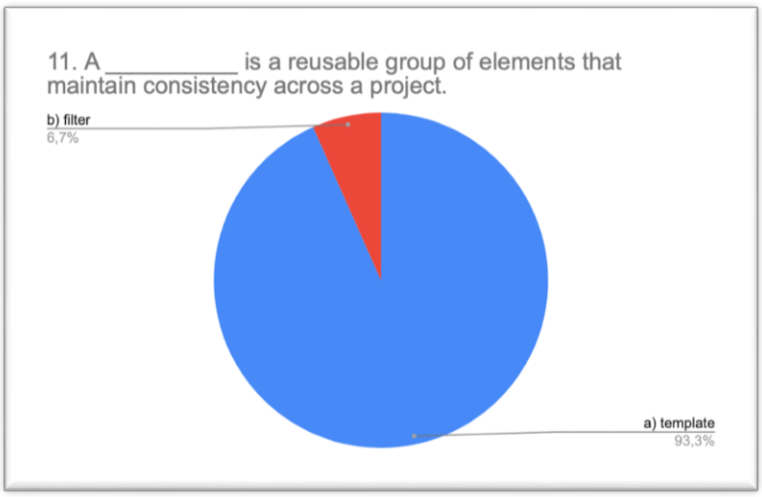
Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 10

, the correct terminology was “layering”, and 60,0% of the students correctly responded. The remaining 40% of the learners answered with either “rendering” or “exporting”, which represents a decent comprehension of the concept in most learners.

Figure 11

Item 11

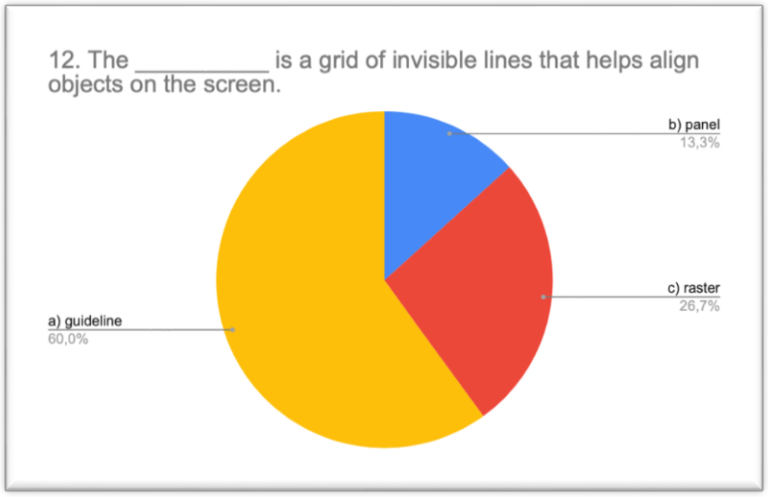


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

Figure 11 shows that the correct terminology was “template”, and 93,3% of the students correctly responded. The remaining 6,7% responded with filter, and no students chose the option of “brush”: overall, a great response to the technical concepts.

Figure 12

Item 12

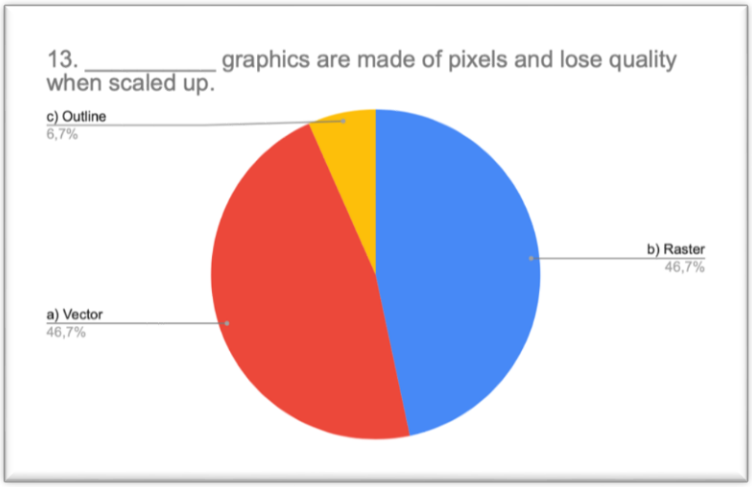


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

For figure 12, the correct terminology was “guideline”, and 60,0% of the students correctly responded. The remaining 40% selected either “raster” or “panel”: overall, a great response to the technical concepts.

Figure 13

Item 13

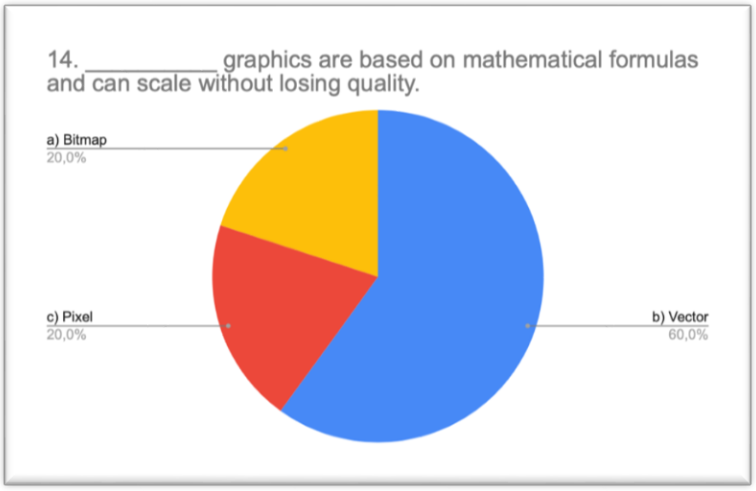


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 13, the correct terminology was “raster”, and 46,7% of the students correctly responded. Nonetheless, “vector” also had a 46,7% of the responses, leaving “outline” with only 6,7% of the responses. For this question, it is difficult to confirm if learners understand or not the concept due to the characteristics given in the statement, “lose quality when scaled up”: according to the University of Michigan Library, vectors and rasters have the same foundation, yet they differ in their capability to maintain the resolution when scaling up or down, feature that raster do not have due to its pixels (2025).

Figure 14

Item 14

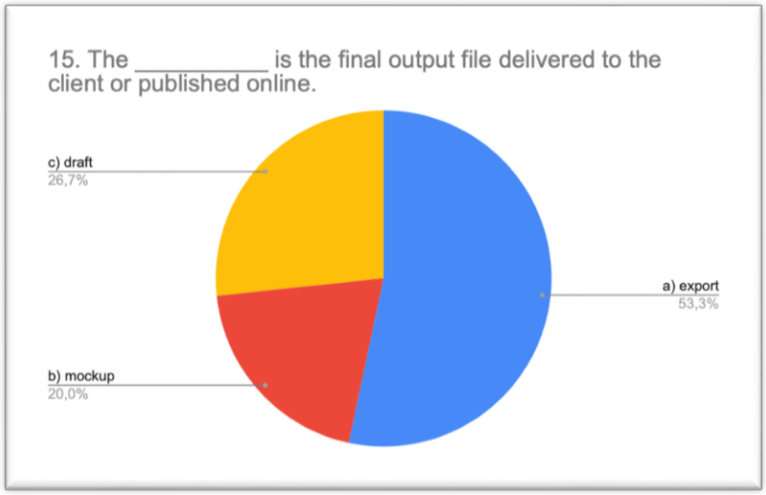


Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

For figure 14, the correct terminology was “vector”, and 60,0% of the students correctly responded. On the other hand, the remaining 40% chose either “bitmap” or “pixel”. In this question, we have another anomaly given by the previous question in which “vector” is also an option. Therefore, it will be necessary to provide a different characteristic or feature to see if students really understand the concept or if they changed options afterwards.

