RESEARCH ARTICLE

JENER Journal of Empirical and Non-Empirical Research
Volume 2, Issue 10, Page 1697-1702 | Article No. 172
DOI: 10.4898/jenerv2i10.a172
ISSN: 7895-9216
Journal homepage: https://jenerjournal.com
Journal email: editor@jenerjournal.com

The Strategies in Developing the Computer Literacy Skills of the Grade 7 Learners in Goa District, Division of Camarines Sur

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ARTICLE INFORMATION

Article history:
Published: October 2026

Keywords:
Computer Literacy
ICT Instruction
Grade 7
Digital Competence
Teacher Strategies
Goa

ABSTRACT

The study examined perceived computer-literacy skills and instructional strategies among Grade 7 learners in Goa District, Division of Camarines Sur, during School Year 2024–2025. A descriptive-evaluative-correlational design involved 31 Grade 7 ICT teachers and a researcher-made questionnaire. Weighted means, frequencies, percentages, ranks, and Kendall's coefficient of concordance with chi-square tests were used at the 0.05 level. Basic computing, email and communication, social media management, search engines and digital libraries, and Microsoft Office indicators were rated Very Much Evident. Four instructional-strategy domains were rated Very Much Utilized. Significant skill-ranking agreement was reported except for email and communication systems and Microsoft Office. Significant strategy-ranking agreement was reported except for partnerships for teacher education. Recommendations emphasized hands-on tasks, professional development, collaboration, responsible technology use, and community engagement. The findings describe teachers' perceptions; they do not establish independent learner mastery or causal effects of the strategies. Direct performance tasks and clearer documentation of respondent grouping would strengthen subsequent evaluation.

1. Introduction

Computer literacy includes the ability to operate devices, communicate responsibly, locate and evaluate information, create digital content, and respond to problems. Familiarity with an application is one part of this broader competence. A learner may be confident with document formatting while still needing support in source evaluation, privacy, or troubleshooting. Assessing these dimensions separately gives a more useful picture than assuming that routine technology use implies general digital proficiency.

Vuorikari et al. (2022) describe digital competence through knowledge, skills, and attitudes needed for confident, critical, and safe engagement with technology. This framework provides a relevant conceptual comparison for the study's domains of basic computing, communication, social media, information searching, and office applications. It is not evidence that the study administered a standardized DigComp assessment, nor does it establish that the selected software-specific items exhaust the competencies relevant to Grade 7.

The study examined both perceived learner skills and teaching strategies in Goa District. Its instructional domains involved community initiatives, partnerships for teacher education, audience engagement, and interactive computer-literacy teaching. These domains recognize that ICT instruction extends beyond isolated technical demonstrations. However, their educational contribution depends on access, appropriate task design, teacher guidance, and opportunities for learners to demonstrate independent performance.

The study asked about the extent of computer-literacy development, the strategies used by Grade 7 ICT teachers, and agreement in the rankings of both. It also formulated policy recommendations. Professional collaboration may support review of teaching approaches and learner evidence; the Philippine Learning Action Cell policy provides a school-based setting for such work (Department of Education, 2016). The study contributes teacher judgments about local practices and skills rather than an independently administered test of digital competence.

2. Methods

2.1 Research design and scope

The study used a descriptive-evaluative-correlational research design in schools in Goa District, Division of Camarines Sur. The stated study period was School Year 2024–2025.

The study assessed reported practices and perceived outcomes through questionnaire responses. Allocation to an intervention, a comparison condition, and repeated outcome measurement were not reported. The findings are interpreted as descriptive evaluations and rank-order analyses; the design label alone does not establish a tested relationship or a causal effect.

2.2 Participants and setting

The study involved 31 Grade 7 teachers teaching ICT in schools in Goa District, Division of Camarines Sur. The respondents were the raters of the questionnaire indicators; the number of learners represented by their judgments was not reported.

The sampling frame, selection procedure, eligibility criteria, number invited, and response rate were not specified. Consequently, the representativeness of the respondents and the extent to which their judgments describe all schools in the setting cannot be established. No unreported school-level or respondent-group sample sizes were inferred.

