Utilization of Information and Communication Technology and 21st Century Skills

Marecel E. Krawczyk[1], Melinda M. Garabato[2]

[1,2]Southern de Oro Philippines College, Cagayan de Oro City, Philippines

ABSTRACT: Learning has now become beyond the four corners of the classroom. Utilization of Information and Communication Technology (ICT) enhances learning which students may either develop the 21st Century skills or otherwise. This study aimed to determine the relationship between utilization of ICT and 21st Century skills of students of East 1 District, Division of Gingoog City for SY 2023-2024. Specifically, this study sought to determine the extent of ICT utilization in terms of learning activities, and perceived impact; the level of 21st Century skills of students in terms of learning skill, creative thinking skill, collaborative skill, communication skill, and technological skills. This study employed descriptive correlational research design and utilized a researcher-made questionnaire for the ICT utilization and adapted and modified questionnaire for the 21st Century skills to 293 respondents who were selected through Slovin's Formula. Mean, Standard Deviation and Pearson Product Moment Correlation Coefficient were used to analyze the data. Results revealed that students' ICT utilization is at high extent. Students' 21st Century skills are developed specially the collaboration skill. There is a weak positive correlation between the extent of students' ICT utilization and 21st Century skill. Thus, promoting digital literacy programs to teach students how to effectively use ICT tools, evaluate online information, and understand digital ethics may be emphasized.

KEYWORDS: ICT Utilization, Impact of ICT, Twenty-First Century Skills

I. INTRODUCTION

Present-day students are born with the presence of the internet and smartphones. Most of them do not know or remember how life is without the internet and their phones. Growing up with all these technologies and access to vast information can overwhelm these individuals. That is why it is important that for teachers to be able to direct the students to become productive as individuals.

A Pew Research Center survey reveals considerable internet usage gaps among older and younger Filipinos (Gonzales, 2020). According to the survey, the Philippines has the 4th highest differential when it comes to internet use by age. 94% of 18- to 29-year-olds use the internet, at least occasionally, or own a smartphone. For the 50-plus crowd, the number is 36%, which makes for a percentage differential of 58. This signifies those older individuals are less likely to use or own these devices. On the contrary, most younger individuals have been dependent on smartphones and the internet.

A study of Philippine Institute for Development Studies (PDIS) indicates that 51% of Filipinos do not use the Internet. This is a significant portion of the population. The main causes of this unwillingness are a lack of knowledge about the internet and inexperience with using it. In addition, 31% of the nation's population refrains from engaging in online employment because they believe they lack the necessary knowledge or abilities (Hani, 2021). These findings highlight the urgent need for programs focused on improving digital literacy and skill development to enable a larger portion of the population to take advantage of the benefits offered by the Internet and online job opportunities.

Further innovations that aid education have further grown. Several emerging learning technologies were discussed in the study of Cukurova and Luckin (2018). These include virtual reality implementations, augmented reality implementations, mobile learning devices, physical computing tools, and internet of things hardware with sensors and technologies that allow collaborative learning at a great scale. This widens the boundaries of the teaching and learning process. Learning has now become beyond the four corners of the classroom.

The result of the study conducted by Hori and Fujii (2021) indicated that it is important to set tasks that provide a continuum of ICT use, both in and out of school, in order to motivate students. This may allow for further impact on the learning

of the students, improving both their understanding and retention. These results may imply that incorporation of ICT has the potential to yield several positive outcomes for students. It can enhance their understanding of the subject matter by providing real-world contexts and applications for the knowledge and skills they acquire. It can also contribute to better retention of information, as students are more likely to remember and apply what they have learned when it is relevant to their daily experiences.

Meanwhile, the study of Mafang'ha (2016) indicated that using ICT in teaching has benefits for both teachers and students. Results further showed that poor ICT skills and lack of access to facilities and resources hinder the utilization of ICT by teachers in school. The findings showed that while ICT has the potential to improve teaching and learning processes, problems with educators' ICT proficiency and providing equal access to technological resources must still be addressed in order to fully realize these benefits in educational settings. It emphasized the significance of equitable resource distribution and professional development to enable successful ICT integration in schools.

II. METHODOLOGY

A research design, this study employed the descriptive survey correlational method of research as its primary approach to achieve its defined objectives. Descriptive research is a comprehensive and systematic inquiry method that focuses on uncovering facts and providing a thorough and precise interpretation of the findings. This method is particularly effective in shedding light on current conditions, prevalent practices, existing situations, or any observed phenomena (Siedlecki, 2020).

