

RESEARCH ARTICLE

Examining 21st century teaching competencies: A study of public elementary school teachers in Patikul West District, MBHTE-Sulu

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ABSTRACT: This quantitative study aims to evaluate and assess the 21st-century teaching competencies of public elementary school teachers in the Patikul West District under the Ministry of Basic, Higher, and Technical Education (Sulu). Utilizing a purposive sample technique and a descriptive-survey approach, 100 instructors were selected for evaluation. Statistical analysis procedures, including Pearson's *r*, one-way ANOVA, t-test for independent samples, weighted mean, and standard deviation, were employed to assess the data. The findings revealed strong competence among teacher-respondents in essential domains such as life and career skills, reflecting a robust dedication to professional growth. However, the need for additional support and training in the information, media, and technology skills domain highlights an area that requires improvement. Notably, the study found that the demographic profile of teachers did not affect their proficiency in 21st-century teaching skills. Overall, the findings underscored the teachers' concerted efforts to integrate these skills into their pedagogical practices, which are essential for preparing students to navigate the challenges of the 21st century. Additionally, fostering a culture of collaboration and sharing best practices among educators can further enhance the integration of 21st-century skills in the classroom. Ultimately, it is crucial for teachers to stay current and adaptable in their teaching practices to meet the evolving needs of students in an increasingly digital and interconnected world.

KEYWORDS: 21st Century Teaching Skills, Learning, Educational Attainment, Length of Service.

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Introduction

Teachers must constantly adapt to new technologies and teaching methods in order to effectively engage with students who are growing up in a digital age. The role of teachers goes beyond simply delivering content; they must also support students' social-emotional development and well-being in an increasingly complex world. As the demands on educators increase, it is important for schools and education systems to provide ongoing professional development opportunities to help teachers stay current and effective in their practice. Collaboration among teachers, administrators, parents, and other stakeholders is essential in creating a supportive learning environment that meets the diverse needs of today's learners. In addition to academic

skills, teachers play a critical role in fostering critical thinking, creativity, collaboration, and communication skills that are essential for success in the 21st century workforce.

This paradigm shift is reflected in the concept of 21st-century learning. It promotes the integration of new tools and technologies into teaching methods while maintaining a lasting educational tradition. The 21st century teacher is not merely a source of information but a facilitator of learning, guiding students to become critical thinkers, collaborators, and problem solvers. It is important to note that the successful use of teaching styles in the classroom is contingent upon their execution, indicating that having these attributes is not enough (Chavez, 2023).

To satisfy the specific learning needs of Gen Z, the present student generation, traditional teaching approaches must be abandoned. Students today want individualized learning experiences catered to their own requirements because they have access to an abundance of employment possibilities and educational resources. This necessitates the need for a new generation of educators who can modify their teaching methods to accommodate various learning styles and make use of technology. Traditional teaching methods still have importance and shouldn't be entirely abandoned, even though it's vital to modify them to fit the demands of today's pupils. Traditional and contemporary teaching methods can be used to give pupils a well-rounded education that will help them succeed in the workforce.

Despite the importance of 21st-century teaching skills has been acknowledged, it is still unknown how many of these abilities teachers truly possess. In order to close this gap, the Patikul West District of the Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu is conducting an assessment of public elementary school teachers' proficiency in 21st-century teaching practices. By analyzing their proficiency in information, media, and technology skills, learning and innovation skills, and life and career skills—while taking into account their demographic profiles—this study seeks to determine how prepared educators are to face the difficulties of the 21st-century classroom.

Furthermore, it is impossible to overestimate the importance of teacher characteristics in forming students' professional identities and promoting humanized teaching methods. Silva (2019) draws attention to the influence that supervisor qualities have on students, arguing that students benefit greatly from having positive role models who exhibit a variety of professional expertise, excellent interpersonal and communication skills, successful teaching methods, and character traits like enthusiasm, honesty, and compassion. This adaptive instructional modeling not only improves students' judgments of academic honesty, but it also promotes their overall personal and professional development. Therefore, acknowledging the qualities of exemplary role models among educators is crucial for fostering a supportive learning environment.

Research Questions

This study assessed the 21st century teaching skills of public elementary school teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu.

Specifically, it answered the following queries upon its very completion:

1. What is the extent of the 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu?
 - 1.1. Learning and innovation skills
 - 1.2 Information, Media, and Technology Skills; and
 - 1.3 Life and Career Skills?