2.3 Instrument and measures

The main data-gathering instrument was a researcher-made questionnaire. It assessed the domains presented in the Results, using indicator-level weighted means and verbal classifications. The response anchors, full scoring rules, interpretation cutoffs, validation procedures, pilot testing and reliability estimates were not reported. Category labels are therefore presented as the study's classifications rather than assigned from an assumed rating scale.

The unit represented in each descriptive table is the stated questionnaire indicator. Reported item means are retained without calculating new domain composites. Duplicate statements remain separate reported entries, and an unreported item value is identified as such where applicable. The ratings do not constitute independently scored learner assessments or administrative measures of school performance.

2.4 Data collection and analysis

Questionnaire administration was the stated data-collection approach. The administration mode, collection dates, instructions to respondents, procedures for incomplete responses, and evidence used by raters were not specified. Ethics review, institutional permission, consent and confidentiality procedures were not reported; no approval or consent process is asserted.

The reported analyses were weighted means, frequency counts, percentages, ranks, and Kendall's coefficient of concordance (W) with corresponding chi-square tests. The significance level was 0.05. The tables retain the reported W values, chi-square values and probability thresholds; exact probabilities were not inferred from inequalities. The group-level ranks, degrees of freedom, tie adjustments and statistical software were not specified.

Kendall's W describes concordance in rankings. The reported significance decisions address agreement in indicator orderings; they do not test causal effects, equality of mean ratings, or the relationship between strategy use and outcomes. No direct strategy–outcome correlation coefficient was reported. Nonsignificant concordance is not interpreted as evidence that an activity was unused or that a learner skill was low.

3. Results

The tables present the reported findings by domain, with interpretation immediately after each presentation. Item statements and values remain in their reported order. Uniform verbal classifications appear in table notes; mixed classifications are displayed by item. No missing numerical results or composite scores have been imputed.

Table 1. Perceived learner skills in Basic Computer Skills

Indicator	Weighted mean
The learner can use peripherals like a mouse, keyboard, and monitor	4.96
The learner can create and edit documents using software like Microsoft Word or Google Docs	4.95
The learner can create and deliver presentations (e.g., Microsoft PowerPoint)	4.84
The learner knows about the motherboard, hard drive, CPU, and memory	4.82
The learner can work with data in spreadsheets (e.g., Microsoft Excel, Google Sheets)	4.82
The learner knows common keyboard shortcuts (e.g., Ctrl+C for copy, Ctrl+V for paste)	4.57
The learner can identify and resolve common hardware issues	4.50
the learner can identify and resolve common software issues (e.g., restarting applications, checking internet connectivity)	4.50

Note. All reported indicators were classified as "Very Much Evident."

Table 1 shows reported item means from 4.50 to 4.96. Peripheral operation and document editing were prominent, while hardware and software troubleshooting were relatively lower. This suggests a distinction between routine application use and problem resolution. The favorable classifications should not obscure these different task demands, and direct tasks would be needed to establish independent troubleshooting competence.

Table 2. Perceived learner skills in Email and Communication Systems

Indicator	Weighted mean
Learners are familiar with video conferencing platforms	4.91
Learners uses instant messaging tools, learn how to use them effectively for quick communication with colleagues	4.89
Learners are able to how to write clear, concise, and professional emails	4.54
Learners are able compose, send, and receive emails	4.54
Learners know how to attach files (such as images or documents) to emails	4.53
Learners know how to reply to emails and forward messages	4.53
Learners understand the purpose of CC (carbon copy) and BCC (blind carbon copy)	4.51

Indicator	Weighted mean
learners are cautious when clicking on links or downloading attachments from unknown sources	4.50

Note. All reported indicators were classified as "Very Much Evident."

Table 2 shows reported item means from 4.50 to 4.91. Video conferencing and messaging were rated more favorably than email conventions and caution with unknown links. This pattern suggests that familiarity with communication tools and safe, professional use should be assessed separately. The table does not document whether learners can identify a suspicious message in a realistic task.

