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The 21st Century Skills of Junior High School Learners and Their Relationship to Their Academic Performance: Demands of Modern Global Society

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ABSTRACT

This study assessed the 21st century skills of junior high school learners and examined their relationship with academic performance at Carlos F. Gonzales National High School, San Rafael West District, Schools Division of Bulacan. A quantitative descriptive-correlational design was employed among 168 randomly selected Grade 7 to Grade 10 learners during School Year 2024-2025. Simple random sampling through an electronic raffle was used. Data were gathered using a modified 21st century skills questionnaire-checklist and were analyzed using frequency, percentage, weighted mean, Pearson product-moment correlation coefficient, and analysis of variance. The respondents demonstrated a Very Good level of 21st century skills across nine dimensions. Based on the recalculated average of the reported domain means, the overall weighted mean was 3.48. Socio-cultural skills obtained the highest mean (M = 3.62), followed by learning and metacognition skills (M = 3.57) and decision-making and problem-solving skills (M = 3.51). Creativity and innovation skills obtained the lowest mean (M = 3.37), although still interpreted as Very Good. The source manuscript reported low positive relationships between academic performance and eight skill dimensions, with coefficients ranging from r = .31 to r = .38. Communication skills were reported as having no correlation with academic performance (r = .10). No significant differences in the learners' 21st century skills were reported when grouped according to age, gender, grade level, and academic-performance category. The findings support sustained integration of communication, English-language proficiency, collaborative learning, innovation-oriented tasks, and metacognitive activities in junior high school instruction.

Keywords: *21st century skills, academic performance, junior high school learners, communication skills, collaboration skills, metacognition*

INTRODUCTION

The rapid development of technology and the changing demands of society have transformed the skills that learners need for academic, personal, and professional success. The fourth industrial revolution has intensified the need for individuals who can adapt to change, communicate clearly, collaborate effectively, solve problems, evaluate information, and use technology responsibly (Rogayan & Macanas, 2020). Schools therefore have an important role in preparing learners for a knowledge-based and globally connected society.

The Partnership for 21st Century Skills identified competencies that extend beyond the mastery of subject content. These include learning and innovation skills, information and media literacy, and life and career skills (Partnership for 21st Century Skills, 2009). Binkley et al. (2012) likewise organized 21st century competencies into ways of thinking, ways of working, tools for working, and living in the world. These frameworks emphasize that learners must be able to apply knowledge in authentic contexts rather than simply recall information.

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In the Philippine basic education context, DepEd Order No. 35, s. 2016 emphasizes the importance of learner-centered instructional processes and the integration of relevant competencies in the K to 12 curriculum. The development of critical thinking, problem-solving, communication, collaboration, information literacy, and adaptability is especially relevant for junior high school learners who are preparing for more complex academic work and future career pathways.

This study examined the 21st century skills of junior high school learners at Carlos F. Gonzales National High School. Specifically, it described the learners' profile, assessed nine dimensions of 21st century skills, determined their relationship with academic performance, and tested whether the skills differed according to age, gender, grade level, and academic-performance category.

Literature Review

21st Century Skills and Learner Readiness

Twenty-first century skills refer to a broad set of competencies, dispositions, and habits that enable learners to respond to the demands of contemporary education, work, and civic life. Larson and Miller (2011) emphasized the application of knowledge through communication, collaboration, technology use, creative thinking, and problem-solving. Van Laar et al. (2017) further identified the relationship between digital competencies and broader skills such as critical thinking, communication, collaboration, creativity, and problem-solving.

Adaptability, Collaboration, and Communication

Adaptability and flexibility help learners respond constructively to change, unfamiliar situations, and new learning demands. Collaboration requires responsibility, trust, and productive interaction within a group. Communication skills involve the ability to express ideas clearly, listen attentively, ask questions, and provide or receive feedback. These competencies are closely connected because learners must communicate effectively when working with others and adapting to complex tasks.

