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Didactic strategy for the development of digital competencies in rural high school students

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Abstract: The essential acquisition and development of digital skills in students and teachers is of vital importance for the teaching-learning process. That is why teaching strategies provide a support resource for developing skills that enable effective performance in the digital environment within the educational sphere. The objective of this study was to design a teaching strategy for developing skills in upper elementary students at the San Jacinto Educational Unit, located in a rural area. This study employs a descriptive design with a cross-sectional, non-experimental approach, incorporating both qualitative and quantitative methods. Using the empirical method, a survey was administered to students based on the ECODIES -40 v.2 questionnaire and another to teachers based on the "DigCompEdu Check-In" v.2021 instrument, both validated and based on the European Digital Competence Framework DigComp and DigCompEdu. The results revealed the heterogeneity of digital competencies among the student population in the five areas of digital competency. Among the main findings, the deficiencies presented by students could be a clear indication that educational institutions and other actors in the education system are not assuming their respective roles in the acquisition, development, and strengthening of digital competency skills.

Keywords: *Active learning, Audiovisual communication, Digital competencies, Digital teaching.*

1. Introduction

In the 21st century, the diverse and changing contexts have made digital competencies (DC) acquire significant relevance in various sectors and organizations, especially in the educational field; these encompass knowledge, skills, values, and fundamental aptitudes to contribute to what is called "digital inclusion", which promotes the inclusion and participation of all, allows to perform competitively, effectively and efficiently in the knowledge society, contributing to the construction of a more dynamic, inclusive and cohesive society [1].

Digital competencies are fundamental to promoting lifelong learning and training, as well as to access quality comprehensive education and well-paid job opportunities; in addition, these skills are essential to understanding and adapting to cultural and entertainment trends in today's world [2] a high level of digital competence provides technology users with a more remarkable ability to protect their privacy and security online, while allowing them to manage electronic information more effectively [3].

Although students of the so-called Generation Z may have access to smart devices, internet connection, and management of specific applications for social interaction, they have insufficient basic digital skills, which negatively influences the teaching-learning processes, participation in digital societies, and professional work [4, 5]. In Ecuador's public education communities, especially in rural areas, the problem is aggravated due to a deficient supply of technological resources and connectivity,

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which are usually presented in an anachronistic and limited manner, which sustains and widens the digital divide [6, 7] having a significant impact on the adequate and timely development of CD in learners.

To achieve relevant levels of digital competence in students, it is crucial the participation of the different actors and levels of the educational system under an adequate organization and practical and constant research to find alternatives that encourage, value and reward the acquisition of such competencies [8, 9] educational institutions assume vital roles for the development of DCs in students; however, these groups maintain deficiencies on the promotion and development of DCs, a problem that is evident in various regions of Ibero-America and Ecuador where primary, secondary and undergraduate students manifest low-medium levels of digital competence [7, 10, 11].

Given the need to assess and improve the levels of digital competence in the education sector, several international organizations and institutions have proposed various frameworks, models, and standards for DCs, providing references to facilitate training and evaluation; among these, the PCK (Pedagogical Content Knowledge) proposed by Mishra and Koehler based on the concepts of Shulman [12] holistic models such as the TPACK Model (Technical Pedagogical Content Knowledge) formerly called TPCK (Technology, Pedagogy and Content Knowledge), an essential reference that highlights the effective integration of technology in teaching [13, 14] likewise, the "UNESCO ICT Competency Framework for Teachers" guides teachers in the effective use of technology in the teaching and learning process, with implications for students' digital skills [15].

The models of digital competencies for students became more specific and adapted, such as the one proposed by the International Society for Technology in Education (ISTE) with standards designated as ISTE Standards for Students that describe the digital skills that students need to succeed in the 21st century and the one proposed by the European Commission, the European Framework of Digital Competences under the "DigComp" model, being a reference for the evaluation of DC in various institutions and applied in multiple investigations [16].

The DigComp framework focuses on five areas: search and management of information and data, communication and collaboration, creation of digital content, security, and problem-solving, and conforming with 21 competencies (see Figure 1). This framework specifies that digital competence involves the combination of knowledge, skills, and attitudes to use digital technologies in a safe, critical, and responsible way, both for learning, work, interaction, and participation in society [17, 18].

