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Integrating Learning and Knowledge Technologies in Hybrid Classical Language Education: A Case Study from the University of La Sabana

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ABSTRACT

In this study, we explore the integration of learning and knowledge technologies in hybrid Ancient Greek and Latin courses at the University of La Sabana during the COVID-19 pandemic. Using an action research methodology, 12 interactive activities were designed and categorized into dynamic class segments of 20- and 10-minute blocks to enhance student engagement and motivation. Data collection methods included classroom observations, surveys, and performance analysis. The results indicate enhanced student interaction and learning outcomes, demonstrating the effectiveness of learning and knowledge technologies in revitalizing classical language education in a hybrid learning environment. This study provides valuable insights into the implementation of innovative pedagogical strategies and the continuous refinement of teaching methodologies through iterative cycles of action and reflection.

Keywords: Educational Technology; Interactive Learning; Hybrid Environments; Ancient Texts; Learning Activities; Action Research

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1. Introduction

The rapid shift to remote learning due to the COVID-19 pandemic posed significant challenges to educational institutions worldwide, particularly in disciplines traditionally grounded in face-to-face interactions, such as classical language education. At the University of La Sabana, this transition necessitated a comprehensive restructuring of ancient Greek and Latin courses, leading to the integration of learning and knowledge technologies (LKT) into a virtual and subsequently hybrid instructional model because the optional return to in-person classes introduced additional complexities, as some students returned to campus while others remained at home for various reasons[1]. This division resulted in initial difficulties with interaction and participation, largely owing to the novelty of the situation and the technical challenges associated with adapting a physical classroom to a hybrid environment. It quickly became evident that hybrid classes required a diverse range of materials and teaching strategies specifically tailored to this new learning context. The inclusion, adaptation, and development of various programs and applications for teaching and learning have provided a wealth of resources, supported by multiple studies that confirm their contributions to educational processes. While literature extensively explores the use of educational technology in modern language learning, there is a notable gap in research specifically addressing the application of these technologies within the realm of classical studies, particularly in the context of hybrid learning environments. We seek to bridge this gap by investigating how LKT can be effectively integrated into interactive activities to enhance student engagement and learning outcomes. The initiative, implemented since 2020, is meant to enrich educational experience by introducing a dynamic structure to the traditionally static classroom setting. This pedagogical approach was crafted based on insights from action research, a methodology instrumental in identifying the need for more engaging and adaptable teaching strategies to accommodate the diverse requirements of learners. The action research process, which included two investigative cycles [2], revealed that conventional instructional methods were insufficient to maintain student engagement and participation in a hybrid environment. As a result, the restructuring of classical language courses at the University of La Sabana involved the division of class sessions into alternating blocks of 20-minute instructional periods followed by 10-minute interactive activities, as illustrated in **Figure 1**.

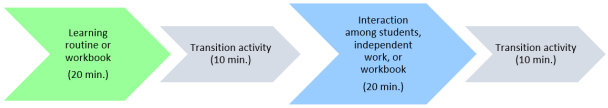

Figure 1. Structure of a one-hour class with blocks and transition activities. Created by the researchers.

This reconfiguration was designed to address the emerging challenges by incorporating audiovisual resources, new teaching strategies, and interactive activities better aligned with the needs of students adapting to the new learning context. Despite the initial success of this restructuring, challenges remain, particularly in ensuring consistent interaction and participation among students. We, therefore, address the following research questions:

1) How can LKT be effectively employed to sustain student engagement and participation in hybrid classical language courses?
2) What specific teaching strategies and tools can be adapted or developed to optimize learning outcomes in this educational context?

[1] Several factors contributed to students not returning to classrooms in Colombia. At the University of La Sabana, students expressed their reluctance to return to campus in informal conversations. Some did not return at all, while others only attended on days with more class hours. Their primary concern was the risk of contracting the virus while using public transportation and potentially infecting family members who had not completed their vaccination schedules. Additionally, the considerable time required for commuting to the campus was a factor, as some students preferred staying at home rather than spending hours in the traffic typical of metropolitan areas. Given these circumstances, we anticipated that the hybrid learning model would continue to gain traction and become more standardized. Many institutions are already adapting to this trend, resulting in a significant increase in the availability of academic programs offered in this format. For additional insights on this topic, consult the expanding bibliography, which includes works by Gil et al. [1] and Debelius et al. [2].

