

Teachers' 21st Century Skills, Self-Efficacy and Resilience

Christene M. Debalos ¹, Richard M. Oco ²

¹Southern de Oro Philippines College, Cagayan de Oro City, Philippines

²DepEd Division of Misamis Oriental, Cagayan de Oro City, Philippines



ABSTRACT: Teachers' nowadays, preparation are concentrated on the competences required of them to teach. Thus, it is paramount to assess the level to which teachers' 21st century skills correlate to their effectiveness and resiliency. The objective of this study was to identify the teachers' 21st century skills and its relationship to self-efficacy and resilience. It was conducted to one hundred-eleven (111) teachers from Kinoguitan District, Division of Misamis Oriental, School Year 2024-2025. The study employed universal sampling method. The study utilized the descriptive correlational research design and used an adapted questionnaire that undergone the validity and reliability test process. Mean, Standard Deviation and Pearson Product Moment Correlation Coefficient were the statistical tools used to interpret and analyze the data. The result revealed that teachers' overall level of 21st century skills was at Highly Observed. Their overall level of self-efficacy was at High Level, and the overall level of resilience was also at High Level. The teachers' 21st century skills significantly positively correlated with self-efficacy and resilience. It is recommended that teachers may maintain a high level of 21st century skills, self-efficacy, and resilience. In addition, school administrators could arrange trainings and seminars to improve problem-solving skills and critical thinking.

KEYWORDS: 21st century skills, resilience, self-efficacy, teachers

I. INTRODUCTION

Studies on teacher preparation have primarily concentrated on the competences required of them from the outset to the present. They must now be able to think critically in addition to having 21st-century capabilities, particularly in measuring the progress of the learners in these areas. These are fundamental skills needed by teachers inside classrooms and should be given utmost concern when considering how teachers apply 21st-century approaches, how deep their critical thinking competencies are, and how these competencies impact the learners. Therefore, it is critical to assess how teachers' 21st century skills relate to their effectiveness and resilience.

Histories are about the changing times that compel people to undergo trials in the different realms and grow individually. People's abilities and habits to suit the many eras they live in have been significantly changed by these disagreements. This is the reason why many nations progress. Much of this shift toward a 21st-century education centers on programs for elementary and secondary education. Throughout the educational process, from early childhood to higher education, emphasis is placed on the critical role that teachers play in helping learners develop 21st-century skills, which are essential for enhancing their chances of success in the future (Abdullo et al.' 2022) They further asserted that it is the teachers who need to possess the skills for learners to acquire such skills. Instructors are supposed to aid and support their learners with critical thinking, curiosity, problem-solving skills, and readiness for production. The teachers must impart the competencies that the younger learners will require in the 21st century.

They should also actively develop and employ cutting-edge technologies and have powerful citizenry. Teachers, who bear the brunt of the responsibility in this process, are supposed to keep a close eye on all global trends and steer society toward generating the next generation of individuals capable of picking up age-appropriate skills and adjusting to their local community.

This study sought to investigate the teachers' 21st century skills and their relationship with self-efficacy and resilience. The challenges faced by teachers in adapting to the new educational milieu and integrating their 21st century skills into the teaching-learning process to prepare students for societal demands and to adjust with technology.

Teachers' 21st Century Skills, Self-Efficacy and Resilience

This study worked with the bases from Lev Vygotsky's Sociocultural Theory of Cognitive Development and particularly with the Zone of Proximal Development this was the theoretical foundation of the study. According to this theory, this is the process by which children learn cultural values and attitudes and also acquire problem-solving strategies through collaborative dialogues with more knowledgeable entities in their society. Social interactions serve the role of mediators or facilitators to this task.

The Zone of Proximal Development (ZPD), as defined by Sage (2022), refers to the difference between a young child's independent abilities and their potential with the guidance of a knowledgeable adult. This zone encompasses the aptitude of the novice learner. Children continuously acquire new knowledge through a perpetual cycle of learning from individuals who possess greater expertise. Under these conditions, engaging in social interactions facilitates cognitive advancement by bridging the disparity between the expertise of the individuals involved and the knowledge of the kid. Social partners utilize cultural resources, such as language, to achieve this. As children grow older, their cognitive abilities expand, allowing them to independently complete more tasks and engage in more complex thinking. In order to enhance cognitive growth, educators should strategically design lessons that align with the Zone of Proximal growth (ZPD) of their learners. Every child has an individual ZPD; therefore, it is essential for teachers to give differentiated assistance while also putting learners into cooperative projects within the classroom.

Vygotsky's theory, as referenced by Daneshfar and Moharami (2018), posited that social and cultural experiences play a crucial role in comprehending child development. In this framework, social connections were regarded as influential factors for growth. The youngster progressively acquires the ability to independently engage in cognitive processes with the assistance of experienced individuals within the social context. Therefore, the development of an individual's cognitive abilities is influenced by the social environment. This method provides innovative strategies for assessing children's cognitive abilities and for instructing them in Reading, Mathematics, and Writing. It emphasizes the influence of social interactions on cognitive development.