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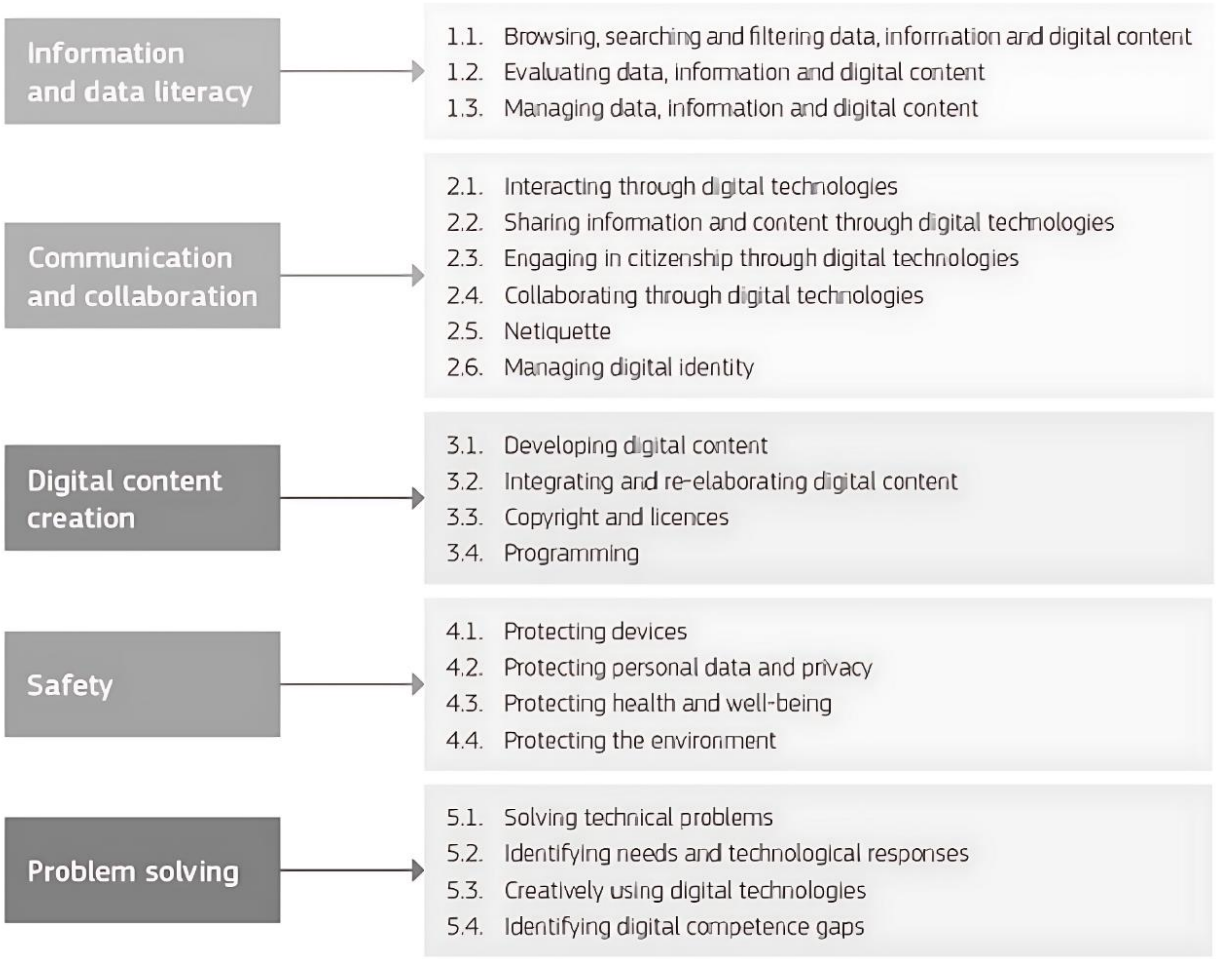

Figure 1.
The 21 digital competencies, DigComp conceptual reference.
Note: Taken from European Commission's Joint Research Centre European Union- Digcomp 2.2, 2023.

The literature shows that digital skills at early ages are significantly and positively associated with academic performance [5] where the use of tools for visual productions can strengthen various digital skills, including critical thinking, analysis, synthesis, and systematization of information; management of computers, programs, and work, which together with other recreational resources involves students in the learning process, promote digital skills and enriches the learning environment.

