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Artículo de Investigación

Digital tools and active methodologies for online EFL learning during emergency remote learning: Students' perceptions of an action research approach

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Resumen: Este artículo da cuenta de un proyecto de investigación-acción desarrollado durante el periodo de enseñanza remota de emergencia. El estudio tuvo como objetivo describir cómo un conjunto de herramientas digitales y metodologías activas, implementadas en un curso universitario de inglés como lengua extranjera, contribuyó a las percepciones de los estudiantes sobre su propio aprendizaje. Los participantes fueron estudiantes de primer año de una carrera de pedagogía en inglés en una universidad chilena. La intervención consideró actividades sincrónicas y asincrónicas que combinaron herramientas tecnológicas como Padlet, Google Docs y Kahoot, con estrategias pedagógicas basadas en principios de aprendizaje activo, tales como la retroalimentación entre pares, el trabajo colaborativo y la gamificación. Los datos se recopilaron mediante una encuesta final en línea y se analizaron cualitativamente. Los resultados muestran que los estudiantes valoraron positivamente las estrategias utilizadas, destacando la interactividad, la variedad y la motivación. El estudio concluye con una reflexión sobre el valor de integrar herramientas digitales y enfoques participativos para apoyar la enseñanza de lenguas extranjeras en modalidad virtual.

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Palabras claves: Enseñanza remota de emergencia- metodologías activas- enseñanza del inglés- enseñanza remota de emergencia- percepción estudiantil- investigación-acción.

Abstract: Emergency remote learning in 2020 presented an unforeseen learning environment for both teachers and students. This context had a detrimental impact on the learning process, encompassing various physical and attitudinal factors. Consequently, this study aimed to investigate students' perceptions on the efficacy of specific digital tools and active methodologies over a 17-week period in enhancing the lexico-grammatical learning of first-year English pedagogy students at a Chilean university. Employing an action research approach, two 50-minute weekly sessions were conducted throughout the 17-week duration. Data were collected through close-ended questions under the action research methodology, using a mixed-method approach. Additionally, a focus group was conducted to gain a deeper understanding of the survey findings. The results demonstrated that the learning experience met or exceeded students' expectations (92.84%). The most highly regarded active methodologies included the use of Canvas ($\mu = 4.42$, SD = .99), Immediate Response Systems ($\mu = 4.32$, SD = .80), and Mastery Paths ($\mu = 4.26$, SD = .64). Discussion forums were considered the least favored active methodology ($\mu = 3.84$, SD = 1.09). Moreover, the students expressed a preference for a return to face-to-face classes (57.37%) as opposed to a hybrid (36.84%) or online (5.79%) format.

Keywords: Emergency remote learning- digital tolos- active methodology- English pedagogy- undergraduate teaching.

Introduction

The abrupt change to emergency remote learning in 2020 presented teachers and students with an unexpected and challenging shift to online teaching and learning (Dhawan, 2020). This rapid transition highlighted several methodological weaknesses, particularly in the use of technology across all educational levels, from primary to tertiary education (Orozco et al., 2017). Recent contributions to EFL innovation in Chile have highlighted the value of context-driven pedagogical practices grounded in teacher-led inquiry (Díaz et al., 2019). Notably, the deficiency in technology utilization became most apparent at the tertiary level (Aristovnik et al., 2023). Online classes often replicated traditional teaching methods such as handout completion, text-based discussions, and slideshow presentations, which were the predominant tools for online instruction (Moneta, 2019). It became evident to students that these methodologies needed to evolve to better align with computer and technology-mediated teaching (Torres et al., 2021). However, this transition encountered multiple challenges. Firstly, teachers faced the hurdle of adapting to the new scenario due to a lack of technological literacy, irrespective of age (König et al., 2020). Additionally, issues of connectivity arose as stable networks and devices were not always accessible for students and teachers. Moreover, the scarcity of physical spaces hindered students' ability to establish dedicated academic environments at home (Pokhrel & Chhetri, 2021). Furthermore, students experienced the constraints of prolonged confinement and social isolation throughout the school year (Maluenda-Albornoz et al., 2021). As a result, autonomy, proactivity, and personal well-being were significantly affected for all individuals involved in education (Maluenda-Albornoz et al., 2021).

In addition to these challenges, specific issues related to class structure and organization needed to be addressed. Class durations were shortened to prioritize the health of students and teachers (Zambrano et al., 2021). Attendance requirements were relaxed, and camera and microphone

use were no longer mandatory. These conditions adversely impacted student participation, academic commitment, and study time (Pérez et al., 2018). Consequently, emergency online teaching disrupted the learning process across all educational settings.

Given the difficult circumstances and the dissatisfaction expressed by students regarding their teachers' lack of digital competence in the year 2020, a group of researchers embarked on a project, focused on utilizing technology and active methodologies in the digital classroom, in order to prevent this from happening again in 2021. This project incorporated didactic digital tools such as video tutorials, animated infographics, and interactive images specifically designed for the participating students. Moreover, various active methodologies, including Immediate Response Systems (IRS), Mastery Paths for formative assessment, and Discussion Forums, were implemented. Furthermore, the project emphasized the utilization of Learning Management System (LMS) platforms, particularly the assessment areas through *Canvas speedgrader*, to enhance and streamline the learning process. LMS platforms (for instance Canvas, Moodle, Blackboard Learn) are websites or applications that offer several benefits, including the creation of learning communities that foster the development of teamwork, communication, creativity, and critical thinking skills (Moreira & Dias-Trinidade, 2020).

