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Research Article

Didactic Strategy to Strengthen Digital Competencies in Intensive Education

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ABSTRACT

The digital divide in intensive adult education limits equitable access to meaningful learning. The objective was to design a didactic strategy to strengthen digital competencies in students of Intensive Higher Basic Education of the U.E. Albertina Rivas Medina. A mixed approach was used with a DigComp questionnaire (ω=0.81) applied before and after the intervention, to 18 students (30-60 years old) with insufficient or satisfactory digital proficiency, and focus groups. The strategy, based on the ADDIE model, integrated Blended Learning, PBL, gamification and collaborative learning. The results showed significant improvements in the five dimensions of the DigComp framework ($p<0.001$). It is concluded that the proposal was effective in enhancing digital skills, promoting autonomous learning and reducing the digital divide in intensive education contexts.

Keywords: Digital competences, Intensive education, Didactic strategy.

1 Introduction

Since 2011, the Ministry of Education of Ecuador has promoted the Basic Education for Youth and Adults (EBJA) program, which is designed for individuals over the age of 18 who have not completed their formal education due to various circumstances. The program offers intensive educational modalities, including: Carrera (2022) has demonstrated that the acceleration of literacy, post-literacy, basic general education (EGB), and unified general baccalaureate (BGU) can be achieved in a more efficient manner.

In the context of curricular modalities designed for the adult population, the increasing integration of technology in the educational sector has underscored the significance of cultivating digital competencies for academic and professional advancement. The integration of Information and Communication Technologies (ICT) and the capacity to methodically seek out and assess information

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are pivotal in enabling educators and students to effectively adapt to rapid technological advancements and evolving social and economic shifts. Structured training programs are imperative to ensure the safe and effective utilization of digital tools, thereby fostering creativity and enhancing learning outcomes (Carneiro et al., 2021; Levano-Francia et al., 2019; López Baldominos et al., 2020; Montero Reyes, 2023; Paredes-Marín et al., 2024). This phenomenon assumes particular significance within the context of Intensive Education, where adult learners who recommend their educational pursuits after protracted periods of interruption encounter challenges with ICTs due to a paucity of practical experience and a concomitant degree of skepticism. This results in a discernible digital divide when juxtaposed with younger generations (Camacho Yáñez et al., 2015; Flauzino et al., 2020).

In the Albertina Rivas Medina Educational Unit, a deficiency in the digital skills of adult students in Intensive Higher Basic Education has been identified in a preliminary and empirical way, through tutor reports and classroom observations. This deficiency manifests itself in limitations to execute technological tasks, little participation in online activities, and lack of familiarity with key digital tools. With respect to this institutional context, the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2019) has indicated that this situation imposes limitations on their potential and hinders their academic progress.

In light of this reality, it is imperative to prioritize the identification and resolution of issues that impede students' ability to function effectively in a digitized world. The objective of the present study is to design a didactic strategy to strengthen fundamental digital skills in Intensive Higher Basic students of the Albertina Rivas Medina Educational Unit. Didactic strategies can be defined as planned and sequenced actions used to promote meaningful learning, including methods and resources that promote active participation, critical thinking, and the relationship between content and context. Furthermore, the integration of technology has been shown to promote both autonomous learning and teamwork (Ahmad et al., 2022; Herrera Gutiérrez and Villafuerte Álvarez, 2023; Martín Díaz and Kempa, 1991; Pardo & Sagredo, 2022; Pereles et al., 2016).

The "Albertina Rivas Medina" E.U. has committed to supporting this research as part of its institutional mandate. Collaboration between teachers and students is crucial for the success of this project. Consequently, students will be equipped to address contemporary challenges, while concurrently acquiring additional knowledge, thereby narrowing the digital divide (Crujeiras Pérez & Jiménez Aleixandre, 2018). Furthermore, the strategy is poised to enhance the quality of education at the institution by promoting more meaningful and effective learning in the digital age.

2 Theoretical foundation

Teaching-Learning Process of Intensive Higher Basic Education

The 2021 Constitution of Ecuador establishes education as an inalienable right and a duty of the state, thereby underscoring its significance throughout one's lifetime. According to the General Regulations of the Organic Law on Intercultural Education (2023), adults and young people in a situation of illiteracy must be offered educational programs adapted to their needs. For this reason, the U.E. Albertina Rivas Medina offers educational programs ranging from literacy to intensive baccalaureate.

The learning process facilitates effective interaction with the environment, thereby enhancing the quality of life (Moreno-Crespo, 2014). Adult education, defined as a continuous process, has been shown to enhance skills and knowledge. Given the unique characteristics of adult learners, including their prior experience, apprehensions, and physical limitations, this pedagogical approach must be tailored to their specific needs. It is imperative that all endeavors are integrated with the established framework, thereby fostering individual initiative and engagement within the community milieu. Diez-Palomar (2009) posits that adult learning is predicated on individual needs rather than on conventional beliefs and methodologies.

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Concurrently, a more participatory and active approach should be employed to facilitate creativity and critical thinking, rather than merely memorizing the material (García García, 2000; Moreno-Fernández & Moreno-Crespo, 2016). The efficacy of this transformation hinges on the integration of technological frameworks, which have profoundly altered the modalities by which we access information, interact, and communicate. This pedagogical approach fosters students' active engagement and enhances their creativity. Furthermore, they are imperative for the management of information and the preparation of students for the digital society (Carneiro et al., 2021; Oseda et al., 2020; Sandobal Verón et al., 2021; Valverde-Crespo et al., 2020).

In summary, it is imperative to transcend the limitations of the conventional classroom and integrate digital methodologies and technologies. These innovations facilitate the development of fundamental practical competencies in a digital milieu, thereby integrating theoretical knowledge with practical application. Consequently, this prepares students to effectively navigate and contribute to the demands of contemporary society.

Didactic Strategy

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In summary, it is imperative to transcend the limitations of the conventional classroom and integrate digital methodologies and technologies that facilitate the development of fundamental practical competencies in a digital environment, thereby integrating theoretical knowledge with practical application and preparing students to meet the challenges posed by contemporary society. Conventional teaching methods have been identified as exhibiting an unidirectional transmission of information, which is not the most efficacious approach to fostering the development of digital competencies in students (Torres & García, 1997). Nevertheless, novel pedagogical approaches have emerged to enhance this methodology by more efficaciously integrating learning and incentivizing the achievement of educational objectives.

It can be posited that these strategies function as instruments that guide educational actions so that they are aligned with the purposes of the institution and, concomitantly, promote the development of students' competencies. To ensure efficacy, these models must be adapted to factors such as the training cycle, the complexity of the problem, and the context (Campusano & Días, 2017). Furthermore,

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they should be regarded as psychopedagogical instruments that facilitate meaningful learning (Ribadeneira Cuñez, 2020, p. 244). These strategies have been shown to facilitate the recognition and application of content, as well as to provide practical tools for skill development. In rural environments, the implementation of active-participatory strategies is recommended to promote creativity and autonomy (Bustos, 2014).

Innovations such as Problem-Based Learning (PBL) and collaborative learning have proven to be highly effective. Collaborative learning has been shown to promote both transversal and specific skills, while PBL allows students to implement, plan, and evaluate projects with real-world application (Colorado-Ordoñez & Gutiérrez-Gamboa, 2016; Oseda et al., 2020).

Concurrently, both Blended Learning and gamification have demonstrated efficacy in the educational sector. Gamification, on the other hand, is predicated on games to encourage student participation and motivation (Acosta et al., 2019; Bourqaiba, 2023). Blended Learning, in contrast, is a fusion between face-to-face and online classes that provides a more personalized and flexible approach (Bourqaiba, 2023).

In summary, the integration of creative approaches and conventional methods, adjusted to the particularities of the students, is essential to enhance digital skills in intensive education. This integration ensures a more relevant and successful learning process.

Basic Digital Skills

In the digital age, the integration of technologies in learning is imperative, as young people use them extensively in their daily lives (García-Martín & Cantón-Mayo, 2019). This underscores the necessity to cultivate digital competencies across all strata of education, inclusive of adult education. Digital competencies are defined as the set of knowledge, technical skills, attitudes, values, and emotions necessary to use technologies safely, critically, actively, and effectively. These competencies range from the ethical and autonomous management of information to its conversion into knowledge and communication through technological tools (Ministry of Education, 2021; Ramirez et al., 2022; Sandobal Verón et al., 2021; Santos Jiménez et al., 2021; Valverde-Crespo et al., 2020).

These competencies encompass both fundamental skills, such as the utilization of digital devices and online applications, and advanced competencies, including the application of artificial intelligence, big data analysis, and machine learning. These advanced competencies are imperative for effectively addressing contemporary technological challenges (Ministry of Education, 2021).

The enhancement of these digital competencies necessitates the effective integration of technological tools within the educational process. A growing body of research has demonstrated the efficacy of tools such as interactive platforms (e.g., Prezi, Genially, Moovly, PowToon) and gamification applications (e.g., Quizizz, Quizlet) in facilitating learning and enhancing academic performance (see Sandobal Verón et al., 2021; Trejo, 2019). However, the efficacy of these tools is contingent upon their effective integration within pedagogical practices, which must take into account the strengths and limitations of each tool (Colorado-Ordoñez & Gutiérrez-Gamboa, 2016).

The cultivation of these competencies enables students to confront the challenges posed by the digital landscape and engage proactively in their respective communities. This process not only expedites access to information and communication but also fosters the development of meaningful interpersonal relationships and facilitates adaptation to a continually evolving learning environment (Quispe Sairitupa, 2023; Zaid et al., 2021). Digital competencies encompass fundamental skills integral to a comprehensive education, including information and data literacy, communication and collaboration, content creation, safety, and problem-solving in the digital environment (Salguero et al., 2024).