In the context of this study, a descriptive-survey research approach was utilized to collect and analyze data. This research technique employed surveys as means of gathering pertinent information, which were used to explore and understand the relationship between the utilization of Information and Communication Technology (ICT) and the 21st Century skills of junior high school students. The descriptive-survey research method involved a series of structured activities, including description, data recording, detailed analysis, and insightful interpretation of the interplay between the variables under investigation.

By adopting this research approach, the study aimed to provide a detailed and comprehensive account of the relationship of utilization of ICT and the 21st Century skills of junior high school students. Through the systematic collection and analysis of data via surveys, this research illuminated this relationship, contributing valuable insights to the field of education and technology integration. This methodological choice underscored the study's commitment to offering a rigorous and informative examination of the subject matter, ensuring that the findings were well-grounded and substantiated.

III. RESULTS AND DISCUSSION

Problem 1. What is the extent of ICT utilization of students in the school in terms of:

    1.1 learning activities; and
    1.2 perceived impact of ICT?

Table 1 on the previous page shows the ICT utilization of students in terms of Learning Activities with the Overall Mean of 2.90 with SD = 0.53, described as Agree and interpreted as High Extent. This means that students are extensively integrating ICT into their learning process, leading to improved efficiency, engagement, and access to resources. This also implies that they demonstrate adaptability to digital assessment methods, self-directed learning skills, and proficiency in digital communication and collaboration. With students having the ability to effectively utilize ICT for learning, increased academic achievement and a deeper understanding of subject matter can be better achieved.

Table 1: Learning Activities

Indicators	Mean	SD	Description	Interpretation
1. I use ICT to help me in doing my homework and projects.	2.89	0.54	Agree	High Extent
2. I play educational games to learn and master my lessons.	2.91	0.54	Agree	High Extent
3. I use ICT to access online resources.	3.07		Agree	High Extent
4. I use ICT to answers online tests and quizzes.	2.94	0.53	Agree	High Extent
5. I use ICT to look up online guides and videos to help me understand the subjects better.	2.91	0.54	Agree	High Extent
6. I use ICT to prepare slideshows and video presentations.	2.93	0.53	Agree	High Extent
7. I use ICT to easily get information outside of regular hour.	2.65	0.56	Agree	High Extent
8. ICT makes it easy for me to work together on group projects with my classmates.	2.97	0.52	Agree	High Extent

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	Mean	SD	Description	Interpretation
9. I develop literacy skills I need through ICT.	3.04	0.51	Agree	High Extent
10. ICT helps me grow by adjusting learning experiences to meet my needs.	2.73	0.55	Agree	High Extent
Overall Mean	**2.90**	**0.53**	**Agree**	**High Extent**

Note: 3.26 – 4.00 Very High Extent; 2.51 - 3.25 High Extent; 1.76 - 2.50 Low Extent; 1.00 - 1.75 Very Low Extent

Moreover, indicator 1, on ICT utilization of students in terms of perceived impact, the statement, *ICT helps me understand difficult lessons*, has the highest Mean of 2.99 with SD = 0.5, described as Agree and interpreted as High Extent. This means that students find that ICT helps them understand difficult lessons. ICT may provide visual aids like videos and animations that make complex concepts easier to grasp. Interactive features allow for hands-on learning experiences, while access to online resources supplements traditional materials. Personalized learning options cater to individual needs, and collaborative tools foster discussion and knowledge sharing among peers.

On the other hand, indicator 10, *ICT helps me balance my virtual and face-to-face interaction activities,* has the lowest Mean 2.81 with SD = 0.65, though lowest but still described as Agree and interpreted as High Extent. This means that students perceived that technology makes it easier for them to manage both online and offline communication. This may also imply that they can use tools like social media and video calls to stay connected with classmates and teachers, whether they are in the classroom or not. This flexibility also helps with time management, as they can schedule meetings and work on projects online.

These findings underscore the importance of integrating both formal and informal uses of technology to enhance students' educational experiences and outcomes. The technical skills themselves are not sufficient to use ICT for effective information access. People's perceptions, presumptions, and beliefs around ICT affect how they evaluate and respond to the information they obtain. Understanding how individuals interact with the technology they use is vital. For students to succeed, they must receive help in learning how to incorporate ICT into their schoolwork, ensuring they can navigate and utilize digital resources critically and effectively (Stein & Sim, 2020).