Figure 15

Item 15



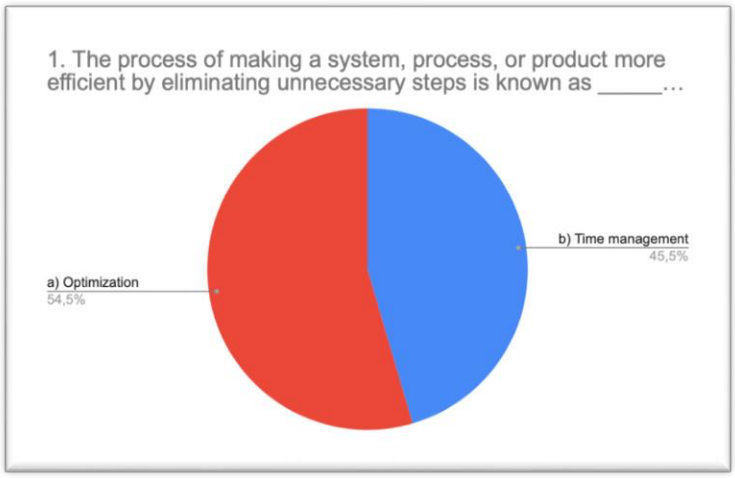
Source. Instrument applied to measure technical vocabulary from the Design specialty. Data collected by Pablo Ávila Quirós, July 2025.

Finally, in figure 15, the correct terminology was “export”, and 53,3% of the students correctly responded. The other two remaining options were similar in their responses with 26,7% (*draft*) and 20,0% (*mockup*). Nonetheless, the relevant fragment to focus on relies on the “final output file delivered or published”. First, a “mockup is a static representation of a product, showing users and stakeholders how it may look and be used”, explains Airfocus (n.d.), which means that it is not functional. Secondly, a “draft” is the initial sketch of the product, and it is considered the first step to visually organize the product itself (Li, n.d.); therefore, none of the concepts are the final output of the file.

4.1.1.2 Productivity

Figure 16

Item 16

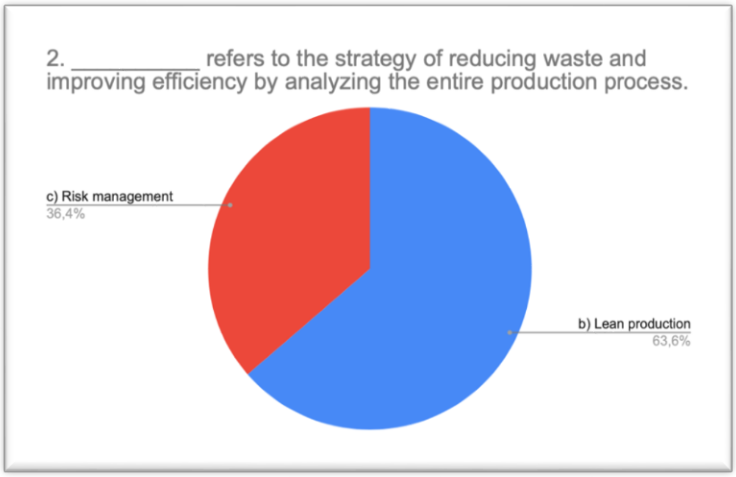


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

For figure 16, the correct terminology was “optimization”, and 54,5% of the students correctly responded. Nonetheless, 45,5% responded with “time management”. Finally, “inventory management” was not selected by any of the students.

Figure 17

Item 17

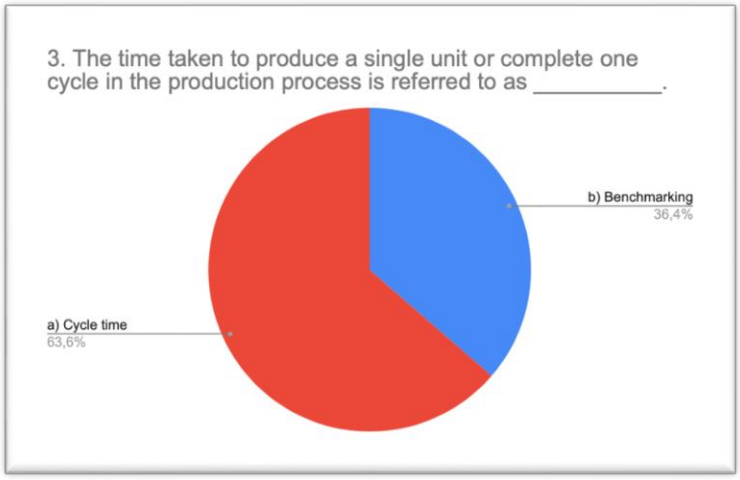


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 17, the correct terminology was “lean production”, and 63,6% of the students correctly responded. On the other hand, 36,4% responded with “risk management”. Finally, “just-in-time (JIT)” was not selected by any of the students.

Figure 18

Item 18

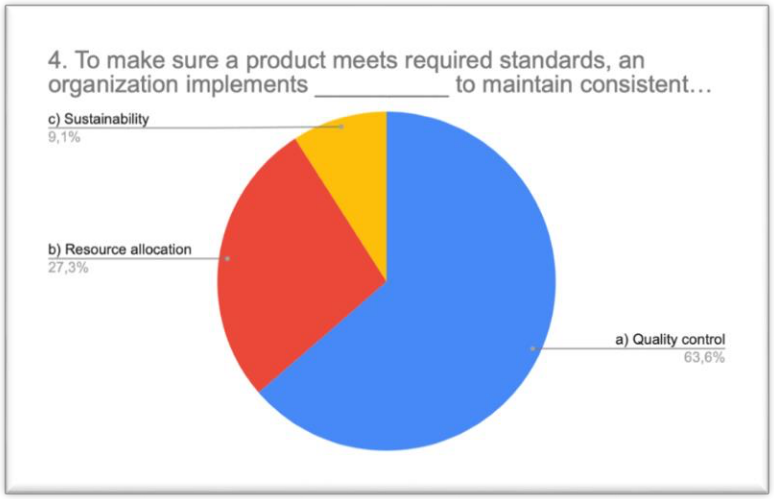


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

Figure 18 presents that the correct terminology was “cycle time”, and 63,6% of the students correctly responded. “Benchmarking” had 36,4% of the responses, leaving “throughput” without any response.

Figure 19

Item 19

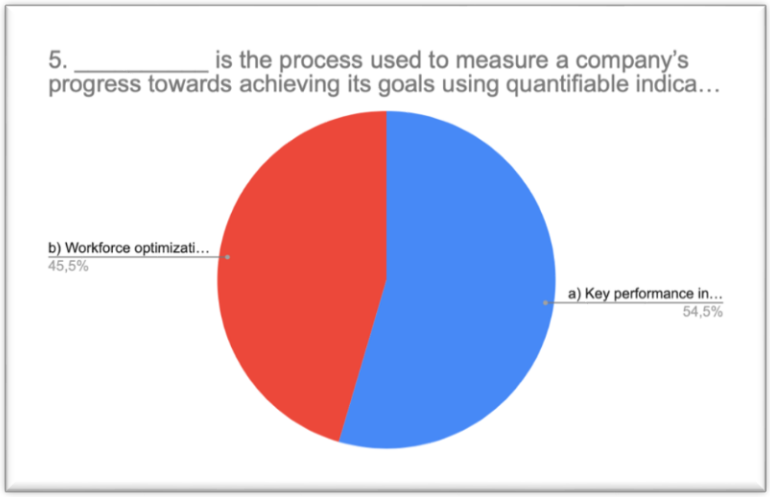


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 19, it can be seen that this is the first question from Productivity in which the three options were selected at least once. For question 4, the correct terminology was “quality control”, and 63,6% of the students correctly responded. The remaining 36,4% chose either “sustainability” or “resource allocation”.