Creativity, Problem-Solving, and Information Literacy

Creativity and innovation involve generating and refining ideas, while decision-making and problem-solving require learners to assess situations, review evidence, consider alternatives, and select appropriate responses. Information and media literacy allow learners to locate, evaluate, organize, and use information responsibly. These competencies are increasingly important in digital environments, where access to information does not automatically guarantee accurate understanding or ethical use (Boholano, 2017; Van Laar et al., 2017).

Leadership, Metacognition, and Socio-Cultural Skills

Leadership skills enable learners to inspire participation, accept responsibility, and support common goals. Metacognitive skills involve awareness of one's strengths, weaknesses, goals, strategies, and learning needs. Socio-cultural skills refer to respect for diversity and the ability to interact appropriately with people from different backgrounds. Together, these competencies support learner independence, social responsibility, and readiness for real-world participation.

Academic Performance and 21st Century Skills

Prior studies have shown that 21st century skills may be associated with academic and personal development. Tindowen et al. (2017) examined the skills of alternative learning system learners, while Rogayan et al. (2021) assessed the 21st century skills of social studies students. Gonzales (2020) likewise documented variations across dimensions of 21st century skills in higher education. These studies provide a basis for examining how similar competencies are manifested among junior high school learners.

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METHODS

Research Design

The study employed a quantitative descriptive-correlational research design. The descriptive component was used to summarize the learners' profile and perceived level of 21st century skills. The correlational component examined the relationship between the skill dimensions and academic performance. Analysis of variance was used to test differences in skill levels across selected profile groups.

Research Locale

The study was conducted at Carlos F. Gonzales National High School in San Rafael West District, Schools Division of Bulacan. Data gathering was conducted during the first grading period of School Year 2024-2025.

Participants and Sampling Technique

The participants were 168 junior high school learners from Grades 7 to 10. Simple random sampling was applied through an electronic raffle, giving eligible learners an equal chance of being selected.

Research Instrument

The primary instrument was a modified 21st century skills questionnaire-checklist. The first section gathered the learners' demographic profile and academic-performance category. The second section measured nine skill dimensions: adaptability and flexibility, creativity and innovation, communication, collaboration, decision-making and problem-solving, information and media literacy, leadership, learning and metacognition, and socio-cultural skills. The instrument used a four-point scale: 3.26-4.00, Very Good; 2.51-3.25, Good; 1.76-2.50, Fair; and 1.00-1.75, Poor.

The source manuscript states that the instrument was adapted, substantially modified for the local context, pre-tested among non-participating learners, and assessed using Cronbach's alpha. However, the final reliability coefficient was not reported. No unsupported coefficient is introduced in this article.

Data Gathering Procedure

Permission to administer the questionnaire was secured from the appropriate education authorities and school personnel. The respondents were informed of the purpose of the study, and participation was voluntary. The researcher administered the survey through Google Forms and explained the instructions before data collection. The responses were compiled, encoded, and analyzed.

Data Analysis

Frequency and percentage were used to describe the respondents' profile. Weighted mean was used to determine the level of 21st century skills. Pearson product-moment correlation coefficient was used to examine the relationship between each skill dimension and academic performance. Analysis of variance was used to test differences in 21st century skills according to age, gender, grade level, and academic-performance category.

Ethical Consideration

The study observed voluntary participation, confidentiality, anonymity, and the responsible handling of data. Learners were informed of the purpose of the survey and the confidentiality of their responses. Because the participants were junior high school learners and may include minors, the researcher should retain documented parental or guardian consent and learner-assent records for journal-submission purposes.