2. Is there a significant difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to their demographic profile in terms of:

- 2.1 Age;
- 2.2 Gender;
- 2.3 Higher Education Attainment; and
- 2.4 Length of service?

3. Is there a significant correlation among the sub-categories subsumed under the level of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu?

Literature

Foreign Literature and Studies

In the rapidly changing landscape of 21st-century education, there is a growing need for a thorough grasp of the abilities required for effective teaching. These essential qualities for contemporary educators are highlighted in Menezes' (2022) research, which highlights the critical roles that optimism, adaptability, and personalized learning strategies play in creating engaging learning environments. This view aligns with the conclusions drawn from Chavez's (2023) research, supporting creative methods of putting academic integrity policies into practice in order to improve students' public speaking skills and confidence.

In addition, the Iowa Core (2016) emphasizes the value of critical thinking, sophisticated communication, creativity, and collaboration as essential qualities for students in the 21st century. Chavez (2023) highlights the significance of approachable and focused educators in encouraging student engagement and collaboration, thereby promoting a constructive learning environment. Furthermore, technology is seen as a game-changer when it comes to helping students acquire 21st-century abilities by providing a variety of opportunities for communication, critical thinking, and problem-solving (Iowa Core, 2016).

Throughout their academic journey, students can develop self-reliance and accountability by utilizing technology to enhance and expand their learning. Integrating these findings is essential to supporting student success and preparing them to succeed in the face of future challenges as educators navigate the changing educational landscape. Additionally, teachers can use online teaching platforms to sustain engagement and promote learning opportunities when conditions change (Chavez et al., 2023).

Research suggests that approachable and focused teachers can promote student involvement and collaboration, creating a welcoming atmosphere for learning (Chavez, 2023). Teaching in the 21st century is not an easy task. Teaching Generation Z puts teachers' skills to the test every day. Previously, the teaching-learning process was quite repetitive. Nonetheless, a multitude of educational pathways and employment opportunities are becoming available to students globally as a result of the ongoing influence of the swift advancement of technology. As a result, in the 21st century, educators must possess the information and abilities necessary to help and support their students.

Every student is different, and a savvy teacher of the twenty-first century should be able to design learning tactics that best meet their needs. Through doing this, it is guaranteed that no child gets left behind. According to Elrica Menezes (2022), educators must also adjust to their surroundings and uphold positivism during the learning process.

Methodology

The research technique acts as a road map that guides the researcher through the entirety of the scientific investigation, beginning with the preliminary stages and continuing all the way through to the conclusion (Harris, 1979). Consequently, the purpose of this chapter is to provide a comprehensive overview of the following components: the research design, the research site, the study participants, the research tools, the sampling technique, the procedure for data collection, the process of ensuring validity and reliability, and the statistical analysis of the data.

Research Design

In order to find out how public elementary school instructors in the Patikul West District of the Ministry of Basic, Higher, and Technical Education—Sulu felt about the challenges grade 9 pupils were having solving algebraic problems, a descriptive survey study approach was used. The descriptive design was selected because it gives the researcher a chance to understand the issue at hand (Blackie, 2000). In addition, a survey approach was applied to collect restricted data on a population that was otherwise quite vast. This method gives the researcher a broad perspective on the subject of study by facilitating the effective collection of data from a variety of participants.

1. Research Locale

The research was conducted across various elementary schools situated in the Patikul West District, Patikul, Sulu. This district encompasses eight public elementary schools, namely: Kasulutan Elementary School, Gandasuli Elementary School, Kadday Mampallam Elementary School, Kaunayan Elementary School, Igasan Elementary School, Tuup Elementary School, Datu Uddin Bahjin Central Elementary School (DUBCES), and Tanum Elementary School. These schools were selected as the research locales due to their representation of the educational landscape within the district.

2. Respondents of the study

The respondents of this study comprised public elementary school teachers from the Patikul West District, under the purview of the Ministry of Basic Higher and Technical Education (MBHTE)-Sulu. A total of one hundred (100) teachers were selected randomly from all the public elementary schools within the Patikul West District. This sampling method was employed to ensure a representative sample of teachers from the district, allowing for a diverse range of perspectives and experiences to be captured in the study.