Furthermore, educators may benefit from understanding the Zone of Proximal Development. Teachers perform an initial assessment of learners' abilities in classrooms. Next, teachers can instruct in a way that challenges each pupil beyond his skills. The pupil initially needs help to perform the task with a more knowledgeable peer or adult. From that point, the zone of proximal development will be widening quite rapidly. To facilitate this expansion, educators could arrange and strategize lessons and teaching for the classroom.

Mere knowledge alone is insufficient for success in the real world. To enhance the proficiency of learners, teachers must also cultivate 21st century abilities such as communication, creativity, innovation, metacognition, and problem-solving (Rodrigo et al, 2021). The term 21st century skills refer to a collection of knowledge, abilities, and characteristics that are crucial, especially as individuals progress from primary school to higher education, enter the workforce, and reach adulthood. The contemporary milieu is characterized by the prevalence of technology and media, as well as rapid technological advancements, easy access to vast amounts of information, and the capacity for both collaborative efforts and individual contributions. Proficient employees and responsible members of society necessitate a diverse array of pragmatic and analytical cognitive abilities. The K-12 Curriculum for Basic Education of the formal school system, as stated by DepEd, are closely related but not exact replicas of each other. It is in alignment, although not precisely identical. The functional literacy indicators are reflected in six interrelated learning strands.

II. METHODOLOGY

This study employed the descriptive-correlational research design. As stated by Saro et al. (2023) that the use of a descriptive-correlational research design is appropriate for quantitative research. The term descriptive-correlational research design refers to a combination of descriptive and correlational research designs that explains a specific phenomenon that appears in the research paper and a systematic inquiry into the interplay between the variables.

The study investigated the interplay between teachers' 21st-century skills, self-efficacy and resilience among teachers; thus, the researcher utilized a quantitative approach, the descriptive-correlational method. In a descriptive correlational study, the researcher's primary goal is to describe connections between variables without demonstrating a causal relationship, according to Katzukov (2020). Data collection from the study's respondents is done via a questionnaire.

The following statistical treatments were utilized to analyse the data of the study: Problems 1, 2, and 3 will use mean values and standard deviation to present the level of 21st century skills, extent of self-efficacy, and resilience of teachers. Problems 4 and 5 will utilize Pearson Coefficient of Correlation (Pearson r) to ascertain significant relationship between the level of teachers' resilience level and self-efficacy and their 21st century skills.

III. RESULTS AND DISCUSSION

Problem 1. What is the level of 21st century skills of the teachers as to:

- 1.1 critical thinking;
- 1.2 problem-solving; and
- 1.3 Information literacy?

Table 1 on the next page shows the overall teachers' 21st century skills. It has an overall Mean of 4.20 with SD=0.52, described as Agree and interpreted as Highly Observed. This data imply that teachers have a high level of 21st Century skills. They are also well prepared and quite capable of helping and getting their students to be ready with 21st century skills. Considering that the skills is needed. The learners of today require this. They need to be competitive, especially when it comes to other countries, the competition for a job is extremely high and undoubtedly, the 21st century skills will give an edge.

The phrase 21st century skills encompasses a diverse array of competencies, abilities, attitudes, and knowledge that are vital for achieving success in today's world. These skills are not confined to particular industries; instead, they are adaptable and can be applied across various contexts. It is crucial for learners to cultivate these skills to prepare for and excel in the demands of 21st-century life. Perez (2023) argued that traditional instructional methods are insufficient for equipping individuals to meet the challenges of the 21st-century. They want an educational approach to be more holistic in order to give primary importance to the development of skills creative and problems solving, critical thinking, collaboration and communication. They underscore the importance of these competencies for students, asserting that they are essential for success in future careers and for becoming engaged members of society.

Table 1: Overall teachers' 21st century skills

Variable	Mean	SD	Description	Interpretation
Critical Thinking	4.20	0.52	Agree	Highly Observed
Problem Solving	4.23	0.51	Strongly Agree	Very Highly Observed
Information Literacy	4.17	0.53	Agree	Highly Observed
Overall Mean	4.20	0.52	Agree	Highly Observed

Note: 4.21-5.00 Very Highly Observed 3.41-4.20 Highly Observed 2.61-3.40 Moderately Observed
1.81-2.60 Lowly Observed 1.00-1.80 Very Lowly Observed

In the same table, the variable Problem Solving was rated the highest with the Mean of 4.23 with SD=0.51, described as Strongly Agree and interpreted as Very Highly Observed. This data imply that the teacher have the highest skill in terms of problem solving in 21st century. In other words, teachers should be able to cope with issues or problems that arise in their classrooms or concerning their relationships with their fellow workers. Obviously, teachers stress the importance of these problem-solving abilities in the learning process. Being able to resolve problems and difficulties is a must for the teaching nowadays. It's been claimed. The development of problem-solving competence should be integrated into the pre-service training of educators so that they will support their students' learning efforts as well as facilitate their own development as problem solvers. For instance, Singh (2020) conducted research indicating that teacher cognition and instructional strategies play a vital role in enhancing students' cognitive development. This research aimed to reshape educators' perspectives and methodologies while evaluating the impact on their students' performance.