Figure 20

Item 20

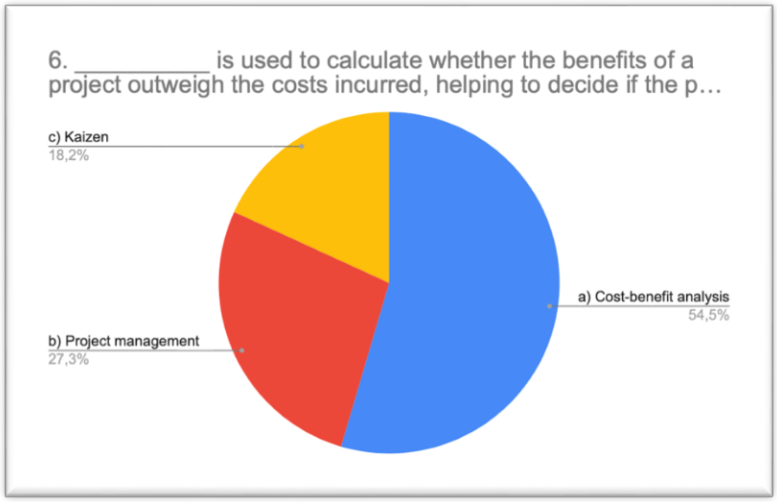


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

As for figure 20, the correct terminology was “key performance indicators (KPIs)”, and 54,5% of the students correctly responded. “Workforce optimization” had 45,5% of the responses, leaving “throughput” without any response. While the KPIs refer to a measurable instrument, workforce optimization focuses on “a set of strategies and practices that aim to improve employee and organizational efficiency and decrease operational costs through using data”, explains Van Vulpen (2021, para.4).

Figure 21

Item 21

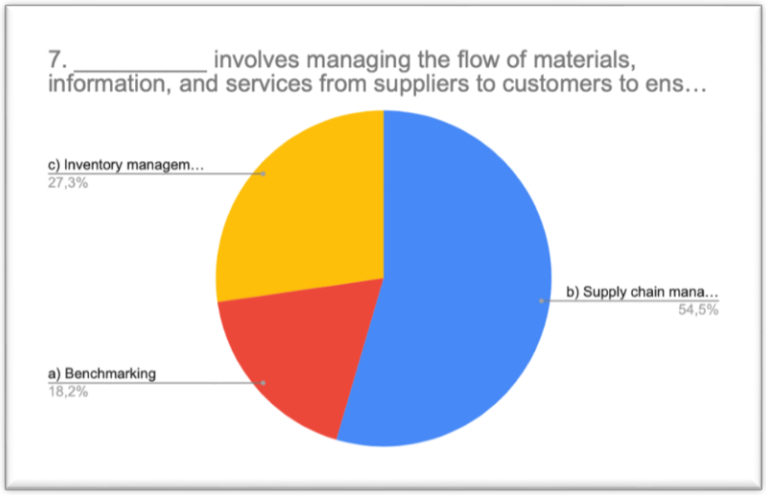


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

Within figure 21, the correct terminology was “cost-benefit analysis”, and 54,5% of the students correctly responded. The remaining 45,5% chose either “Kaizen” or “project management”.

Figure 22

Item 22

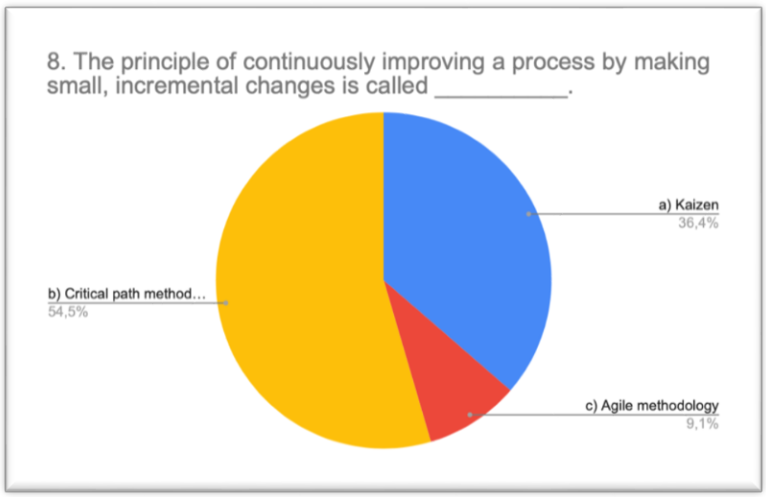


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

For figure 22 the correct terminology was “supply chain management”, and 54,5% of the students correctly responded. The remaining 45,5% chose either “inventory management” or “benchmarking”.

Figure 23

Item 23

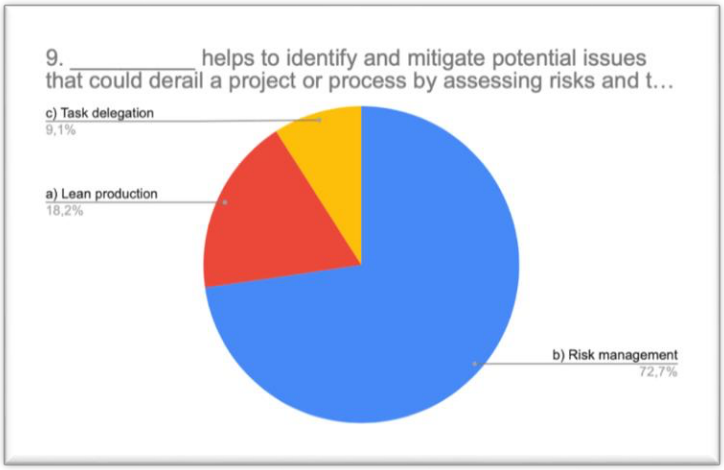


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 23, the correct terminology was “Kaizen”, and only 36,4% of the students correctly responded. The remaining 63,4% chose either “critical path method (CPM)” or “agile methodology”. CPM had most of the responses; nonetheless, while reading the statement given, this concept focuses on a “technique that allows you to identify tasks that are necessary for project completion. The critical path in project management is the longest sequence of activities that must be finished on time to complete the entire project”, explains Team Asana (2025, para. 2), compared to “Kaizen,” which focuses on small, incremental processes.

Figure 24

Item 24

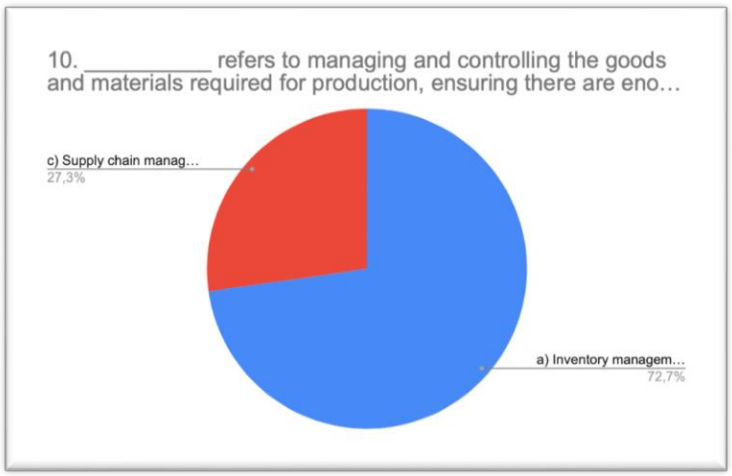


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

By analyzing figure 24, the correct terminology was “risk management”, and 72,7% of the students correctly responded. The remaining 27,3% chose either “task delegation” or “lean production”: overall, a great response to the technical concepts.

