

Teachers' Teaching Competence and Pupils' 21st Century Skills and Performance

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ABSTRACT: Competence of the teachers can be linked to the pupils' learning abilities in the 21st century as well as their performance. This study evaluated the extent of knowledge acquired by teachers regarding the Philippine Professional Standards for Teachers (PPST) and how this knowledge correlated with their pupils' learning styles and performance. The independent variable pertained to the information acquired by teachers regarding the terms of PPST Domains, specifically in content knowledge and pedagogy, learning environment, diversity of learners, and assessment and reporting. The dependent variable focused on the 21st century skills and performance of the pupils. The respondents of this study were the teachers (n=111) from the selected schools in the Division of Misamis Oriental. The gathered data underwent analysis and interpretation through various descriptive and inferential statistical methods, including Frequency and Percentage, Mean and Standard Deviation, as well as the Pearson Product Moment Correlation Coefficient. Results showed that the teachers have very high competence. Pupils have very high learning styles and also high performance. Content knowledge and pedagogy showed moderate positive correlation with the pupils' learning styles and performance. Thus, the success of the teachers is closely linked to the success of the learner. It is recommended that teachers use interactive techniques in their lessons to improve their instructional abilities.

KEYWORDS: content knowledge and pedagogy, pupils' 21st century skills, teaching

I. INTRODUCTION

In today's world, educators are expected to demonstrate proficiency in their respective fields to uphold the Department of Education's vision of fostering a culture of excellence across all academic disciplines. To deliver high-calibre instruction, teachers must possess the skills and methodologies to effectively conduct their lessons with a commendable demeanour and exemplary style. Teaching competence plays a critical role in ensuring that students from diverse backgrounds achieve exceptional academic outcomes.

To attain competence, teachers must employ a range of effective strategies to not only captivate student interest but also to foster an environment that is conducive to learning (Morillo & Abay, 2019). Competency among teachers is a key component of the broader education and learning system. It is attributed to teachers who possess appropriate qualifications. The teaching profession is widely regarded as one of the oldest and most respected in the world. It is essential that what transpires inside the classroom aligns with the core principles of teaching to maintain the profession's esteemed reputation. However, the conduct of certain teachers can significantly impact their students' academic performance. Teaching involves imparting knowledge to learners, a responsibility that falls on the shoulders of teachers who have undergone rigorous training to effectively deliver instructions to students.

The proficiency of educators can be measured by assessing pupils across different competencies in the National Achievement Test, an annual assessment conducted by the Department of Education to gauge the knowledge and skills students have acquired and developed. The results of the test are indicative of the effectiveness of teachers in guiding students' learning and their influence on academic achievement (Gepila, 2020). The success of the teachers is closely linked to the success of the learner. This conviction has been deeply embedded in the author's experiences over the past decade, which included teaching in a private school. The research delves into 21st-century learning skills.

This study aimed to evaluate the effectiveness of teachers and how it influences pupils' learning abilities in the 21st century. Furthermore, it delved into opportunities for fostering critical thinking and efficient communication to enhance the practical understanding of both teachers' and students' attributes.

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This study was anchored on Alton Lee's (2003) Competent Teaching theory which explains the how's of work as teachers. He explained that decisions about how to teach can only be made by considering the learners, the contexts of teaching, and the values underpin of teaching. He defined competent teaching as the Science, art and practice of teaching which is known as pedagogy. The theory cites that, using evidence from researched practice, it identifies how competent teaching focuses on student achievement and facilitates high standards of student outcomes for heterogeneous groups of students. It encompasses pedagogical practices that allow classes and other learning groups to work as caring, inclusive and cohesive learning communities. Further, it establishes effective links between schools and other learning groups with respect to their cultural contexts. The students are bound to socialize. For teachers to facilitate learning, it is deemed to be responsive to student learning processes. This will entail to have been providing with sufficient and effective opportunities to learn it. It provides multiple task contexts to support learning cycles, aligns curriculum goals. The resources will include ICT usage, task design, teaching and school practices. Incorporated pedagogy entails scaffolding and providing appropriate feedback on students' task engagement. Incorporated pedagogy promotes learning orientations, pupils' regulation, metacognitive strategies and thoughtful pupils' discourse and encourages teachers and pupils to engage constructively in goal-oriented assessment (Brew et al., 2021).