Table 2 shows the ICT utilization of students in terms of its perceived impact with the Overall Mean of 2.93 with SD = 0.52, described as Agree and interpreted as High Extent. This means that students believe that ICT has influenced their performance in school and their lives in general. It also implies that ICT tools and resources have a significant influence on their academic outcomes and achievements. This can encompass various aspects, including the belief that access to ICT enhances learning opportunities, improves study efficiency, facilitates collaboration, or provides access to valuable resources.

Table 2: Perceived Impact

Indicators	Mean	SD	Description	Interpretation
1. ICT helps me understand difficult lessons.	2.99	0.51	Agree	High Extent
2. ICT makes access learning materials easily.	2.95	0.52	Agree	High Extent
3. ICT inspires and motivates me to engage in learning activities.	2.93	0.53	Agree	High Extent
4. ICT enhances my ability to communicate and collaborate with classmates and teachers effectively.	2.87		Agree	High Extent
5. ICT boosts my learning through its interactive experience.	2.94	0.53	Agree	High Extent
6. ICT helps me become more independent and study on my own, which helps me improve in studies.	2.95	0.52	Agree	High Extent
7. ICT upgrade my skills of concentration in studying.	2.98	0.51	Agree	High Extent
8. ICT integration on traditional lessons make it more interesting for me to study and learn.	2.93	0.53	Agree	High Extent
9. ICT usage has a positive impact on my mental and physical health.	2.97	0.52	Agree	High Extent
10. ICT helps me balance my virtual and face-to-face interaction activities.	2.81	0.54	Agree	High Extent
Overall Mean	**2.93**	**0.52**	**Agree**	**High Extent**

Note: 3.26 – 4.00 Very High Extent; 2.51 - 3.25 High Extent; 1.76 - 2.50 Low Extent;   1.00 - 1.75 Very Low Extent

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supplements traditional materials. Personalized learning options cater to individual needs, and collaborative tools foster discussion and knowledge sharing among peers.

On the other hand, indicator 10, *ICT helps me balance my virtual and face-to-face interaction activities,* has the lowest Mean 2.81 with SD = 0.65, though lowest but still described as Agree and interpreted as High Extent. This means that students perceived that technology makes it easier for them to manage both online and offline communication. This may also imply that they can use tools like social media and video calls to stay connected with classmates and teachers, whether they are in the classroom or not. This flexibility also helps with time management, as they can schedule meetings and work on projects online.

The integration of ICT allowed for a mix of traditional face-to-face and interactive virtual classes. This suggests that ICT was utilized to enhance both in-person and online learning experiences. Students may have used technology to access lecture recordings, participate in virtual discussions or activities, and engage with course materials outside of the classroom (Lewohl, 2023).

Table 3 shows the overall result of the ICT utilization of students. It has an Overall Mean of 2.92 with SD = 0.53, described as Agree and interpreted as High Extent. This means that students are able to utilize ICT as aid in their learning. This implies that ICT devices, equipment, and facility are readily available for students' use and that they have employed them in their schoolwork such as assignments and projects knowing its impact to performance and output. With access to computers, laptops, tablets, and internet connectivity, students engage in research, collaborative works and projects, and create multimedia presentations. The utilization of educational software, online platforms, and digital resources enhances the depth and breadth of their learning experiences.

Table 3: Overall ICT Utilization of Students

Variables	Mean	SD	Description	Interpretation
Learning Activities	2.90	0.53	Agree	High Extent
Perceived Impact	2.93	0.52	Agree	High Extent
Overall Mean	**2.92**	**0.53**	**Agree**	**High Extent**

Note: 3.26 – 4.00 Very High Extent; 2.51 - 3.25 High Extent; 1.76 - 2.50 Low Extent; 1.00 - 1.75 Very Low Extent

Through the utilization of ICT tools, students may access vast amount of information, allowing them to explore large datasets, perform comprehensive analysis, and express their discoveries through creative presentations. This integration fosters proficiency in digital literacy while also promoting critical thinking, improving problem-solving skills, and fostering creativity in both learning and practical application. By engaging with these tools, students develop a holistic skill set essential for success in the modern digital age.