Distribution of Samples According to School

Public School of Patikul West District, Ministry of Basic, Higher, and Technical Education	Number of Teacher- Respondents
Kasulutan Elementary School	28
Gandasuli Elementary School	20
Kadday Mampallam Elementary School	8
Kaunayan Elementary School	5
Igasan Elementary School	6
Tuup Elementary School	6
Datu Uddin Bahjin Central Elementary School (DUBCES)	20
Tanum Elementary School	7
TOTAL	100

3. Sampling design

A non-probability sampling method employing purposive sampling was utilized. One hundred (100) teachers from eight (8) different public elementary schools in the Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, were purposefully selected as samples for the study. Purposive sampling was chosen to ensure the collection of data that best represents the desired quality and quantity for this study. By selecting teachers who are actively involved in teaching algebra to grade 9 students in the district, the research aimed to gather insights directly relevant to the research objectives. This sampling approach allowed for a focused and targeted selection of participants who could provide valuable information on the topic under investigation.

4. Data Gathering Procedure

For the purpose of data collection, the researcher got authorization to administer the questionnaire from the Dean of State University College and the Patikul West District supervisor, selecting respondents from eight public primary schools for the 2022–2023 academic year. The researcher personally launched, administered, and collected questionnaires, organizing and processing the data for meaningful insights. The final report was drafted based on statistical analysis.

5. Research Instrument

This study utilized a questionnaire adapted from the work of Eric Heretape (2019) to collect data on the proficiency of public elementary school teachers in 21st-century teaching skills. The questionnaire was divided into two parts. The first part focused on gathering the socio-demographic profile of the respondents, encompassing factors such as age, gender, educational attainment, and length of service. The second part delved into the assessment of public elementary school teachers' proficiency in 21st-century teaching skills and their frequency of application in classroom settings. The researcher obtained permission to administer the questionnaire from the Dean of State University College and the supervisor of Patikul West District. Subsequently, the questionnaire was distributed to the selected elementary school teachers from eight (8) different schools for the academic year 2023-2024. The questionnaires were then analyzed for meaningful insights and used in the final research report.

6. Validity and reliability

This study used a questionnaire adapted from Eric Heretape's (2019) study on 21st-century teaching skills among public elementary school teachers. The questionnaire underwent rigorous validation and review by two experts from the faculty at Sulu State College to ensure its relevance and reliability.

7. Statistical treatment data

The following statistical tools were utilized to generate the primary empirical data for this study:

- i. **Weighted Mean and Standard Deviation:** The weighted mean and standard deviation were employed to assess the extent of 21st-century teaching skills among public elementary school teachers in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu.
- ii. **A t-test and one-way analysis of variance (ANOVA)** were utilized to identify significant differences in teaching skills based on demographic variables like age, gender, educational attainment, and length of service.
- iii. **Pearson Product-Moment Correlation:** The Pearson product-moment correlation was conducted to explore the relationships between different sub-categories of 21st-century teaching skills, including learning and innovation skills, information, media, and technology skills, and life and career skills. These statistical methods provided a rigorous framework for interpreting and understanding the data collected in this research endeavor.

Results and discussion

This chapter analyzes and interprets data from a study on the 21st-century teaching skills of public elementary school teachers in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu. It examines the extent of these skills in learning and innovation, information, media, and life and career skills. The study also explores differences and correlations among these variables.

Following the ensuing parts, which provide the analysis, presentations, and interpretations of the results that are in accordance with each of the research questions, meticulous scoring was performed on the data that was acquired for this study, and proper statistical analyses were applied to the data.

Question 1. What is the extent of the 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, in the context of: 1.1. Learning and Innovation Skills; 1.2 Information, Media, and Technology Skills; and 1.3 Life and Career Skills?

1.1 In the context of learning and innovation skills

Table 1.1: Extent of the 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu in the context of learning and innovation skills.

	Statements	Mean	S.D.	Rating
1	Observe the learners while they are having the self-learning in the classroom.	4.45	.642	Often
2	Guide the learners in examining reliability, bias, or credibility of claims by means of giving activities that suit in.	4.28	.726	Often
3	Brainstorm and seek out opportunities for learners to improve their ideas and on the way, they react to situations.	4.21	.756	Often
4	Provide learners with performance standards by which their work will be evaluated.	4.40	.682	Often
5	Manipulate models and simulations for the learners to experiment and create new ideas.	4.23	.737	Often
6	Facilitate the learners in organizing, classifying, questioning or evaluating the work of their classmates.	4.15	.744	Often
7	Bring together relevant information and perspectives to inform thoughts, actions or beliefs of learners.	4.30	.704	Often
8	Allow an open conferences style of interaction rather than the one-way seating of traditional desk.	4.14	.739	Often
	Total Weighted Mean	4.27	.4877	Often

Legend: 4.50-5.00 = Always (A), 3.50-4.49 = Often (O), 2.50-3.49 = Sometimes (S), 1.50-2.49 = Rarely (R), 1.00-1.49 = Never (N)

Table 1.1 depicts the extent of 21st century teaching skills of public elementary teachers in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, in terms of learning and innovation skills. The results show that the total mean score is 4.27, indicating an overall rating of "often." The total standard deviation is 0.4877, indicating that there is less diversity in teacher respondents' agreement with the propositions. This means that teacher-respondents frequently exercise learning and creativity abilities, which are critical for educating students for 21st-century difficulties.