Meanwhile, the variable Information Literacy was rated the lowest with the Mean of 4.17 with SD=0.53, described as Agree and interpreted as Highly Observed. This data implies that the teachers have high response for information literacy. They believed that with these skills, they can provide the best and updated data and information to their students and that they are able to determine the genuine from fake or fabricated ones. Instructors should consistently strive to enhance their information literacy, particularly in relation to the facts and concepts they will employ in activities conducted with their students for educational purposes. Teachers hold considerable influence in the eyes of their students, which may lead the students to accept as truth whatever is presented to them. Therefore, it is imperative for educators to apply critical thinking and remain mindful when utilizing and disseminating knowledge and data.

According to Gündüzalp (2021), information literacy skills positively impact digital literacy skills, which are among the most crucial competencies in today's digital landscape. Research indicates that information-literate instructors are more adept at conducting themselves appropriately in online environments. These findings underscore the importance of educators'

Teachers' 21st Century Skills, Self-Efficacy and Resilience

information literacy levels, especially given that digital literacy skills are essential for success and optimal performance within digital learning settings.

Problem 2. What is the teachers' level of self-efficacy?

Table 2 on the next page presents the data on Teachers' Self-Efficacy. It registered an overall Mean of 4.20 with $SD=0.51$, described as Agree and interpreted as High Level. This data imply that the teachers' motivation or positive outlook is on high level which further means that they can have activities and information shared to the students that will also inspire them to do and perform better.

Effectiveness is an essential quality for educators, enabling them to successfully navigate and fulfill their responsibilities within the school environment while managing their students. Teaching has evolved beyond merely delivering lessons and engaging with students daily. It now necessitates follow-ups and documentation, extending beyond the traditional realms of teaching. Although this may seem daunting, it also presents a significant opportunity to develop new skills and refine existing ones. Numerous studies conducted in international contexts have demonstrated a link between the auxiliary responsibilities assigned to classroom teachers and their self-efficacy and performance. Self-efficacy beliefs are shaped by the work environment, with verbal encouragement and role modeling from supervisors acting as vital catalysts for enhancing employees' self-efficacy expectations. Research by Daguplo et al. (2019) indicated that principals in public schools in the Philippines assign teachers a variety of supplementary responsibilities alongside their instructional roles.

Table 2: Teachers' Self-Efficacy

Indicators	Mean	SD	Description	Interpretation
1. It is easy for me to stick to my aims and accomplish my goals.	4.30	0.50	Strongly Agree	Very High
2. I am confident that I could deal efficiently with unexpected events.	4.23	0.51	Strongly Agree	Very High
3. I believed I can succeed at almost endeavor to which I set my mind.	4.24	0.51	Strongly Agree	Very High
4. I am confident that I can perform effectively on many different tasks.	4.22	0.52	Strongly Agree	Very High
5. I will be able to successfully overcome many challenges.	4.11	0.54	Agree	High
6. When facing a difficult task, I am certain that I can accomplish them.	4.18	0.53	Agree	High
7. I can always manage to solve difficult problems if I try hard enough.	4.20	0.52	Agree	High
8. Thanks to my resourcefulness, I know how to handle unforeseen situations.	4.23	0.51	Strongly Agree	Very High
9. I can remain calm when facing difficulties because I can rely on my coping abilities.	4.25	0.51	Strongly Agree	Very High
10. When I am confronted with a problem, I can usually find several solutions.	4.13	0.53	Agree	High
Overall Mean	4.20	0.51	Agree	High
Note: 4.21-5.00 Very High 3.41-4.20 High 2.61-3.40 Moderate 1.81-2.60 Low\ 1.00-1.80 Very Low				

In the same table, indicator 1, *It is easy for me to stick to my aims and accomplish my goals*, was rated the highest with the Mean score of 4.30 with $SD=0.50$, described as Strongly Agree and interpreted as Very High Level. This data implies that the teachers have the focus and determination to make sure that they are on track in reaching their goals and not easily distracted with things around them. To be able to achieve one's goal, they must stick to the plan that they made. They may make the necessary adjustments along the way to make the plan workout but they should not lose their focus and determination in reaching their goals and objectives.

Self-efficacy denotes the capacity to navigate the challenges encountered in one's professional journey by utilizing effective coping strategies. As a result, several educators have willingly accepted additional responsibilities associated with their teaching roles, perceiving these added tasks as valuable opportunities. These opportunities encompass earning certifications and promotion points, acquiring new knowledge, and enhancing their professional expertise. Moreover, mahinay et al. (2021) stated that the involvement of instructors in multiple roles does not detract from their commitment to their responsibilities or

Teachers' 21st Century Skills, Self-Efficacy and Resilience

their job performance. On the contrary, they regard this as a pathway to further their teaching careers through ongoing professional development.