Table 3. Perceived learner skills in Social Media Management

Indicator	Weighted mean
The learner can understand various social media platforms (e.g., Facebook, Twitter, Instagram)	4.88
The learner can set privacy preferences	4.84
The learner can create and manage social media profiles	4.83
The learner can interpret social media analytics (likes, shares, engagement)	4.80
The learner can create and maintains a content calendar for social media posts	4.77
The learner can recognize real vs. fake news on social media	4.71
The learner can understand norms and best practices for online communication	4.68
the learner can create engaging content (text, images, videos) for social media	4.68

Note. All reported indicators were classified as "Very Much Evident."

Table 3 shows reported item means from 4.68 to 4.88. Platform familiarity and privacy settings were prominent, while content creation and communication norms were relatively lower. These judgments describe a broad set of social-media behaviors rather than a single technical skill. They do not establish actual privacy protection or the ability to evaluate misleading content.

Table 4. Perceived learner skills in Search Engines and Digital Libraries

Indicator	Weighted mean
The learner can formulate precise queries, evaluate search results, and identify reliable sources	4.83
The learner can refine their searches and find relevant information efficiently	4.82
The learner can assess the credibility and relevance of search results	4.82
The learner is familiar with platforms like JSTOR, PubMed, or Project MUSE, which help them access scholarly articles, e-books, and research papers	4.53
The learner is familiar with Zotero, EndNote, or Mendeley for organizing and citing sources	4.53
The learner is aware of their digital rights and responsibilities	4.51
The learner is familiar with the tools that enhance collaboration and document management skills	4.51
the learner knows how to protect their personal information, avoid phishing scams, and recognize fake news	4.50

Note. All reported indicators were classified as "Very Much Evident."

Table 4 shows reported item means from 4.50 to 4.83. Query formulation and search evaluation were prominent, while safety-related behaviors occupied the lower end. Familiarity with scholarly databases and reference managers was also rated favorably. The profile requires developmental interpretation for Grade 7 and does not show that learners can independently verify an unfamiliar source.

Table 5. Perceived learner skills in Microsoft Office

Indicator	Weighted mean
The learner can adjust the page size, margins, and indentions	4.99
The learner can explore pivot tables for summarizing and analyzing large data tables	4.99
The learner can use statistical functions (e.g., AVERAGE, STDEV) to analyze data sets	4.99
The learner can perform basic mathematical operations (addition, subtraction, multiplication, division) within cells	4.99
The learner can adjust the font size of the text	4.99

Indicator	Weighted mean
The learner can choose different typefaces for a uniform and readable appearance	4.92
The learner can insert, cuts, and pastes text in a document	4.77
the learner can artistically combine text, images, animations, or themes in the presentation	4.73

Note. All reported indicators were classified as "Very Much Evident."

Table 5 shows reported item means from 4.73 to 4.99. Several formatting, spreadsheet and statistical-function items shared the highest reported value. Combining media in presentations was relatively lower. This profile indicates favorable perceptions of specific office tasks, but it does not establish proficiency across the software suite or justify treating nonsignificant concordance as low performance.

Table 6. Rank-order agreement for perceived computer-literacy skills

Domain	Kendall's W	Chi-square	Reported probability
Basic Computer Skills	0.91	19.11	$p<0.01$
Email and Communication Systems	0.64	13.44	$p>0.05$
Social Media Management	0.95	19.95	$p<0.01$
Search Engines and Digital Libraries	0.80	16.80	$p<0.025$
Microsoft Office	0.47	9.87	$p>0.05$

Note. Significance level = 0.05. Numerical strings and probability notation are retained as reported; no p-values were recalculated.

Table 6 addresses the research question on rank-order agreement. Agreement was reported as significant for basic computing, social media and searching, but not for communication systems or Microsoft Office. This contrasts with favorable descriptive ratings in every skill domain. Statistical nonsignificance in a ranking test does not identify low proficiency. The results instead limit claims of a common ordering and should be supplemented with direct evidence before targeted skill deficits are asserted.