[2] Each cycle consisted of three stages. The first stage, "planning," focused on reflecting on the learning modality and identifying aspects of the classical language courses that needed adaptation or improvement. The second stage, "acting," involved the planning and implementation of a strategic action plan to modify teaching practices according to the identified needs. The final stage, "reflecting," collected and analyzed data on the impact of these modifications, which then informed the next cycle of research, allowing for further refinement and adaptation of the pedagogical strategies used in the courses [3].

These questions are central for understanding LKT's potential to transform classical language education in hybrid environments, and for identifying best practices that can be applied across similar disciplines. By examining the integration of LKT in this context, we contribute to the ongoing discourse on the modernization of classical studies, offering insights that may inform future pedagogical strategies in both hybrid and traditional learning environments.

2. Literature Review

The COVID-19 pandemic necessitated an unprecedented shift to remote learning across educational institutions, revealing the limitations of existing pedagogical approaches, particularly in sustaining student engagement and ensuring effective learning outcomes in a remote environment[4, 5]. Although the technologies implemented during this period were effective in providing feedback, personalized instruction, and promoting engagement, they often lacked a focus on the content, activities, and pedagogical strategies necessary for fully supporting effective learning, as noted by Aravantinos et al.[6]. The pandemic underscored the urgent need for innovative teaching strategies, including the integration of artificial intelligence, to adapt to the evolving educational landscape, where online and hybrid models are becoming increasingly prevalent. Latorre et al.[7] emphasize the importance of incorporating LKT in education to foster innovation and enhance learning experiences. Forero-Álvarez et al.[8] demonstrate how the implementation of LKT in classical language classrooms has led to improved engagement and academic performance, aligning with the growing recognition of digital tools in education. Similarly, Oña-Rodríguez et al.[9] highlight the transdisciplinary potential of LKT, showing how these technologies facilitate the integration of knowledge across different fields, enriching the teaching of language and literature. Additionally, Ipek et al.'s[10] study on artificial intelligence educational applications highlights the transformative impact of emerging technologies such as ChatGPT in creating personalized learning environments, which is essential for maintaining student engagement in hybrid settings. This aligns with the findings of Torrado[11] and Khoshimova et al.[12], who emphasize the positive impact of modern technologies on language teaching, noting that these tools have been instrumental in overcoming the challenges posed by remote learning environments.

The integration of LKT into educational practices is widely recognized for its potential to enhance learning experiences, especially in language education[13]. However, there remains a significant gap in the literature regarding the application of these technologies in classical language instruction, particularly in hybrid learning environments. It is crucial to adapt these technologies to address the unique challenges of classical language courses, which often demand high levels of interaction and engagement that can be difficult to achieve in a hybrid setting. Latorre et al.[7] discuss the innovative use of LKT in educational practices, highlighting their potential to create more engaging and effective learning environments. Forero-Álvarez et al.[8] further emphasize the role of these technologies in enhancing student engagement and learning outcomes in classical language courses. Moreover, Papadakis et al.'s[14] study on cloud-based smart technologies and computer simulations in open education demonstrates how these technologies can facilitate the creation of adaptive and personalized learning environments. This aligns with the findings of Vidakis et al.[15], who explore the use of serious games in education, highlighting their potential to generate valuable educational data and improve learning outcomes. Papadakis et al.[16] also underscore the potential of game-based learning in addressing these challenges, particularly in classical studies, such as the exploration of ancient Greek theater, where immersive and interactive methods can significantly enhance student understanding and engagement.

Hybrid learning presents specific challenges for classical language education, which are further intensified by the nature of the content. Successfully implementing hybrid models in this context requires not only technological integration but also pedagogical innovations that can sustain student motivation and participation. Forero-Álvarez and Triana Perdomo[3] provide a valuable framework for enhancing student interaction in hybrid classical language courses through dynamic class structures, which segment classes into shorter, more interactive blocks. Despite the growing body of research on LKT and hybrid learning, a significant gap remains in the literature regarding their application in classical language education. We seek to address this gap by investigating the effectiveness of LKT in enhancing engagement and learning outcomes in hybrid Ancient Greek and

Latin courses. By focusing on the specific didactic strategies presented, we aim to identify best practices that can be applied not only to classical language education but also across similar disciplines, contributing to the ongoing evolution of teaching methodologies in the digital age.