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RESULTS AND DISCUSSION

Profile of the Respondents

Table 1. *Profile of the Junior High School Learners (N = 168)*

Profile Variable	Category	Frequency	Percentage
Age	11-12 years old	34	20.24%
	13-14 years old	42	25.00%
	15-16 years old	86	51.19%
	17 years old and above	6	3.57%
Gender	Male	64	38.10%
	Female	104	61.90%
Grade level	Grade 7	36	21.43%
	Grade 8	40	23.81%
	Grade 9	42	25.00%
	Grade 10	50	29.76%
Academic performance	Approaching Proficiency (80-84)	6	3.57%
	Proficient (85-89)	24	14.28%
	Advanced (90 and above)	138	82.15%

Most respondents were 15 to 16 years old (51.19%), female (61.90%), and enrolled in Grade 10 (29.76%). In terms of academic performance, 138 learners (82.15%) were classified within the Advanced category, 24 (14.28%) were Proficient, and six (3.57%) were Approaching Proficiency. No learner was classified under the Beginning or Developing categories.

Level of 21st Century Skills

Table 2. *Summary of the Learners' 21st Century Skills*

Skill Dimension	Weighted Mean	Interpretation	Rank
Socio-cultural skills	3.62	Very Good	1
Learning and metacognition skills	3.57	Very Good	2
Decision-making and problem-solving skills	3.51	Very Good	3
Information and media literacy skills	3.48	Very Good	4
Adaptability and flexibility skills	3.46	Very Good	5.5
Leadership skills	3.46	Very Good	5.5
Collaboration skills	3.44	Very Good	7
Communication skills	3.42	Very Good	8
Creativity and innovation skills	3.37	Very Good	9
Recalculated overall weighted mean	3.48	Very Good	

The learners rated themselves Very Good across all nine dimensions. Socio-cultural skills obtained the highest mean (M = 3.62), indicating respect for diversity, culture, beliefs, and traditions. Learning and metacognition skills ranked second (M = 3.57), while decision-making and problem-solving skills ranked third (M = 3.51). Creativity and innovation obtained the lowest domain mean (M = 3.37), although it remained within the Very Good range.

Based on the nine reported domain means, the recalculated overall weighted mean was 3.48. This value differs from the inconsistent overall figures stated in some narrative portions of the source manuscript. The domain-level data support the conclusion that learners generally perceived themselves as equipped with relevant 21st century competencies.

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Priority Indicators for Improvement

Table 3. *Selected Lower-Rated Skill Indicators*

Skill Dimension	Selected Indicator	Mean	Interpretation
Communication	I have good command of English languages.	2.30	Fair
Creativity and innovation	I address issues and concerns and find innovative solutions for these challenges.	3.18	Good
Collaboration	I open the table for ideas to come up with better decision-making.	3.18	Good
Adaptability and flexibility	I can work with different types of people.	3.19	Good
Leadership	I build rapport among my peers.	3.14	Good
Information and media literacy	I can manipulate computers, smartphones, tablets and other modern gadgets.	3.23	Good

Although the overall domain ratings were positive, the item-level results identify priorities for instructional support. English-language proficiency received the lowest reported mean (M = 2.30), interpreted as Fair. Learners may also benefit from structured opportunities to solve authentic problems, exchange ideas during group work, build rapport with peers, work with unfamiliar people, and strengthen practical digital skills.

Relationship Between 21st Century Skills and Academic Performance

Table 4. *Reported Correlations Between Skill Dimensions and Academic Performance*

Skill Dimension	Pearson r	Reported Interpretation	Null Hypothesis
Adaptability and flexibility skills	.32	Low correlation	Rejected
Communication skills	.10	No correlation	Accepted
Collaboration skills	.38	Low correlation	Rejected
Creativity and innovation skills	.37	Low correlation	Rejected
Decision-making and problem-solving skills	.33	Low correlation	Rejected
Information and media literacy skills	.32	Low correlation	Rejected
Leadership skills	.37	Low correlation	Rejected
Learning and metacognition skills	.31	Low correlation	Rejected
Socio-cultural skills	.38	Low correlation	Rejected

The source manuscript reported low positive relationships between academic performance and eight skill dimensions, with coefficients ranging from r = .31 to r = .38. Communication skills were reported as having no correlation with performance (r = .10). The highest reported coefficients were observed for collaboration and socio-cultural skills (r = .38), followed by creativity and innovation and leadership skills (r = .37).