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3 Methodology and results

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The present study employs a mixed-methods approach, integrating both qualitative and quantitative research methodologies. The qualitative section of the study examines students' experiences and views on the use of digital tools, while the quantitative section seeks to describe and assess the change in digital skills before and after an educational intervention. According to Hernández-Sampieri and Mendoza (2018), this approach facilitates a more comprehensive understanding of the subject under study by integrating numerical data with subjective and detailed information.

The European DigComp competence framework has been utilized to structure and assess these digital competences. This framework provides a standardized reference for evaluating digital skills in five key areas: information and data literacy, communication and collaboration, digital content creation, security, and problem-solving.

The population of this study consists of students enrolled in Intensive Higher Basic Education at the Albertina Rivas Medina High School. For the current academic year, the student population is comprised of 33 individuals enrolled in the 8th and 10th grade levels, with a distribution of 16 students in 8th grade and 17 in 10th grade. It is important to note that the institution did not offer the level corresponding to 9th grade in the 2024-2025 school year.

The sample was selected through non-probabilistic sampling, with the application of inclusion and exclusion criteria. To this end, an online questionnaire was developed through Google Forms and disseminated among the WhatsApp groups of each course. The instrument was divided into two sections. The initial delineation encompassed an age range from 30 to 60 years, as evidence has demonstrated that students under the age of 30 exhibit superior proficiency in digital tools. Consequently, students who satisfied this criterion were eligible to proceed to the subsequent stage.

As illustrated in Figure 1, in the 8th grade of Intensive Basic Education, three students were under 30 years of age, and 13 were between 30 and 60 years of age. In the 10th grade, nine students were under the age of 30, and eight of these students met the age criteria. A total of 21 students were selected subsequent to the implementation of the initial filter. The cultivation of these competencies enables students to confront the challenges posed by the digital environment and engage proactively in the community. This is due to the fact that it not only facilitates access to information and

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communication, but also contributes to the maintenance of meaningful interpersonal relationships and the adaptation to a constantly evolving learning environment (Quispe Sairitupa, 2023; Zaid et al., 2021). Digital competencies encompass fundamental skills integral to a comprehensive education, including information and data literacy, communication and collaboration, content creation, safety, and problem-solving in the digital environment (Salguero et al., 2024).

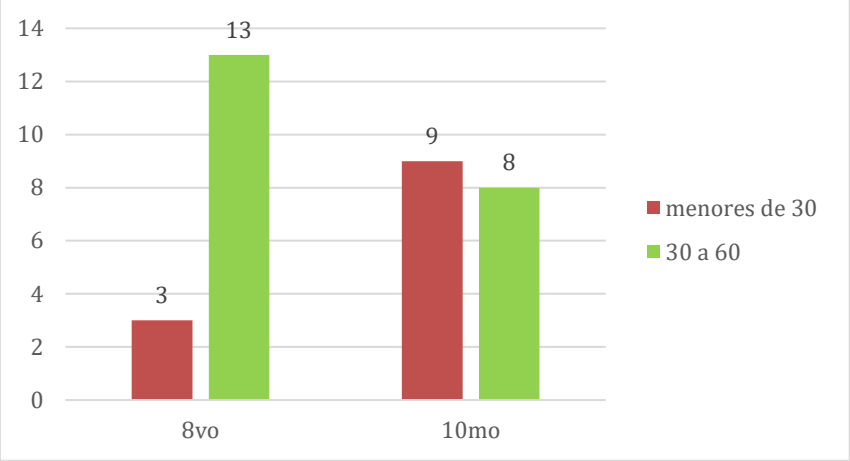

Figure 1. Age range of intensive high school students

The second criterion corresponded to the level of digital skills. Only those students whose level was classified as insufficient or satisfactory were considered. The results of the second section of the questionnaire showed that, of the 21 students previously filtered by age, 18 met this second criterion (Figure 2), thus constituting the final sample of the study and the experimental group with which the didactic strategy was carried out.

The questionnaire was composed of 19 questions, each with a five-choice Likert-type response scale, where the lowest value was 0 and the highest was 4. Therefore, the total possible score of the instrument was from 0 to 76 points. To facilitate the interpretation of the results, the scores obtained were transformed from continuous variable to ordinal, establishing three levels of basic digital competence:

1. **Insufficient**: Lack of basic digital skills (0-25 points).
2. **Satisfactory**: Limited but functional management of basic skills (26-50 points).
3. **Outstanding**: Reliable mastery of basic digital skills (51-76 points).

To ensure the validity and reliability of the instrument, McDonald's omega coefficient (ω) was calculated, considering the assumptions necessary for its application, such as the relationship between the questions and their link to the same topic. In this case, the questionnaire was designed to assess digital skills through interrelated questions. The answers obtained showed sufficient variation and coherence, which allowed us to affirm that the conditions required to apply this statistic are met. The analysis, carried out with the Jamovi software, yielded a value of 0.81, which indicates a very good value of reliability of the instrument according to Colorado Romero et al. (2025).

Since the selection focused only on students who had an insufficient or satisfactory level of digital skills, the sample can also be classified as a convenience type (Arias-Gómez, 2016).

Due to the small sample size (18 students), a pre-experimental design of a single group with pre-test and post-test was chosen, as has been done in previous research by Oseda et al. (2020) and Ramos Vera and Ramos Vera (2021).

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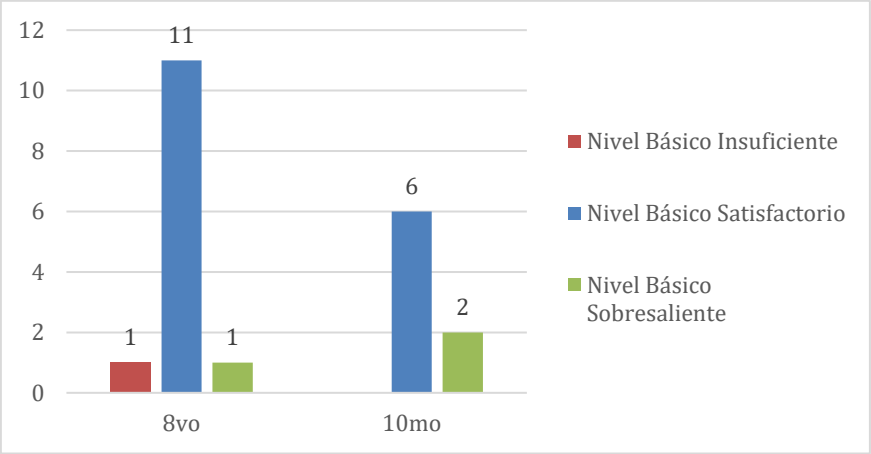

Figure 2. Basic digital skills level

As a result of the pre-test of the 18 selected students, it is highlighted that:

1. In their first dimension of information and data literacy, eight of the participants (frequently and always) conduct online searches using search engines. However, only 10 students answered that they usually consult various sources of information while browsing the web. Regarding the organization and storage of digital files, nine responded that they do it occasionally. And finally, for the retrieval of content saved online, they showed mixed results, four people agreed with it and another five expressed their disagreement (Figure 3).

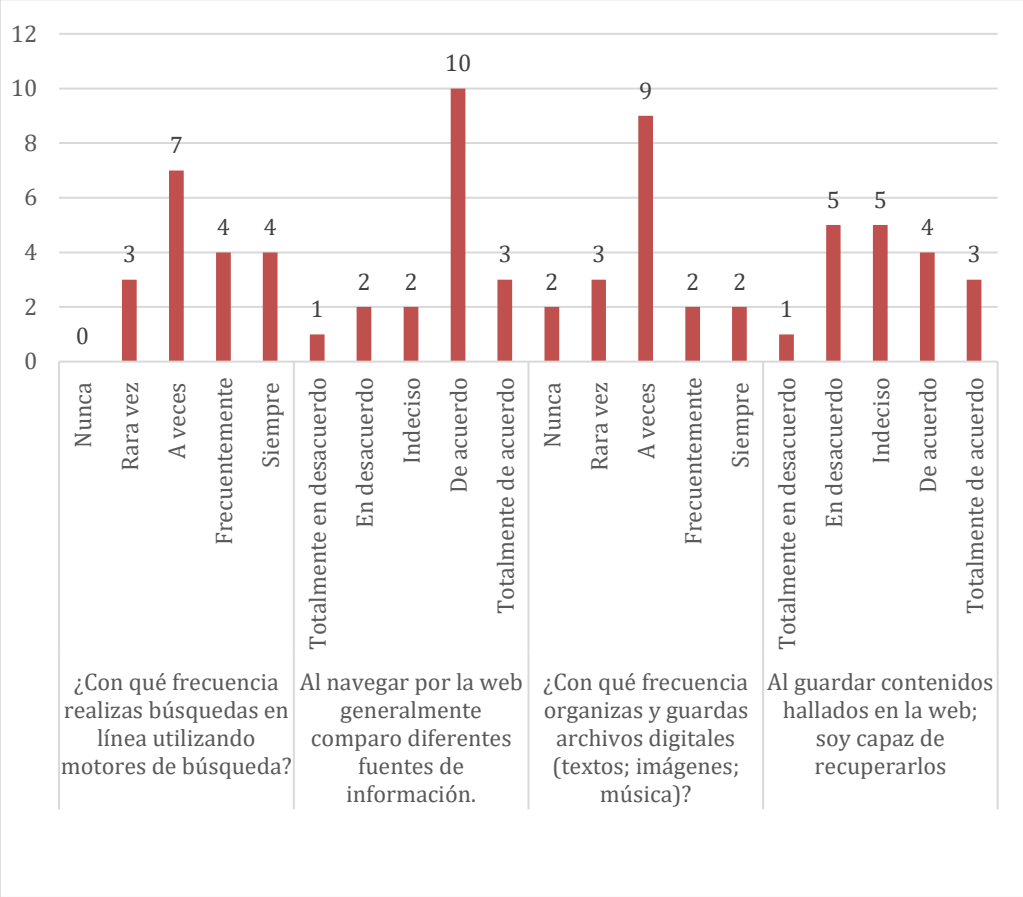

Figure 3. Pre-test results of the "Information and Data Literacy" competition

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2. Regarding the second dimension that refers to communication and collaboration, most of the participants (17 out of 18) responded that they use email and mobile phones to communicate. However, when indicating their level of comfort when using advanced digital communication features, their answers vary, as seven people feel "quite comfortable", while five are between "not at all comfortable" and "not at all comfortable". The frequency of sharing information and collaborating on digital content creation is low, with 12 indicating that they do so between "sometimes" and "rarely." In addition, 11 participants indicate that they "sometimes" use online services to interact with institutions, although collaboration in the creation of digital content is an area that requires attention, as 11 do so "sometimes" and two people "never" (Figure 4).