Therefore, the primary objective of this innovation project was to enhance the learning experience of lexico-grammatical features among first-year students in an English teaching program at a Chilean university through the use of digital tools and active methodologies during a semester of online classes. Following the implementation, it was crucial to ascertain the participants' perceptions of the introduced changes to their online learning experience.

Literature review

Previous research has examined the efficacy of learning management systems (LMS) in online classes, which became prevalent during emergency remote learning. LMS platforms offer several benefits, including the creation of learning communities that foster the development of teamwork, communication, creativity, and critical thinking skills (Moreira & Dias-Trinidade, 2020). Furthermore, the constant availability of materials and didactic resources on LMS platforms facilitates students' autonomous work (Rahman et al., 2019). However, studies have indicated that teachers' utilization of LMS has been ineffective, primarily due to their lack of digital competences. For instance, Torres et al. (2021) conducted a study revealing that many participants expressed dissatisfaction with online courses, citing their teachers' inadequate skills in working with basic tools.

Furthermore, research on digital tools, defined as multimodal technological resources, has demonstrated various potentials and challenges (Sailer & Sailer, 2021). Creating a safe environment that promotes creativity and critical thinking skills is identified as a significant advantage of digital tools (Moreira & Dias-Trinidade, 2020; Sanhueza-Campos & Díaz-Vargas, 2022). Additionally, electronic assessment has been positively received by students due to its speed and reduced rater bias, which also benefits teachers (Kartsevski et al., 2022; Silva et al., 2021). Video-based digital tools have also proven effective in facilitating comprehensive skill acquisition. However, along with challenges related to the use of digital tools, concerns regarding the quality of online teaching have been reported. Torres et al. (2021) identified three key aspects reflecting negative perceptions: support for students' online learning experience, course planning and organization, and learning monitoring. The study also highlighted students' negative perceptions of their teachers' willingness to receive training on digital tools. Ultimately, as revealed by extensive body of evidence, the usefulness of digital resources depends on the teacher's role and the students' interest (Herrador-Alcaide et al., 2020; UNESCO, 2020).

Research on active methodologies, which involve negotiation processes for problem-solving and knowledge building, has shown positive results, particularly in terms of motivation and engagement in learning (Kang & Zhang, 2020). Active methodologies diverge from traditional, unidirectional knowledge transfer methods and represent a significant pedagogical transformation in higher education (Bailin & Battersby, 2017; Carvalho et al., 2021). Peer assessment, mastery paths, immediate response systems, and discussion forums are among the most popular active methodologies. Crisol-Moya et al. (2020) suggest that these student-centered models promote high levels of learning when students' perspectives are considered in class planning and evaluation design. Students also express positive feedback regarding the use of active methodologies, as they appreciate the shift from a passive to a collaborative learning process (Silva et al., 2021).

Interestingly, research on virtual English language teaching has revealed varying realities. Kamal et al. (2021) examined student perceptions of online English teaching before and during emergency remote learning. The study found that prior to this period, online teaching was more effective than face-to-face classes. However, during emergency remote learning, the effectiveness of online teaching declined to a level comparable to classroom learning. It is important to note that the sudden transition to online settings did not provide teachers with sufficient time for proper e-learning methodology training (Tijani et al., 2021), potentially explaining the prevalence of traditional methodologies in online environments. Virtual English teaching has posed significant challenges for both teachers and students, who have tackled problems as they arise and engaged in learning by doing (Karalis & Raikou, 2020). Moreover, students generally perceive a lack of willingness from their teachers to receive training on the use of technological resources (Sanhueza-Campos & Díaz-Vargas, 2022; Spante et al., 2018), which is a critical aspect in the current digital landscape.

Other action research studies conducted during emergency online teaching have highlighted the significant impact of digital tools on the development of language skills, including reading, writing, speaking, and listening (Syafiq et al., 2021). According to these authors, the use of videos can improve oral communication aspects such as fluency, pronunciation, grammar, vocabulary, and content. Additionally, a study on motivation and student engagement (Putra, 2021) suggests that transferring traditional teaching methodologies to the online classroom results in boredom, which negatively affects student engagement and participation. Furthermore, Herrador-Alcaide et al. (2020) found that the teacher's role as a facilitator of autonomous work is crucial for the success of online instruction. The use of digital tools provides students with time, flexibility, and functionality, which in turn fosters critical thinking and reflection.