Moreover, the variable on ICT utilization in terms of Perceived Impact has the highest Mean of 2.93 with SD = 0.52, described as Agree and interpreted as High Extent. The outcome indicates a strong agreement among students regarding the significant impact of ICT. It emphasizes the critical need for the integration of technology within learning environments to elevate student outcomes. This underscores the necessity of providing students with the necessary knowledge and skills to proficiently navigate, utilize, and harness technology for academic achievement. Recognizing the impact of ICT offers educators a valuable opportunity to explore into innovative teaching methodologies and pedagogical strategies, leveraging technology to enrich and optimize student learning experiences.

On the other hand, between the two variables of High Extent, Learning Activities have the lowest Mean of 2.90 and a SD = 0.53, described as Agree and interpreted as High Extent. The data implies that the students have utilized ICT in their learning activities for their respective schoolwork. This underscores the importance of ensuring access to ICT resources in educational settings to support student learning activities, fostering digital literacy skills essential for thriving in a technology-driven world. It highlights the need to prioritize investments in ICT infrastructure and support mechanisms to meet the evolving needs of students and enhance their overall learning experiences.

Problem 2. What is the level of 21st Century skills of students in terms of:

    1.1   Learning;
    1.2   Creative Thinking;
    1.3   Collaborative;
    1.4   Communication; and
    1.5   Technological?

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Table 4: Learning Skills

	Indicators	Mean	SD	Description	Interpretation
1	I have a strong desire to learn.	3.30	0.54	Strongly Agree	Highly Developed
2	I value the importance of reflecting on meaningful learning experiences	3.28	0.55	Strongly Agree	Highly Developed
3	I search for the meaning and significance of various things on my own.	2.98	0.61	Agree	Developed
4	I convey information in a logical and clear manner.	2.94	0.63	Agree	Developed
5	I create diverse options for myself.	2.93	0.64	Agree	Developed
6	I find other options for daily life.	2.95	0.63	Agree	Developed
	Overall Mean	**3.06**	**0.60**	**Agree**	**Developed**

Note: 3.26 – 4.00 Highly Developed; 2.51 - 3.25 Developed; 1.76 - 2.50 Slightly Developed; 1.00 - 1.75 Not Developed

Table 4 shows the 21st Century skills of students in terms of learning skills. It has an Overall Mean of 3.06 with SD = 0.60, described as Agree and interpreted as Developed. This means that students have developed their learning skills which signifies they are able to have strong desire for learning, value for reflection, search for meaning, convey logically, and create and fond diverse options for daily life. The students' ability to develop learning skills characterized by intrinsic motivation, critical thinking, meaningful learning, effective communication, creativity, and adaptability has profound implications for their academic achievement, personal development, and lifelong learning journey. This suggests that the students are actively engaged in their learning process, developing critical thinking skills, fostering creativity, and embracing lifelong learning attitudes.

Children's learning skills may be significantly influenced by how teachers and classrooms are set up and how they engage with one another. The study of Shoaib and Ullah (2021) found a positive relationship between students' learning skills and the classroom environment. To determine how classroom dynamics and teacher-student interactions affect learning outcomes, the study examined a number of these factors. The results highlight how important it is to establish classroom environments that are encouraging and favorable to improve students' learning skills.

Learning, intellectual, and critical skills have evolved among the different academic skills. The traditional practices of these skills have evolved into more specialized schools of thought, such as functionalist and critical schools. In academic writing, they are widely utilized by researchers, educators, and students to comprehend social phenomena, formulate hypothesis, and direct their investigations. These abilities are constantly put to the test and changed, which improves education. Acquiring skills is essential for academic success and shapes our comprehension of a range of topics (Shoaib et al., 2021).

Moreover, the table reveals that indicator 1, *I have a strong desire to learn*, has the highest Mean of 3.30 and standard deviation of 0.54 described as Strongly Agree and interpreted as Highly Developed. Students having strong desire to learn means that they are internally motivated and enthusiastic about acquiring new knowledge, skills, and understanding. They are eager to explore subjects, engage with learning materials, and seek out opportunities for intellectual growth.

On the other hand, the indicator 5, *I create diverse options for myself* has the lowest Mean 2.93 with SD = 0.64, described as Agree and interpreted as Developed. This means that students have the capacity to come up with various options or alternatives for themselves in different situations or contexts. They possess the capability to think creatively and consider different possibilities when making decisions or solving problems.

Active learning empowers students to explore diverse opportunities. When students are actively engaged, they broaden their horizons, gain practical skills, and build confidence. This involvement allows them to discover various paths and options for their future. By taking charge of their education, they can seek out a range of experiences, from internships to networking events, that align with their interests and goals (Barlow & Barlow, 2020).