The correlations should be interpreted cautiously. They indicate association rather than causation, and the submitted manuscript does not report the exact p-values for the dimension-level correlations. The final statistical output should be attached or verified before publication.

Differences in 21st Century Skills According to Learner Profile

Table 5. *Reported Differences in 21st Century Skills According to Profile Variables*

Profile Variable	F-computed	F-critical	p-value	Interpretation	Null Hypothesis
Age	1.09	2.72	.40	Not significant	Accepted
Gender	.83	3.96	.40	Not significant	Accepted
Grade level	1.09	2.72	.96	Not significant	Accepted
Academic performance	2.40	3.11	.24	Not significant	Accepted

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No significant differences in the learners' 21st century skills were reported according to age, gender, grade level, or academic-performance category. These findings suggest that the learners generally demonstrated similar self-assessed competency levels across the examined profile groups.

Proposed Enhancement Priorities

Table 6. *Proposed School-Based Enhancement Priorities*

Priority Area	Recommended Action	Persons Involved	Expected Outcome
English-language communication	Strengthen oral and written communication through reading, speaking, writing, and feedback activities.	Language teachers, subject teachers, learners	Improved confidence and clarity in English communication
Authentic problem-solving	Use project-based and inquiry-oriented tasks involving real community and school issues.	Subject teachers and learners	Stronger innovation, judgment, and solution-building skills
Collaborative learning	Provide structured roles, peer-feedback routines, and group decision-making activities.	Teachers and learners	Improved teamwork, trust, and openness to ideas
Digital literacy	Integrate responsible information searching, digital organization, productivity tools, and media-literacy tasks.	Teachers and ICT coordinators	More effective and ethical technology use
Leadership and socio-cultural awareness	Conduct peer-led activities and culturally responsive learning experiences.	School heads, advisers, student leaders	Improved rapport, responsibility, and respect for diversity
Progress monitoring	Use periodic learner self-assessment, teacher observation, and performance evidence.	School heads and teachers	Evidence-informed refinement of interventions

CONCLUSION

Junior high school learners at Carlos F. Gonzales National High School generally demonstrated a Very Good level of 21st century skills across adaptability and flexibility, creativity and innovation, communication, collaboration, decision-making and problem-solving, information and media literacy, leadership, learning and metacognition, and socio-cultural skills. Socio-cultural and metacognitive competencies emerged as relative strengths, while creativity and innovation obtained the lowest domain-level mean. Item-level findings also identified English-language proficiency as an important area for improvement. The source manuscript reported low positive relationships between academic performance and eight skill dimensions, while communication skills were reported as having no correlation with performance. No significant differences were reported according to age, gender, grade level, and academic-performance category. The results support continued school-based efforts to develop communication, collaboration, innovation, problem-solving, digital literacy, leadership, and reflective learning practices.

Recommendations

1. Teachers may incorporate authentic, collaborative, and inquiry-oriented learning tasks that allow learners to practice communication, decision-making, problem-solving, creativity, and innovation.
2. English-language proficiency may be strengthened through integrated speaking, reading, writing, presentation, and feedback activities across learning areas.
3. Schools may provide structured opportunities for learners to work with diverse peers, build rapport, exchange ideas, and participate in group decision-making.
4. Digital-literacy activities may include responsible information searching, evaluation of sources, organization of digital content, and the ethical use of media and productivity tools.
5. School heads may use the proposed enhancement priorities as a basis for learner-development programs, teacher professional development, and monitoring activities.

6. Future researchers may examine additional variables, use objective performance measures, verify the psychometric properties of the instrument, and conduct similar studies across multiple schools or districts.

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