Methodology

This action research project was conducted within an English language teaching program at a Chilean university, focusing on first-year students who are enrolled in various courses related to the target language, including pronunciation, grammar, and vocabulary. The project was carried out during 2020 when the classes were transitioned to an online format due to the challenges posed by emergency remote learning. This shift to online learning revealed issues of limited student participation and engagement, as evidenced by the infrequent use of cameras and microphones by the students. Consequently, the classes primarily became one-sided monologues delivered by the teacher, which had a detrimental impact on the students' learning experience. Another significant problem that emerged was the inability to ensure that students were utilizing the target language effectively for vocabulary and grammar acquisition. As a result, the online learning environment lacked significance, and the reliability of assessments

was compromised as students resorted to external aids such as the internet, applications, or seeking assistance from others to complete their online tests. Consequently, a change in methodologies and assessment approaches was necessary. This action research study aimed to address this research problem by exploring the following research questions:

1. To what extent can the implementation of active methodologies and digital tools enhance the learning experience of lexico-grammatical aspects of future teachers of English?

2. What are the perceptions of students regarding the strategies and tools implemented during the intervention?

These research questions guided the entire research cycle, which consisted of four distinct phases: planning, action, observation, and reflection (Burns, 2010). It is important to note that these phases were tailored to suit the specific context and realities of the researchers to address the existing problem.

Planning

Participants

The participants of this study are first-year students of an English teaching program at a Chilean university, enrolled in Introduction to Grammar and Vocabulary Workshop, conducted entirely in the target language. The sample consisted of 19 students (9 male, 10 female) from 18 to 28 years of age, with A2 to B1 proficiency levels, mainly from urban high schools, and having taken their senior year in online mode due to emergency remote learning.

Digital tools

The teaching materials employed in this research comprised a variety of digital tools created by the teacher-researchers. These tools included interactive images, both simple and animated infographics, video tutorials, and interactive slideshow presentations, with support from the Training and Teacher Resources Center of the sponsoring institution. All these materials were specifically designed and developed to cater to the linguistic needs of the participants in this action research project. Interactive images are digital resources that enable users to navigate within the image, zoom in on details, and interact with graphical objects (Gusev et al., 2014). According to Martins and Junior (2021), the use of these digital tools can significantly enhance learning and assessment. Likewise, infographics serve as graphical representations of complex information, facilitating fast and clear understanding of knowledge or data (Bicen & Beheshti, 2017; Newsom & Haynes, 2004). Video tutorials provide step-by-step explanations for specific activities, aiding in the comprehension of concepts and challenging content. Furthermore, they offer anytime accessibility for students (Lembani, 2020). Interactive slideshow presentations enable teachers to prioritize and sequence information in an engaging manner for students (Hullman & Diakopoulos, 2011). Lastly, Canvas SpeedGrader is an assessment tool that enhances feedback on various learning tasks. It allows teachers to provide comments in the form of text, video, audio, or emojis, and students can respond to these comments and receive real-time feedback (Laflen, 2023).

Active methodology materials

Three distinct active methodologies were implemented in this action research project: discussion forums, immediate response systems (IRS), and mastery paths, all embedded on Canvas LMS. Discussion forums create a third space for learning, which exists outside the traditional classroom and promotes interaction among students and with the teacher in a safe and open environment (Kang & Zhang, 2020). IRS, also known as classroom response systems, collect responses from the class and provide immediate feedback, assisting teachers in making

decisions based on students' performance (Gündüz & Akkoyunlu, 2020). Mastery paths allow students to follow personalized learning routes based on their level of mastery of content. For example, a minimum score was established for each formative test, and students who achieved the score could progress to the next content module. In contrast, students who did not meet the minimum score were offered supplementary materials and exercises to reinforce the necessary content and skills, enabling them to retake the test and progress to the subsequent module (Trail-Constant & Abril, 2017).

Research tools

Participants were administered a Google Forms survey, which incorporated multiple-choice questions, five-level Likert scale response questions, and closed-ended questions to gather their perceptions regarding the use of digital tools and active methodologies. The survey questions were developed based on the works of Ames Ramello (2019), Darius et al. (2021), Khan et al. (2021), and Okoye et al. (2021). Additionally, the survey explored other aspects of the students' online learning experience, such as encountered difficulties, advantages and disadvantages of online learning, and overall feelings toward the online learning experience. Lastly, an open-ended question provided students with the opportunity to address any other significant aspects that might not have been covered in the preceding survey questions.

Focus group

Due to the valuable insights expressed in the survey responses, a focus group session was conducted to allow students to further elaborate on their answers. The focus group involved a semi-structured interview, conducted online by a third-party, wherein the questions were formulated based on the most salient aspects revealed in the survey.

Action

To enhance the learning experience, a range of original and specific audiovisual materials were developed for each learning unit. These materials primarily comprised simple and animated infographics, video tutorials, interactive images, e-books, and slideshow presentations. In addition, three distinct active methodologies were employed: Immediate response systems (IRS), mastery paths, and discussion forums.

The Immediate response systems (IRS) involved formative assessments using the Mentimeter app, where students were able to respond to questions related to the class content and skill development. Mastery paths were facilitated through the Canvas platform, enabling students to progress at their own pace. Discussion forums were utilized to practice grammatical items and writing skills. For example, prompts such as "What was your experience in the first year of emergency remote learning?" encouraged students to utilize past tenses, thereby fostering more authentic feedback.

To prevent overreliance on the same resources and maximize the positive effects of teaching and learning, different digital tools and active methodologies were employed in each class session. This approach was implemented twice a week, with each session lasting fifty minutes, over a period of 17 weeks during the first semester of 2021.