Digital storytelling also called digital storytelling, is a multi-format technique that combines the art of storytelling and technological elements, through the creation of interactive multimedia presentations using the computer or other portable devices, linking the content emotionally and eloquently for the receivers [19, 20] these narratives can be of personal, documentary and informative order [21]. In the educational context, it allows students to improve creativity, collaborative learning, and development of skills in using technology, promoting dynamic participation in teaching and learning processes [22].

There have been several studies applying digital narratives as learning techniques and strategies [23, 24] for the development of language skills [25] and digital competencies [26] in different educational scenarios and levels; In the Peruvian context, Sulca and Aliaga [27] conducted a quantitative, quasi-experimental research, with a non-probabilistic sample of 62 university students of Education, the experimental group was subjected to digital storytelling workshops for 12 weeks, a modified and validated instrument was applied, the post-test results indicated that the experimental

group showed significant values in the five competency areas, higher averages were observed in the area of content creation, the levels of digital competence went from a medium level to a high level.

Moral Pérez, et al. [28] research evaluated the development of narrative and digital competencies in 286 students of early childhood and primary education in rural areas. It assessed five indicators that were limited to the infant's technological capabilities of expressive and creative type: for the primary group, knowledge of the audiovisual language, and correct use of tools for creating and editing narratives. The female students in the infant education group reached a basic level with better technological use; in the primary level, higher grades showed more excellent knowledge and technical management in audiovisual editing, generally indicating an initiation in developing digital competence.

Students from the first educational level must develop digital competencies, which contribute significantly to their academic training, transforming information and knowledge in an innovative, contextualized, and creative way. Therefore, taking into account the above, the general objective is defined as follows: to design a didactic strategy for the development of competencies in students of higher primary education of the "San Jacinto" Educational Unit in the rural area of the canton of 24 de Mayo, province of Manabí, Ecuador.

2. Method

The study was conducted in a public educational institution in the rural area of 24 de Mayo canton, province of Manabí, Ecuador, in the second quarter of the 2023-2024 school year. The research is descriptive, with a transversal, non-experimental design, under a mixed qualitative-quantitative approach. Among the theoretical methods applied were analysis-synthesis, induction-deduction, and documentary analysis, as empirical methods, scientific observation, and survey with the questionnaire instrument through an online form; also, mathematical and statistical methods were used, with particular emphasis on descriptive and inferential statistics.

To assess students' digital competence, an online form was designed based on the ECODIES -40 v.2 questionnaire, validated and based on the European Digital Competence Framework DigComp. The questionnaire consists of 40 items that assess 19 competencies in the five areas. The instrument shows good—moderate reliability, with a Cronbach's alpha coefficient of 0.742 [29].

To collect information on the level of digital competence in teachers, an online form was designed based on the instrument "DigCompEdu Check-In" v.2021, under the European Framework for Digital Competence of Educators DigCompEdu, is made up of 22 competencies, distributed in seven areas: (A1) professional engagement, (A2) digital content, (A3) teaching and learning, (A4) assessment and feedback, (A5), student empowerment, (A6) developing students' digital competence and (A7) open education, these total 25 items each with seven response options that internally classify six levels: beginner (A1), explorer (A2), integrator (B1), expert (B2), leader (C1) and pioneer (C2) [30, 31].

2.1. Population And Sample

The research started from a population of 203 students; the study sample was established by non-probabilistic sampling by availability and convenience, collecting 63 students of the upper primary level (eighth, ninth, and tenth) with ages ranging between 12 and 15 years ($\bar{x}$=13.6), being 61.9% (σ =19.0) female and 38.1% male (σ = 18.1). Regarding the accessibility of technological resources, 11.1% indicated that they have a computer or laptop at home, personal access to a smartphone (61.3%), or family (38.7%); internet connectivity at home was 69.8%. On the other hand, the educational institution has a laboratory equipped with computers, an interactive whiteboard, and Internet access.

The educational institution had 13 professionals, of whom, due to availability and convenience, a sample of 7 teachers was selected, who taught classes to the students involved in the research. 57% of the participating teachers are men and 43% women, 5 professionals with third-level academic degrees and 2 with fourth-level. The ages ranged from 28 to 49, and the teaching trajectory ranged from 3 to 12 years.