Meanwhile, indicator 5, *I will be able to successfully overcome many challenges*, was rated the lowest with the Mean score of 4.11 with SD=0.54, described as Agree and interpreted as High Level. This data imply that the teachers do not give up easily when they face challenges and failures. They still give themselves chances to redeem themselves and push through with achieving their plans, goals and objectives.

It is important for teachers to be patient and the same time persevering considering that mistakes are inevitable. With many tasks on hand, they can be easily distracted and wane. With determination and passion, they can definitely overcome it and succeed. Having the beliefs in themselves that they can achieved and overcome anything, they can definitely overcome adversaries. According to Serrano and Dela Cruz (2022) believing in one's capacity and capability and accepting their weaknesses will allow the teachers on what are the things they need to do to finish their task, duties and responsibilities. They will be able to know when they are going to need the assistance from others and when they will do it by themselves. Thus, knowing one's strength and weaknesses is essential.

Problem 3. What is the teachers' level of resilience?

Table 3 shows the overall level of Teachers' Resilience. It registered an overall Mean of 4.04 with SD=0.52, described as Agree and interpreted as High Level. This data imply that the teachers have somewhat high assessment of their capabilities to overcome challenges and problems that affect them at work and on a personal level. This would further imply that the teachers possess the capability of being a problem-solver in as much as their own challenging situations are concerned.

Resilient individuals demonstrate a strong mindset that enables them to pursue their goals despite the inevitable challenges they face. They can learn valuable lessons along the way and positively influence the lives of others around them. The educational profession is not without stresses and conflicts; this often puts teachers in the most difficult of situations. As instructional leaders, teachers are, therefore, expected to excel in their duties without any excuses. They feel a sense of achievement when teachers help students succeed, satisfy professional responsibilities, develop solutions to obstacles in pedagogy, collaborate with adult colleagues, and communicate relevant information to parents regarding struggling students (Han, et al., 2023).

Table 3: Teachers' Resilience

Indicators	Mean	SD	Description	Interpretation
1. I have ambitions to achieve certain things during my lifetime.	4.28	0.50	Strongly Agree	Very High
2. I know what to do in most situations I face.	3.96	0.53	Agree	High
3. I have a strong motivation in achieving what I want.	4.24	0.51	Strongly Agree	Very High
4. I really enjoy unravelling causes of problems.	4.26	0.51	Strongly Agree	Very High
5. I can solve most of my problems.	4.20	0.52	Agree	High
6. I help others solve their problems and challenges.	3.94	0.54	Agree	High
7. I have a personal brand that I think I regularly demonstrate to others.	3.80	0.55	Agree	High
8. I know myself very well.	3.70	0.56	Agree	High
9. I always listen and understand what others are talking to me about.	4.13	0.53	Agree	High
10. I am normally curious about people.	3.93	0.54	Agree	High
Overall Mean	4.04	0.52	Agree	High
Note: 4.21-5.00 Very High 3.41-4.20 High 2.61-3.40 Moderate 1.81-2.60 Low\ 1.00-1.80 Very Low				

In the same table, indicator 1, *I have ambitions to achieve certain things during my lifetime*, was rated highest with the Mean score of 4.28 with SD=0.50, described as Strongly Agree and interpreted as Very High Level. This data imply that the teachers have goals and aspirations to achieve. Once they are done with achieving a plan, they proceed with pursuing the other plans that they have. Setting goals and objectives must be planned and in accordance with priorities. This means that teachers must investigate and rank the things they want to achieve according to how badly needed and how important it is to be done

Teachers' 21st Century Skills, Self-Efficacy and Resilience

right away. Thus, they must know how to make priorities so that things will be done according to how it is needed and as to its benefits and usefulness for them and their students. According to Daguplo et al. (2019) it is important to identify the things that need more attention and immediate actions. In this way, addressing of pressing issues will be easier and appropriate to the immediate needs of the teachers and even towards their students.

Meanwhile, indicator 10, *I am normally curious about people*, was rated the lowest with the Mean of 3.93 with SD=0.54, described as Agree and interpreted as High Level. This data imply that the teachers have high desire to know the persons they are working with like their colleagues and students. This desire will allow the teachers to gather necessary information wherein they can gauge on the things that they will do and avoid. It is important to have this kind of mindset so that they will not be causing misunderstanding and that will also know their limitations and strengths. Moreover, they can also determine what to do and what assistance they can provide to help the students that are struggling. According to Mahinayet al. (2021) it is important to know the situation first before making an action and decision. In this way, mistakes will be avoided and that proper and accurate help and assistance will be provided to the needy. Moreover, it will also prevent from making the situation worsen considering that the diagnosis was accurate.

Problem 4. Is there a significant relationship between the teachers' level of 21st century skills and level of self-efficacy?