3. Utilizing LKT for Hybrid Classical Language Classes

LKT facilitate efficient utilization of time, both within and beyond the classroom. They also bolster motivation, enhance attentiveness, and stimulate student participation, regardless of the mode of instruction. Furthermore, they provide on-demand access to information and explanations, actively involving students in the learning process, as pointed out by García Valcárcel [17] and Herrero et al. [18]. Indeed, the advantages of incorporating technological tools in classical language courses, such as videos, self-assessing quizzes, interactive slides, and games, are evident. For instance, the use of videos, quizzes, and interactive grammar presentations in conjunction with the flipped classroom model leads to a reduction in class time allocated to explanations. Students can access these resources before the session and practice as many times as needed, ultimately optimizing instructor–student interaction for query resolution or practical application of the discussed topics [3].

In the context of specific hybrid class sessions, the judicious application of gamification at select moments contributes to a more captivating and motivating experience for participants. The thrill of attaining favorable outcomes directs attention toward providing correct responses, which, in turn, nurtures learning by reinforcing existing knowledge and solidifying new knowledge. Furthermore, accurate answers serve as markers of the learning process and the efficacy of the instructional strategies implemented in class. Conversely, incorrect responses necessitate instructor feedback, effectively positioning games as valuable tools for content reinforcement [4].

Although the outlined strategies are generally effective, it is imperative to select and integrate technological tools, thoughtfully considering the objectives of each course and activity, along with the resources available at each educational institution, as some may require licenses. The ensuing section provides a concise overview of the educational technologies employed to implement these strategies.

3.1. Collaborative Workspaces

At the University of La Sabana, the primary platform for communication and collaboration is ***Microsoft Teams***[5]. This versatile tool empowers educators to conduct hybrid classes effectively, using video calls that allow remote participants to activate audio and camera features. It offers in-meeting chat options and personal chats for individual interactions. Moreover, it supports the exchange of voice notes and video clips, with accessibility on both computers and mobile devices, thanks to versions compatible with *Android* and *Apple*. Any meeting attendee can share their computer screen, making it easy to display slides, videos, digital whiteboards, and other content. Furthermore, meetings can be recorded by any participant, and the video recordings are stored on the ***Microsoft Stream*** [6] platform, granting access to all meeting participants or other university members, as required. This platform also features repositories for different groups and allows integration with other platforms and applications, as we will explore later. These capabilities can be effectively harnessed to provide students with a wide array of educational resources and to enhance interactivity in the classroom. For instance, students can be encouraged to share their work, engage in private discussions, and more (see Activities in Appendix 1.3, 1.4, and 1.6 [7]). Other platforms such as *Zoom*, *Google Classroom*, *Collaborate*, and *TeamViewer* offer similar functionalities.

Microsoft OneNote complements these communication and collaboration platforms, providing a versatile space

[3] For the use of LKT in classical language courses, see Forero-Álvarez and Triana Perdomo [19] and Forero Álvarez et al. [8].

[4] See Perdomo and Rojas [20] and Páez et al. [21].

[5] The tools used are in bold and italics.

[6] *Microsoft Stream* is an application that allows secure uploading, viewing, and sharing of videos and channels, available exclusively to members associated with a *Microsoft* account using a specific domain. It is advisable to create a channel to host videos created for courses. In our case, some of the videos published on *Stream* are accessible through the following *YouTube* channel: https://www.youtube.com/channel/UCRL7yv2piZFjou3v_Q0elkQ. Similar platforms with analogous features include *Vimeo*, *YouTube*, and *Google Videos*.

[7] Access the Appendix via the following link: https://doi.org/10.6084/m9.figshare.25329898

for note-taking and editing. *OneNote* simplifies the organization of tabs by topics and sections dedicated to individual students. Students can easily complete exercises and assignments and securely store information, facilitated by a built-in text processor that automatically saves and syncs data. Instructors can create tabs exclusively accessible to individual students, ensuring a private space to work on exercises without concerns of exposing errors to peers. Additionally, this tool serves as a valuable resource for instructors to provide examples for activities and for students to submit assignments requiring feedback (see Activities in Appendix 1.3 and 1.4[7]). Tabs can also be configured for universal access by all class participants when promoting collaborative work and peer assessment is deemed appropriate (see Activity in Appendix 1.1[7]). Similar programs include *Simplenote*, *Notion*, *Google Keep*, *Evernote*, and *Memonic*.