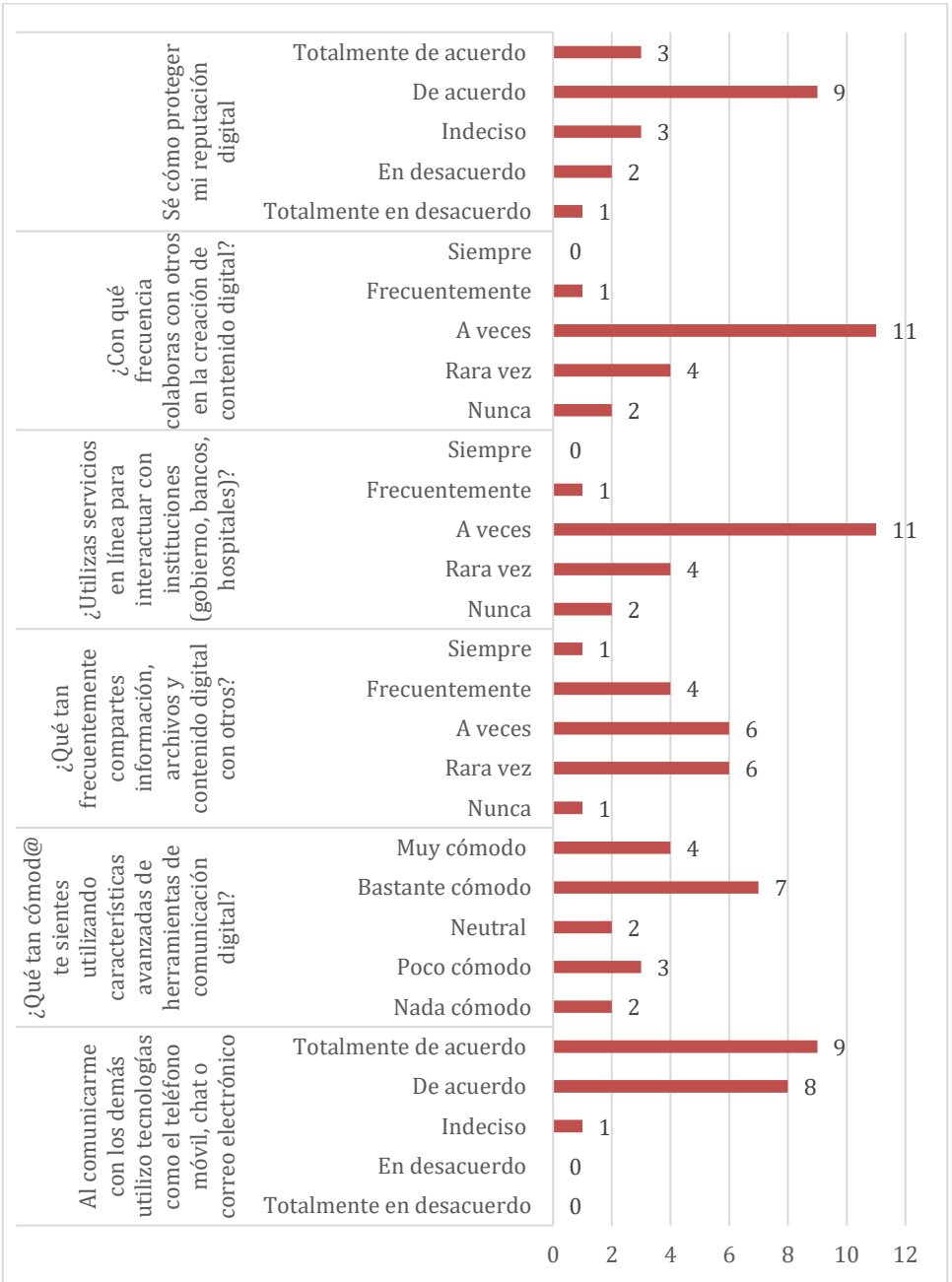

Figure 4. Pre-test results of the "Communication and Collaboration" competency

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3. In their third dimension in digital content creation, the majority of participants (seven) create and edit content "sometimes," but nine do not feel confident making changes to others' content. Copyright and licensing awareness is diverse, with seven participants seeing themselves as "aware," but there is also a sizable group (seven) who feel "unconscious." This indicates that more education is required in this area (Figure 5).

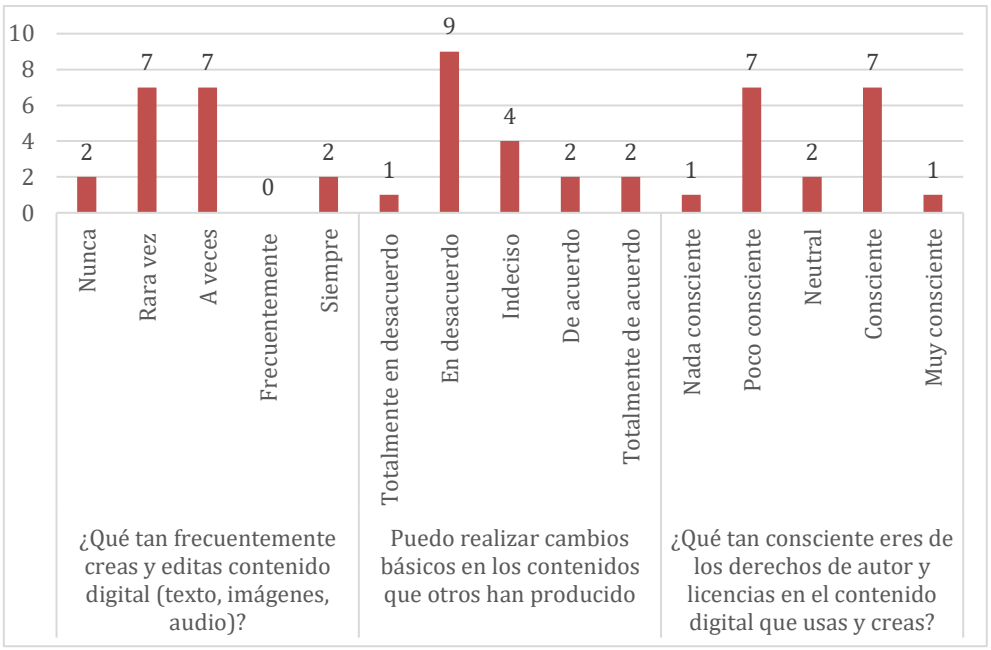

Figure 5. Pre-test results of the "Digital Content Creation" competition

4. In its fourth dimension of digital security, it is evident that the majority (nine) use basic steps to protect their devices, although only two feel adequately informed about the regulatory measures of privacy of digital services. The ability to balance the use of digital technologies with physical and psychological well-being is high, with 11 participants rating themselves as "good" (Figure 6).

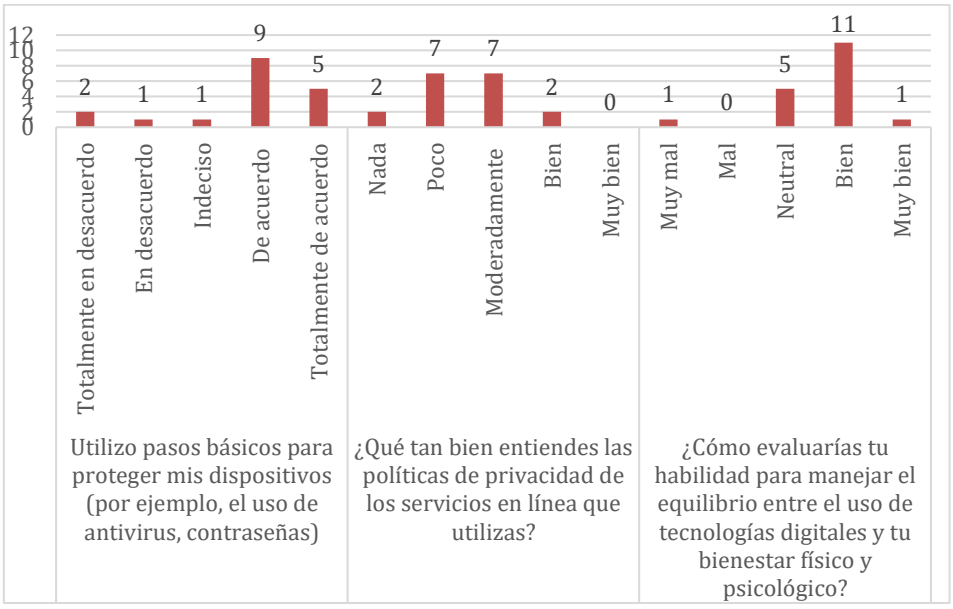

Figure 6. Pre-test results of the "Digital Security" competition

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5. Finally, in the fifth dimension in problem-solving, six participants feel capable of solving technical problems on their own, but eight do not feel confident in this area. Searching for tutorials or guides online is common, with eight indicating that they do so "sometimes." The willingness to experiment with new digital tools is high, with 10 participants agreeing that they like to do so (Figure 7).