Figure 25

Item 25

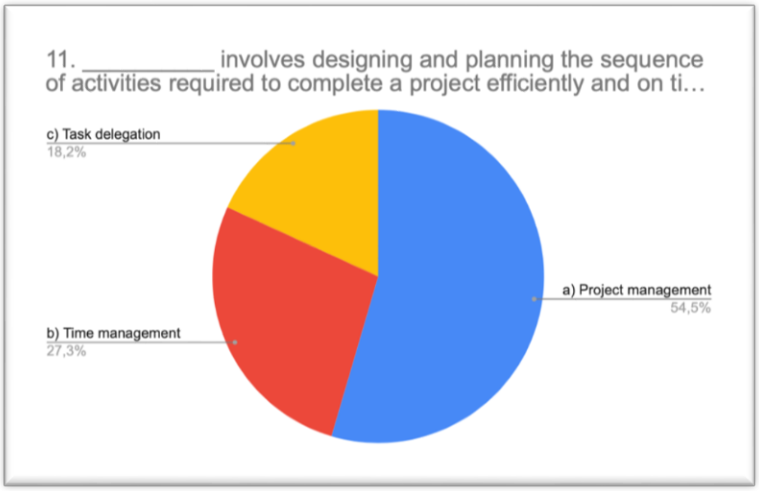


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 25, the correct terminology was “inventory management”, and 72,7% of the students correctly responded. The remaining 27,3% chose “supply chain management”, leaving “cost-benefit analysis” without any responses: overall, a great response to the technical concepts.

Figure 26

Item 26

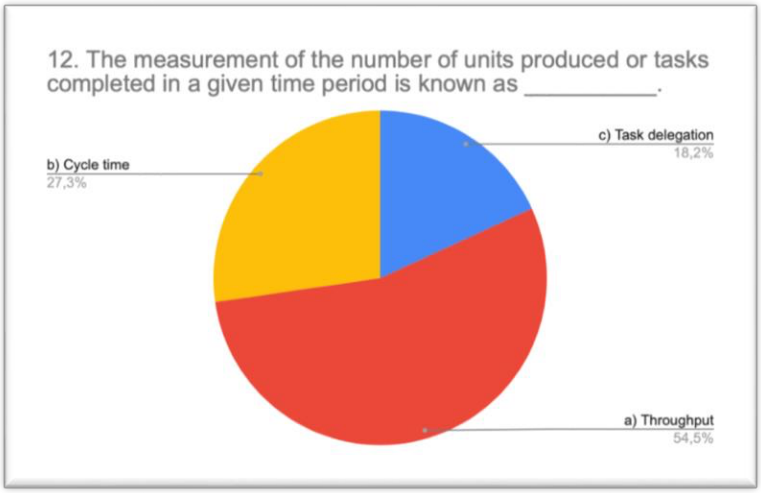


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

As for figure 26, the correct terminology was “project management”, and only 54,5% of the students correctly responded. The remaining 45,5% chose either “task delegation” or “time management”. For this specific question, the polarization of the responses was noticeable and must be referenced for future studies, either for the options given or the proficiency of the students.

Figure 27

Item 27

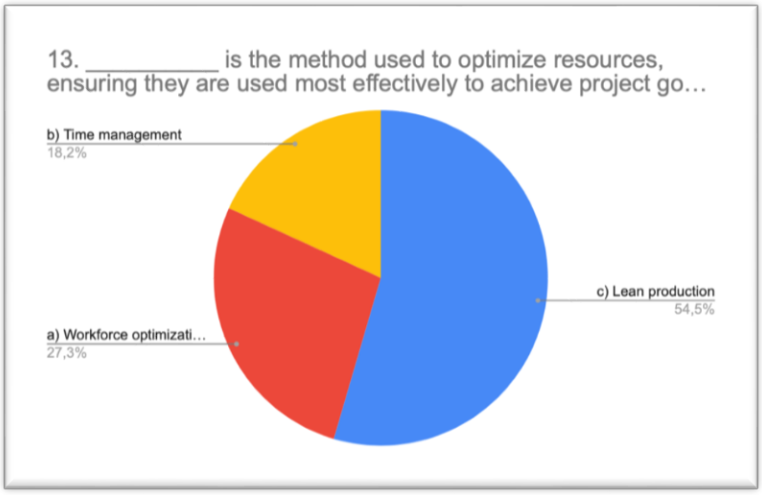


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

Figure 27 showcases that the correct terminology was “throughput”, and only 54,5% of the students correctly responded. The remaining 45,5% chose either “task delegation” or “cycle time”. As well as the previous question, the polarization of the responses was noticeable and must be referenced for future studies.

Figure 28

Item 28

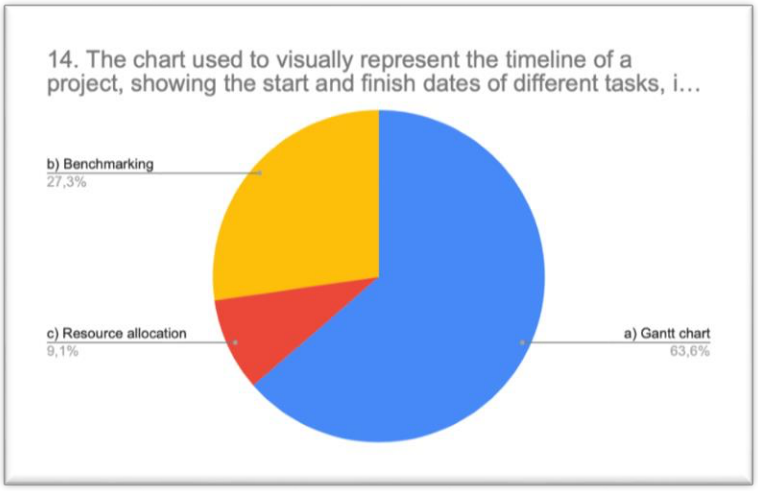


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

As for figure 28, the correct terminology was “workforce optimization”, and only 27,3% of the students correctly responded. The remaining 72,7% chose either “time management or “lean production”. This question, along with question 15, represented a noticeable backtracking compared to the overall testing for Productivity. As an initial analysis, the versatility of the word “resources” might be the major polarizer in the responses.

Figure 29

Item 29

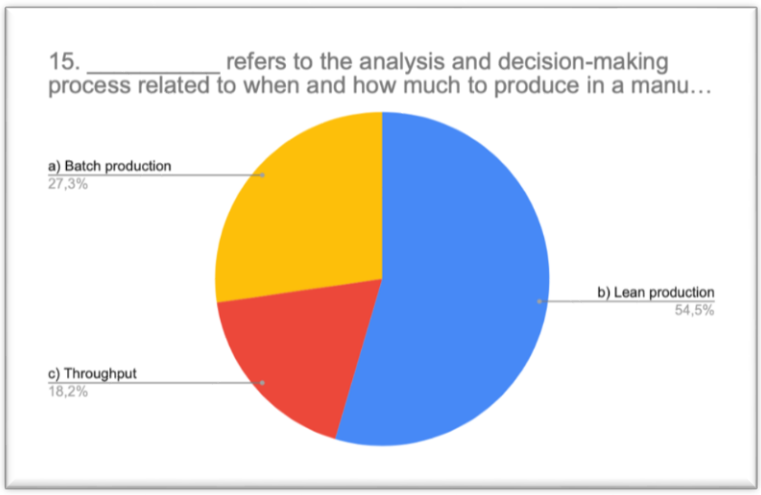


Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

In figure 29, the correct terminology was “Gantt chart”, and 63,6% of the students correctly responded. The remaining 36,4% chose either “benchmarking” or “resource allocation”: overall, a great response to the technical concepts. Nonetheless, the addition of the word “chart” might have been an immediate pointer to the correct response.