Table 5: Creative Thinking Skills

	Indicators	Mean	SD	Description	Interpretation
1	I have the ability to generate new and innovative ideas	3.02	0.56	Agree	Developed
2	I have thoughts that flow.	2.85	0.62	Agree	Developed
3	I have the appropriate thinking for situations.	3.01	0.56	Agree	Developed
4	I have analytical or meticulous thinking.	2.87	0.61	Agree	Developed
5	I have a high level of imagination.	2.91	0.59	Agree	Developed
6	I have diverse thinking or imagination.	2.97	0.59	Agree	Developed

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	Mean	SD	Description	Interpretation
Overall Mean	**2.94**	**0.59**	**Agree**	**Developed**

Note: 3.26 – 4.00 Highly Developed; 2.51 - 3.25 Developed; 1.76 - 2.50 Slightly Developed; 1.00 - 1.75 Not Developed

Table 5 presents the 21st Century skills in terms of creative thinking. It has an Overall Mean of 2.94 with SD = 0.59, described as Agree and interpreted as Developed. This means that students have develop their creative thinking skills which signifies that they are able to acquire the ability to analyze, evaluate, and interpret information effectively. They can discern between different perspectives, identify logical fallacies, and construct sound arguments. This development empowers students to approach problems with a deeper understanding, enabling them to make informed decisions and solve complex issues with confidence.

Moreover, the table reveals that indicator 1, *I have the ability to generate new and innovative ideas*, has the highest Mean of 3.02 with SD = 0.56, described as Strongly Agree and interpreted as Highly Developed. This means that students possess a creative mindset and the capacity to think beyond conventional boundaries. This capability enables them to conceive fresh perspectives, solutions, and approaches to problems or challenges. They are skilled at integrating diverse information, drawing connections between seemingly unrelated concepts, and envisioning unusual possibilities.

On the other hand, the indicator 2, *I have thoughts that flow*, has the lowest Mean of 2.85 with SD = 0.62, described as Agree and interpreted as Developed. The data implies that students have the ability to generate ideas easily. This state of mental flow often occurs when someone is deeply engaged in a task or conversation, where ideas and insights seem to emerge effortlessly. It implies a sense of clarity, coherence, and momentum in one's thinking process, allowing for productive and creative thinking.

This suggests that providing students with tools, techniques, and collaborative environments that support creativity and idea generation can ultimately contribute to students' ability to generate ideas more easily.

It is important for students be able to let thoughts flow because it helps them think creatively, solve problems effectively, and adapt to new situations. In school, this skill helps them tackle challenging assignments and explore new topics. Later in their careers, being able to generate ideas sets them apart, allowing them to innovate and succeed in their fields. Even in everyday life, being able to think creatively helps them find solutions to various problems they encounter.

Table 6: Collaborative Skill

Indicators	Mean	SD	Description	Interpretation
1. I can work in pairs or small groups to collaborate.	3.05	0.58	Agree	Developed
2. I can collaborate with other students to set goals and create plans for the team.	3.07	0.58	Agree	Developed
3. I can collaborate to present group work in the classroom.	3.16	0.55	Agree	Developed
4. I can work as a team to gather opinions on group work.	3.09	0.57	Agree	Developed
5. I can provide feedback to friends or evaluating the work of other students.	2.99	0.61	Agree	Developed
6. I can push myself to adapt to working with friends.	3.04	0.58	Agree	Developed
Overall Mean	**3.07**	**0.58**	**Agree**	**Developed**

Note: 3.26 – 4.00 Highly Developed; 2.51 - 3.25 Developed; 1.76 - 2.50 Slightly Developed; 1.00 - 1.75 Not Developed

Table 6 shows the 21st Century skills in terms of collaborative skill. It has an Overall Mean of 3.07 with SD = 0.58, described as Agree and interpreted as Developed. This implies that students have developed their collaborative skills which signifies they were able to possess the ability to effectively work with others towards a common goal or task. This skill encompasses various aspects, including communication, teamwork, compromise, leadership, and conflict resolution. Collaborative students can communicate their ideas clearly, actively listen to others, and contribute positively to group discussions. They can work harmoniously in teams, leveraging each member's strengths and supporting one another's weaknesses.