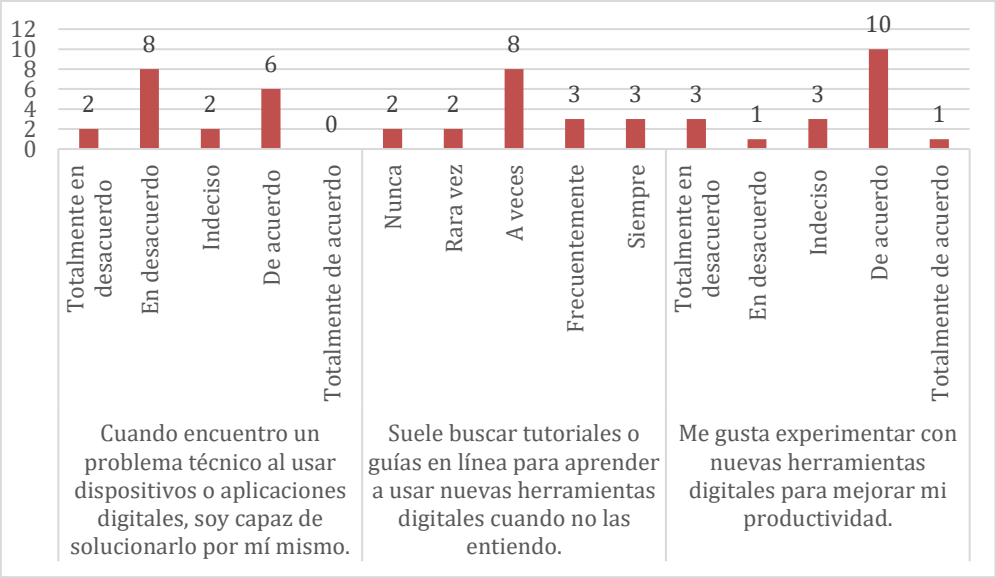

Figure 7. Pre-test results of the "Problem Solving" competition

In addition to the quantitative analysis, two focus groups of nine students each were formed, randomly selected from the sample. These focus groups were organized with the aim of gaining a more detailed understanding of students' perceptions and experiences about the use of digital tools, following the approach of Lara et al. (2022).

Based on the focus groups carried out, the students mentioned that the platforms they frequented the most for their educational tasks were WhatsApp, Google and Pinterest. They also expressed concern about possible deception or uncomfortable situations on social networks. However, they showed a great interest in acquiring knowledge and using new technologies to be able to support their children and not depend on third parties to carry out their tasks.

The results reinforced the numerical data on the lack of digital skills, as their views on their lack of confidence and experience with technology are consistent with the low levels in all areas examined.

Didactic strategy

Triangulation revealed that it is important to design strategies that go hand in hand with the key areas of the DigComp framework, that integrate methodologies that build student confidence, and that take into account the challenges of intensive education, such as limited time or the difficulties that students have on the use of technology.

The didactic strategy proposed to strengthen the basic digital competencies of students of Intensive Basic Education of the Albertina Rivas Medina Secondary School is justified in teaching methods that consider the characteristics and needs of adult students. Diez-Palomar (2009) highlights the need to connect learning with students' previous experiences and personal and professional context. For his part, García García (2000) highlights the importance of creative problem situations that are contextualized in the reality of students and are oriented to solve projects with the technological tools that are already used by students in life or work.

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In addition, the use of visual resources such as illustrations, proposed by Tapia and Arteaga (2012), contributes to the effective coding of information and improves the understanding of technological concepts. On the other hand, Moreno-Fernández and Moreno-Crespo (2016) highlight the importance of taking into account adults' perceptions of their learning difficulties in order to adapt educational strategies effectively. Thus, the didactic proposal combines the design of contextualized problem situations, the use of visual resources and the consideration of the individual needs of adult learners, with the aim of strengthening their basic digital skills in a meaningful and contextualized way.

As previously indicated, the strategy was applied in the experimental group, where the results of the questionnaire and the contributions obtained in focus groups were combined to adjust the teaching to the demands of the students. This is based on Blended Learning, including Gamification, Collaborative Learning and PBL. This blended learning is effective for adult education and represents an innovative approach, generating practical and accessible learning opportunities, and also fosters broader skills in students (Bourqaiba, 2023).

The strategy was organized according to the ADDIE instructional model, which includes five phases: Analysis, Design, Development, Implementation and Evaluation. Over the course of four weeks, activities were developed that address the five areas of the European DigComp framework: data literacy, communication and collaboration, content creation, digital safety and well-being, and problem-solving. The activities were implemented on the Moodle platform, combining synchronous sessions with audiovisual materials, interactive resources, digital games, collaborative forums and practical activities.

A general outline of the didactic strategy is shown in Figure 8, while Table 1 details its complete structure, including the activities developed, the topics addressed and the methodologies applied:

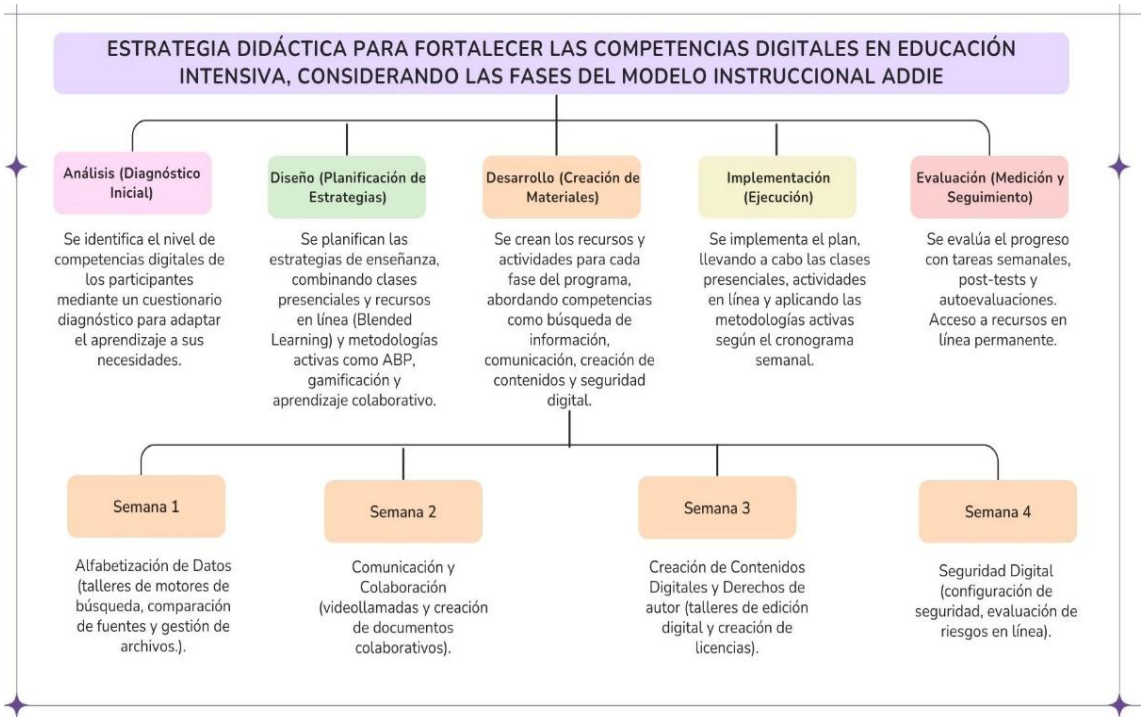

Figure 8. Outline of the Didactic Strategy to Strengthen Digital Competencies in Intensive Education, considering the phases of the ADDIE instructional model.

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Table 1. Didactic strategy implemented considering PBL, gamification and collaborative learning.

Week	DigComp Competition	Main activities	Applied Methodologies
Week 1	Information and Data Literacy	**Session 1**: Introduction to Search Engines. ▪ Practical activity: Perform effective searches on Google. ▪ Game (Gamification): "Quick Search Challenge" on Quizizz. **Session 2**: File Organization and Management. ▪ Educational video about Google Drive. ▪ Practical activity: Classifying, renaming and organizing digital documents. ▪ Forum: "Importance of Digital Organization".	**Gamification** (Quizizz) **PBL**: Solve online search challenges. **Collaborative Learning:** Exchange of good practices in the forum.
Week 2	Communication and collaboration	**Session 1**: Use of communication tools. ▪ Practical activity: Simulation of group video call. ▪ Forum: Experiences using digital tools. **Session 2**: Online services and digital reputation. ▪ Practical activity: Navigating and carrying out online procedures (government, banks). ▪ Reflective activity: Taking care of digital reputation. ▪ Forum: "Online services and their impact".	**Collaborative**: Group simulations. **PBL**: Solving real problems with governance platforms. **Active reflection**: Digital reputation.
Week 3	Digital Content Creation	**Session 1**: Content editing. ▪ Practical activity: Create a digital invitation from scratch. ▪ Forum: "Impact of digital content". **Session 2**: Copyright and licensing. ▪ Explanatory video on Creative Commons licenses. ▪ Practical activity: Apply licenses to own content. ▪ Game (Gamification): Quizizz on copyright.	**PBL**: Design useful and applicable content. **Gamification**: Interactive game about licensing. **Collaborative**: Review and feedback among peers.
Week 4	Digital security and well-being	**Session 1**: Device Protection. ▪ Practical Workshop: Enabling Two-Factor Authentication. ▪ Simulation of Common Cyberattacks. **Session 2**: Digital Risk Assessment. ▪ Practical Activity: Phishing Simulation. ▪ Final Quiz (Quizizz).	**PBL**: Solving digital risk scenarios. **Gamification**: Interactive quizizz about security.