3.2. Digital Whiteboards

The ***Microsoft Whiteboard*** digital platform offers an expansive canvas and includes templates for brainstorming, problem-solving, strategic planning, research design, workshops, games, and more. It allows for the customization of marker colors. This tool facilitates the integration of various external resources and linkage with *Teams* or any other platform through a simple link. Students can access the platform using their institutional accounts and make real-time modifications. All changes to the whiteboard are automatically saved and synchronized, making them valuable resources for reviewing explanations and student contributions. A whiteboard can be created for each course or even for each chapter in the study workbook. *Microsoft Whiteboard* has become an indispensable instrument for Greek and Latin classes, enabling the inclusion of PDF workbook pages, supplementary audiovisual resources, and annotations achieved with the precision of a digital tablet, as demonstrated in **Figure 2**.

The tool's flexibility extends to the creation of custom whiteboards for students requiring individualized reinforcement sessions, whether for specific activities (see Activities in Appendix 2.2 and 1.2[7]) or other unique needs. Various options are available, including *Miro*, N*oteBook*Cast, and Jamboard, which was employed in the Activity in Appendix 1.2[7]. *Jamboard* not only facilitates anonymous participation through text-based sticky notes but also allows the creation of multiple frames, tailored to different topics or sessions.

Figure 2. Illustration of comments and supplementary images on the digital whiteboard for the *Athenaze* workbook ([22], p. 209).

3.3. Gamification Platforms

Kahoot! takes the lead as the most widely adopted gamification platform in classrooms. It is lauded for its user-friendly interface, intuitive quiz creation process, and rapid integration of audiovisual resources. Participants simply need a cell phone, tablet, or computer to join by visiting www.kahoot.it and entering the code displayed by the instructor. Attentiveness is key, as game scores depend on both the accuracy and swiftness of responses. *Kahoot!* supports individual or group play, offering various gameplay modes such as classic, high tower, submarine squad, and more. Furthermore, instructors can schedule post-class sessions for asynchronous play. The application allows for result exports to *Excel* or integration with *Google Drive*, granting instructors access to data for assessment if agreed upon with students. The game permits each student to select their desired username, fostering participation, especially among reserved students.

Another resource akin to *Kahoot!* is *Quizizz*, designed for creating interactive quizzes useful in assessing vocabulary or the correct usage of morphosyntactic structures. Instructors craft multiple-choice quizzes and share them with students via a unique code, enabling synchronous or asynchronous play. In contrast to *Kahoot!*, *Quizizz* provides each student with a distinct quiz, tracking individual progress on screen. ***Quizlet***, on the contrary, specializes in creating flashcards, particularly beneficial for vocabulary acquisition. These flashcards feature the target word on the front and its translation or a supporting image on the back. Students enter using a unique code, gaining access to all flashcards for review and memorization. They can then tackle specific

questions designed to verify vocabulary retention.

For further gamification and collaborative learning among students, we also have ***Gimkit*** and ***Gartic Phone***. *Gimkit* offers a fusion of *Kahoot!* and *Quizlet*, featuring unique elements that enhance engagement and speed. It is ideal for group introductions or reviews on various topics, with adjustable gaming parameters (time, difficulty, scenario, etc.), and it supports independent work. Kits, which consist of sets of questions, can be created from scratch or customized. With the *KitCollab* feature, students can collaborate to create a kit within minutes. Students join the game by using a unique code on their electronic devices. Participants accumulate virtual coins, instead of points, which can be employed to boost their scores. *Gartic Phone*, on the contrary, merges the dynamics of *Pictionary* with the classic "telephone game" (also known as "Chinese whispers"). In this game, participants alternately draw what they see and guess what they observe. The application shifts between words and drawings, with the aim of comparing the original phrases with the final outcomes. The game leader suggests the theme and selects various gaming modes and parameters, and students join by entering a unique code on their electronic devices. The ideal setup for this game includes electronic tablets with styluses or computers with mice to facilitate participation.