Table 4: Test Correlation Between 21st Century Skills and Self-Efficacy

Variable	r-value	p-value	Level of Correlation	Decision	Interpretation
Critical Thinking	0.489	0.001	Low Positive Correlation	Reject Ho	Significant
Problem Solving	0.534	0.001	Moderate Positive Correlation	Reject Ho	Significant
Information Literacy	0.164	0.581	Negligible Positive Correlation	Accept Ho	Not Significant

Note: 0.91 - 1.00 Very High Positive Correlation 0.71 – 0.90 High Positive Correlation
 0.51 – 0.70 Moderate Positive Correlation 0.31 – 0.50 Low Positive Correlation
 0.00 – 0.30 Negligible Positive Correlation *Significant when computed p-value <0.05*

From Table 4, it is evident that 21st century skills correlate with self-efficacy. It is expected that these three 21st century skill variables correlate with the teacher self-efficacy. In examining critical thinking skills, r is shown at 0.489 with a computed p-value of 0.001. Thus, since the computed p-value is lower than the critical p-value, there exists a low positive correlation that is indeed significant between 21st century skills and teachers' self-efficacy, with critical thinking skill accounting for this. The relationship, even though the strength is low, can be said to exist for both variables, thus implying that as the score on 21st century skills moves higher, there may also be increases in the scores of self-efficacy; hence, this deserves consideration.

Critical thinking skills allows the teachers to have the mindset of investigating and gathering the necessary data and information before making decisions and conclusions. Sound and accurate decisions were properly and meticulously crafted and deliberated before it was taken into action. In this way, accident and mistakes are lessened and that its negative impact towards the recipient like the students is being avoided. According to Molano (2020) when making plan of actions, it must be backed up with proper investigations and accurate data so that it will truly solve the problem in full and that teachers can then move to solving other tasks that also requires time and effort from them.

For problem solving skills, it registered an r-value of 0.534 with computed p-value of 0.001. The computed p-value is less than the critical p-value. This data imply that significant moderate positive correlation was registered between 21st century skills and teachers' self-efficacy when problem solving skills is taken into account. Thus, it is very important to have recognition to it. Problem-solving is the process of conducting investigations and analysis before making decisions. It is very important to make queries so that truth will be unveiled and that proper solutions and actions will be made and carried out to solve it and have better performance and results for the teachers. Research indicates that problem-solving skills are highly relevant to the current roles of teachers (Daguplo et al., 2019). Consequently, aspiring teachers must possess the capability to devise solutions to challenges in order to facilitate their students' learning processes and to aid them in enhancing their problem-solving skills.

For information literacy, it registered an r-value of 0.164 with computed p-value of 0.581. The computed p-value is more than the critical p-value. This data imply that no significant correlation was registered between twenty one century skills and teachers' self-efficacy when information literacy is taken into account. This also implies that with the increase in the scores of 21st-century skills, there may be possible scores for self-efficacy too; thus, it means the null hypothesis has been accepted. Information literacy is important in today's world. While this study suggests that self-efficacy may not be overly important in comparison with other forces, its relevance must not be overlooked. Teachers must be competent in distinguishing falsehoods from truths against a formidable tide of fake news sweeping through various internet sites. In doing so, they will enlighten their students to become information-literate and equip them to respond with vigilance against fake news that may harm them and

Teachers' 21st Century Skills, Self-Efficacy and Resilience

the person falsely accused by such misinformation. Teachers must prioritize the skill set they need in their teaching and maintain ongoing professional development to counteract the negative impact of technology on careers.

Problem 5. Is there a significant relationship between the teachers' level of 21st century skills and level of resilience?

Table 5: Test Correlation Between 21st Century Skills and Resilience

Variable	r-value	p-value	Level of Correlation	Decision	Interpretation
Critical Thinking	0.465	0.001	Low Positive Correlation	Reject Ho	Significant
Problem Solving	0.511	0.001	Moderate Positive Correlation	Reject Ho	Significant
Information Literacy	0.102	0.692	Negligible Positive Correlation	Accept Ho	Not Significant

Note: 0.91 - 1.00 Very High Positive Correlation 0.71 – 0.90 High Positive Correlation
0.51 – 0.70 Moderate Positive Correlation 0.31 – 0.50 Low Positive Correlation
0.00 – 0.30 Negligible Positive Correlation *Significant when computed p-value <0.05*

Table 5 shows the test correlation between 21st century skills and resilience. It is expected that the three (3) sub-variables under 21st century skills are correlated with the teachers' resilience and for critical thinking skills, it registered an r-value of 0.465 with computed p-value of 0.001. The computed p-value is less than the critical p-value. This data imply that the significant low positive correlation was registered between 21st century skills and teachers' resilience when critical thinking skills is taken into account.

For educators to effectively investigate and gather the necessary data and information prior to making informed judgments and drawing conclusions, it is essential for them to possess critical thinking skills. To ensure that the decisions made are accurate and well-founded, they require careful preparation and contemplation before implementation. This approach minimizes the risk of errors and mishaps, thereby averting potential negative consequences for stakeholders, including students. According to Gonzales (2020), when formulating an action plan, it is imperative that it is underpinned by thorough investigations and reliable data. This is crucial to ensure that the plan comprehensively addresses the issue at hand, thus enabling educators to subsequently attend to other responsibilities that demand equal time and effort.