Moreover, the table reveals that the indicator 3, *I can collaborate to present group work in the classroom*, has the highest Mean of 3.16 with SD = 0.55, described as Agree and interpreted as Developed. This means that students possess a collaborative mindset which expresses their readiness and willingness to work together with their peers to deliver a joint presentation. This statement indicates that they understand the importance of teamwork and are prepared to actively engage in the collaborative process. They are likely confident in their ability to communicate effectively with their group members, contribute ideas, coordinate tasks, and support one another to ensure the success of the presentation.

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Collaborative learning can significantly benefit students who may struggle with their lessons by providing them with support from their peers. Collaborative activities enable students to share information, clarify concepts, and collectively work towards understanding class material. Teaching methods are important in effectively develop engagement in students, suggesting that collaborative learning can be one such method. By working together on classwork, students not only improve their academic performance but also develop essential skills such as teamwork and communication, which are valuable for their future success (Kong, 2021).

On the other hand, indicator 5, *I can provide feedback to friends or evaluating the work of other students*, has the lowest Mean 2.99 with SD=0.61 which is described as Agree and interpreted as Developed. This means that students have the ability to provide feedback and evaluate work of their peers. This statement indicates that the students are confident in their skills to critically evaluate the work of others and provide suggestions or comments aimed at improvement. It also reflects a sense of responsibility and engagement in the learning process, as students recognize the importance of peer feedback in enhancing learning outcomes for everyone involved.

It important to emphasize teaching students' critical collaboration skills like asking for assistance, staying on task, and providing and accepting feedback. Knowledge and application of these collaborative skills can be significantly improved when given emphasis. This highlights the value of clear instructions in collaborative skills development in the classroom which can be employed to help students learn and succeed (Barbee, 2020).

Table 7: Communication Skill

Indicators	Mean	SD	Description	Interpretation
1. I can present ideas effectively through various forms of communication, such as speaking, writing, and taking action in diverse ways.	3.05	0.56	Agree	Developed
2. I can clearly answer questions in front of a large group of people.	2.79	0.63	Agree	Developed
3. I can utilize media and technology effectively and impactfully.	2.90	0.60	Agree	Developed
4. I can communicate effectively in various situations.	2.84	0.62	Agree	Developed
5. I can communicate for different purposes, such as informing, teaching, motivating, and inviting others.	2.98	0.58	Agree	Developed
Overall Mean	**2.91**	**0.60**	**Agree**	**Developed**

Note: 3.26 – 4.00 Highly Developed 2.51 - 3.25 Developed 1.76 - 2.50 Slightly Developed 1.00 - 1.75 Not Developed

Table 7 shows the 21st Century skills in terms of communication skill. It has an Overall Mean of 2.91 with SD = 0.60, described as Agree and interpreted as Developed. This means that students have develop their communication skills which signifies they are able to develop their ability to convey information effectively, whether it is through speaking, writing, listening, or non-verbal cues like body language. Communication skills involve not just the ability to express oneself clearly and articulately, but also to understand and interpret messages from others. This includes active listening, asking questions for clarification, and responding appropriately.

Moreover, indicator 1, *I can present ideas effectively through various forms of communication, such as speaking, writing, and taking action in diverse ways*, has the highest Mean of 3.05 with SD=0.56, described as Agree and interpreted as Developed. This means that students are confident and proficient in expressing their thoughts and ideas using different mediums. This suggests that students feel capable of effectively communicating their ideas not only verbally (speaking), but also in written form (writing), and through their actions.

On the other hand, indicator 2, *I can clearly answer questions in front of a large group of people*, has the lowest Mean 2.79 with SD=0.63 which is described as Agree and interpreted as Developed. This implies that students have confidence and ability to communicate effectively in public settings. This means that the students feel comfortable and capable of articulating their thoughts and ideas when speaking to a large audience. It implies that they possess strong verbal communication skills, including clarity of expression, coherence in presenting ideas, and confidence in delivering responses.

Prentiss (2021) highlights the significance of fostering a supportive classroom culture that encourages risk-taking and growth mindset regarding public speaking. Teachers play a crucial role in creating an environment where students feel safe to practice and make mistakes, knowing they will receive constructive feedback and support. This approach can help students build confidence gradually, as they gain experience and refine their public speaking skills. The study suggests that incorporating opportunities for peer collaboration and peer feedback can further alleviate speech anxiety by providing students with additional

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support and perspectives. By fostering a collaborative and inclusive learning environment, educators can empower students to overcome speech anxiety barriers and develop effective communication skills essential for academic and professional success.