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Week	DigComp Competition	Main activities	Applied Methodologies
		▪ Final Activity: Digital Portfolio with Evidence.	**Reflection**: Digital well-being.

The "problem-solving" competition is immersed in several activities in the different weeks. At the end of the course, the post-test was applied through Google Forms for the evaluation stage; for which the same questionnaire used as an input tool was used, which facilitated the obtaining of conclusions about the investigated group.

As a result of the post-test, the following output were obtained:

1. There is a great improvement in the "Digital Literacy" competency, given that virtually all participants conduct online searches on a regular basis; 10 of them do so "frequently" and six "always". Likewise, the habit of contrasting sources of information is solidly installed, with 10 people "Totally agree" and eight "Agree". In relation to the organization and storage of digital files, eight participants indicated that they always organize and save files, while seven do so frequently. Regarding the ability to retrieve stored content, 11 people stated that they "strongly agree" with their ability to do so (Figure 10).

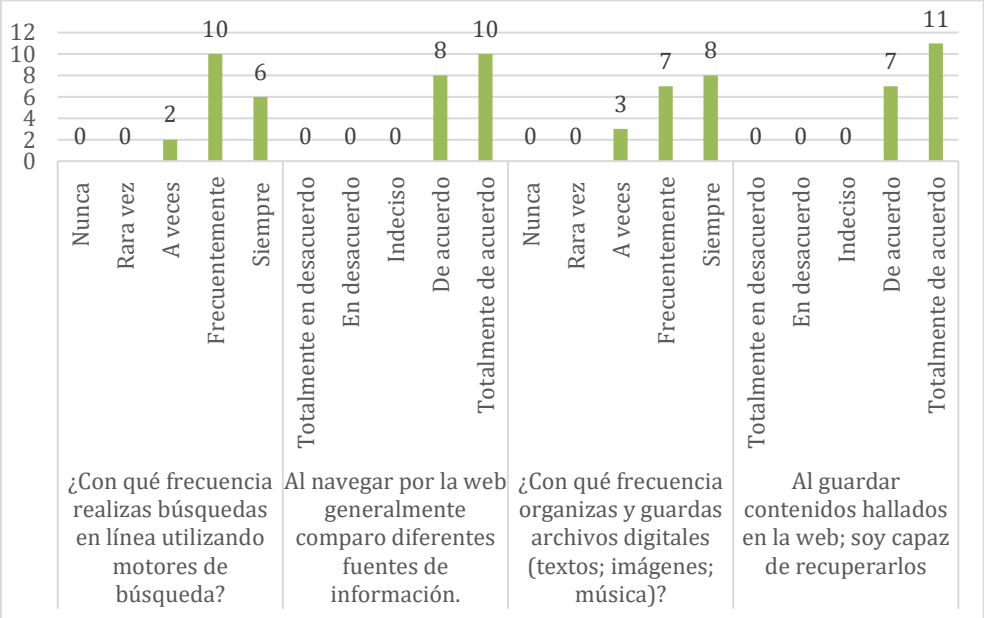

Figure 9. Post-test results of the "Information and Data Literacy" competition

2. The students presented a high use of communication technologies. 14 people expressed "Strongly Agree" with using tools such as mobile phones, email to communicate or chats. In addition, nine said they felt "Very comfortable" and another nine "Quite comfortable" when employing advanced digital communication features. In terms of collaboration, eight people frequently share digital content with others, and four always do so. Interaction with online services, such as those of government or banks, is also remarkable: five people do it all the time, and five frequently. Finally, six participants declared themselves "Strongly Agree" on knowing how to protect their digital reputation, while another six answered "Agree" (Figure 11).

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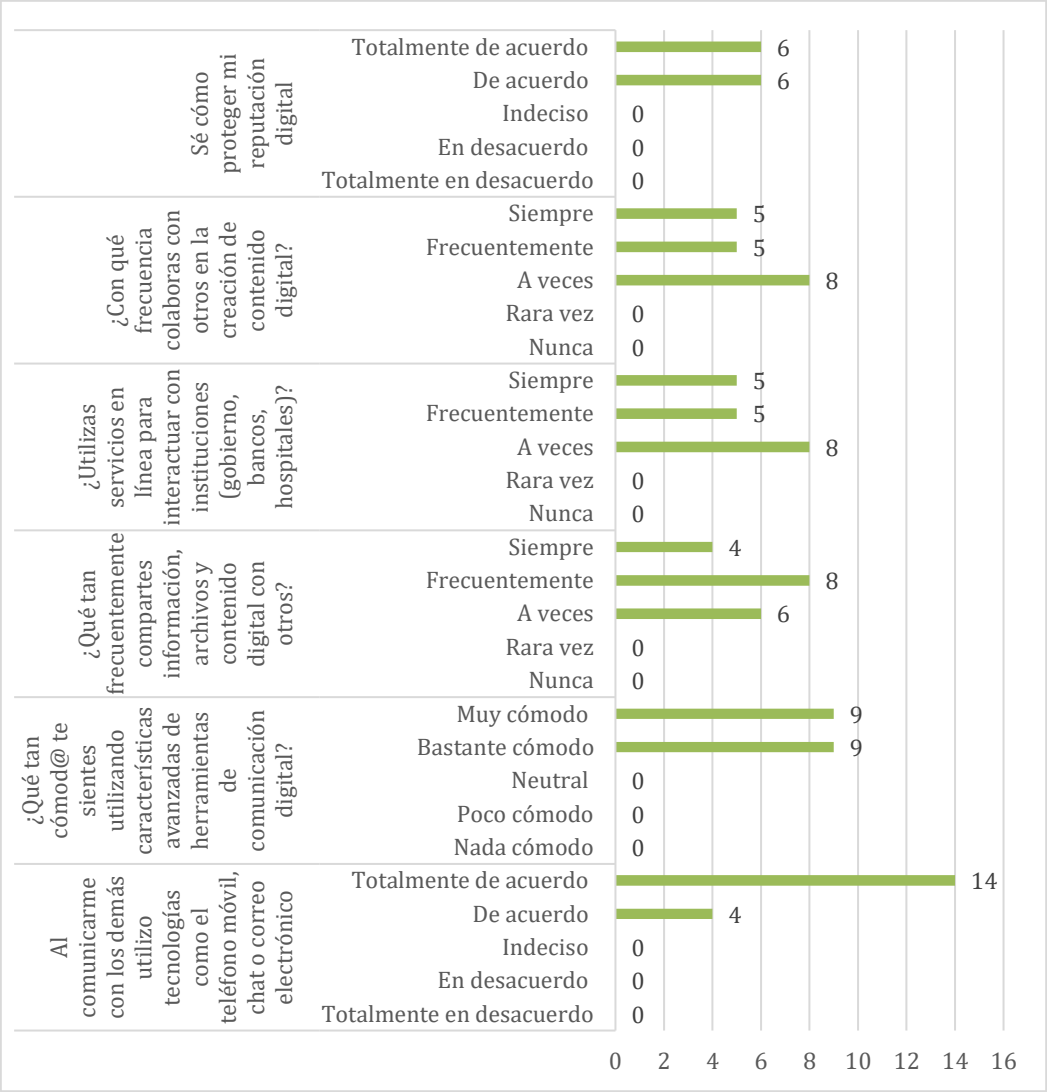

Figure 10. Post-test results of the "Communication and Collaboration" competency

3. As for digital creation and editing, a high level of digital creative activity is reflected, 12 students do it "Frequently" and six "Always". In terms of the ranking of "Agree and Strongly Agree" regarding their ability to make basic changes to digital content produced by others, this was 11 and seven participants respectively. Similarly, participants showed more awareness of copyright and licensing, with eight being "Very Aware" and 10 "Aware" (Figure 12).

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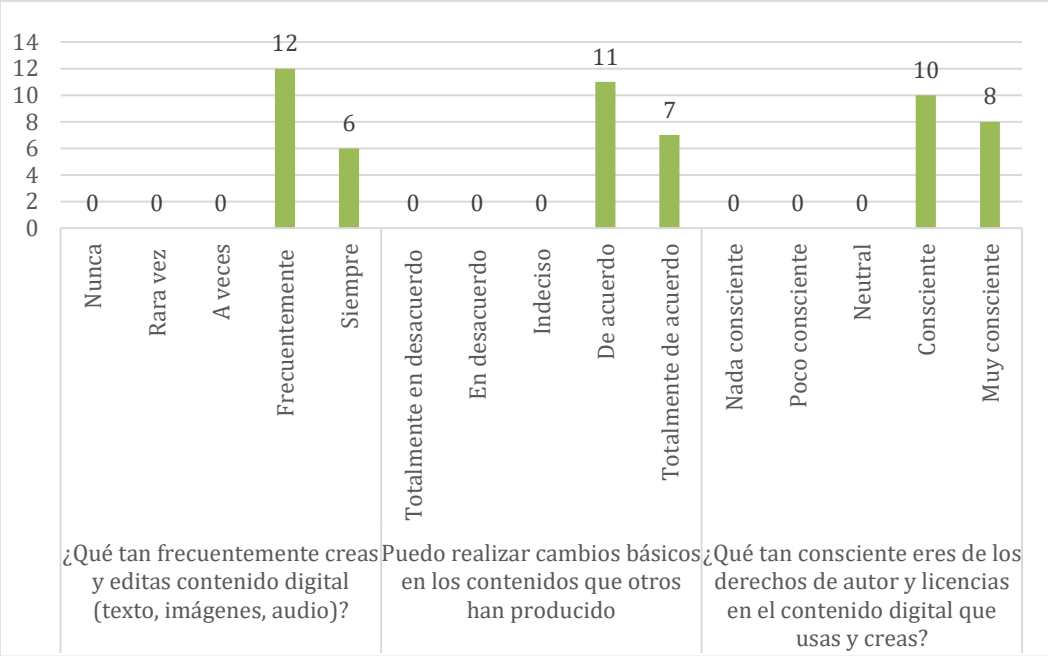

Figure 11. Post-test results of the "Digital Content Creation" competition

4. Participants demonstrate better understanding and application in digital security. 13 of them responded that they "strongly agree" with using basic measures such as antivirus or passwords to protect their devices. In addition, 12 indicated that they understood "Good" and six "Very Good" the privacy policies of the online services they use (Figure 13).