Following the completion of the intervention, a digital survey was administered to the participants. The survey consisted of multiple-choice questions and an open-ended question designed to gain deeper insights into the responses provided. Subsequently, the students were invited to voluntarily participate in a focus group aimed at eliciting the underlying motivations behind their survey answers. The focus group was conducted virtually, facilitated by two

trained teacher assistants. One assistant led the discussion, while the other recorded significant topics, agreements, and details expressed during the meeting.

Table 1 *Weekly action plan*

Week	digital tool / active methodology	Content / skill
1	Video tutorial Discussion forum	What's in a sentence?
2	Infographic Mastery paths	Parts of speech
3	Video tutorial IRS	What is done? To whom?
4	Interactive image Discussion forum	Comparing and contrasting
5	Animated infographic Mastery paths	Comparing and contrasting
6	Video tutorial IRS	How things are done
7	Interactive image Discussion forum	Life experiences
8	Animated infographic IRS	Future plans
9	Video tutorial IRS	Knowing a word
10	Animated slideshow presentation Mastery path	Knowing a word
11	Video tutorial IRS	Connotation
12	Animated infographic Mastery paths	Transitive vs intransitive
13	Infographic Mastery paths	Polysemy, homonymy, synonymy, antonymy, hyponymy
14	Video tutorial IRS	Acquisition vs learning
15	Infographic Mastery paths	Acquisition vs learning
16	Video tutorial IRS	Word families
17	Infographic Mastery paths Survey	Hypermedia gloss Google form

Data analysis

Quantitative data analysis involved the application of descriptive statistics to identify patterns in the students' responses (SPSS 29.0). Numerical variables were presented using percentages, means, and standard deviations. Thematic content analysis was employed for qualitative analysis to identify categories and subcategories from the responses provided by the focus group participants and the open-ended question in the survey.

Observation

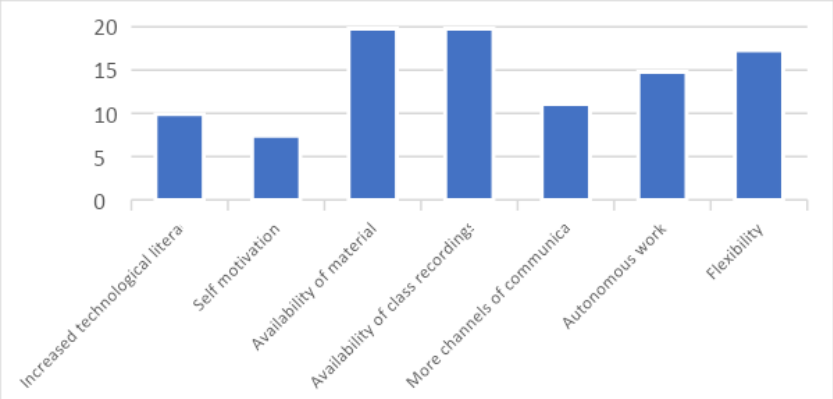
The quantitative results are presented first by means of descriptive tables and figures, followed by the qualitative results to address the research objective in a more organised way. The main aim of this action research study was to enhance the learning experience of lexico-grammatical features among first-year students in an English teaching program at a Chilean university through the use of digital tools and active methodologies.

The survey results indicated that the majority of students (41.05%) reported that their experience during the intervention was just as expected, followed by better than expected (45.79%). A small percentage of students had a negative perception (13.16%). These findings align with the preferences expressed in Question 2, where the most prominent responses were related to the convenience of having materials readily available (40%) and the ability to attend classes from home (40%). Additional responses highlighted the absence of classroom distractions (11.4%) and the opportunity for active participation (8.6%).

In terms of the methodological strategies employed in the course, students expressed varying opinions. On average, the most highly valued strategies were tasks and activities on Canvas *Speedgrader* (μ= 4.42, SD= .99), immediate response systems (μ= 4.32, SD= .80), and mastery paths (μ= 4.26, SD= .64). Discussion forums were the least preferred methodology (μ= 3.84, SD= 1.09).

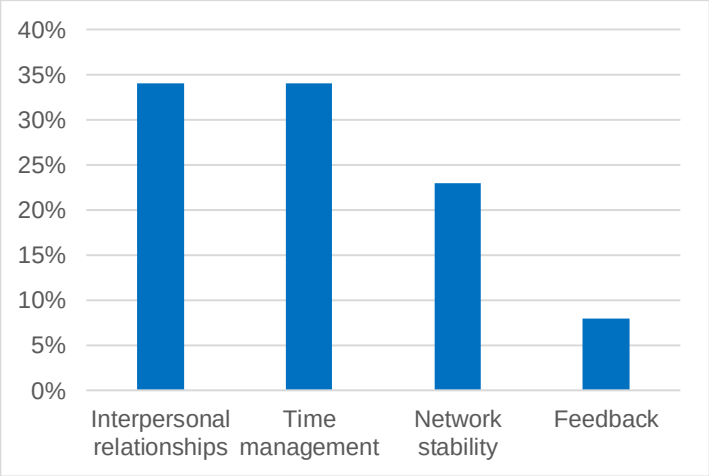
Regarding the advantages of online learning, students highlighted the availability of resources and class recordings, as well as the flexibility in scheduling and attendance requirements, and opportunities for autonomous work (Figure 1).