For problem solving skills, it registered an r-value of 0.511 with computed p-value of 0.001. The computed p-value is less than the critical p-value. The data indicate that a strong moderate positive correlation has been established between twenty one first skills and teacher self-efficacy, when accounting for problem solving skills. A moderate relationship means that the relationship between the two variables was noticeable in its presence. It further implies that as the scores for twenty one first century skills increase, there is some likelihood of an increase in the scores for self-efficacy as well. Thus, it is important to have recognition to it.

Prior to determining a course of action, the problem resolution process necessitates thorough investigation and analysis. It is critical to pose questions that facilitate the discovery of facts, ensuring that appropriate solutions and strategies are formulated and implemented to effectively address the issue and enhance performance and outcomes for educators. Research by Daguplo et al. (2019) and Molano (2020) indicated that proficiency in problem-solving is highly relevant to the roles educators fulfill today. Consequently, aspiring teachers must possess the capability to devise solutions that streamline the learning process for their students and foster their problem-solving skills.

For information literacy, it registered an r-value of 0.102 with computed p-value of 0.692. The computed p-value is more than the critical p-value. This data imply that no significant correlation was registered between twenty one first century skills and teachers' self-efficacy when information literacy is taken into account. This further means that as the scores for twenty one first century skills increase it may have or no possibility that score for self-efficacy will also increase. Thus, the null hypothesis is accepted.

In today's digital age, information literacy has become an essential competency. This study suggests that there may be no direct correlation with self-efficacy; however, the importance of this finding should not be overlooked. Given the rampant spread of misinformation across various online platforms, it is crucial for educators to distinguish between credible news and false information. By doing so, they can also guide their students to develop a sound understanding of information and foster vigilance against misleading content, which can be detrimental not only to the students but also to those susceptible to the proliferation of false information. Research conducted by Perez (2023) reinforced that information literacy is vital for the effective utilization of digital platforms, even though accessing and using these platforms may appear effortless.

IV. CONCLUSIONS

Through the findings, below are the conclusion made.

1. Teachers can abreast and are ready to adjust to the necessary changes in the educational system.

Teachers' 21st Century Skills, Self-Efficacy and Resilience

2. Teachers can perform their duties and responsibilities with high moral and confidence.
3. Teachers can overcome challenges at work and on personal level.
4. Self-efficacy was linked to teachers' ability to solve problems and critical thinking in the 21st century.
5. Their resilience was linked to their modern-day capabilities of being critical and problem-solving.

V. RECOMMENDATIONS

Given the study's findings and conclusions, the researcher suggests the following:

1. Teachers may maintain their high level of 21st century skills. Teachers may improve their information literacy skills and incorporate strategies about it to help learners develop their skills in information literacy too.
2. The teachers may sustain their high level of self-efficacy. Through participating in various trainings and seminars to improve their ways and means in being able to overcome challenges and problems they face or encounter.
3. The teachers may carry on having high level of resilience. They may also change their skills on being enthusiastic and interested in knowing a person or their learners so that they will be able to understand them and provide assistance fitted to them.
4. To ensure the welfare and performance of teachers, especially on 21st century skills and self-efficacy, school administrators may provide a range of workshop and training that place a greater emphasis on thinking skills and problem-solving skills.
5. School administrators may continue to develop, to give training sessions and seminars that focus on how more better development of problem solving skills and critical thinking with maintaining as well as on Information Literacy, thereby ensuring the continued enhanced well-being and performance of the teachers.