The mean scores show that teacher-respondents frequently use learning and innovation skills in their teaching practice, such as observing students, guiding them in examining reliability and credibility, brainstorming, providing performance standards, manipulating models and simulations, facilitating organizational and classification skills, gathering relevant information, and allowing open conference-style interaction. This means that the teacher-respondents are not only well-equipped with the abilities required to create a positive learning environment, but they are also actively engaged in creative teaching approaches.

1.2 In the context of information, media, and technology skills

Table 1.2: Extent of the 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu in the context of information, media, and technology skills

	Statements	Mean	S.D.	Rating
1	Participate in assessing information in an effective manner which is related to the learners learning.	4.05	.770	Often
2	Find resources such as databases documentary films and websites to be utilized in class as sources of information.	3.76	.818	Often
3	Encourage collaborative learning in order to participate effectively and generate valuable information.	4.21	.715	Often
4	Evaluate the resources and the available information.	4.23	.737	Often
5	Make internet as a tool for giving learners assessments and assignment.	4.00	.696	Often
6	Educate learners on how to use computers for learning.	3.74	.991	Often
7	Utilize the e-class record in determining learners' achievements.	4.36	.718	Often
8	Submit computer-generated reports.	4.24	.806	Often
9	Make printed materials in remediation for slow learners.	4.26	.747	Often
	Total Weighted Mean	4.094	.4608	Often

Legend: 4.50-5.00 = Always (A), 3.50-4.49 = Often (O), 2.50-3.49 = Sometimes (S), 1.50-2.49 = Rarely (R), 1.00-1.49 = Never (N)

Table 1.2 demonstrates the depth of the 21st century teaching skills of Public Elementary Teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu in the context of Information, Media, and Technology Skills. The total mean score is 4.094, with an overall rating of "Often". The overall standard deviation is 0.4608, indicating that there is less fluctuation in the teacher respondents' agreement with the assertions. This means that teacher-respondents frequently use information, media, and technological skills, which are critical for preparing students for 21st-century issues.

The mean scores indicate that the teacher-respondents frequently demonstrate the information, media, and technology skills in their teaching practice, such as participating in assessing information, finding resources, encouraging collaborative learning, evaluating resources and information, making the internet as a tool, educating learners in media literacy, utilizing e-class records in determining learners' achievements and creating digital products, and printing materials. This implies that the teacher-respondents are successfully using current technologies into their instructional approaches.

1.3 In the context of Life and Career Skills

Table 1.3 Extent of the 21st century teaching skills of public Elementary teacher at Patikul West District, Ministry of Basic, Higher and Technical Education (MBHTE)-Sulu in the context of Life and Career Skills.

	Statements	Mean	S.D.	Rating
1	1. Build harmonious relationship with the learners by knowing when to talk and when to listen.	4.60	.667	Always
2	2. Give value and respect to other opinions, ideas and beliefs.	4.61	.584	Always
3	3. Ensure the learners' differences are accepted and the needs of individual learners are addressed to the best extend regardless of other backgrounds.	4.40	.651	Often
4	4. Respect cultural differences and work effectively with people from a range of social and cultural backgrounds.	4.44	.686	Often
5	5. Participate in trainings that promote peace and understanding of cultural diversity.	4.21	.769	Often
6	6. Treat each learner as an individual deserving of respect and not as a representative of a group.	4.53	.627	Always
7	7. Select materials that reflect the different backgrounds and needs of the learners.	4.38	.582	Often
8	8. Utilize time and manage workload efficiently.	4.51	.595	Always
9	9. Establish commitment to learning as lifelong process.	4.49	.611	Often
10	10. Reflect critically on past experiences in order to inform future progress.	4.39	.601	Often
Total Weighted Mean		4.456	.4894	Often

Legend: 4.50-5.00 = Always (A), 3.50-4.49 = Often (O), 2.50-3.49 = Sometimes (S), 1.50-2.49 = Rarely (R), 1.00-1.49 = Never (N)

Table 1.3 shows the extent of 21st-century teaching skills of public elementary teachers in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, in terms of life and career skills. The total mean score is 4.456, with an overall rating of "often." The total standard deviation is 0.4894, indicating that there is less variation in teacher respondents' agreement with the propositions. This means that teacher-respondents frequently practice life and professional skills, which are critical for educating students for 21st-century difficulties.