Figure 1: *Advantages of online learning*



The obstacles encountered by students during the online learning period included difficulties in communication among peers and with faculty. The most frequently mentioned obstacles were challenges in maintaining interpersonal relationships with peers and faculty, managing time between personal and academic life, and ensuring a stable internet connection. Few students cited difficulties in receiving immediate feedback as an obstacle, as observed in Figure 2.

Figure 2: *Obstacles encountered in online learning*

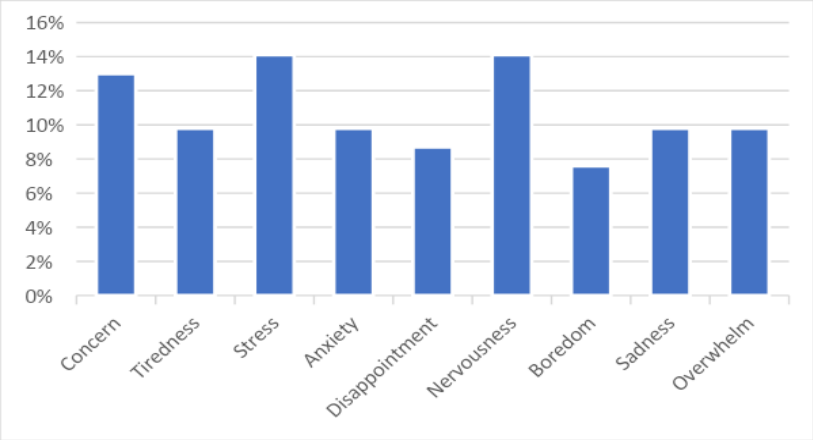


Other challenges reported by students during online learning included frequent interruptions while studying (15.8%), occasional interruptions (57.9%), and the absence of a dedicated study space at home (45%).

Figure 3: *Recurrent positive emotions felt during online learning*

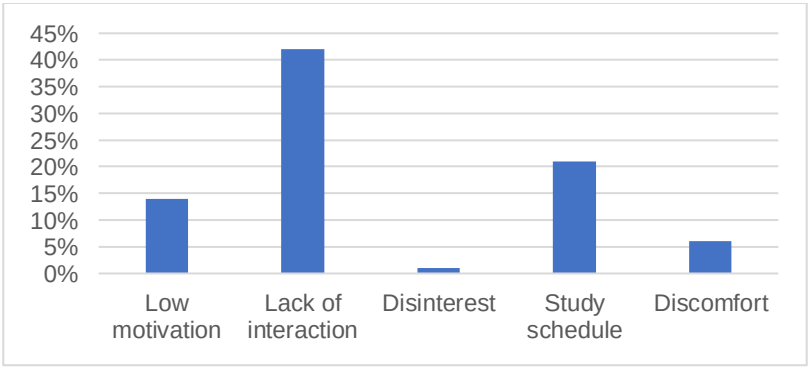
Regarding the emotional dimension, students experienced both positive (Figure 3) and negative emotions (Figure 4) during the implementation of this pedagogical innovation. Positive emotions such as optimism, gratefulness, and motivation were commonly reported, while negative emotions included nervousness, stress, and concern.

Figure 4: *Recurrent negative emotions felt during online learning*



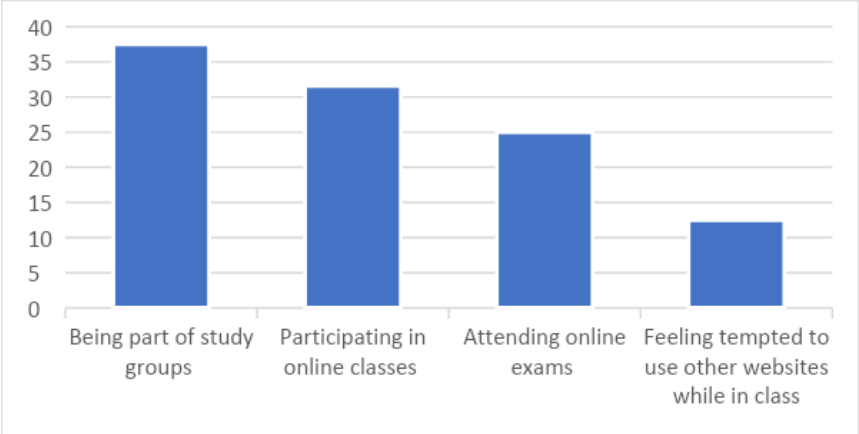
Students identified several factors that negatively affected the implementation of online learning, including limited interaction between students and faculty, difficulties in maintaining a consistent schedule for academic work, low motivation, and disinterest in attending online classes compared to face-to-face classes (Figure 5).