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2.2. Data Collection and Analysis Procedure

Before the research, permission was obtained from the school authorities, teachers, and legal representatives of the students for their participation, declaring confidentiality for all participants, respecting the privacy and physical and emotional integrity of children and adolescents, complying with the Second General Provision of the LOEI 2023 regulation, enshrined in Article 44 of the Constitution of the Republic of Ecuador. For the design and application of questionnaires, the online tool Google Forms was used to collect information from students and teachers.

Once the diagnostic data were collected and organized, the analysis and treatment were carried out using the Jamovi program version 2.4.8, and descriptive and comparative studies of the sample were developed. The Level of Digital Competence (NCD) in students for each area and overall was determined by calculating the sum of hits, divided by the total number of items, and multiplying by 100, resulting in several hits that represent the percentage level of digital competence (P NCD) for each area and overall, with a range from 0 to 100. Additionally, the level of digital competence was classified as low, medium, and high (adopted from Iglesias, et al. [32].

The estimation of NCD in teachers was carried out globally and by areas; for this purpose, initially, a gradual sum of 0 to 6 of each item was made, grouped by areas; the total score obtained from the seven areas determined the global NCD, where scores ≤ 23 indicates being a "Beginner" (A1), values between 23 and 38 "Explorer" (A2), 39 to 56 "Integrator" (B1), 57 to 74 "Expert" (B2), 75 to 91 "Leader" (C1) and ≥ 92 "Pioneer" (C2) [30] to determine the level by area, the means of the responses were calculated and then the levels and area were classified by applying the general scoring rule (Table 1)

Table 1.
The general rule for assigning scores by area and levels.

Level	A1	A2	A3	A4	A5	A6	A7
Beginner/Explorer	<8	<6	<8	<6	<6	<9	<6
Integrator/Expert	8-13	6-9	8-13	6-9	6-9	9-16	6-9
Leader/Pioneer	>13	>9	>13	>9	>9	>16	>9

Source: CheckIn_HE_v.2021_EN self-reflection report.

2.3. NCD Diagnosis of Students

The graphical analysis of the data collected in the students' NCD diagnosis (Figure 2) reveals distinctive patterns in the students' Digital Competence Levels (NCD). A higher concentration of data (n=36) is distinguished in the medium NCD, with a median of 46.0 and a maximum value of 63.0. On the other hand, the low NCDs (n=26) show a median of 26.0 and a maximum value of 33.0, while only one student was identified with a high NCD, reaching a value of 73.0 (n=1). The box plot reveals a moderate dispersion, with a slight asymmetry, suggesting a varied distribution in the levels of digital competence, with a notable prevalence in the medium NCD, followed by the low level. On the other hand, the presence of outliers at both the low and high end of the scale is evident, marking the existence of a wide diversity in digital competencies within the student population.

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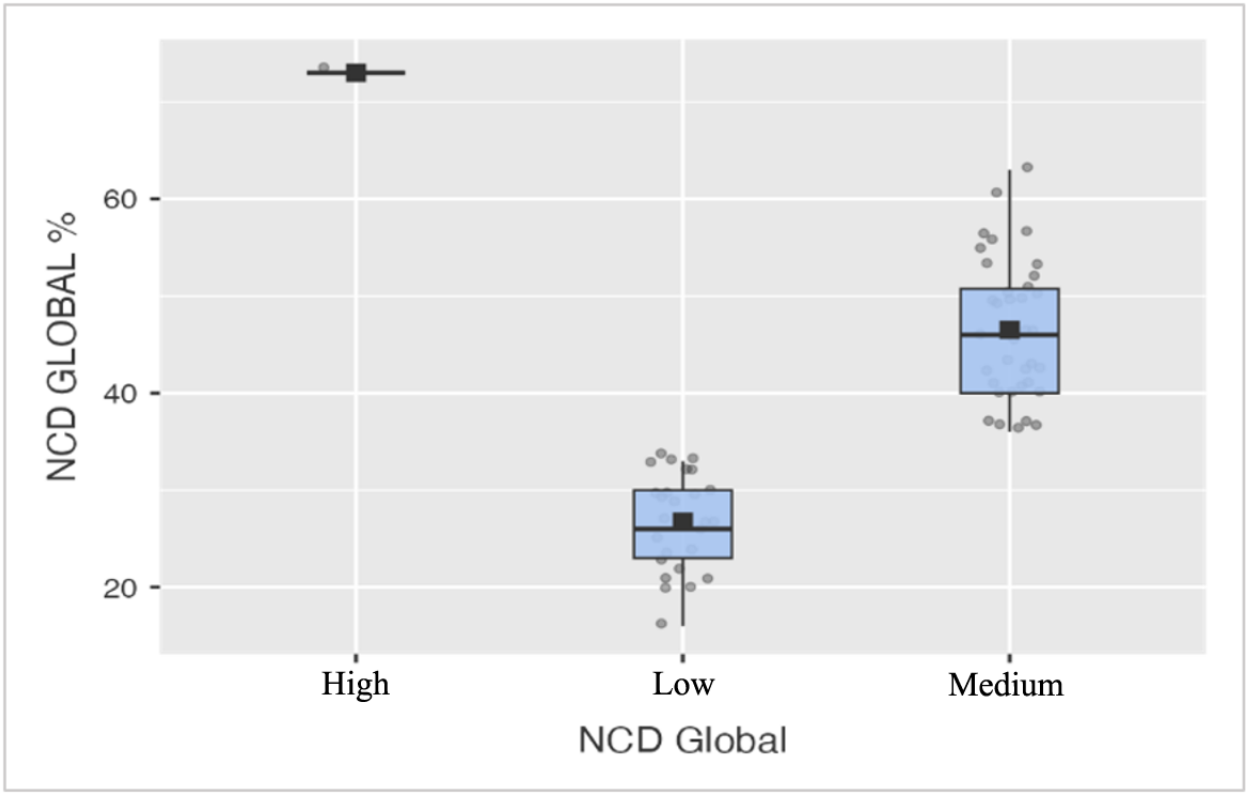