The mean scores show that the teacher-respondents consistently exhibit life and career skills in their teaching practice, including making sure that students' differences are accepted, honoring cultural diversity, taking part in peace-promoting trainings, choosing materials that reflect a variety of backgrounds, committing to lifelong learning, and critically analyzing previous experiences. They also consistently exhibit these skills, such as fostering harmonious relationships with students, treating each learner with respect, and valuing and respecting the opinions of others. This suggests that the teacher-respondents are not only devoted to creating an inclusive and respectful learning environment but also to their own professional progress and their students' personal development.

Question 2. Is there a significant difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to their demographic profile in terms of: 2.1 age; 2.2 gender; 2.3 higher education attainment; and 2.4 length of service?

2.1 According to Age

Table 2.1: Difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to age.

SOURCES OF VARIATION	Sum of	Mean
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		Squares	df	Square	F	Sig.	Description
Learning and Innovation Skills	Between Groups	.224	3	.075	.307	.820	Not Significant
	Within Groups	23.330	96	.243			
	Total	23.554	99				
Information Media, and Technology Skills	Between Groups	.366	3	.122	.567	.638	Not Significant
	Within Groups	20.656	96	.215			
		21.022	99				
	Total						
Life and Career Skills	Between Groups	.677	3	.226	.941	.424	Not Significant
	Within Groups	23.029	96	.240			
	Total	23.706	99				

*Significant alpha .05

Table 2.1 illustrates the difference in the extent of 21st century teaching skills of public elementary teachers in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, when data is categorized by age. The factors are: learning and innovation skills; information, media, and technology skills; and life and career skills. The analysis indicates that the F values and probability values for all variables are not statistically significant at $\alpha = 0.05$. This means that teacher-respondents aged 30 and below have the same perceptions of the scope of these factors as those aged 31–45, 46–50, and 51 and up, or vice versa.

This implies that teacher-respondents from public elementary schools in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, regardless of age, assess the amount of 21st century teaching skills similarly. In light of this, the hypothesis stating that "There is no significant difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to their demographic profile in terms of age." is regarded as valid.

2.2 According to Gender

Table 2.2: Difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to gender.

VARIABLES							
	Grouping	Mean	S. D.	Mean Difference	t	Sig.	Description
Learning and Innovation Skills	Male	4.1471	.33725	-.14812	-1.493	.145	Not Significant
	Female	4.2952	.51115				
Information Media, and Technology Skills	Male	4.1242	.36827	.03583	.291	.772	Not Significant
	Female	4.0884	.47925				

Life and Career Skills	Male	4.4118	.41815	-.05330	-.407	.685	Not Significant
	Female	4.4651	.50448				

*Significant at alpha 0.05

Table 2.2 illustrates the difference in the extent of 21st century teaching skills of public elementary teachers in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, when data are grouped by gender. The factors are: learning and innovation skills; information, media, and technology skills; and life and career skills. The table demonstrates that the mean difference and probability values for all variables are not significant at $\alpha = 0.05$. This suggests that the amount of these variables has no difference in how male and female teacher-respondents perceive them. This means that teacher-respondents from public elementary schools in Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu, view the extent of 21st century teaching skills in the same way regardless of gender. In light of this, the hypothesis that "there is no significant difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to their demographic profile in terms of gender." is taken into consideration and approved.

2.3 According to Educational Attainment

Table 2.3: Difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to educational attainment.

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Learning and Innovation Skills	Between Groups	.160	4	.040	.162	.957	Not Significant
	Within Groups	23.394	95	.246			
	Total	23.554	99				
Information Media, and Technology Skills	Between Groups	1.868	4	.467	2.316	.063	Not Significant
	Within Groups	19.154	95	.202			
	Total	21.022	99				
Life and Career Skills	Between Groups	1.522	4	.381	1.630	.173	Not Significant
	Within Groups	22.184	95	.234			
	Total	23.706	99				

*Significant alpha .05

Table 2.3 shows how, when data are grouped by educational attainment, public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu differ in their level of 21st century teaching skills. Information, media and technology skills, learning and innovation skills, and life and career skills are among the variables. The table demonstrates that, at $\alpha 0.05$, the F-values and probability values for every variable are not significant. This indicates that teacher-respondents with a bachelor's degree do not perceive these variables differently than teacher-respondents with a master's degree, a doctoral degree, and a

master's unit, or vice versa. This suggests that, irrespective of their educational background, the teacher-respondents of the public elementary school at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu view the extent of 21st century teaching skills in the same way. Thus, the following hypothesis is supported: "When data are grouped according to their demographic profile in terms of educational attainment," is taken into consideration and approved.