Table 7. Teaching strategies in Supporting Community Level Initiatives

Indicator	Weighted mean
The teacher encourages learners to use multimedia tools to share local culture, history, or personal experiences	4.77
The teacher encourages learners to create apps that address community needs	4.76
The teacher set up tech repair clinics in collaboration with local repair shops or experts	4.67
The teacher leads campaigns to raise awareness about digital literacy	4.61
The teacher collaborates with non-governmental organizations (NGOs) and local government bodies	4.50
The teacher joining joint initiatives can focus on digital literacy campaigns, e-governance, or community surveys	4.50
The teacher organizes coding clubs or workshops within the community	4.50
The teacher organizes local hackathons or coding competitions	4.50

Note. All reported indicators were classified as "Very Much Utilized."

Table 7 shows reported item means from 4.50 to 4.77. Sharing local experiences through multimedia and developing community-oriented applications were prominent. Coding clubs, partnerships and competitions were relatively lower. The pattern suggests a distinction between contextualizing classroom outputs and sustaining broader community structures, which would require evidence of actual participation and continuity.

Table 8. Teaching strategies in Establishing Partnership for Teacher Education

Indicator	Weighted mean
The teacher join online forums, social media groups, or professional networks focused on ICT in education	4.64
The teacher establish mentorship programs within schools wherein experienced ICT teachers guide newer colleagues in integrating technology effectively	4.52
The teacher encourage peer collaboration and knowledge-sharing	4.52
The teacher invites guest speakers or organize field trips related to technology	4.52
The teacher invites pre-service teachers to observe ICT classes or participate in workshops	4.50

Indicator	Weighted mean
The teacher conduct joint training sessions where experienced ICT teachers share effective practices with aspiring educators	4.50
The teacher engage parents and community members in discussions about digital literacy and responsible technology use	4.50
the teacher conduct action research within the school context and explore how specific ICT strategies impact learners learning	4.50

Note. All reported indicators were classified as "Very Much Utilized."

Table 8 shows reported item means from 4.50 to 4.64. Professional networks were prominent within partnerships, while action research and several other activities occupied the lower end. These practices are not interchangeable: accessing a network differs from evaluating a classroom strategy. The nonsignificant ranking agreement later in the study should be read as a limit on shared priorities.

Table 9. Teaching strategies in Promoting Audience Engagement

Indicator	Weighted mean
The teacher use discussions, peer feedback, and knowledge sharing	4.97
The teacher utilize online platforms, discussion forums, or learning management systems where learners can actively participate, ask questions, and collaborate	4.96
The teacher use videos, animations, and interactive simulations to explain complex ICT concepts	4.94
The teacher tailor learning experiences based on learners' interests and abilities	4.87
The teacher engage learners in discussions about ethical issues related to technology	4.86
The teacher incorporate educational games, quizzes, or challenges related to ICT concepts	4.84
The teacher foster teamwork by assigning group projects	4.71
the teacher create tutorials, lead workshops, or present on ICT topics	4.70

Note. All reported indicators were classified as "Very Much Utilized."

Table 9 shows reported item means from 4.70 to 4.97. Discussion, peer feedback and online participation were prominent, while learner tutorials and group projects were relatively lower. The profile suggests an emphasis on interaction. It does not establish that participation produced deeper understanding or that every learner had comparable opportunities to contribute.

Table 10. Teaching strategies in Teaching Learners' Computer Literacy in an Interactive Way

Indicator	Weighted mean
The teacher uses interactive whiteboards to display content, engage learners, and encourage participation	4.93
The teacher discusses the impact of social media and digital footprints	4.91
The teacher teaches learners to search for information online, evaluate sources, and cite appropriately	4.62
The teacher explores platforms that adapt content based on learners' progress and learning pace	4.54
The teacher utilizes Moodle, Edmodo, or Google Classroom for assignments, discussions, and quizzes	4.52
The teacher uses gamification learning by incorporating game elements into lessons (e.g., quizzes, badges, leaderboards)	4.51
The teacher uses online tools for formative and summative assessments	4.50
the teacher attends webinars on emerging technologies and trends	4.50

Note. All reported indicators were classified as "Very Much Utilized."