Figure 2.
Global proficiency levels of upper basic general education students.

Table 2 shows particular patterns in students' digital competence (NCD) levels, both in the five competency areas and between genders. In Area 1, slightly higher performance is observed in the female gender ($\bar{x}$=24.8) compared to the male gender ($\bar{x}$=19.5), suggesting a low NCD in both. On the other hand, in Area 2, this difference widens in favor of the female gender, with a mean of 51.3 versus 42.1 in male students, revealing a medium NCD for both genders. In Area 4, this trend is maintained, where the female group ($\bar{x}$=46.6) outperforms the male ($\bar{x}$=36.7), also manifesting a mean NCD. However, in Areas 3 and 5, these disparities are less marked, with similar values between genders, suggesting a medium NCD in both cases.

Table 2.
Diagnosis of digital competence levels by areas and gender in students.

Hit percentage (0-100).	Gender	Mean	Median	D.E	Minimum	Maximum
P NCD A1	Male	19.5	0	22.4	0	66
	Female	24.8	33.0	24.3	0	66
P NCD A2	Male	42.1	40.0	18.2	10	80
	Female	51.3	55.0	19.8	20	80
P NCD A3	Male	36.5	42.0	17.2	0	71
	Female	37.0	42.0	20.1	0	71
P NCD A4	Male	36.7	42.0	13.7	14	71
	Female	46.6	49.5	22.1	0	85
P NCD A5	Male	33.9	33.0	26.9	0	100
	Female	35.8	33.0	29.2	0	100
NCD GLOBAL	Male	36.5	36.0	10.6	16	56
	Female	42.5	44.5	14.5	20	73

Note: A1 Information, A2 Communication, A3 Content Creation, A4 Safety, A5 Problem Solving.

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About the values presented globally, it is observed that both genders obtained values that group them in a medium NCD. However, there is remarkable consistency among female students ($\bar{x}$=42.5) in contrast to the male group ($\bar{x}$=36.5), with a clear superiority of the female gender in terms of NCD, such values highlight the relevance of addressing the gender gaps in digital training to promote equity and comprehensive development of students in the current context.

2.3. Diagnosis of NCD in Teachers

Regarding overall digital competence, the results show that most teachers may have an "Integrator" level (57.1%). However, there is a percentage that is at the "Explorer" level (28.6%), while 14.3% reach the "Expert" level. The scores by area indicate that teachers are at intermediate levels in most areas, with significant variations between areas. Specifically, in area A1, professional commitment resulted in a mean of 8.0, classifying them at the "Integrator/Expert" level, while in area A7, Open education, the mean is 4.6, placing them at the "Beginner/Explorer" level (Figure 3).