Figure 30

Item 30



Source. Instrument applied to measure technical vocabulary from the Productivity specialty. Data collected by Pablo Ávila Quirós, July 2025.

Finally, figure 30 showcases that the correct terminology was “batch production”, and only 27,3% of the students correctly responded. The remaining 72,7% chose either “lean production” or “throughput”. By seeing the data, “lean production” had most of the responses, a phenomenon that can indicate that learners knew that the concept was referring to a type of production.

4.1.2 Interviews

4.1.2.1 Teacher Interview

The first set of interviews was held in a face-to-face context with three English teachers from Colegio Técnico Profesional CIT: as a requirement to participate in this interview, besides being English educators, the three professionals had taught the subject “English for Specific

Purposes" (technical content in the target language) to the participating students. The objective of these interviews was to understand the position of experienced educators on the approach and methodology presented (interdisciplinary audiovisual projects in English, Productivity, and Design through the Content and Language Integrated Learning approach) as an alternative while teaching technical vocabulary. The interview consisted of ten open questions connected to their experience while teaching this subject and using the given methodology and approach. The questions and the analysis are given below.

Questions	Responses and Analysis
Question #1: Can you describe your experience teaching English in a technical high school setting?	Every interviewed teacher described the experience as positive and rewarding. Teacher #1 focused on how, due to the type of high school, the content can be taught in a simpler way while contextualizing it with real-life situations. Teacher #2 emphasized the challenge of keeping students engaged when discussing technical training. Lastly, teacher #3 compared the experience to a roller coaster, yet it is fulfilling and full of learning opportunities.
Question #2: Have you previously collaborated with teachers from other specialties (e.g., Productivity or Design) on interdisciplinary projects?	Two out of the three teachers said that they have collaborated with educators from other subjects on interdisciplinary projects. For instance, some mentioned subjects were Biology, Chemistry, Entrepreneurship, and Programming. Teacher #2 mentioned that

	while attempting the interdisciplinary projects, the lack of openness or willingness to collaborate from other educators was the main hindrance.
Question #3: In your opinion, what are the main challenges 12th-grade students face when learning technical vocabulary in English?	All three educators agreed that learning technical vocabulary in that specific grade is very challenging. For instance, teacher #1 stated that learning vocabulary without context limits retention and application in learners. Teacher #2 pointed out the overconfidence or resistance presented in older students; therefore, the educator considers it necessary to use more dynamic and engaging strategies. Finally, teacher #3 focused on how the infrequent use of that vocabulary makes it difficult for learners to retain.
Question #4: What strategies do you usually use to help students acquire and retain technical vocabulary?	All three experts shared strategies that have worked for them. Teacher #1 mentioned that contextualizing the vocabulary with real-world tasks, such as the internship or practicum, can contribute to the teaching/learning process. Using materials of practical application can also contribute to the process, as expressed by teacher #2. Lastly,

	teacher #3, to mention some examples, talked about the use of memory games as an engaging way to support vocabulary acquisition.
Question #5: Are you familiar with the Content and Language Integrated Learning (CLIL) approach? If so, how do you apply it in your classes?	Referring to the Content and Language Integrated Learning approach, all three teachers indicated familiarity with this one; nonetheless, teacher #1 explained that she had been using it unknowingly before formally learning about it. Teacher #2 expressed its use through activities like business pitches or client interactions in a specialty context. The third teacher focused on using discussions and case studies to link language learning with social matters.
Question #6: What are the advantages and limitations of using CLIL in technical education, particularly for vocabulary development?	In terms of advantages, all three teachers mentioned that the given approach offers authentic, real-life contexts that help students practice and retain technical vocabulary. On the other hand, teachers #1 and #2 outlined a challenge related to the need for continuous collaboration and union between English teachers and specialty educators; for instance, they mentioned issues with content coordination and scheduling for agreements.

	Finally, another limitation stated was connected to the perception of students and how they might feel overwhelmed by the amount of workload and vocabulary presented.
Question #7: Have you ever implemented or supported audiovisual projects in your English teaching? If yes, what kind of projects?	As part of their teaching practice, all three educators have implemented and/or used audiovisual projects; for instance, they enlisted sales pitches, documentaries, short videos, etc. Teacher #1 expressed that students are currently audiovisual: everything they are consuming is presented on a screen with eye-catching audio or music. Additionally, teachers #2 and #3 described using persuasive video projects where students promote their specialties by explaining their daily activities or campaigns.
Question #8: How do you think audiovisual projects influence student engagement and vocabulary learning?	A positive influence is the common response among the interviewed teachers when it comes to engagement and vocabulary acquisition. Teacher #1 compared the methodology to the trendy content students consume: learners are tightly accustomed to short, dynamic content, which, if replicable, can be more appealing and accessible to a

	certain part of the population. The second teacher mentioned the versatility of the methodology presented: the variety of tools and tasks can provide students with a more meaningful learning process. Finally, teacher #3 singled out a personal experience in which learners have been vocal about how they enjoy making technology-related projects and how motivation is also presented.
Question #9: What do you think are the benefits and challenges of involving English in interdisciplinary audiovisual projects?	To begin with, all three educators agreed that these activities provide authentic opportunities to use the target language in a different context, reinforcing both content and idiomatic skills. One educator referred to the importance of bilingual education and real-life application. On the contrary, while referring to the challenges, it was mentioned the necessity to balance task complexity with students' language proficiency to avoid confusion or frustration. Additionally, the companionship during the process of the project for students to stay organized and manage multiple tasks across classes and teachers.

Question #10: Based on your observations, how do students tend to acquire and improve technical vocabulary?	Towards the most relevant question to the research, all three educators agreed that learners retain and improve this necessary vocabulary using this approach and methodology rather than mere memorization. Teacher #1 talked from experience by stating that students learned by explaining specialty projects or connecting terms across subjects. Teacher #2 reinforced previous thoughts while stating the relevance of continued exposure in realistic scenarios. Finally, teacher #3 observed that, at the current population, often gather vocabulary passively by seeing content in the target language, for instance, manuals, labels, etc.

4.1.2.2 Student Interview

The second set of interviews was conducted with three 12th-grade specialty students, 2 from Design and 1 from Productivity, from Colegio Técnico Profesional CIT: students volunteered themselves after being informed of the purpose of the instrument. As a reminder, it is to explore students' perspectives on the process of acquiring and enhancing technical vocabulary through participation in interdisciplinary audiovisual projects. It aims to gather insights into your experiences and reflections following the implementation of the Content and Language Integrated Learning (CLIL) approach in your technical education. The interview

consisted of ten open questions connected to their experience while using the given methodology and approach. The questions and the analysis are given below.

Questions	Responses and Analysis
Question #1: How would you describe your overall experience with the interdisciplinary audiovisual project?	Feedback presented by students highlighted positive features of the project style. One student shared the perception of these methodologies as “a break from routine” and the possibility to add more individualized aspects, such as language learning and creative thinking. Additionally, another student mentioned that these projects are the factual “contextualized cases” that they might encounter in the future.
Question #2: What did you think about combining English and (Productivity or Design) in one project?	Within the classroom, it can be seen that learners embrace the language-content situation. Nonetheless, the interviews confirmed that actions, such as a practice for the real world, the reinterpretation of content, and critical thinking, actually contribute to more fructiferous learning process, compared to traditional methods. One student reflected on how this methodology connects cognitive processes with enjoyment of this one, suggesting that the exercise can be more meaningful.