Owing to the popularity of gamification applications in classrooms, a multitude of ready-made games can be found online, created by other educators or students. For instance, by conducting a search for "*Athenaze*" or "*Lingua Latina*" on the Quizlet and Gimkit portals, numerous available games can be discovered. Another example is the "*Kahoot Linguarum Classicarum*" portal featuring games designed for the *Lingua Latina per se Illustrata*, *Cambridge Latin Course*, and *Athenaze* workbooks [8]. One more option is the "Lenguas Clásicas en el Severo Ochoa" portal [9]. However, it is advisable for instructors to create their own games, as many links may become inactive or unavailable for various reasons. Furthermore, maintaining a consistent didactic approach is essential. In our case, we have chosen to focus on reinforcing communication skills rather than specific textbook chapters, as we believe that these tools can enhance language knowledge by fully utilizing class time [10]. We also find it inappropriate to include errors as distractors in the games, as students might memorize misspellings or incorrect syntactic constructions. Finally, it is prudent to save a copy of the questions and answers in a file in case the platform changes or if data are accidentally deleted.

3.4. Interaction Platforms

Moodle stands as a versatile learning management tool that facilitates the creation of online learning communities. Institutions with licenses have tailored versions, such as the one used at the University of La Sabana, known as *Virtual Sabana*, featuring its unique distribution and institutional branding. Through this platform, users can share multimedia content, quizzes, and an array of activities and games to aid students in their pre-session, in-session, and post-session studies. It is accessible on various electronic devices. Moodle offers diverse interaction features, including forums, wikis, collaborative glossaries, workshops, surveys, and self-correcting exercises (see Activities in Appendix 1.6 and 2.4[7]). Platforms similar to *Moodle* include *Chamilo*, E-doceo, and *Canvas*.

Google Workspace Forms is a collaborative tool for survey creation and management. It allows users to create surveys with options for anonymous responses or to request student names, email addresses, or codes. This tool is excellent for gaining insight into students' perspectives on the class, which facilitates feedback on various activities while also evaluating students' comprehension of the topics. *Microsoft Teams* also offers the ability to conduct polls in group chats through the *Microsoft Forms* application. Both these tools can be employed for questioning in classical languages and leveraging responses to reinforce content and rectify errors (see Activity in Appendix 2.3[7]). Other survey applications worth considering include *Typeforms*, *SurveyMonkey*, and *Formsite*.

4. Interactive Activities

The 12 activities provided in Appendix[7] have been designed to complement the class workbooks *Athenaze* and

[8] Explore the repository mentioned here: https://sites.google.com/view/kahootlatinegraece/

[9] For additional information, visit: https://clasicasseveroochoa.blogspot.com

[10] As an example, we offer a *Kahoot!* exercise in which past tenses in Greek are practiced: https://create.kahoot.it/share/gr2-pasados/c3da66ca-7cea-4b62-b375-3f0d8890cafc (see Activity in Appendix 2.6).

Lingua Latina per se Illustrata. While these workbooks traditionally emphasize the analysis and interpretation of readings, gradually introducing more complex grammatical structures, idiomatic expressions, and vocabulary, they are primarily intended for reinforcing content in a printed format and during in-person sessions. The exercises in *Athenaze* focus on etymological and morphosyntactic analysis, translations, and sentence completion, while the *Lingua Latina per se Illustrata* exercises involve filling in gaps in short texts and responding to questions posed in Latin. The activities outlined in the Appendix have been specifically adapted for a hybrid learning environment, though they can also be seamlessly integrated into in-person classes using printed guides, physical boards, or electronic devices. Our approach is distinctive in its aim to foster independent study, promote effective learning, and facilitate the acquisition of new vocabulary. These activities are designed not only to enhance reading comprehension and improve pronunciation but also to deepen the analysis of morphology and syntax. Additionally, they encourage the effective use of dictionaries, improve translation skills, and explore the cultural dimensions of classical languages.