Figure 5: *Perception of students regarding factors that negatively affect online learning*



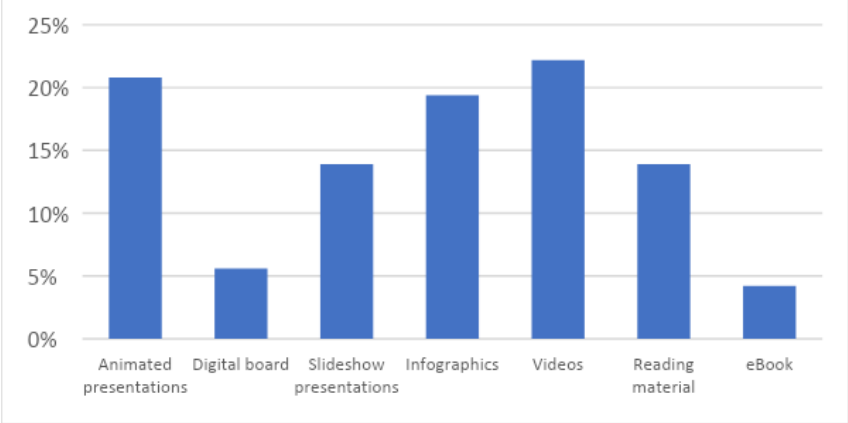
Furthermore, as observed in Figure 6, students encountered challenges during online classes related to difficulties in participating in study groups (37.5%), engaging in online class discussions (31.6%), and taking online exams (25%). A smaller number of participants mentioned feeling tempted to use other websites during class (12.5%).

Figure 6: *Challenges encountered during online classes*



In terms of virtual tools, videos had the most positive effect on student motivation (22.2%), followed by animated presentations (20.8%) and infographics (19.4%). Reading materials and traditional slideshow presentations had a lower positive perception compared to the aforementioned tools but a higher positive perception compared to digital boards and eBooks (Figure 7).

Figure 7: *Virtual tools that motivate students during online learning*



Furthermore, in terms of learning methods, students expressed a preference for individual work over pair/group work. Class discussions were the least preferred methodology. Finally, when asked about their preferred modality for post-emergency remote learning classes, the majority of students (57.4%) expressed a preference for face-to-face classes, followed by a hybrid modality (36.8%), and online learning (5.8%).

Focus group

The focus group discussion provided valuable insights into key areas of interest, such as online learning, comfort, group work versus individual work, and emotions. The participants shared their opinions, providing a deeper understanding of these aspects. The following sections present a detailed account of the focus group discussion.

Positive Emotions

One of the most significant positive aspects of online learning, according to the students, was the availability of class recordings stored on the platform throughout the course, enabling access from any location and at any time. Students expressed their appreciation for this aspect, stating that it allowed them to clarify doubts and catch up on missed classes:

> "…Having access to class recordings allows me to clarify doubts that may arise later, and it gives me the opportunity to catch up when I cannot attend".
>
> ["...el tener las grabaciones disponibles permite aclarar dudas que aparezcan más tarde y da la posibilidad de ponerse al día cuando no es posible asistir"]. (Original report in the L1; translated by the authors).

Individual work was perceived as the most advantageous modality by students, as it allowed them to optimize their time and make autonomous decisions about their work. The difficulty in coordinating virtual meetings, as many students had additional responsibilities at home, contributed to this perception:

> "… Working individually saves time. Having to work in groups makes it difficult to coordinate your times with those of your classmates and distribute the workload. Working individually allows me to follow my own pace according to my time availability".
>
> ["...hacer tareas de manera individual ahorra tiempo. Al tener que trabajar en equipo se dificulta mucho coordinar los tiempos de los demás con los propios y distribuir el trabajo. El trabajar individualmente permite trabajar al ritmo propio de acuerdo con la disponibilidad personal"]. (Original report in the L1; translated by the authors).

Positive emotions reported by students were partially attributed to the interaction they had with their teachers. In the survey, students mentioned feelings of optimism, gratefulness, and motivation. During the focus group, they emphasized the close and supportive relationship with their teachers, who demonstrated empathy, warmth, and flexibility:

> "…the most positive sensation in these subjects is the close relationship with the teachers. Both showed to be empathetic, warm, and flexible".
>
> ["...lo que genera la mayor sensación positiva en las asignaturas es la cercanía de los profesores. Ambos mostraron ser empáticos, cercanos y flexibles"]. (Original report in the L1; translated by the authors).
>
> "…the teachers were always attentive to our needs, both academically and personally".
>
> ["...los profesores siempre estuvieron atentos a las necesidades de los estudiantes, ya fuesen académicas o personales"]. (Original report in the L1; translated by the authors).

Negative emotions

Negative emotions experienced during online classes, as identified in the survey, included nervousness, concern, and stress. Students expressed feeling anxious about participating in classes, fearing making mistakes due to their English proficiency level:

> "…participating in classes is a bit anxiety-inducing, due to fear of making mistakes".
>
> ["...participar en clases da un poco de ansiedad y existe temor a equivocarse"]. (Original report in the L1; translated by the authors).

When discussing post-emergency remote learning classes, students explained their preference for the hybrid modality as the second most popular option after face-to-face classes, relegating online learning to the last place. They mentioned difficulties in commuting to campus, challenges in coordinating schedules between in-person and online classes, and the need for an adaptation process, particularly for students who experienced online education in their final years of secondary school.