2.4. In terms of length of service

Table 2.4: Difference in the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu when data are grouped according to length of service

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Learning and Innovation Skills	Between Groups	2.197	4	.549	2.443	.052	Not Significant
	Within Groups	21.357	95	.225			
	Total	23.554	99				
Information Media, and Technology Skills	Between Groups	.995	4	.249	1.180	.325	Not Significant
	Within Groups	20.027	95	.211			
	Total	21.022	99				
Life and Career Skills	Between Groups	2.389	4	.597	2.661	.037	Significant
	Within Groups	21.318	95	.224			
	Total	23.706	99				

*Significant alpha .05

When data are grouped according to teacher-respondents' demographic profile in terms of length of service, a post-hoc analysis using the Tukey test is performed to determine whether groups, defined according to length of service, have various levels of mean in terms of life and career skills.

Regarding life and career skills, the data indicates that teacher respondents who had fewer than five years of service had a mean difference of $-.35018^*$, a significant alpha-0.05 difference with a standard error of .12470 and a p-value of .047 compared to teacher respondents who had between six and ten years of service.

Question 3. Is there a significant correlation among the sub-categories subsumed under the level of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu?

Table 3. Correlation on the extent of 21st century teaching skills of public elementary teachers at Patikul West District, Ministry of Basic, Higher, and Technical Education (MBHTE)-Sulu.

Variables	Pearson	Sig.	N	Description
Dependent	Independent	<i>r</i>		

Learning and Innovation Skills	Information, Media and Technology Skills	.628*	.000	100	High
	Life and Career Skills	.624*	.000	100	High
Information, Media and Technology Skills	Life and Career Skills	.596*	.000	100	High

Correlation coefficient is significant at alpha .05

Correlation Coefficient Scales Adopted from Hopkins, Will (2002): 0.0-0.1 = Nearly Zero; 0.1-0.3 = Low; 0.3-0.5 = Moderate; 0.5-0.7 = High; 0.7-0.9 = Very High; 0.9-1 = Nearly Perfect

Table 3 illustrates the correlation among the sub-categories encompassed within the scope of 21st-century teaching skills among public elementary teachers in Patikul West District, MBHTE-Sulu. The table indicates that the computed Pearson correlation coefficients (Pearson r) between these categories are significant at the alpha 0.05 level. Notably, there are high positive correlations observed among the sub-categories:

- 1) Strong positive correlations exist between learning and innovation skills, information, media, and technology skills, and life and career skills.
- 2) Additionally, there are high positive correlations between information, media, and technology skills and life and career skills.

These findings suggest that as one variable increases, the other variable tends to increase as well, indicating non-random relationships. The most substantial correlation is between learning and innovation skills and information, media, and technology skills ($r = 0.628$, $p < 0.01$), implying a close association between these two skill sets. Conversely, the weakest correlation is between information, media, and technology skills and life and career skills ($r = 0.596$, $p < 0.01$), suggesting a slightly less robust positive correlation. Thus, while all these skills are positively related, their associations vary in strength. Consequently, the hypothesis stating that there is no significant correlation among the sub-categories of 21st-century teaching skills is rejected.

Conclusion

Based on the findings:

1. The teacher-respondents possess the 21st century teaching skills that are essential for preparing students for the problems of the twenty-first century. Their high ranking in the life and career skills area means they have a strong sense of professional development. Since the information, media, and technology skills domain is the lowest rated of the three, they require further assistance and training in this area.
2. Teachers' abilities in preparing students for the challenges of the future are not determined by factors such as age, education level, or years of experience. It is encouraging to see that all teachers, regardless of background, are equipped with the necessary skills to adapt to the changing educational landscape. Moving forward, targeted training and support in the information, media, and technology skills domain can help bridge any existing gaps and further enhance their overall effectiveness in the classroom.
3. In order to prepare students for the problems of the 21st century, the teacher-respondents of the public elementary school in Patikul West District, MBHTE-Sulu, are putting their 21st century teaching skills into practice in an integrated way.

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