Question #3: Did you enjoy working on the project? Why or why not?	For this given question, learners had a varied set of answers. For instance, student #1 confused that even though projects are meaningful, a common reaction was the overwhelm of its completion. On the other hand, learner #2 referred to the joy and freedom provided by the methodology, such as using English jokes or idioms. Finally, student #3 talked about how learning became more enjoyable, which showcases the project's functionality.
Question #4: In what ways did this project help you use or learn English?	All three students agreed on the opportunities given by this methodology to use the target language in context. Student #1 mentioned the broad impact interdisciplinary projects had in their language learning. Student #2 referred to the exposure to real-world formats while using the vocabulary. Finally, student #3 indirectly presented the constructivist learning theory while sharing that these projects allowed the construction of meaning in a deeper sense.
Question #5: Did using English in the context of (Design or Productivity) help you understand the language better? How?	A range of perspective was given within this question. Nonetheless, it is imperative to remember that given projects reflect on

	students based personal needs, language level, and learning style. Student #1 provided a neutral yet open-attitude response by saying that it depends on the case given or circumstances. Student #2, in general senses, provided a negative response, which adds a different viewpoint of the approach. Regardless of the response, it is relevant to comprehend further needs on different learners. Finally, student #3 provided a fully positive response by saying that both language learn and confidence boots were the main value of these approaches.
Question #6: Was it easier or harder to learn technical vocabulary through this project? Why?	"Easier than usual" was the common response by the interviewees, yet each learner provided a unique reason on their agreement. Student #1 says that, once you have the concepts together, it becomes manageable. This comment showcases the relevance of having access to the specific language. The second student presented some examples of how humor and storytelling in videos have made vocabulary acquisition more natural and less forced. Additionally, the learner mentioned that not

	everything has to be from technical classes, allowing the versatility of the approach. As a closure, student #3 talked about the expansion that can be obtained while using these projects: since you might be already familiar with the concepts, the methodology can force learners to strengthen their lexicon.
Question #7: Do you feel more confident using technical vocabulary in English now? Why or why not?	Interviewed students mentioned that confidence while using the vocabulary was a noticeable outcome. Some students shared their personal progress and talked about how they could use the proper lexicon at work. Finally, one student mentioned how the teaching/learning process was given in a more natural environment.
Question #8: Were you motivated to complete the project? What kept you interested?	For this question, it's relevant to mention that learners choose their specialty based on their interests; therefore, most of the responses aligned with the same idea regarding motivation. This kind of personal motivation is powerful and sustainable, especially when students feel connected to the subject matter. Student #2 referred to how freedom and creativity enhance the process as well.

	Student #3 shared that, overall, they are more engaged when tasks feel authentic and relevant to their professional paths, beyond a merely imaginary happening.
Question #9: What was the most difficult part of the project for you?	For the responses, students showed both learning and logistical challenges. Student #1 referred to the complexity of some vocabulary since they needed to understand both the word and how to use in a context given. Student #2 focused on how time might hinder the process while having these methodologies. On the other hand, the learner also reflected that, when possible, projects can take an impressive turn and have a great product and result. Student #3 gave the example and the matter to consider while learning technical vocabulary: some concepts don't translate directly, and some extra research is necessary for the process.
Question #10: Would you recommend this type of project to other students? Why or why not?	The unanimous "yes" from all three students shows a strong recommendation of this interdisciplinary audiovisual approach. Student #1 highlighted the benefits in both personal and academic growth. Student #2 restated the freedom of this type of

	evaluation. Additionally, the learner criticized how some educators relied mainly on essays or memoristic approaches, inviting them to innovate expression. Student #3 mentioned the holistic learning experience; moreover, the learner also mentioned soft and technical skills, which signals that the project prepares students for real-world challenges.

Chapter V: Conclusions and Recommendations

5.1. Conclusions

In the following chapter, the conclusions obtained and analyzed from the instruments applied to both learners and teachers of Colegio Técnico Profesional CIT will be presented. Along the way, observations regarding the problem formulation, the general objective, and the specific objectives are provided.

5.1.1. Regarding the Problem Formulation

What is the impact of applying English, Productivity, and Design as part of interdisciplinary audiovisual projects with the Content and Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Profesional CIT during the first semester of 2025?

As stated at the beginning of the thesis, it was projected the inquiry of what is the impact of applying English, Productivity, and Design as part of interdisciplinary audiovisual projects with the Content and Language Integrated Learning approach to enhance technical vocabulary. 12th-grade students from Colegio Técnico Profesional CIT were used as the population during the first semester of 2025.

Overall, by analyzing the compiled data, it can be seen that learners have a positive impact when focusing on vocabulary retention while using the Content and Language Integrated Learning approach and the diverse methodology of interdisciplinary audiovisual projects.

5.1.2. Regarding the General Objective

To analyze the effectiveness of applying interdisciplinary audiovisual projects such as English, Productivity, and Design with the Content and Language Integrated Learning approach

to enhance technical vocabulary in 12th-grade students from Colegio Técnico Profesional CIT during the first semester of 2025.

The researcher affirms that, given the analysis of the interdisciplinary audiovisual project integrating English, Productivity, and Design, crossed by the Content and Language Integrated Learning (CLIL) approach, this methodology can be an effective technique to promote and contribute to the teaching/learning process among 12th-grade students at Colegio Técnico Profesional CIT. As presented in several findings, the combination of specialty content with the target language allowed learners to contextualize covered terms in a meaningful, task-oriented manner, which contributes to the introjection of the same ones. Finally, the integration of the CLIL essence endures language acquisition alongside the development of professional skills. Overall, the general objective given was successfully achieved.

5.1.3. Regarding the Specific Objectives

1. *To analyze the process of technical vocabulary retention by implementing interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.*
2. *To describe the process of acquisition and enhancement of technical vocabulary by participating in interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.*
3. *To examine the students' perceptions regarding the application of interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and*

Language Integrated Learning approach to enhance technical vocabulary in 12th-grade students from Colegio Técnico Professional CIT during the first semester of 2025.

Regarding the first specific objective, its purpose was to analyze the process of retention by implementing the given terminology. Based on this inquiry, it can be reflected that learners were able to recall and apply specialized lexicon over time. Since the approach provides repeated exposure to this vocabulary and given the fact that it is presented within authentic contexts, the learning process was reinforced and promoted the long-term comprehension of students. Finally, since the methodology, audiovisual projects required a creative part, active practice was provided and allowed students to recall the content.

Specific objective #2 referred to the description of the acquisition process while using both the approach and the methodology. By analyzing the data, students shared that while actively engaging with the terminology, the learning process felt less traditional and memoristic. As with any other cognitive process, students faced the recognition stage of most of the vocabulary presented; later on, after presenting the instruments, the adoption and usage within contexts was achieved by most of the learners. Regarding these cognitive processes, the CLIL approach enhances the overall development of both target features – language and content.

Finally, for the third specific objective, which was linked to the students' perspective on both the approach and the projects, most of the perceptions were predominantly positive. The interviewees described the learning process as relevant, dynamic, and different, aspects that can enhance the motivation and engagement necessary for the current population of learners. Finally, among the responses and feelings, learners valued the real-world context provided by the projects, making them recommend its replicability among the subjects, alongside English.