> "…for some students it is difficult to get to campus".
>
> ["...Es difícil para muchos estudiantes llegar al campus"]. (Original report in the L1; translated by the authors).
>
> "…It will be difficult to coordinate times between classes that will be face-to-face with the ones that will be online".
>
> ["...Será difícil coordinar los tiempos entre las clases que serán presenciales y las que serán online"]. (Original report in the L1; translated by the authors).
>
> "…an adaptation process will be necessary. Several students had their last years of secondary education online".
>
> ["...Será necesario un proceso de adaptación; muchos estudiantes vienen de cuarto medio online"]. (Original report in the L1; translated by the authors).

Open-ended question

Responses to the open-ended question in the end-of-course survey complemented the focus group discussions and provided additional insights into the students' learning experience. Some of the notable answers included positive feedback on the availability of materials and class recordings, the usefulness and efficiency of the Canvas platform, and the captivating nature of the audiovisual materials provided. Students expressed satisfaction with the materials, particularly infographics, and highlighted their ability to access teachers' presentations when they had doubts.

The question included at the end of the survey was: Please, give us your personal opinion (in English or Spanish) about your own learning experience in either the Vocabulary Workshop or the Grammar Workshop courses that took place this semester in virtual mode. Some of the answers were:

> "My experience in both subjects was good. I learnt a lot and having the material available was also a good method, since, when in doubt, I could get back to the teachers' presentations".
>
> ["Mi experiencia en ambos ramos fue buena, aprendí bastante y tener material al alcance también fue un buen método, ya que, si me surgían dudas, revisaba las presentaciones preparadas"]. (Original report in the L1; translated by the authors).
>
> "My experience learning online this semester was really pleasant. Canvas was really useful and efficient to look for material and do homework".

> ["Mi experiencia aprendiendo online en este semestre fue de los más grata para mí. La plataforma CANVAS me pareció muy útil y eficiente al momento de buscar material y hacer tareas"]. (Original report in the L1; translated by the authors).
>
> "The audiovisual material given for studying was very useful and also very captivating, I enjoyed studying with it. The activities in class were also very interesting, they left me with the feeling of wanting to know more about certain contents". (Original report in the L2).
>
> "The material was great, and better if we talk about the infographics". (Original report in the L2).

In conclusion, the focus group discussion and analysis of the open-ended question in the survey provided deeper insights into various aspects of the intervention, including online learning, work modalities, emotions, and preferences for post-emergency remote learning classes. These findings further support the quantitative data analysis and contribute to a comprehensive understanding of the students' experiences.

Reflection

Based on the findings, it can be concluded that didactic materials developed using digital tools, such as videos and infographics, along with the incorporation of active methodologies, generated a positive perception among students regarding the courses in which this pedagogical innovation was implemented. One area that received considerable praise, not only from a pedagogical standpoint but also in terms of digital competencies, was the engagement with the material (Fernández-Sánchez et al., 2019). Students expressed a greater sense of commitment when the material was specifically designed by their teachers, resulting in increased participation in both online and asynchronous classes (López-Quintero et al., 2017). This was evident in the responses provided by students in the survey open-ended question, where the majority expressed satisfaction with their online learning experience, either meeting or exceeding their expectations. The focus group discussions further reinforced these positive sentiments, with several students expressing similar opinions.

Regarding active methodologies, which were implemented in conjunction with digital tools, the highest-rated methodologies by students were Canvas tasks and assessment through speedgrader on the same platform. This tool optimized the evaluation and correction process, allowing for assessment to be conducted using a computer, cellphone, or tablet. It offered the convenience of including rubrics, annotations, qualitative comments (including emojis), and automatically awarding points and grades to students (Rahman et al., 2020). The second-highest rated methodology was the use of immediate response systems, implemented in this study through Mentimeter. This tool enabled students to respond to questions posed by the teacher using their mobile phones, serving as formative assessment. These questions aimed to monitor students' progress, encourage anonymous participation, and foster interaction among peers. The competitive aspect of this mode also facilitated learning and participation (Situmorang et al., 2020). Another active methodology positively valued by students was the use of mastery paths. These allowed for differentiation in students' progress, tailoring the learning experience through evaluations that determined whether students could advance to the next level or required additional practice on the content before proceeding. The positive feedback on this methodology stemmed from its emphasis on process evaluation, giving students an opportunity to improve their performance (Parra et al., 2018). Furthermore, these student opinions regarding active methodologies align with Maluenda (2021), who suggests that active teaching-learning strategies enhance motivation, facilitate deeper learning, and

provide multimodal learning opportunities that strengthen the development of competencies. Previous research has shown that strategy-based interventions can significantly improve learners' receptive and productive lexico-grammatical knowledge (Sanhueza et al., 2018; Vildosola et al., 2021).