REFERENCES

- 1) Abdulloh, W., Niemted, W., Chusuwan, R., and Tansakul, J. (2022). A second-order confirmatory factor analysis model of primary school administration promoting 21st century skills. *African Educational Research Journal*, 10(1): 28-37.
- 2) Akdemir, M. (2019). Investigation of entrepreneurial characteristics and critical thinking tendencies of geography-teachers [Unpublished master thesis]. Marmara University, İstanbul.
- 3) American Psychological Association (2019). Resilience. <https://www.apa.org/>
- 4) Anagün, Ş. S. (2018). Teachers' Perceptions about the Relationship between 21st Century Skills and Managing Constructivist Learning Environments. *International Journal of Instruction*, 11(4), 825–840. <https://doi.org/https://doi.org/10.12973/iji.2018.11452a>
- 5) Barge, Mary Ann. (2020). What Are Extracurricular Activities and Why Do You Need Them? <https://blog.prepscholar.com/what-are-extracurricular-activities-and-why-do-you-need-them>
- 6) Berondo, R. G., & Dela Fuente, J. A. (2021). Technology Exposure: Its Relationship to the Study Habits and Academic Performance of Students. *Utamax : Journal of Ultimate Research and Trends in Education*, 3(3), 125141. <https://doi.org/10.31849/utamax.v3i3.7280>
- 7) Bingöl, P. (2019). The effect of project-based learning on critical thinking and course achievement in social studies teaching [Unpublished master thesis]. Atatürk University, Erzurum.
- 8) Buse, Kathleen. (2022). Resiliency and the Impact of Self-efficacy. <https://www.ascb.org/careers/resiliency-and-the-impact-of-self-efficacy/>
- 9) Cansoy, R., Parlar, H., & Polatcan, M. (2018). Teacher candidates' critical thinking tendencies research in Turkey: A content analysis. *Universal Journal of Educational Research*, 6(9), 1974–1980. <https://doi.org/10.13189/ujer.2018.060916>
- 10) Care, E., Kim, H., Vista, A., & Anderson, K. (2018). Education system alignment for 21st-century skills Focuses on assessment. Retrieved 18 July 2019, from <https://www.brookings.edu/research/education-system-alignment-for-21st-century-skills/>
- 11) Çelik, Ö. Çokçalışkan, H. & Yorulmaz, A. (2018). Investigation of the effect of student classroom teachers' critical thinking disposition on their media literacy. *International Journal of Evaluation and Research in Education*, 7(3), 194-202. <https://doi.org/10.11591/ijere.v7.i3.pp194-202>
- 12) Çepni, S., & Ormancı, Ü. (2018). Geleceğin dünyası. In S. Çepni (Ed.), *Kuramdan uygulamaya STEM+A+E eğitimi*. Ankara: Pegem Publishing. <https://doi.org/10.14527/9786052410561>
- 13) Cherry, Kendra. (2022). What Is Positive Thinking? <https://www.verywellmind.com/what-is-positive-thinking-2794772>

Teachers' 21st Century Skills, Self-Efficacy and Resilience

- 14) Daguplo, M. S., Capili, P. L. G., Estrella, A. R. C., & Bano, A. L. (2019). Tracking the Employment and Employability Characteristics of the Graduates of the College of Teacher Education. *Asia Pacific Journal of Multidisciplinary Research*, 7(2), 67-74.
- 15) Daneshfar S. & Moharami M. (2018) Dynamic Assessment in Vygotsky's Sociocultural Theory: Origins and Main Concepts. <http://www.academypublication.com/issues2/jltr/vol09/03/20.pdf>
- 16) Demitra, & Sarjoko. (2018). Effects of handed cooperative learning based on indigenous knowledge on mathematical problem-solving skills. *International Journal of Instruction*, 11(2), 103–114. <https://doi.org/10.12973/iji.2018.1128a>
- 17) Durodolu, O. O., & Mojapelo, S. M. (2020). Contextualization of the information literacy environment in the South African education sector. *Electronic Journal of e-Learning*, 18(1), 57–68.
- 18) Gonzales, G. (2020, April 3). Big divide in internet use in Philippines by age, education level – report. *Rappler*. Retrieved September 8, 2022 from <https://www.rappler.com/>
- 19) Gu, Y. (2020). Enhancement of college English teachers' information literacy in an information environment. *International Education Studies*, 13(4), 106–112.
- 20) Gunawan, G., Harjono, A., Nisyah, M. A., Kusdiastuti, M., & Herayanti, L. (2020). Improving students' problem-solving skills using an inquiry learning model combined with an advanced organizer. *International Journal of Instruction*, 13(4), 427-442. <https://doi.org/10.29333/iji.2020.13427a>
- 21) Gündüzalp, S. (2021). 21 st Century Skills for Sustainable Education: Prediction Level of Teachers' Information Literacy Skills on Their Digital Literacy Skills. *Discourse and Communication for Sustainable Education*, 12(1), 85-101.
- 22) Han, X., Xu, Q., Xiao, J., & Liu, Z. (2023). Academic atmosphere and graduate students' innovation ability: The role of scientific research self-efficacy and scientific engagement. *European Journal of Psychology of Education*, 1-18.
- 23) Higgins JPTTJ, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (2021). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.0: www.training.cochrane.org/handbook. (Accessed on May 1st, 2021)
- 24) Into, C. Gempes, P. (2018). Untold stories of teachers with multiple ancillary functions: A phenomenology of fortitude. *Journal of Advances in Humanities and Social Sciences*. 4(1): 13-25.
- 25) Karabacak, Z. I. ., & Sezgin, A. A. (2019). Türkiye'de dijital dönüşüm ve dijital okuryazarlık [Digital transformation and digital literacy in Turkey]. *Türk İdare Dergisi [Turkish Administrative Journal]*, 91(488), 320–343.
- 26) Kinoguitan district Map (2023). <https://rb.gy/3spnqg>
- 27) Katzukov, Yanely. (2020). What is a descriptive correlational study design? <https://askinglot.com/what-is-a-descriptive-correlational-studydesign>
- 28) Kusaeri, K., & Aditomo, A. (2019). Pedagogical beliefs about critical thinking among Indonesian Mathematics pre-service teachers. *International Journal of Instruction*, 12(1), 573–590. [HTTPS:// doi.org/10.29333/iji.2019.12137a](https://doi.org/10.29333/iji.2019.12137a)
- 29) Mahinay, R. B., Panares, N., & Magnaong, M. E. (2023). Classroom Teachers' 21st Century Skills in the K to 12 Basic Education Curriculum Implementation: Basis for Policy Review to Increase NAT Scores. <https://doi.org/10.5281/zenodo.7831671>
- 30) Molano, T. C. (2020). The skills of pre-service teachers of region II, Philippines in the 21st century. *International Journal of Scientific and Technology Research*, 9(2), 4108-4110.
- 31) Motallebzadeh, K, Ahmadi, F., & Hosseinnia, M. (2018). Relationship between 21st Century Skills, Speaking and Writing Skills: A Structural Equation Modelling Approach. *International Journal of Instruction*, 11(3), 265-276. <https://doi.org/10.12973/iji.2018.11319a>
- 32) Nazhifah, N., Wiyono, K., & Azairok, M. (2023). Profile of Physics Creative Thinking Skills for High School Students in The 21st Century. *JIPFRI (Jurnal Inovasi Pendidikan Fisika Dan Riset Ilmiah)*, 7(1), 1-11.
- 33) Nurhayanti, H., Riyadi, & Usodo, B. (2020). Analysis of mathematical problem-solving skills viewed from initial ability and gender differences in an elementary school. *Elementary Education Online*, 19(3), 1127–1141. <https://doi.org/10.17051/ilkonline.2020.716848>
- 34) Olaivar, Rosene, (2020). Teachers' Attitude Towards Ancillary Functions in Relation to Job Commitment and Satisfaction, City Schools Division, Tagbilaran City, Bohol. *International Journal of All Research Education and Scientific Methods (IJARESM)*, ISSN: 2455-6211 Volume 8, Issue 12, December-2020, Impact Factor: 7.429, Available online at: www.ijaresm.com
- 35) Perez, K. Y. (2023). The Impact of Lack of Internet and Technology Access on Students' Academic Achievement: An Analysis of the United States (Doctoral dissertation, Georgetown University).