Each activity is crafted to provide continuous feedback, bolster motivation for learning the target language, and maintain high levels of attention and concentration. Moreover, the activities are intended to encourage active student interaction in both synchronous and asynchronous settings. By incorporating elements of gamification, these activities effectively mitigate the distractions that students often encounter in home environments, which can differ significantly from traditional classroom settings [11]. Recognizing that many students may experience anxiety or other psychological challenges related to social isolation, these activities are designed to sustain interest and engagement from the outset by fostering communication skills in ancient languages [12]. This approach ensures that the vocabulary and grammatical structures acquired resonate more deeply with students' daily lives and thoughts, thereby increasing their enthusiasm for learning and participation in class dynamics [13]. The activities presented are either original creations or adaptations of established classroom practices used in other foreign language contexts. They are categorized into two groups: "block activities" and "transition activities". To facilitate implementation, each activity is presented in a structured format that includes the intended learning outcomes, suggested duration, required resources (software, platform, application, etc.), preparatory steps, in-class execution details, potential variations, and comments aimed at optimizing effectiveness.

5. Impact of the Activities

To assess the impact of the activities designed for the classical languages classroom at the University of La Sabana, a mixed-methods approach was adopted, integrating both qualitative and quantitative data collection instruments. This approach ensured a comprehensive understanding of the effects of the implemented activities on student engagement, learning outcomes, and overall classroom dynamics in a hybrid learning environment. The instruments used included classroom observations recorded in a field diary, an anonymous open-ended survey administered via *Google Forms*, and a performance analysis of students' academic results over multiple semesters [14].

The classroom observations, systematically documented in a field diary, provided qualitative insights into the implementation of the activities and their impact on student engagement and participation. These observations were particularly focused on how the hybrid format influenced student interactions and the dynamics of the learning environment. The field diary entries revealed that when philosophi-

[11] According to Guijosa [23], students in virtual courses tend to face more distractions compared to those in traditional in-person classes, which significantly impacts their academic performance and ability to concentrate. For additional references, consult [24–27]. Other studies have found that students are distracted at a rate of 58.19% depending on circumstances [28] and 59.26% struggle to focus owing to the use of digital devices (cellphones, tablets, computers, etc.) [29]. A study by Maqableh and Alis [30] with 1336 participants on distraction and reduced focus reported that 84.8% of students were easily distracted, 76.1% had to attend virtual classes while performing household tasks, and 72.1% felt less engaged owing to the absence of physical teacher presence.

[12] See [30–35]. Additionally, the report by UNESCO, UNICEF, and the World Bank on the global education crisis in the context of the pandemic discusses the significant loss and regression in education, resulting from the disparity between expected and actual learning outcomes. This is undoubtedly owing to the challenges faced by teachers and students in adapting to a completely different teaching and learning environment [36].

[13] For more information on the relationship between motivation and meaningful learning in language education, see [37–40].

[14] A detailed description can be found in Forero-Álvarez et al. [8].

cal and cultural topics were explored through the analysis of ancient texts, particularly those linked to textbook situations or real-life contexts, students exhibited a heightened interest and posed more in-depth questions. Notably, several students reported applying ancient sentences in assignments for other courses, suggesting deeper integration and internalization of the material. These observations highlight the success of the activities in fostering a meaningful connection between the classical content and the students' broader educational experience.

To gather quantitative data on student perceptions, an anonymous survey was conducted during the first semester of 2022, targeting students enrolled in Greek I and II and Latin II courses. Out of 30 students, 16 (53.3%) participated, providing feedback through a single open-ended question designed to capture their overall impressions of the activities. The survey responses were analyzed using a thematic analysis framework, specifically following the categorization model of Taylor and Bogdan [41]. The results, presented in **Table 1** below, categorize student feedback into three main themes, each accompanied by a count of relevant comments and a qualitative analysis of the responses.

The survey results indicated that the variety of activities introduced a dynamic and engaging element into the classroom, effectively reducing monotony and enhancing the overall learning experience. This variety was strategically alternated with periods dedicated to text interpretation and workbook exercises, contributing to a perception of reduced academic workload among students. This perception is likely linked to the diverse and interactive nature of the activities, which students felt made learning less daunting and more manageable. Additionally, positive feedback regarding the activities' impact on communicative skills and language acquisition underscores their effectiveness in fostering a more immersive and interactive learning environment. The absence of negative comments further emphasizes the positive reception of these activities and their significant role in enhancing student motivation and engagement.