Students reported various advantages of online learning, such as the availability of resources like class recordings and materials. The focus group discussions highlighted this as one of the major strengths of the virtual modality, as class recordings and associated materials could be accessed at any time. The ability to review content by watching the recordings was a significant advantage not possible in face-to-face classes (Basilaia et al., 2020). Flexibility, particularly in terms of schedules and attendance requirements, was another positive aspect emphasized by students. Online classes tended to have shorter duration compared to their face-to-face counterparts. Additionally, the possibility of working individually was seen as advantageous, considering the challenges of meeting in person for group work. Even when face-to-face collaboration was possible, it often resulted in students simply dividing the tasks individually and later assembling them (Fox et al., 2020). While these aspects may seem beneficial to students, they have important academic and administrative implications, especially regarding the enhancement of synchronous sessions through digital tools and the implementation of active methodologies in different courses. In this virtual context, that offers greater schedule flexibility, strategic behavior can greatly benefit students, leading to higher academic achievement by promoting self-control in the learning process, time management, and study planning (Baars et al., 2015; Pérez et al., 2018).

During the implementation of this pedagogical innovation, students reported experiencing both positive and negative emotions. Notable positive emotions included optimism, which students attributed to the teaching materials and teachers (Mishra et al., 2020); gratitude for having audiovisual materials specifically designed for their courses rather than relying solely on internet resources (Efa, 2021; Rahmania & Mandasari, 2021); and motivation towards workshop classes, which stood out due to the use of digital tools and active methodologies that enhanced participation and dynamism during the lessons.

Among the negative aspects, students frequently experienced nervousness, stress, and concern. Nervousness, primarily stemmed from the English language requirements of the classes, which differed from the proficiency levels most students have at the beginning of their first semester. However, reports from the focus group indicated a gradual improvement in this regard over the course of the semester. Similarly, stress was mainly caused by uncertainty regarding participation expectations in class. It is worth noting that these students were first-year university students experiencing their initial tertiary education year online during an emergency remote learning period, without established friend networks, without having met their teachers in person, and fulfilling academic obligations from home, all of which carried negative implications (Fruehwirth et al., 2021). The most commonly reported negative emotion was concern, which can be attributed to the context in which students were invited to participate in this pedagogical innovation, the uncertain scenario posed by emergency remote learning, and the distant prospect of returning to face-to-face classes (Kyne & Thompson, 2020). While these negative emotions were closely tied to the circumstances, it is crucial for teachers to address them in class to facilitate organization and clarity of information and, more importantly, to value and express ideas, as they are as important as the content covered in class (González et al., 2015).

On the other hand, the main challenges encountered by students during online teaching and learning pertained to their relationships with teachers and peers, making it difficult to form study groups and actively participate in classes. Difficulties in developing these relationships

can significantly impact learning, especially considering the collaborative nature of learning that enriches classroom dynamics, fosters discussion, promotes critical thinking skills, and strengthens students' decision-making processes, as also suggested by Silalahi and Hutauruk (2020). Time management also proved to be problematic for students during online learning, as aligning academic work with household and family responsibilities was a challenging task. Limited internet access was another prevailing obstacle, particularly for families residing in rural or semi-rural areas with limited connectivity, which is consistent with Hall et al. (2020). These factors hindered the organization of consistent study schedules. Finally, in terms of post-emergency remote learning classes, students expressed a first preference for face-to-face modality, followed by a hybrid one, which indicates a positive evaluation of the potentialities offered by online teaching and learning through digital tools and active methodologies. Online learning was relegated to the least preferred option.

Looking ahead to future research needs and projections regarding digital tools and active methodologies, an optimistic scenario emerges with numerous possibilities. While digital tools and their applications in general and language teaching have been extensively studied, further research is needed to explore the benefits of combining these tools with active methodologies. The active methodologies that require greater exploration include mastery paths, immediate response systems, and discussion forums (both written and oral). This future research should be conducted within technology-mediated settings in traditional, blended, and online classes. Although this intervention was implemented with university students, it is important to study the effects of active methodologies and digital tools on elementary and secondary students, given that technology is an integral part of their daily lives, which could have a greater impact on both teaching and learning. It is crucial to consider the emotional effects that the implementation of new technologies and methodologies might have on teachers, especially those from older generations who may be more inclined towards traditional approaches.

Conclusions

Based on the findings presented in this study, it can be inferred that the integration of digital tools and active methodologies garners significant favor among students in online educational settings. These approaches exhibit the potential to enhance student engagement with learning materials and foster active participation in synchronous classes. Moreover, the utilization of active methodologies and digital tools facilitates the monitoring of learning progress while strengthening formative and differentiated assessments of students. Notably, the incorporation of original audiovisual materials, as opposed to non-original materials sourced from the internet or other outlets, has been positively received by students, reflecting their appreciation for the efforts invested in instructional design and development. The insights provided by students' comments and opinions affirm that Learning Management System (LMS) platforms contribute to the advancement of online learning, presenting noteworthy advantages that can be effectively leveraged in face-to-face or blended learning environments. Among digital tools, video content emerges as the preferred medium among students, closely followed by infographics for the presentation and practice of course content. In terms of active methodologies, immediate response systems have gained substantial popularity, with Canvas *Speedgrader* ranking second in terms of assessment tools. Mentimeter represents just one example of the various immediate response system applications available, offering the potential to monitor learning progress and encourage secure and active classroom participation. Finally, it is essential to underscore the significance of expediting the transition from traditional classrooms to virtual and digitalized learning environments, an imperative that holds true for tertiary education instructors across disciplines. Prioritizing the enhancement of technology

integration in our pedagogical approaches becomes particularly crucial, especially when preparing future educators.

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