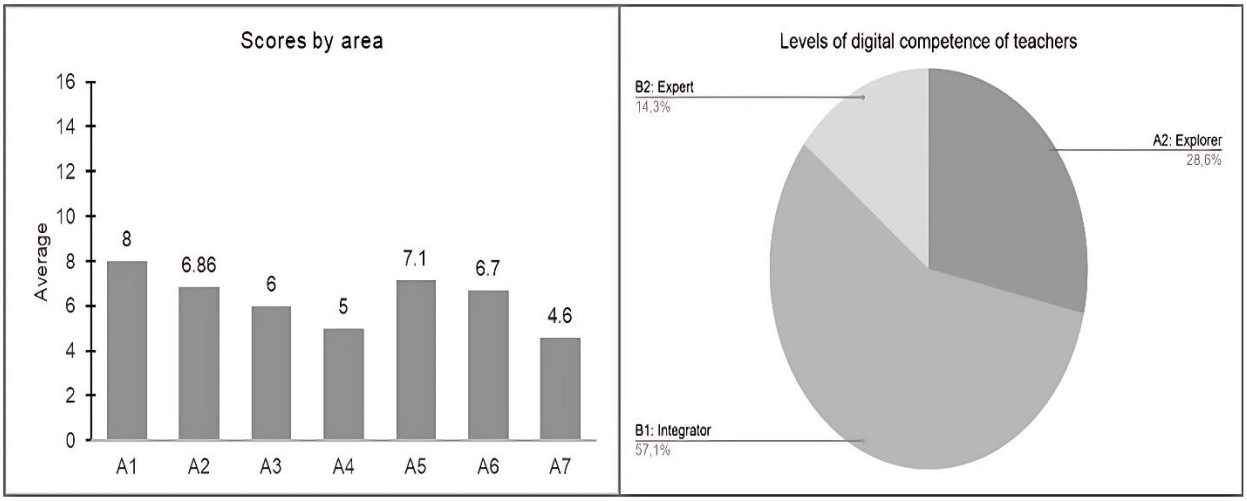

Figure 3.
Levels of digital competence of teachers globally and by subject area
Note:
Averages achieved in each area digital.
Note: Percentages are according to the level of competence.

3. Design of the Proposal

The design of the didactic strategy was based on the specific needs identified in the diagnosis; it was based on scientific literature, pedagogical approaches, and active methodologies such as the inverted classroom, problem-based learning, collaborative, and service learning. Sessions were organized based on the digital narrative technique, where the five areas of the European Framework for Digital Competence DigComp 2.1 were adopted, in addition to the skill "*To investigate, using ICT and other resources, and analyze the causes of the impacts of human activities on habitats, to infer their consequences and discuss the results*" taken from the Ecuadorian Curriculum for General Basic Education in the subject of Natural Sciences.

The didactic strategy is structured in eight sessions. Each one is structured by the topic, objective, competencies to be developed, estimated time, teaching and learning activities, evaluation, and examples of suggested activities for students with specific educational needs (SEN) that point out the use of inclusive and contextualized technological resources and applications, which should be programmed in an LMS to facilitate the teaching and learning process of the students. Table 3 shows a sample of the design of the didactic strategy, session 3, which aims to develop two competencies of Area 1 related to

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the search and management of information and data. The complete didactic strategy is available at https://goo.su/9bliAT

Table 3.
Session 3 design: Research, explore, and learn.

Subject: Research, explore, and learn	**Estimated time: 80 minutes.**
Objective: To search for relevant, reliable, and up-to-date digital information for the narrative by applying search, evaluation, and organization techniques.	
Competencies to be developed: Navigate, search, and filter data, information, and digital content (1.1); manage data, information, and digital content (1.3).	
Teaching strategies: Demonstration: With the support of the virtual classroom resources and the teacher, techniques for searching, filtering, evaluating, and retrieving digital information are presented, including search engines, keywords, reliable sources, filtering by date, organization of folders, files, and web pages, and creation of folders in the cloud.	
Learning activities: Collaborative learning: Each team starts by searching, downloading, and organizing folders of relevant, updated, verified, and reliable information to appropriate the subject matter and support the content of the narrative simultaneously. The groups structure and synthesize the information in a matrix: the information or data obtained, with author or source and year of publication, using the Google Presentations or Canva tool.	
Suggested tools and activities for SEN associated with a disability: For the development of these activities, priority is given to group work and constant accompaniment by the teacher, adapting technological resources according to the type of SEN presented, for example: Auditory SEN: The teacher has students analyze the presentations and videos subtitled or adapted with the Hand Talk tool, and they can create mind maps to synthesize and organize information. Visual SEN: We suggest using tactile devices, applying the devices' screen reader and voice assistant functions to search for information, and elaborating information presentations using the descriptive audio function of Google Slides or other AI tools to generate text-to-speech or vice versa. Priority is given to group work and teacher guidance for developing these activities.	
Evaluation: A checklist is used to evaluate each team's performance during the practical activity of search and organization, capacity to find relevant and updated information, and ability to verify the sources' reliability.	
Media and resources: Computer lab, computer or mobile devices, internet, projector, and audio.	