5.2. Recommendations

Due to the results presented and the impact provided by the research, recommendations for Colegio Técnico Profesional CIT and bilingual technical education in general are the following:

a) It is recommended to expand and continue exploring the scope of interdisciplinarity in general. Regardless of including English or not, teachers should focus on lowering the workload for learners by covering and evaluating several subjects in fewer tasks.
b) To stay at the forefront of bilingual technical education, the administration and the Ministry of Public Education, in general, should provide training on the CLIL approach to English teachers.
c) As a way to provide learners with a meaningful education, it should be recommended to increase the opportunities for real-life applications or tasks. Realistic professional scenarios, for technical students soon to perform a practicum, can enhance and promote the learning process.
d) As a challenge for the administration, enhancing collaboration and openness between teachers is a must. Beyond English and technical subjects, teachers in general should be able to understand the principles and features of interdisciplinarity.
e) Since the research was performed under a limited time span, it is recommended to perform long-term monitoring and assessment of the vocabulary retention. Within this, the adjustment of the strategies can provide a refinement of the approach and its scope.
f) Finally, it is recommended to consider the application of this type of project to different grades from the third cycle, 10th and 11th, and other specialties that are offered within the high school, such as Cybersecurity, Software Development, or Electronics.

Chapter VI: Proposal

6.1 Proposal of the Research

As a way to enhance the acquisition of technical vocabulary in technical education, the following research proposes the use of interdisciplinary audiovisual projects. Combining English with any specialization, such as Productivity or Design, alongside the CLIL approach, will allow a holistic development within the population.

The presented proposal focuses on assigning learners the task of creating video workshops:

a) Productivity 101: Promotional Video
b) Design 101: Promotional Video

6.2 Place Where the Proposal is Developed

For this specific proposal, the promotional videos will take place at Colegio Técnico Profesional CIT, located in Belén, Heredia, with 12th-grade students enrolled in the technical specialties of Productivity and Design. Nonetheless, this specific methodology can be adapted to other institutions, specialties, ages, and subjects. Additionally, this type of technique can be promoted within private or public institutions across the country.

6.3 Objectives of the Proposal

6.3.1 General Objective

a) To analyze the effects of implementing interdisciplinary audiovisual projects, such as promotional videos, on the acquisition of technical vocabulary in 12th-grade students at Colegio Técnico Profesional CIT through the CLIL approach.

6.3.2 Specific Objectives

a) To evaluate the impact of producing instructional videos in English on technical vocabulary retention in the specialty subjects.

b) To examine how creating promotional videos enhances the use and contextual understanding of technical vocabulary in the specialty subjects.

6.4 Suggested Activities

a) Productivity in Action: Promotional Video

General information:

- Duration: 3 sessions (40 minutes each)
- Content and Language Integrated Learning approach: Technical process explanation in English and vocabulary reinforcement through authentic task creation.
- Materials: Cameras or smartphones, editing software (if possible), technical tools, and materials from the Productivity specialty.

Firstly, the objective of the activity is that students from Productivity create a promotional video in which production processes are presented within the industry context. Alongside the procedure or process to present, learners are given the lexicon to include and use in context.

As part of the stages of the audiovisual project, learners write the outline of their video to ensure the inclusion of the terminology and coherence throughout the final product. After reviewing this last section, learners move on to the final section: students record themselves promoting or presenting the given topics using the target language. If necessary, the editing of the video is completed in this same section.

Finally, the videos are presented to the peers. For this section, a short Q&A is recommended to reinforce comprehension. From the teacher's side, with the previously created evaluation rubric, feedback and final comments are given.

b) A Day as a Designer: Promotional Video

General information:

- Duration: 3 sessions (40 minutes each)
- Content and Language Integrated Learning approach: Specialized design vocabulary and audiovisual presentation skills.
- Materials: Cameras or smartphones and editing software (if possible),

For this proposal, the main objective is to provide learners with insight into different future daily activities of people from the design field. Along with the openness of the topic of the video, learners are expected to use the technical vocabulary presented.

As part of the creation of the audiovisual, learners write the guidelines to follow for their video to ensure the usage of the vocabulary and accuracy of the final product. After concluding this section, learners move on to the final section: students record their products using the target language. If necessary, the editing of the video is completed in this same section as well.

When completed, the videos are presented in class with a follow-up activity – Q&A, peer feedback, etc. Feedback and an evaluated rubric are expected from the educator who applied the project: within this one, the assessment of the vocabulary usage, among other technicalities are expected.

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ANNEXES

Annex 1: Student's Test (Design)

Universidad Hispanoamericana
English Teaching major
Final Thesis Project

Pre-Test Instrument (Design)

Dear participant,

A study titled **"Interdisciplinary Audiovisual Projects to Enhance Technical Vocabulary in Bilingual Mid-Level Technicians"** is being conducted to explore how integrating audiovisual projects into interdisciplinary education can benefit the acquisition of technical vocabulary in **Design**. This research aims to provide valuable insights for educators, policymakers, and institutions within Costa Rica's technical education system.

- **Objective of the Multiple-Choice Assessment (Pre-Test)**

  The objective of this pre-test is to evaluate students' current level of technical vocabulary knowledge in bilingual settings. The results will provide baseline data to identify existing strengths and areas for improvement. This information will help assess the effectiveness of interdisciplinary approaches, such as integrating English and Productivity subjects, in enhancing students' technical vocabulary skills and overall professional readiness.

- **Why We're Asking for Your Participation**

  You have been selected because of your experience within the technical education system and your involvement with interdisciplinary methodologies. Your unique insights are essential for identifying specific strategies and opportunities for enhancing bilingual education. Your honest and thoughtful responses are crucial for the success of this study. Every piece of feedback will help shape a comprehensive understanding of how technical vocabulary can be effectively taught using innovative approaches.

- **How and When to Respond**

  You must respond via Google Forms. We kindly request that you complete the questionnaire by [*specified deadline*].

- **Confidentiality**

  Please be assured that all responses will remain anonymous. Any information you provide will be kept confidential and used solely for academic purposes.

- **Our Appreciation**

We deeply appreciate your willingness to participate and contribute to this research. Your input is invaluable in shaping educational practices that can benefit both students and institutions.

- **Sharing of Results**

  If you are interested in the results of this study, please let us know, and we will gladly share a summary of the findings upon the completion of the research.

Thank you again for your valuable contribution.

Sincerely,

Pablo Ávila Quirós

Google Forms

Instructions: Read each sentence carefully and choose the most appropriate concept from the given options to complete the statement

1. The _____ is the visual element that helps users navigate a website.
   a) logo
   b) interface
   c) sketch
2. To create smooth transitions between screens, designers use _____ effects.
   a) animation
   b) cropping
   c) exporting
3. The _____ tool allows you to cut out unwanted parts of an image.
   a) brush
   b) crop
   c) fill
4. A _____ is a preliminary drawing or plan of a design.
   a) wireframe
   b) prototype
   c) grid
5. The _____ defines the overall style and colors used in a project.

a) palette
b) layout
c) font

6. A _____ is used to test how a design works before final production.
   a) export
   b) prototype
   c) canvas
7. The _____ is the area where you create your design in graphic software.
   a) canvas
   b) panel
   c) mask
8. _____ refers to the space between lines of text.
   a) Tracking
   b) Leading
   c) Padding
9. The _____ helps adjust the space between individual letters.
   a) kerning
   b) spacing
   c) leading
10. _____ is the process of combining multiple images or elements in one design.
    a) Rendering
    b) Layering
    c) Exporting
11. A _____ is a reusable group of elements that maintain consistency across a project.
    a) template
    b) filter
    c) brush
12. The _____ is a grid of invisible lines that helps align objects on the screen.
    a) guideline
    b) panel
    c) raster
13. _____ graphics are made of pixels and lose quality when scaled up.
    a) Vector

b) Raster
c) Outline

14. _____ graphics are based on mathematical formulas and can scale without losing quality.
a) Bitmap
b) Vector
c) Pixel

15. The _____ tool lets you select and move parts of your design.
a) pen
b) brush
c) lasso

16. The _____ color mode is used for designs that will be printed.
a) RGB
b) CMYK
c) HEX

17. _____ is the file format best suited for web graphics with transparency.
a) PNG
b) JPEG
c) PDF

18. A _____ is a set of related fonts used to create a consistent look.
a) typeface
b) style
c) font family

19. _____ is the process of optimizing images and files to reduce loading time.
a) Compression
b) Cropping
c) Exporting

20. The _____ is the final output file delivered to the client or published online.
a) export
b) mockup
c) draft

Annex 2: Student's Test (Productivity)

Universidad Hispanoamericana
English Teaching major
Final Thesis Project

Pre-Test Instrument (Productivity)

Dear participant,

A study titled **"Interdisciplinary Audiovisual Projects to Enhance Technical Vocabulary in Bilingual Mid-Level Technicians"** is being conducted to explore how integrating audiovisual projects into interdisciplinary education can benefit the acquisition of technical vocabulary in **Productivity**. This research aims to provide valuable insights for educators, policymakers, and institutions within Costa Rica's technical education system.