Table 10 shows reported item means from 4.50 to 4.93. Interactive whiteboards and discussion of digital footprints were prominent. Assessment tools and teacher webinars occupied the lower end. The domain combines classroom practices with teacher development, so its favorable classification should not be interpreted as a direct measure of learner interactivity alone.

Table 11. Rank-order agreement for the perceived outcome domains

Domain	Kendall's W	Chi-square	Reported probability
Supporting Community-level Initiatives	0.75	15.75	<0.05

Domain	Kendall's W	Chi-square	Reported probability
Establishing Partnership for Teacher Education	0.59	12.39	p>0.05
Promoting Audience Engagement	0.89	18.69	p<0.01
Teaching Learners' Computer Literacy in an Interactive Way	0.82	17.22	p<0.025

Note. Significance level = 0.05. Numerical strings and probability notation are retained as reported; no p-values were recalculated.

Table 11 addresses the research question on rank-order agreement. Agreement was reported as significant for community initiatives, audience engagement and interactive teaching, while partnerships for teacher education were nonsignificant. This pattern concerns priorities within each instructional domain. It does not establish that partnerships were unused or that the other strategies improved computer literacy. The missing group definitions limit interpretation of whose rankings were being compared.

4. Discussion

The study portrays computer-literacy skills as broadly evident and instructional strategies as widely used. However, neither the high ratings nor their coexistence establish that the reported strategies caused skill development. No strategy–skill correlation is presented. The concordance tests concern the ordering of indicators and should not be interpreted as tests of the relationship between teaching practices and learner competence.

The skill domains encompass operational, informational, communicative, and safety-related behaviors. Vuorikari et al. (2022) provide a relevant framework for considering this breadth. The study's software-specific items are useful descriptions of particular tasks, but evidence of formatting or spreadsheet use does not automatically demonstrate critical information evaluation or responsible online behavior. Future assessment should make the performance criteria for each domain explicit.

The nonsignificant rankings for communication systems and Microsoft Office do not show that these were low-performing domains. Both were rated Very Much Evident, and several office-application items approached the highest reported values. The results instead limit claims of a shared priority ordering. Decisions about targeted support should therefore rely on task-level evidence rather than interpreting statistical nonsignificance as a skill deficit.

The recommendations place responsibility on teachers, school heads, ICT coordinators, and community partners. Their practical value would depend on coordinated implementation and evidence of learner participation. Learning Action Cell sessions could support demonstrations, shared assessment criteria, and review of common instructional problems (Department of Education, 2016). A subsequent evaluation should also establish access conditions so that differences in equipment or connectivity are not mistaken for differences in learner capability.

5. Implications for practice and further research

The study supports using the indicator-level pattern as a starting point for local review. Decisions should connect a stated need with a feasible response and a criterion for judging progress. Relative positions within a favorable profile are not equivalent to measured deficits, and a significant ranking result is not evidence that a proposed policy will work. Recommendations should be implemented with attention to context and evaluated rather than assumed effective.

Further research should use clearly defined outcomes and document how they are measured. Direct performance tasks, observations, or independently recorded school indicators could complement questionnaire ratings. A longitudinal or comparative evaluation could examine change over time, provided the design addresses baseline differences and alternative explanations. These are proposed directions for future work, not procedures undertaken in the study.

6. Conclusion

The study rated the five computer-literacy domains Very Much Evident and the four instructional-strategy domains Very Much Utilized. Significant agreement was reported for most rankings, with exceptions for email and communication systems, Microsoft Office, and partnerships for teacher education. The findings support recommendations for practical instruction, professional support, and responsible digital participation. They do not establish causal skill improvement or independently verified learner mastery.

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