Students' performance analysis was conducted based on the results of the semester midterms, which consist of text translations complemented with tests on Virtual Sabana platform. Each semester, three midterms are conducted in accordance with institutional guidelines. The objective is for students to be able to track their learning process. Taking advantage of this circumstance, a formative assessment has been implemented, allowing personalized feedback through analytical e-rubrics [15]. The analysis could only be done for the grades of Greek I because it is the course that has had the most groups open since the last version of the assessing system, which took place in 2018-2. The third assessing period was chosen because it is when the teaching–learning process reaches its final stage, requiring all the previous knowledge of the subject. The **Figure 3** shows the averages of 10 groups from 2018-2 to 2024-1.

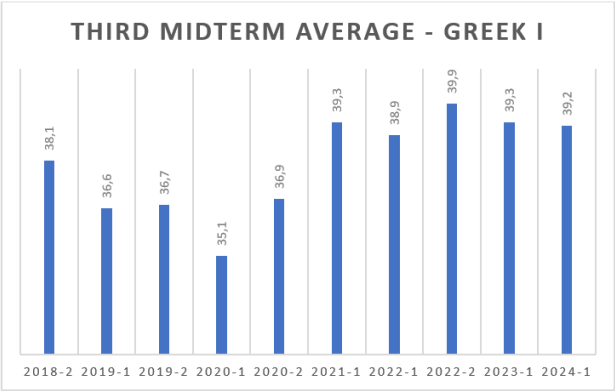

Figure 3. Third midterm average scores for Greek I from 2018-2 to 2024-1.

The data revealed several key trends in academic performance. An initial drop to an average of 35.1/100 was observed during the first semester of 2020, coinciding with the sudden transition to remote learning due to the COVID-19 pandemic. This decline can be attributed to the challenges of adapting to the new virtual learning environment. However, by the second semester of 2020, the average increased to 36.9/100, reflecting the positive impact of newly implemented didactic strategies designed to address these challenges. The subsequent semesters (2021-1 and 2022-1) showed continued improvement, with averages of 39.3/100 and 38.9/100, respectively. The peak was reached in 2022-2, with an average of 39.9/100, indicating the successful adaptation to hybrid learning and the effectiveness of the pedagogical strategies employed. The stability of the averages in 2023-1 and 2024-1 (39.3/100 and 39.2/100) suggests that these strategies have established a robust foundation for sustained academic performance in a hybrid learning environment. These findings underscore the importance of a

[15] See Forero-Álvarez and Triana Perdomo [19].

Table 1. Impact of Activities in the Classical Language Classroom.

What Are Your Thoughts on the Activities Conducted in Class, Such as Video Recording, Dialogues, the Virtual Sabana Forum, Hangman, Surveys, Stop Game, and Kahoot!	**Number of Comments**
Enhance the didactic development of the classes (dynamism, variety, diversity, essential complement to the workbook, reduce monotony, decrease academic workload).	18
The activities were very favorable (very good, cool, incredible, enjoyable, entertaining, fun, innovative, interesting, motivating).	17
Contribute to learning (increase student attention, understanding of the topics, stimulate learning, language acquisition, fluency, pronunciation).	13

well-structured, dynamic approach to learning in classical languages, where interactive and engaging activities, coupled with effective use of digital tools, can significantly enhance student engagement and learning outcomes.

6. Discussion

The findings from this study clearly demonstrate the positive impact of integrating interactive activities and LKT into hybrid classical language instruction at the University of La Sabana. The combination of diverse pedagogical strategies and technological tools within a hybrid learning environment not only enriched the educational experience but also significantly enhanced student engagement and motivation. These outcomes align with the initial hypothesis that innovative instructional approaches are necessary to meet the challenges posed by hybrid learning. However, these findings must be contextualized within broader curriculum development models to fully understand their implications. The observed improvements in student engagement and performance can be seen as a direct response to the dynamic restructuring of course content, which was informed by action research. This restructuring involved segmenting classes into shorter instructional blocks interspersed with interactive transition activities, as outlined in the Introduction (**Figure 1**). This approach is consistent with contemporary curriculum models that emphasize flexibility, student-centered learning, and the integration of technology to create adaptive learning environments. In terms of curriculum development, the successful implementation of these activities highlights the importance of designing curricula that are not only content-rich but also responsive to the diverse needs of students. The use of LKT to facilitate interaction, foster independent learning, and enhance communicative skills is particularly relevant in this context, as it directly addresses the need for engagement and participation in a learning environment where physical presence is limited. This aligns with the literature on the effective use of educational technologies, which emphasizes the need for pedagogical models that support both synchronous and asynchronous learning.