Teachers' 21st Century Skills, Self-Efficacy and Resilience

- 36) Plotnikova, N. F., & Strukov, E. N. (2019). Integration of teamwork and critical thinking skills in the process of teaching students. *Cypriot Journal of Educational Sciences*, 14(1), 1–10. <https://doi.org/10.18844/cjes.v14i1.4031>
- 37) Quino, J.B. and Corpuz, G.G. (2021), Self-efficacy and practices in teaching 21st-century skills. *International Journal of Scientific & Engineering Research*. 12(6). <http://dx.doi.org/10.20935/AL1255>
- 38) Resilience Assessment Questionnaire (RAQ). <https://www.ficm.ac.uk>
- 39) Rodrigo, M.R., Bacus, K.M., Cordova, A.J., Medallo, M., Pacturan, L.D., Enero, D.J (2021); Descriptive-Correlational Study on the effects of E-commerce on the Philippine Economic Performance. <https://www.studocu.com/ph/>
- 40) Sage, K. (2022). Zone of Proximal Development. Routledge. <https://doi.org/10.4324/9780367198459-REPRW163-1>
- 41) Sales, E., Belgira, K. & Salise, S. (2021). Classroom Performance and Ancillary Functions Among Secondary School Teachers in the Third District of Bohol. www.researchgate.net
- 42) Sandoval, W. A., Kwako, A., Modrek, A. S. & Kawasaki, J. (2018) Patterns of Classroom Talk Through Participation in Discourse-Focused Teacher Professional Development. *Proceedings of the 13th International Conference of the Learning Sciences*, 2 (pp. 760-767).
- 43) Saro, Jeffry M., Jeffrey Q. Apat, Michael S. Pareja (2023). A Descriptive-Correlational Study of the Teachers' Motivation, Competences, and Perceptions in Writing Action Research. *J Adv Educ Philos*, 7(1): 14-24.
- 44) Serrano, K. and Dela Cruz, D. (2022) Influence of social support to student learning and development. *International Journal of Research in Education*. (11)12. <http://dx.doi.org/10.5861/ijrse.2022.112>
- 45) Shisigu, A., Hailu, A., & Anibo, Z. (2018). Problem-based learning and conceptual understanding of college female students in physics. *Eurasia Journal of Mathematics Science and Technology Education*, 14(1), 145-154.
- 46) Singh, A., Ago, B. J., Cerillo, T., Laguna, D., & Ugto, A. (2020). Effectiveness of Collaborative Learning in Enhancing Academic Performance in Creative Nonfiction Literary Essay Subject of Grade 12 HUMSS Students at Bestlink College of the Philippines. *Ascendens Asia Singapore—Bestlink College of the Philippines Journal of Multidisciplinary Research*, 2(1).
- 47) Subekti, H., Susilo, H., Suwono, H., & Purnomo, A. R. (2019). Challenges and Expectations towards Information Literacy Skills: Voices from Teachers' Training of Scientific Writing. *International Journal of Learning, Teaching and Educational Research*, 18(7), 99-114.s



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and