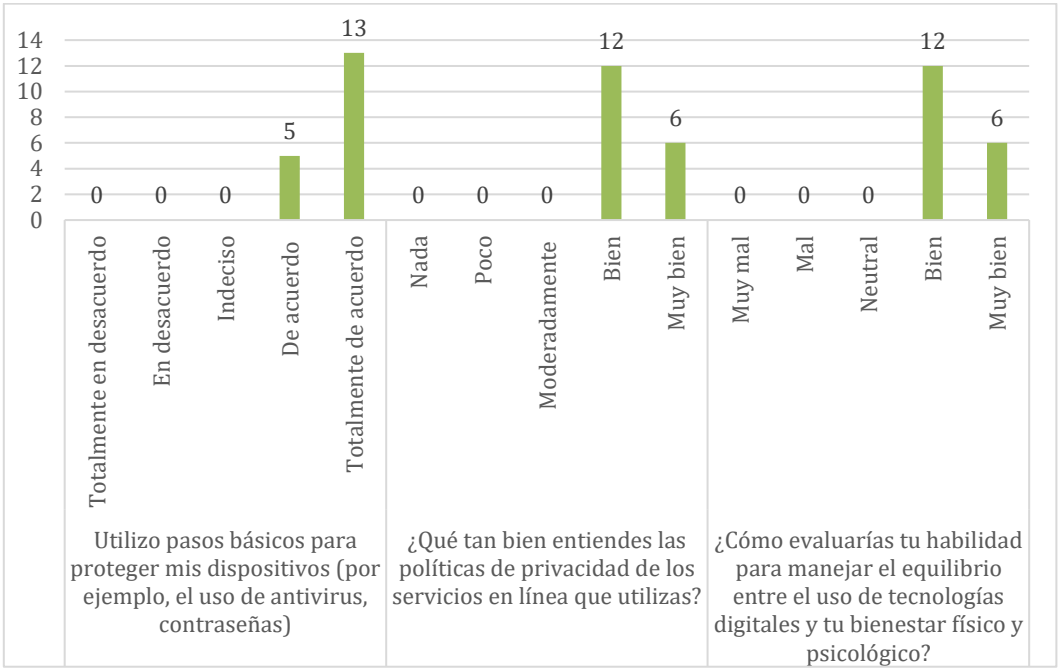

Figure 12. Post-test results of the "Digital Security" competence

5. Regarding the ability to solve technical problems, eight participants indicated that they "Agree" and two "Strongly Agree" with their ability to deal with technical problems independently. The

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application of online tutorials is common; nine of them use it frequently and nine said always. 11 "Strongly Agree" about trying new digital tools to be more productive, and seven "Agree" (Figure 14).

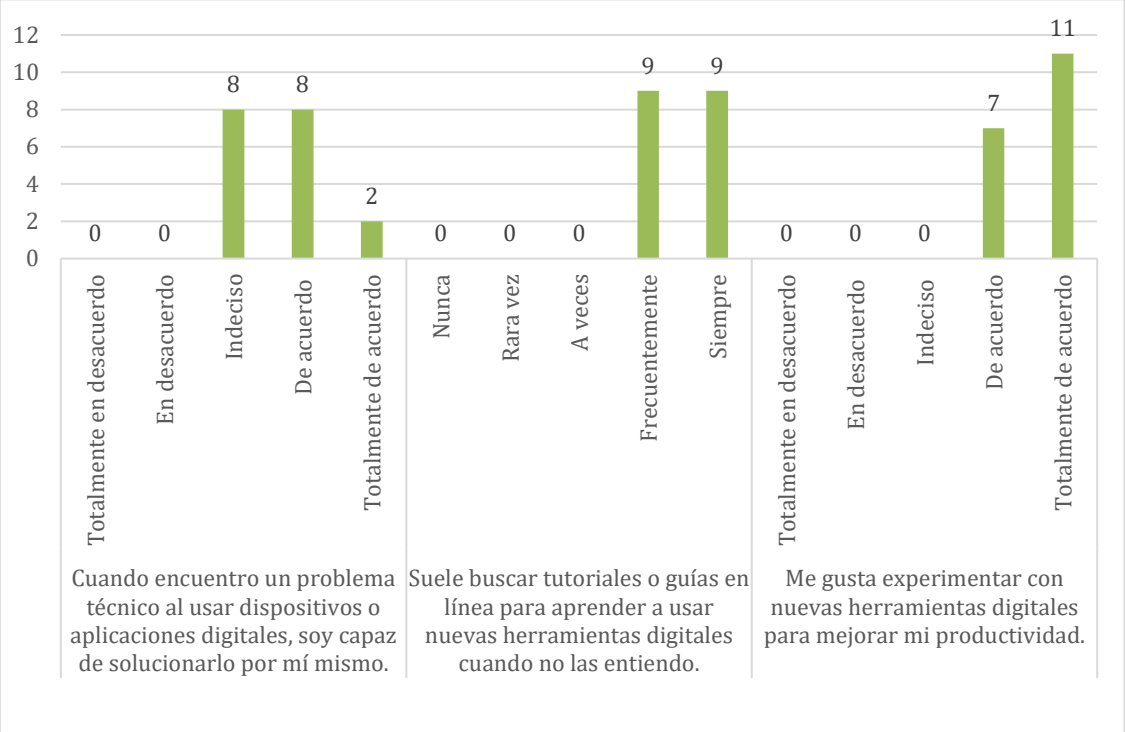

Figure 13. Post-test results of the "Problem Solving" competition

When comparing the results of the pre-test stage against the post-test stage, the following stand out:

1. A relevant change in all responses is observed in the competence of information and data literacy. In the online search, 10 people searched "Frequently" in the post-test stage compared to the pre-test stage (four). In comparison of information sources, the majority changed from "Agree" (10) to "Strongly agree" (10). The organization and storage of digital files, in the pre-test stage, is sometimes carried out nine; while the post-test stage, the majority (15) performs it "Frequently" or "Always". Finally, in the ability to retrieve saved content, the number of students who "agreed" (four) in the pre-test increased to "strongly agreed" (11) in the post-test (Figure 15).

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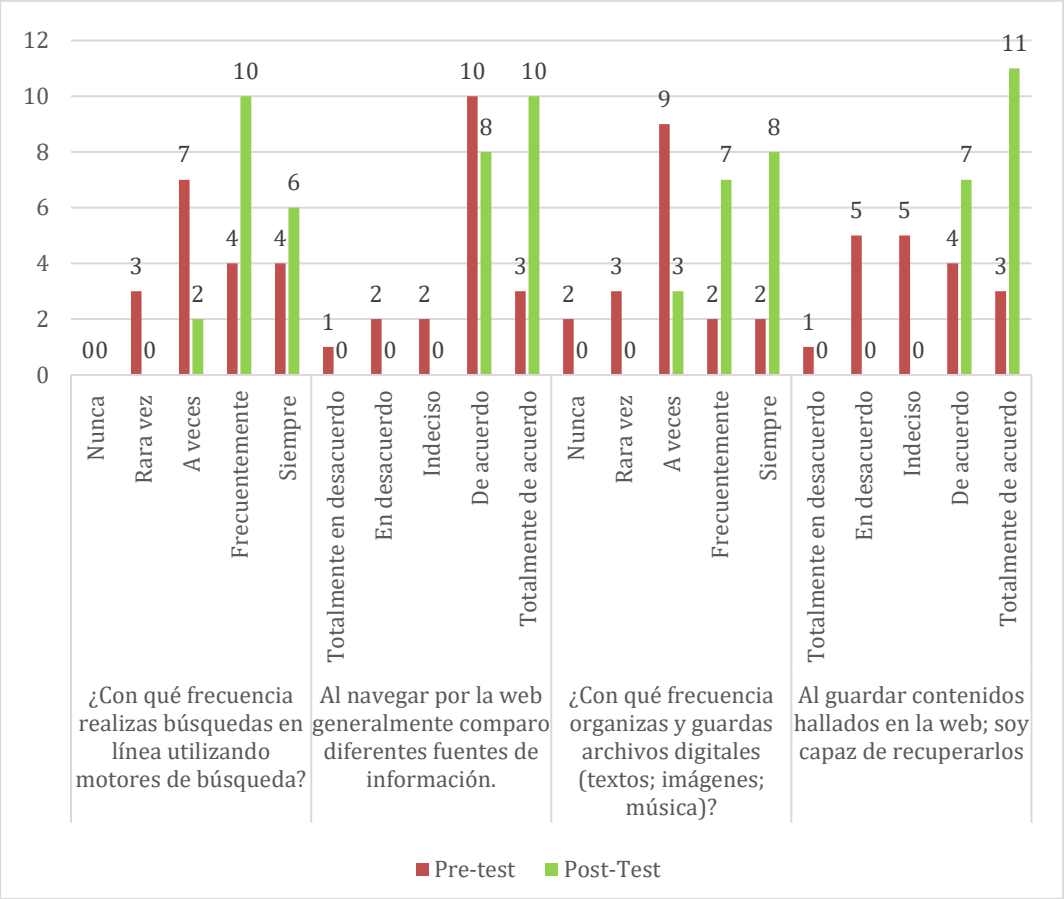

Figure 14. Comparison of pre-test and post-test results in Information and Data Literacy

2. In the communication and collaboration competence, an improvement in the use of communication technologies was analyzed. In the pre-test, 9 students were "Strongly Agree" with its use, improving to 14 in the post-test. Comfort with the advanced features of a digital communication tool also increased, since in the pre-test most were "quite comfortable" (seven) with it, while in the post-test, most feel "very comfortable" (nine). In terms of the frequency of sharing information and digital content, more participants said they did so "frequently" (eight). Interaction with institutions through online services has a higher use (10) in the post-test, since it was "sometimes" (11) in the pre-test. The same is true for collaboration in digital content creation, where more participants (10) said they did so "frequently" and "always" than "sometimes" (11). More participants also "strongly agreed" (six) with knowing how to protect their digital reputation, than in the pre-test they "agreed" (nine) (Figure 16).