3.1. Selection of Experts

In the selection of experts, consent to participate was requested from 13 candidates to form the group of experts, considering the fulfillment of five requirements: to have six or more years of experience in the subject, professional training of a level master's degree or PhD, active experience of 8 years or more in secondary or higher education, to have scientific publications related to the subject addressed and finally to reach a high or medium level according to the competence coefficient (K), for which procedures, evaluation scales and the equation K= (Kc + Ka) - 0 were followed. 5, proposed by Dobrov and Smirnov [33].

Where:

K: Coefficient of competence

Kc: coefficient of knowledge possessed by the expert on the subject matter addressed

Ka: coefficient of argumentation or substantiation of the expert's criteria

The interpretation of the K coefficient was performed using the following scale: If $1.0 \geq K > 0.8$, the proficiency level is high. If $0.8 \geq K > 0.5$, the competence level is medium, and if $0.5 \geq K$, the competence level is low.

3.1.1. Expert Competence Level

After performing the calculation of the competence coefficient (K) in the 13 expert candidates, it was observed that a small group (n=3) reached a medium competence coefficient ($0.8 \geq K > 0.5$), another group (n=7) a high coefficient ($1.0 \geq K > 0.8$), resulting in a group of 10 experts selected for the evaluation of the proposal (Table 4), the other three candidates were not participants of the evaluation because they showed a low competence level ($0.5 \geq K$).

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Table 4.
Coefficients and level of competence attained by the selected experts.

Candidate an expert	Kc[1]	Ka[2]	K[3]	Competence level
1	0.80	0.97	0.89	High
2	0.80	0.86	0.83	High
3	0.80	0.88	0.84	High
4	0.90	0.99	0.95	High
5	0.80	0.87	0.84	High
6	0.90	0.88	0.89	High
7	0.80	0.9	0.85	High
8	0.70	0.77	0.74	Medium
9	0.70	0.78	0.74	Medium
10	0.80	0.89	0.85	High

Note: [1]Knowledge quotient; [2]Argumentation quotient; [3]Competence quotient.

3.1.2. Validation by Expert Judgment

The didactic strategy was subjected to an evaluation by the group of experts selected to determine its validity, for which purpose the didactic strategy and evaluation instrument were shared with the experts via e-mail. The questionnaire consisted of 3 criteria: (1) clarity, (2) pertinence, and (3) coherence, each with five aspects totaling 15 items; each aspect was evaluated on a Likert-type scale from 1 to 4, where one indicates that the criterion was not met, two low level, moderate and four high level. To estimate content validity, Aiken [34] coefficient was calculated using the formula [34] modified by Penfield and Giacobbi [35] with a magnitude ranging from 0 to 1, with 1 indicating perfect agreement among experts about the rated content [34].

$$V = \frac{\bar{x} - l}{k} \text{ [1]}$$

Where $\bar{x}$ is the mean of the judges' ratings, l is the lowest possible rating, and k is the range of possible values of the Likert scale used.

Also, Kendall's W statistical test was used as a coefficient to measure the strength of agreement among the evaluators, with 0 indicating a total lack of agreement among the experts and 1 being the maximum possible value of agreement among the experts; the strength of agreement increases when the W value approaches 1 [36] and the following hypothesis was proposed to confirm the agreement:

H_0: There is no concordance among the consulted experts.

H_a: There is concordance among the experts consulted.

The confirmation of the hypotheses was performed with the chi-square test at a significance level (α) of 0.05. If the probability value (p) $\leq$ 0.05, H_0 is rejected; if the probability value (p) $>$ 0.05, H_0 is not rejected.