Table 8*: Technological Skill*

Indicators	Mean	SD	Description	Interpretation
1. I use technology or the internet for self-learning.	3.09	0.55	Agree	Developed
2. I choose the appropriate technological tools to successfully accomplish tasks.	3.06	0.57	Agree	Developed
3. I evaluate the reliability and relevance of online sources of information.	3.00	0.59	Agree	Developed
4. I use technology to track the assigned tasks.	2.92	0.62	Agree	Developed
5. I use technology to help share information (such as presenting in multi-media formats, audio, or video).	3.07	0.57	Agree	Developed
6. I use technology to support teamwork or collaboration.	3.05	0.57	Agree	Developed
7. I use information wisely and creatively	3.10	0.55	Agree	Developed
Overall	**3.04**	**0.57**	**Agree**	**Developed**

Note: 3.26 – 4.00 Highly Developed; 2.51 - 3.25 Developed; 1.76 - 2.50 Slightly Developed; 1.00 - 1.75 Not Developed

Table 8 presents the 21st Century skills in terms of technological skill has an Overall Mean of 3.04 with SD = 0.57, described as Agree and interpreted as Developed. This means that students have developed their technological skills which signifies they were able to gain proficiency in using various digital tools, software, and technologies. Students with developed technological abilities may navigate faster within the digital world, completing tasks and obtaining resources more quickly.

The development of technological skill is related to improved academic achievement in children. This implies that having a strong command of technology improves students' capacity to manage schoolwork and make efficient use of digital resources, which improves academic performance. Creative and cooperative ICT use improves students' achievement suggesting that students who use ICT in innovative and collaborative ways typically achieve better academically because of increased contact and engagement with classmates and course materials (Youssef et al., 2022).

Moreover, the table reveals that indicator 7, *I use information wisely and creatively*, has the highest Mean of 3.10 with SD = 0.55, described as Agree and interpreted as Developed. This means the ability of students to efficiently search for reliable digital sources, critically evaluate their credibility, and apply them in innovative ways to solve problems or create content. They demonstrate proficiency in digital literacy, critical thinking, creativity, and ethical considerations in utilizing digital information effectively and responsibly.

On the other hand, indicator 4, *I use technology to track the assigned tasks*, has the lowest Mean of 2.92 with SD = 0.62, described as Agree and interpreted as Developed. This means that students have utilized technology in organizing and managing workload. This statement suggests that the students rely on digital tools and applications to manage their academic responsibilities efficiently. This includes task management apps, calendar apps, online learning platforms, note-taking apps, and personalized systems. By utilizing technology in this way, students can stay organized, meet deadlines, and effectively manage their tasks.

Proficiency in technological skills is crucial for efficiently utilizing technology to strengthen learning inside the classroom. To integrate technology into learning methods and for students to have relevant learning experiences, one must possess a high level of technological skills. Information and data literacy, communication and collaboration, digital content creation, safety and security, problem-solving, analysis, and reflection are among the six dimensions of basic ICT competence beliefs. These dimensions likely cover a variety of technological skills, suggesting that a wide range of competencies is required for successful ICT integration in education.

Table 9: Overall of 21st Century Skills of Students

Variables	Mean	SD	Description	Interpretation
Learning Skills	3.06	0.60	Agree	Developed
Creative Thinking Skills	2.94	0.59	Agree	Developed
Collaborative Skills	3.07	0.58	Agree	Developed
Communication Skills	2.91	0.60	Agree	Developed
Technological Skills	3.04	0.57	Agree	Developed
Overall Mean	**3.00**	**0.59**	**Agree**	**Developed**

Note: 3.26 – 4.00 Highly Developed.;2.51 - 3.25 Developed 1.76 - 2.50 Slightly Developed 1.00 - 1.75 Not Developed

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Table 9 on the previous page shows the 21st Century skills of students. It has an Overall Mean of 3.00 with SD = 0.59, described as Agree and interpreted as Developed. This means that students have developed their 21st Century skills which suggests that students are prepared to succeed in today's society. These abilities help them adapt, think critically, work well with others, express themselves clearly, and use technology effectively. With these skills, students can tackle challenges and thrive in both their personal and professional lives.