- **Objective of the Multiple-Choice Assessment (Pre-Test)**

  The objective of this pre-test is to evaluate students' current level of technical vocabulary knowledge in bilingual settings. The results will provide baseline data to identify existing strengths and areas for improvement. This information will help assess the effectiveness of interdisciplinary approaches, such as integrating English and Productivity subjects, in enhancing students' technical vocabulary skills and overall professional readiness.

- **Why We're Asking for Your Participation**

  You have been selected because of your experience within the technical education system and your involvement with interdisciplinary methodologies. Your unique insights are essential for identifying specific strategies and opportunities for enhancing bilingual education. Your honest and thoughtful responses are crucial for the success of this study. Every piece of feedback will help shape a comprehensive understanding of how technical vocabulary can be effectively taught using innovative approaches.

- **How and When to Respond**

  You must respond via Google Forms. We kindly request that you complete the questionnaire by [*specified deadline*].

- **Confidentiality**

  Please be assured that all responses will remain anonymous. Any information you provide will be kept confidential and used solely for academic purposes.

- **Our Appreciation**

We deeply appreciate your willingness to participate and contribute to this research. Your input is invaluable in shaping educational practices that can benefit both students and institutions.

- **Sharing of Results**

  If you are interested in the results of this study, please let us know, and we will gladly share a summary of the findings upon the completion of the research.

Thank you again for your valuable contribution.

Sincerely,

Pablo Ávila Quirós

Google Forms

Instructions: Read each sentence carefully and choose the most appropriate concept from the given options to complete the statement

1. The process of making a system, process, or product more efficient by eliminating unnecessary steps is known as _____.
   a) Optimization
   b) Time management
   c) Inventory management
2. _____ refers to the strategy of reducing waste and improving efficiency by analyzing the entire production process.
   a) Just-in-time (JIT)
   b) Lean production
   c) Risk management

3. The time taken to produce a single unit or complete one cycle in the production process is referred to as _____.
    a) Cycle time
    b) Benchmarking
    c) Throughput
4. To make sure a product meets required standards, an organization implements _____ to maintain consistent quality throughout production.
    a) Quality control
    b) Resource allocation
    c) Sustainability
5. _____ is the process used to measure a company's progress towards achieving its goals using quantifiable indicators.
    a) Key performance indicators (KPIs)
    b) Workforce optimization
    c) Cost-benefit analysis
6. _____ is used to calculate whether the benefits of a project outweigh the costs incurred, helping to decide if the project should proceed.
    a) Cost-benefit analysis
    b) Project management
    c) Kaizen
7. _____ involves managing the flow of materials, information, and services from suppliers to customers to ensure timely production.
    a) Benchmarking
    b) Supply chain management
    c) Inventory management

8. The principle of continuously improving a process by making small, incremental changes is called _____.
    a) Kaizen
    b) Critical path method (CPM)
    c) Agile methodology
9. _____ helps to identify and mitigate potential issues that could derail a project or process by assessing risks and taking proactive measures.
    a) Lean production
    b) Risk management
    c) Task delegation
10. _____ refers to managing and controlling the goods and materials required for production, ensuring there are enough without overstocking.
    a) Inventory management
    b) Cost-benefit analysis
    c) Supply chain management
11. _____ involves designing and planning the sequence of activities required to complete a project efficiently and on time.
    a) Project management
    b) Time management
    c) Task delegation
12. The measurement of the number of units produced or tasks completed in a given time period is known as _____.
    a) Throughput
    b) Cycle time
    c) Task delegation

13. _____ is the method used to optimize resources, ensuring they are used most effectively to achieve project goals.
    a) Workforce optimization
    b) Time management
    c) Lean production
14. The chart used to visually represent the timeline of a project, showing the start and finish dates of different tasks, is called a _____.
    a) Gantt chart
    b) Benchmarking
    c) Resource allocation
15. _____ refers to the analysis and decision-making process related to when and how much to produce in a manufacturing system.
    a) Batch production
    b) Lean production
    c) Throughput

Annex 3: Teacher's Interview

Universidad Hispanoamericana
English Teaching Major
Final Thesis

English Teacher Interview

The effectiveness of applying interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach.

Objective: The objective of this interview is to explore English teachers' perspectives on the process of technical vocabulary acquisition and enhancement through participation in interdisciplinary audiovisual projects. It aims to gather insights into their experiences, strategies, and reflections on implementing the Content and Language Integrated Learning (CLIL) approach in technical education contexts. Please be assured that all responses will remain anonymous. Any information you provide will be kept confidential and used solely for academic purposes.

Question #1: Can you describe your experience teaching English in a technical high school setting?

Question #2: Have you previously collaborated with teachers from other specialties (e.g., Productivity or Design) on interdisciplinary projects?

Question #3: In your opinion, what are the main challenges 12th-grade students face when learning technical vocabulary in English?

Question #4: What strategies do you usually use to help students acquire and retain technical vocabulary?

Question #5: Are you familiar with the Content and Language Integrated Learning (CLIL) approach? If so, how do you apply it in your classes?

Question #6: What are the advantages and limitations of using CLIL in technical education, particularly for vocabulary development?

Question #7: Have you ever implemented or supported audiovisual projects in your English teaching? If yes, what kind of projects?

Question #8: How do you think audiovisual projects influence student engagement and vocabulary learning?

Question #9: What do you think are the benefits and challenges of involving English in interdisciplinary audiovisual projects?

Question #10: Based on your observations, how do students tend to acquire and improve technical vocabulary?

Annex 4: Student's Interview

Universidad Hispanoamericana
English Teaching Major
Final Thesis

Student's Perception Interview

The effectiveness of applying interdisciplinary audiovisual projects as English, Productivity, and Design through the Content and Language Integrated Learning approach.

Objective: The objective of this interview is to explore students' perspectives on the process of acquiring and enhancing technical vocabulary through participation in interdisciplinary audiovisual projects. It aims to gather insights into your experiences and reflections following the implementation of the Content and Language Integrated Learning (CLIL) approach in your technical education. Please be assured that all responses will remain anonymous. Any information you provide will be kept confidential and used solely for academic purposes.

Question #1: How would you describe your overall experience with the interdisciplinary audiovisual project?

Question #2: What did you think about combining English and (*Productivity or Design*) in one project?

Question #3: Did you enjoy working on the project? Why or why not?

Question #4: In what ways did this project help you use or learn English?

Question #5: Did using English in the context of (*Design or Productivity*) help you understand the language better? How?

Question #6: Was it easier or harder to learn technical vocabulary through this project? Why?

Question #7: Do you feel more confident using technical vocabulary in English now? Why or why not?

Question #8: Were you motivated to complete the project? What kept you interested?

Question #9: What was the most difficult part of the project for you?

Question #10: Would you recommend this type of project to other students? Why or why not?