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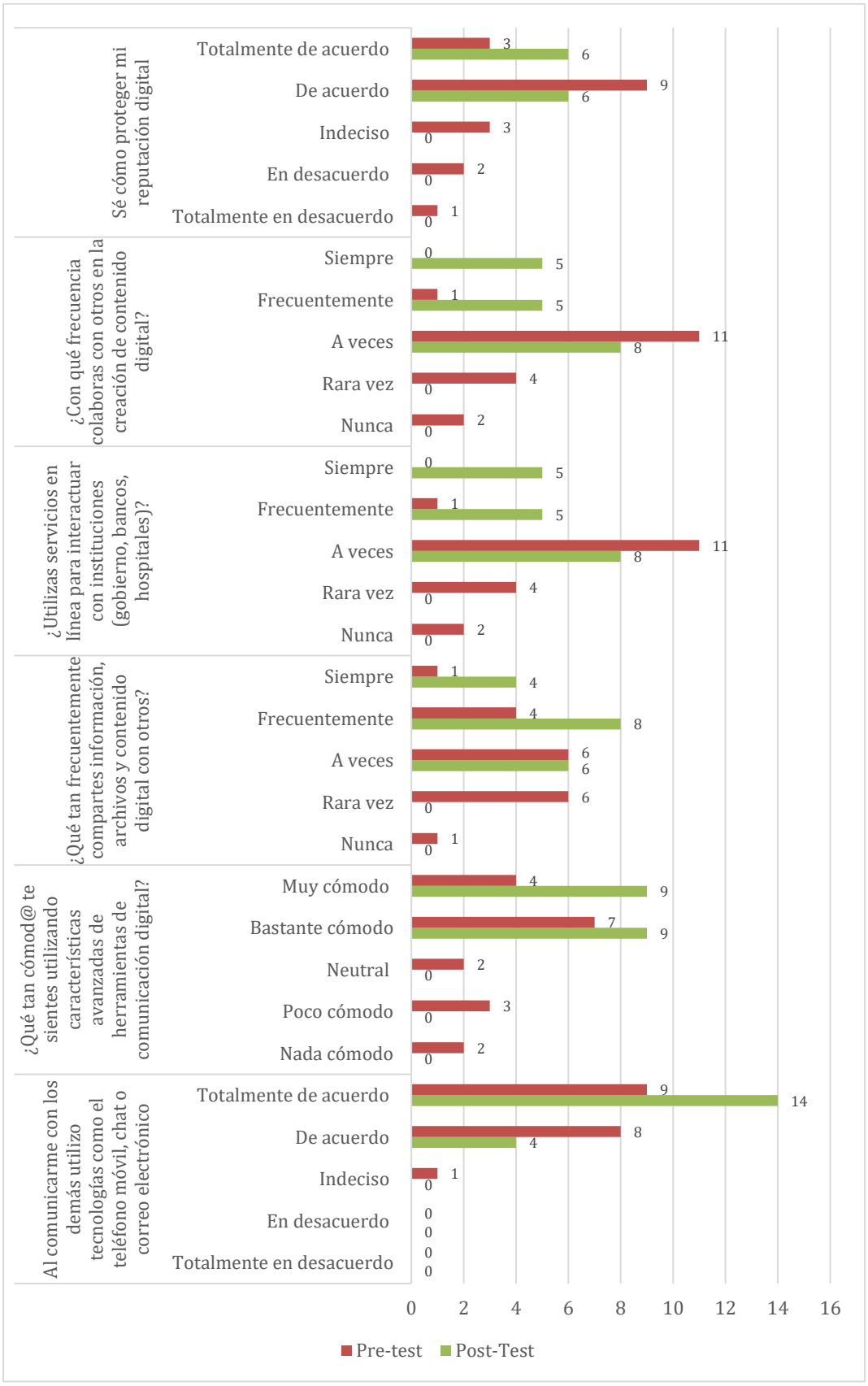

Figure 15. Comparison of pre-test and post-test results in Communication and Collaboration

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3. In the digital content creation competition, a significant change in the frequency of content creation and editing was analyzed. In the pre-test, most did it "Rarely" (seven), while in the post-test the majority did it "Frequently" (12). The ability to make changes to other people's content also progressed considerably, going from "Disagree" (nine) in the pre-test to "Agree" (11) in the post-test (Figure 17).

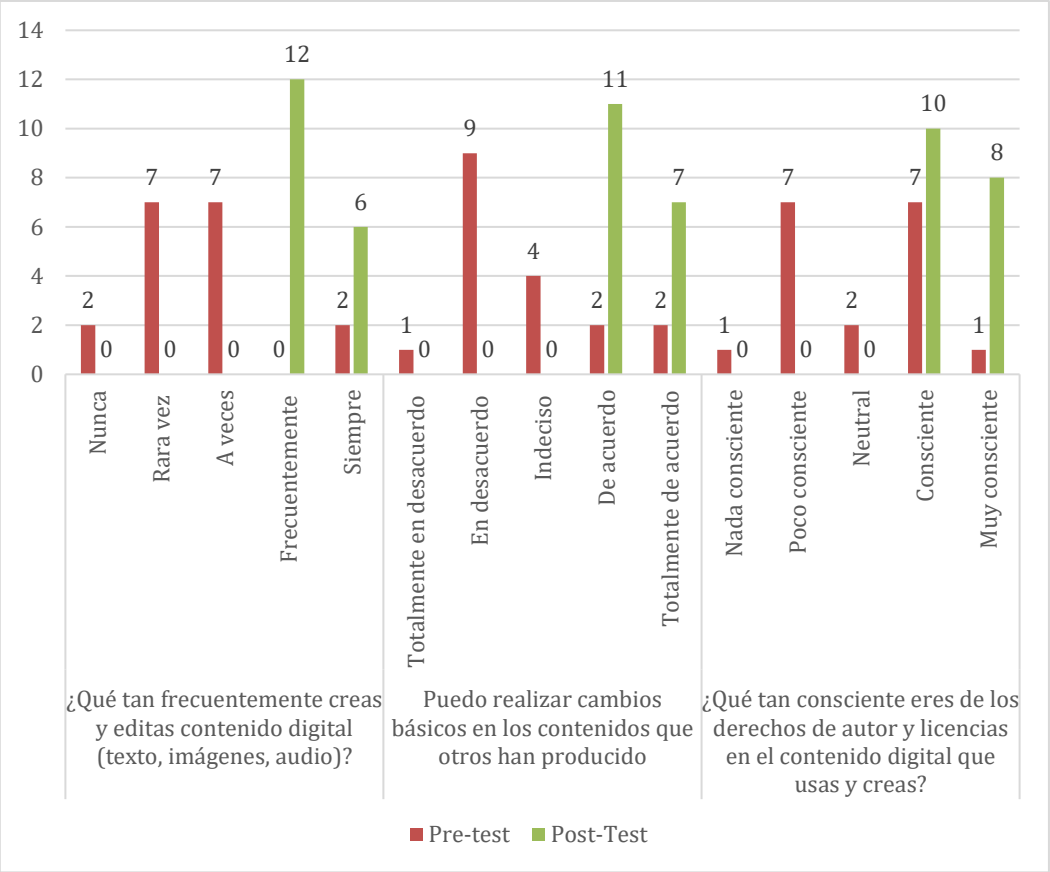

Figure 16. Comparison of the results of the Pre-test and post-test in Digital Content Creation.

4. In the digital security competition, the majority (nine) use an antivirus and passwords according to the pre-test and the vast majority (13) answered "Totally agree" with those statements according to the post-test. Awareness of privacy policies went from "Moderate" (seven) to "Good" (12). In the dimension of the use of digital technologies and well-being, more participants felt "Good" (12) and "Very Good" (six) in the post-test (Figure 18).