Teaching students 21st Century Skills is essential because it enables them to deal with the challenges of a rapidly changing world. Along with traditional academic knowledge, these also include education, computer literacy, and interpersonal skills including teamwork and critical thinking. It is critical to give creativity and innovation top priority as the world becomes more competitive (Kennedy & Sundberg, 2020).

Moreover, the table reveals that among the 21st Century Skills, Collaborative Skills has the highest Mean of 3.07 with SD = 0.38, described as Agree and interpreted as Developed. The outcome indicates students have strong ability to work together with others. This involves communication, teamwork, compromise, and problem-solving within a group setting. Strong collaborative skills enable individuals to contribute positively to team dynamics, share ideas, delegate tasks, and achieve shared objectives efficiently.

On the other hand, among the 21st Century Skills, Communication Skills have the lowest Mean of 2.91 with SD = 0.60, described as Agree and interpreted as Developed. This means that students have developed communication skills which suggests that students have acquired the ability to effectively convey information, ideas, and emotions through various mediums such as verbal, written, and digital communication. These abilities include active listening, articulating thoughts clearly, adapting communication styles to different audiences, and utilizing technology for communication purposes.

Effective communication skills form the cornerstone for fostering positive connections, enhancing results, and minimizing risks in any endeavor. Actively prioritizing the development of these skills involves consistent efforts to create opportunities for feedback, evaluation, and continuous improvement. By nurturing strong interpersonal and communication abilities, individuals and teams not only achieve exceptional results but also cultivate wholesome relationships and foster productive cooperation. These skills enable clear articulation of ideas, active listening, and the ability to navigate conflicts constructively, thereby laying a robust foundation for success in both personal interactions and professional environments (Puscas et al., 2021).

Problem 3. Was there a significant relationship between ICT utilization and 21st Century skills of students?

Table 10: Test Correlation on Level of ICT Utilization and Level of 21st Century skills of students

Variables	r-value	p-value	Description	Decision	Interpretation
Learning Activities	0.408	0.002	Weak Positive Correlation	Reject Ho	Significant
Perceived Impact	0.422	0.001	Weak Positive Correlation	Reject Ho	Significant

Note: *Significant when computed p value <0.05.*

Table 10 shows the result of the test correlation between ICT utilization and 21st Century skills. The result shows significant relationship between learning activities and perceived impact and 21st Century skills. This means that both learning activities and perceived impact involving the utilization of ICT are significant in developing and improving 21st Century skills of students. This implies how the ICT utilization can leverage students in acquiring the necessary skills to thrive in this evolving digital society.

The study of Weber and Greiff (2023) reinforce these results by underscoring the importance of integrating ICT early in a child's education to foster 21st-century skills. It acknowledges the challenge of aligning ICT utilization with students' developmental needs while laying the groundwork for future skill development. By identifying cognitive and non-cognitive antecedents for ICT 21st-century skills, including reasoning, executive functions, motor skills, language development, and social-emotional development, the study highlights the multifaceted nature of skill acquisition. It suggests that effective integration of ICT should be developmentally appropriate and child-centered, leveraging playful activities and guided by teachers.

The study's findings highlight the assumption that utilization of ICT consequently leads to the development of 21st-century skills among students. The observed low positive relationship between ICT utilization and these skills suggests a more complex relationship that needs further exploration.

IV. CONCLUSIONS

This study came up with the following conclusions based on the findings of the study:

1. ICT utilization of students is not new to them especially on learning activities. Among the 21st century skills

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2. Students have developed the 21ˢᵗ Century skills since these are practiced in most classes.

3. The ICT utilization is part of the 21ˢᵗ Century skills development.

V. RECOMMENDATIONS

Based on the findings and conclusions found in this study, the following recommendations are presented.

1. With already high extent of ICT utilization among students, schools may ensure consistent access to computers, laptops, tablets, and reliable internet connectivity for all students. By fostering a culture of innovation and exploration, schools can empower students to fully utilize ICT tools for research, collaboration, and multimedia presentations.

2. With already developed 21ˢᵗ century skills among students, comprehensive strategies should be put in place in schools to help students develop their capacity for adaptability, critical thinking, collaboration, effective use of technology, and clear communication. Project-based learning, interdisciplinary approaches, and opportunities for practical skill application can help achieve this.

3. As ICT utilization is significantly related to 21ˢᵗ-century skills, long-term may be done. Such as, promoting digital literacy programs to teach students how to effectively use ICT tools, evaluate online information, and understand digital ethics.

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