3.1.3. Validation of the Didactic Strategy

The results of the content validation of the didactic strategy (Table 5) show favorable values with substantial consistency in the three criteria considered; the criterion clarity received a mean rating of 3.62 with a moderate Aiken V coefficient of 0.87. These values indicate that the structure of the didactic strategy is straightforward to understand, and the tools to be used are adequate and accessible. The coherence criterion's mean reached was 3.70 with an Aiken V coefficient of 0.90, which follows a very high level of agreement in each aspect, stating that the sequences of activities show spatial, temporal, and curricular coherence between their phases, objectives, and approaches. Finally, the criterion relevance received a mean rating of 3.66 and Aiken's V coefficient of 0.89.

These values indicate a high level of agreement among the experts, congruence with the learning objectives, correspond to the context and diversity, and are adequate to encourage student participation and collaboration. Overall, the data reveal a remarkable level of agreement among the judges regarding the content validity of the didactic strategy, with a high Aiken V coefficient of 0.89 and a mean rating of

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3.66, which supports the validity and determines the suitability of the didactic strategy as being transparent, coherent and relevant to develop digital competencies in rural students.

Table 5.
Aiken's V coefficient and averages.

Criteria	Average of ratings by the ten experts (E)										Means	V of Aiken
	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10		
Clarity	3.8	3.6	3.6	3.8	3.6	3.2	3.8	3.4	3.6	3.8	3.62	0.87
Coherence	3.8	3.2	3.8	4.0	4.0	4.0	3.4	3.6	3.4	3.8	3.70	0.90
Pertinence	3.8	3.4	4.0	4.0	3.2	4.0	3.4	3.2	3.8	3.8	3.66	0.89
Global											3.66	0.89

There was significant agreement among the experts ($p < 0.005$), which led to the rejection of H_0 and to the conclusion that there is agreement among the expert evaluators. However, the strength of agreement estimated by Kendall's W coefficient yielded a relatively low value (W 0.275) of consensus among the judges (Table 6).

Table 6.
Kendall's W estimation.

N judges	W of Kendall[a]	χ^2	gl	p (<0.005)
10	0.275	38.471	14	0.000

Note: [a] Kendall's Coefficient of Concordance.

4. Discussion and Conclusions

The present study shares similarities with the findings of Iglesias, et al. [32] who found an average level of global competence with a median of 48.72 in elementary school students. The results coincide in Area 1, where lower values were found globally. On the other hand, the values differ statistically between genders, where the male gender showed superiority over the female in area 4.

The diagnosis results highlight the heterogeneity of digital competencies within the student population among the five areas of digital competence and genders. On the other hand, there was a general superiority in the medium level of digital competence, with remarkable superior consistency in the female gender exhibiting a clear superiority in terms of competence over the male gender.

The above highlights that students' deficiencies in NCD could indicate that educational institutions and other actors in the educational system need to assume their respective roles. The literature exposes analogies in the various scenarios and groups [11].

The relatively low value in the concordance strength may be related to a dispersion of the scores issued by the judges, as well as the composition of multiple factors inherent to the evaluation instrument, such as the clarity of criteria and aspects of the assessment instrument; likewise, in the experts, subjectivity, diversity of perceptions, variability in the use of the scales where the experts were more strict or lenient in their assessments [36].

Concerning the teachers' NCD, an integrative and expert level is evident, which can positively influence the effective implementation of the designed didactic strategy; however, teachers with explorer NCD can affect the quality of teaching, the application of learning strategies, and the adequate support to students in their process of acquiring digital competencies, this diversity of teacher NCD, underlines the importance of offering training opportunities and continuous professional development to ensure effective implementation of the didactic strategy. Therefore, it is imperative that teachers define, develop, and value digital competencies sustaining a didactic-pedagogical perspective in the use of ICT [37, 38].

The didactic strategy was validated by the experts, who asserted a high level of agreement and consistency in the evaluated criteria. This supports the strategy's suitability to develop digital competencies in rural students in the investigated context, providing a clear, coherent, and relevant

guide for educational practice and, consequently, for its implementation in other institutions and similar scenarios.

The analysis highlights an imperative integration of DCs in the educational curriculum to address needs in the development of digital competencies of students; for this, educational institutions must implement effective strategies and programs on critical actors, accompanied by equitable and timely attention and provision of technological resources [7, 19] thereby contributing to the reduction of disparities and magnitude of the digital divide present in the rural sector.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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