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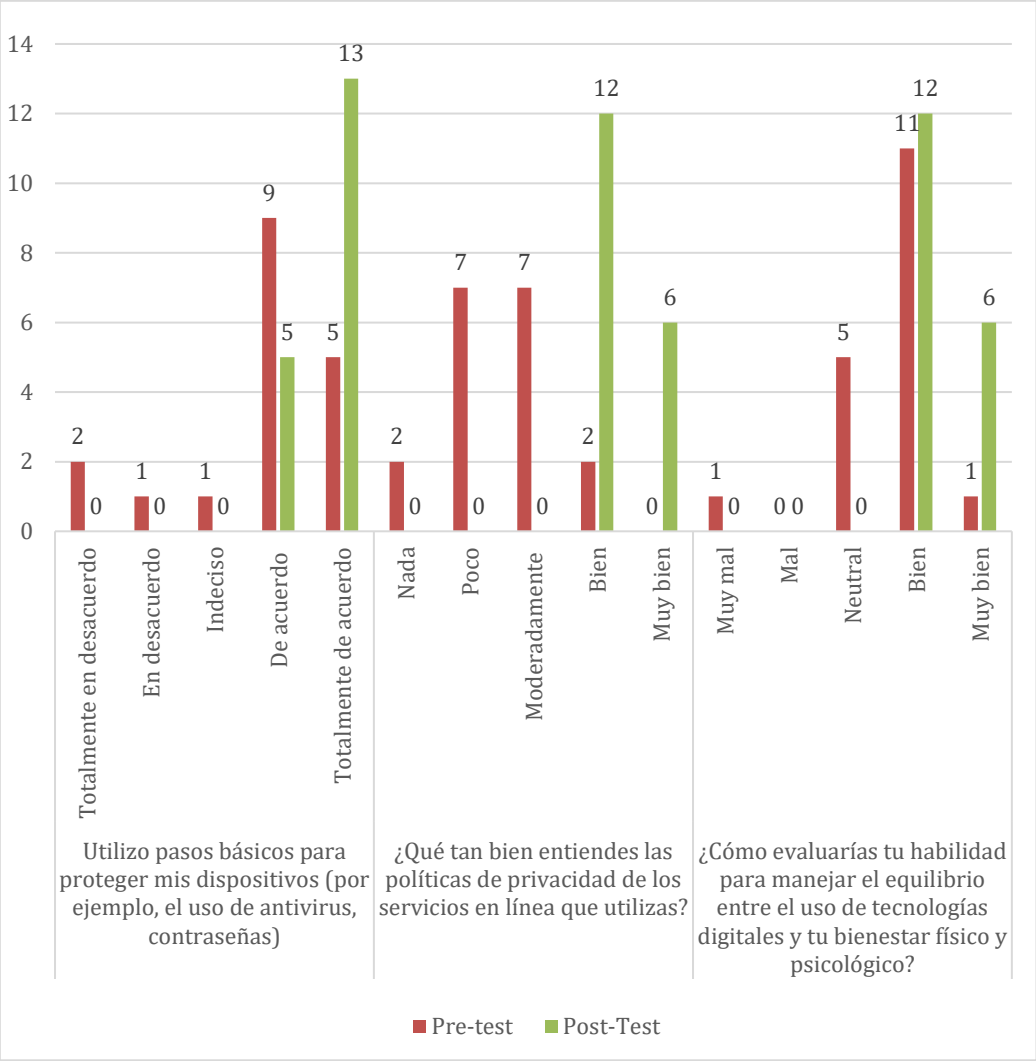

Figure 17. Comparison of pre-test and post-test results in Digital Security

5. Finally, in the problem-solving competition, in the pre-test, two participants answered "Strongly disagree" and eight "Disagree" regarding their ability to solve technical problems on their own, while in the post-test, 10 participants were "Undecided" and two "Strongly agree". Regarding the search for tutorials or online guides, in the pre-test, four participants answered "Never" and "Rarely", while in the post-test, 18 answered "Frequently" and "Always". Regarding the willingness to experiment with new digital tools to improve productivity, in the pre-test, seven participants answered between "Strongly disagree", "Disagree", and "Undecided"; while in the post-test, 18 answered between "Agree" and "Strongly agree" (Figure 19).

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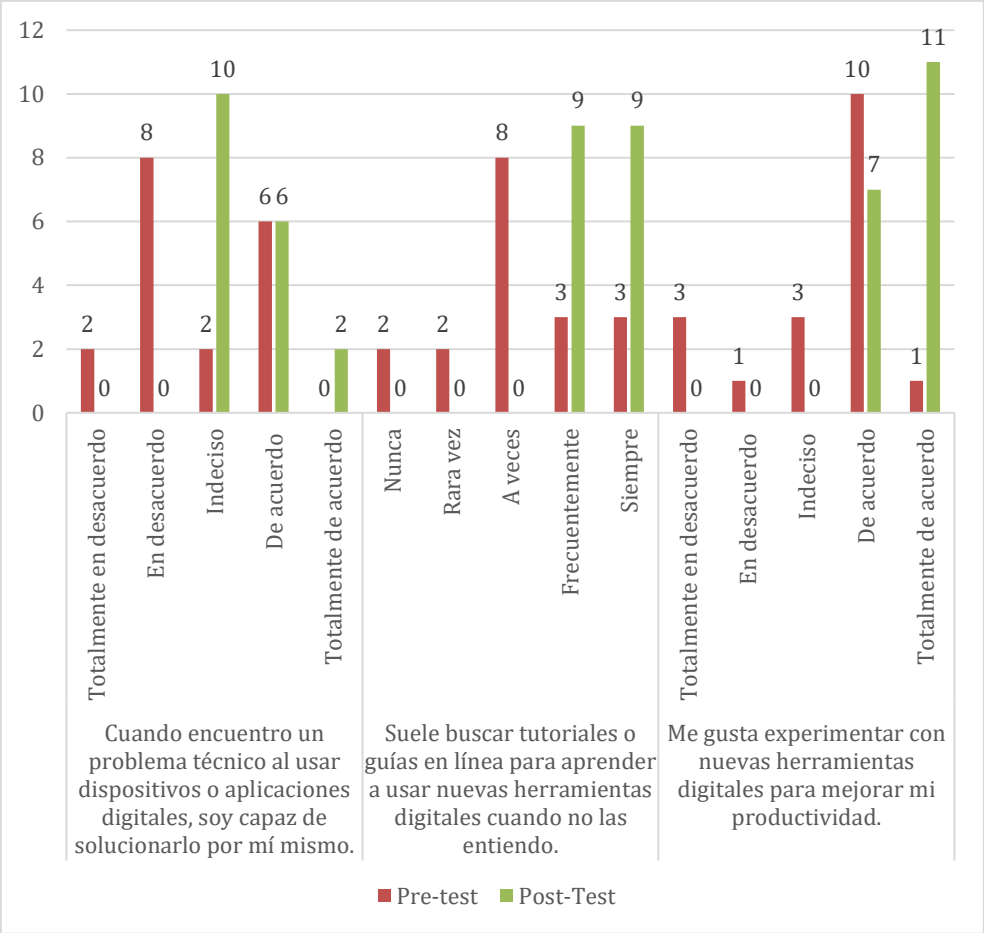

Figure 18. Comparison of pre-test and post-test results in Problem Solving

For this research, the Wilcoxon test for paired samples was used to verify if there is an improvement in the sample's basic digital skills between the pre-test and the post-test or if a significant change occurs. This non-parametric test was chosen because the data obtained during the pre-test did not show a normal distribution, since, before performing the test, through the Shapiro-Wilk test, the values were W = 0.876 and p = 0.022. Regarding the Wilcoxon test, the results found were W = 1.00 and $p < 0.001$, which indicates that there is significance when comparing pre-test and post-test.

After the implementation of the strategy, a satisfaction survey was applied to the participants with two key questions: "In general, how satisfied are you with the didactic strategy implemented?" and "Please describe how the didactic strategy implemented helped you (or not) to improve your confidence in the use of technologies and their applicability in your daily life." The results showed a high rating, with an average rating of 4.94 out of 5. Responses highlighted increased technological confidence, everyday practical applications, and the strengthening of autonomous learning, rating the experience as meaningful and transformative.

4 Conclusions

The findings obtained allow us to affirm that the didactic strategy implemented had a positive impact on the development of basic digital competencies in students of intensive basic education. The improvement evidenced in the five dimensions evaluated reflects that a pedagogical approach focused on the real context of the student can facilitate more meaningful learning and contribute to closing technological gaps that persist.

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In the dimension of information and data literacy, there is an important advance in autonomy to search, organize and retrieve information. This progress not only strengthens the student's technical ability but also contributes to the development of more critical thinking regarding the use of digital sources.

The improvement in communication and collaboration shows that students not only feel more comfortable interacting through technological tools but have also managed to integrate better into digital spaces. This is especially relevant in educational contexts where active participation and cooperation are fundamental for integral development.

In relation to the creation of digital content, it is observed that the participants increased the ability to create and edit their own content, along with the awareness of copyright. This development highlights the importance of competence as a tool to fulfill their own vocational and personal potential.

On the other hand, in the dimension of "Digital Security", on the use of protection measures, there were improvements, which showed the trend of people towards a safer and more responsible digital use. The relevance of this result is critical, as this specific dimension reduces technology-related risks according to the relevant literature on the subject, such as the study by Guaña-Moya (2023).

And, finally, on the dimension of "Problem Solving", where the ability of students to address technical problems and experiment with new digital tools has improved, it could be said that there is a greater willingness to address technological challenges and in turn more empathy, which is fundamental for continuous adaptation in the digital world.

On the other hand, the satisfaction survey confirms that the strategy was adequate to the extent necessary and timely.

All this evidence supports educational theories that place a greater emphasis on active and contextual learning, as described by Diez-Palomar (2009) and García (2000). The fact that gamification and collaboration are involved in the course supports these ideas, as meaningful learning can only be achieved through active and repeated interaction with the content.

In short, the results of this study showed that the didactic strategy implemented was highly successful in strengthening the digital competencies of intensive basic education students. The improvement observed in the five dimensions reflects the benefits of combining innovative pedagogical approaches with traditional methodologies adapted to the context of adult learners.

Also, the findings serve to remind us how important it is to personalize teaching strategies to the real needs of students, especially with the digital divide that continues to exist. In addition, providing students with new digital skills translates into being able to be active and autonomous engines in the connected society in which we live today.

Consequently, beyond theory, the evidence collected throughout the research brings real value to the lives of students, through greater empowerment and autonomy at work and access to new opportunities. In this way, the study responds to the proposed objective and offers a replicable model for similar educational contexts, showing that a well-structured digital education is key to transforming learning opportunities and improving the quality of life of students.

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