Despite the promising results, several limitations must be acknowledged. The survey data, while providing valuable insights into student perceptions, may be influenced by individual biases and the relatively small and homogenous sample size, limited to specific courses at a single institution. To strengthen the generalizability of these findings, future research should expand the sample to include a wider range of institutions and student demographics, despite the challenges posed by the limited availability of classical language courses in a hybrid format. Additionally, a more nuanced analysis of how specific activities impact various language skills and cultural competencies would be beneficial, as it would provide deeper insights into the effectiveness of these pedagogical strategies across different learning objectives. Furthermore, the positive reception of these activities contrasts with the scarcity of literature specifically addressing the adaptation of hybrid learning models in the context of classical language education. This study contributes significantly to filling this gap, offering evidence that hybrid learning, when properly structured and supported by LKT, can be highly effective in maintaining student engagement and improving learning outcomes. The findings suggest that the integration of interactive activities and technology should be considered an essential component of curriculum development for hybrid learning environments. The successful integration of LKT and interactive activities into the hybrid instruction of classical languages underscores the need for ongoing innovation in curriculum design. By aligning pedagogical strategies with the evolving demands of learning environments, educators can create more engaging, effective, and adaptable learning experiences. This study not only provides a framework for

enhancing classical language education in hybrid settings but also offers insights that can inform broader curriculum development efforts in the digital age.

7. Conclusions

We set out to explore how LKT can be effectively integrated into hybrid classical language courses to enhance student engagement and learning outcomes. By addressing the research questions, we demonstrated that the strategic incorporation of interactive activities, coupled with innovative pedagogical approaches, significantly enriched the educational experience for students at the University of La Sabana. The dynamic restructuring of class formats, which involved alternating instructional blocks with interactive transition activities, was particularly effective in sustaining student interest and participation, thereby answering the central inquiry of how LKT can transform classical language education in a hybrid learning environment. The findings underscore the critical role of gamification strategies and LKT in optimizing classroom time, promoting holistic language skill development, and fostering an environment conducive to both participation and independent study. The success of these strategies suggests that hybrid learning models, when thoughtfully designed and implemented, can address the challenges traditionally associated with classical language instruction.

However, to fully realize the potential of this educational transformation, continuous reflection and strategic planning are essential. Action research, on which this study was based, proved imperative in identifying student needs and tailoring the instructional approach accordingly. This iterative process of evaluation and adaptation not only facilitated the effective implementation of classroom activities but also highlighted the importance of a curriculum that is flexible, student-centered, and responsive to the specific challenges of hybrid education. Moreover, the study's contribution extends beyond the immediate context of classical language instruction and the University of La Sabana. It provides valuable insights into curriculum development models that prioritize adaptability, creativity, and technological integration. These insights are particularly relevant as educational institutions worldwide continue to navigate the complexities of hybrid and remote learning environments in the wake of the COVID-19 pandemic. This study reaffirms the need for ongoing innovation in the teaching of classical languages. By aligning pedagogical strategies with the evolving demands of modern learning environments, educators can sustain the ancient humanistic tradition embedded in classical studies while ensuring that these disciplines remain relevant and engaging for contemporary students. Future research should continue to explore the intersection of technology and pedagogy in education, expanding the scope of inquiry to include diverse institutional contexts and student populations.

Author Contributions

R.F.-Á. proposed the research, conducted the survey with the students, and collaborated on data interpretation and the writing of the article. L.A.T.-P. contributed data interpretation, research, and the writing and review of the article. L.K.J.-C. contributed to the search and description of the LKT tools and the writing of the article.

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Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and the ethical guidelines of the University of La Sabana. Ethical review and approval were waived as this was an educational research study that did not involve invasive procedures or the collection of sensitive personal data. The research adhered to institutional standards for ethical educational research.

Informed Consent Statement

Informed consent was obtained from all participants involved in the study. Students were informed that the activities were part of a research project aimed at improving their

performance in classical language learning. They were also notified that the results would be published, and participation was fully voluntary and anonymous.

Data Availability Statement

The data supporting the reported results are not publicly available due to privacy considerations. However, anonymized data related to students' grades can be made available upon reasonable request to the corresponding author.

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Conflict of Interest

The authors declare no conflict of interest.

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