Teachers, who are the most significant force in education, have the difficult duty of instilling in pupils the information, skills, and behaviors required to navigate an ever-changing society. Thus, in order to convey knowledge, instructors must be highly skilled learning facilitators while also serving as moral role models. This means that a school must not only have educationally qualified teachers, but also teachers who are truly dedicated and committed to serving the public, particularly the pupils entrusted to their care. Teachers, who are the most important factor in education, have the enormous task of instilling in the pupils the knowledge, skills, and behavior required to face an ever-changing society. (Toston, 2023). This portion of works was linked by classroom practice. Social media and online communities offer people a lot of information and the chance to learn from specialists in various areas. In the field of education, teachers with advanced 21st-century skills are more likely to have a positive attitude toward education, and they support and protect students with or without learning disabilities.

Enabling educators to cultivate their twenty-first-century competencies and inclusive education skills empowers them to create inclusive learning environments that facilitate the holistic development of all students. In 2023, UNICEF has set a goal to ensure universal access to high-quality education as a fundamental human right. The organization recognizes the unique attributes, interests, capabilities, and educational needs of each child, emphasizing the importance of personalized and inclusive learning. To effectively fulfil their roles, educators need to possess the capacity to customize instruction, cater to various learning styles, and establish inclusive classroom settings that promote teamwork and provide assistance to all students (Hamstead, 2024).

Prioritizing the enhancement of instructional quality and the elevation of teacher proficiency is crucial for ensuring sustained nation-building efforts. The Philippine Professional Standards for Teachers (PPST) serve as the benchmark for assessing the competencies of educators within the country. All professional development will focus on the Philippine Professional Standards for Teachers (PPST) to prepare teachers' to implement the K-12 program. Given that these standards are mandated for teacher recruitment and progression; performance assessments should also be aligned with the PPST and it is advisable for schools to offer additional training and informative sessions on the PPST Domain of Community Linkages and Professional Engagement. This initiative would equip teachers with valuable ideas, guidance, and support, enabling them to excel in all PPST domains and enhance students' academic performance (Pamon and Oco, 2024)

Thus, this present study takes the academe as the setting and looks into the possibility that the competence of teachers could have an association with the pupils' academic performance, with hopes that the results of this study would have a positive impact on the teachers and on the on-going efforts of Department of Education in providing teachers with educational development for growth and performance. Moreover, part of this study is based on PPST concepts.

II. METHODOLOGY

The study utilized the descriptive correlational research design with content analysis which is appropriate for its objective in determining the relationship between teachers' teaching competence and pupils' 21st century skills and performance in the Alubijid West District. It described with emphasis what exists such as status, practices, conditions, situations, or any phenomena. This method involved description, recording, analysis, and interpretation of prevailing conditions. Documentary analysis deals on collecting the existing data and then studying it for possible reasons on why such event exists. In this study the performance of the pupils was taken from the School Form (SF) 5. The investigation was between teaching standard competence level of teachers and its relationship towards pupils' 21st century skills and performance in the Alubijid West District. It is also a process of investigation involving the collection of data in order to find answers to the questions concerning the recent status of the subject of the study and to properly test whether relationships existed between two or among variables.

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A descriptive research design will be employed when the study's goal is to uncover new truths and it centers on the current situation. Only when the information to be collected relates to the current situation, offering the benefit of facts and drawing attention to the most crucial aspects to report, is it helpful. Using this method, current conditions are described, documented, analyzed, and interpreted. According to Siedlecki (2020), descriptive research looks at the organization and characteristics of a given organization or population, and it can provide a description of events that evolve over time.

Statistical treatment of the data provided the guidance of the researcher to achieve the exact treatment of each of the following problems. Problem 1 used the Mean and Standard Deviation in determining the level of teachers' teaching competence which consists of the following: content knowledge and pedagogy; learning environment; diversity of learners; assessment and reporting. Also, Problem 2 used the Mean and Standard Deviation in determining the level of the pupils' learning skills and performance. While Problem 3 used Pearson Product Moment Coefficient Correlation or Pearson r in determining the relationship between the teachers' teaching competence and the level of pupil's learning skills and performance.

III. RESULTS AND DISCUSSION

Problem 1. What is the level of teachers' teaching competence in terms of:

- 1.1 content knowledge and pedagogy;
- 1.2 learning environment;
- 1.3 diversity of learners; and
- 1.4 assessment and reporting?

Table 1 presents the overall teachers' teaching competence. It registered an overall Mean of 4.30 and SD=0.52, with the description of At all times and with the interpretation of Very High. Moreover, majority of the variables were rated Very High. The data suggests that the teachers were able to gain more than enough knowledge and abilities. This is significant since it plays a key role in assessing the performance level of the teachers. Therefore, it is essential that topics be considered in this domain.

Table 1.

Overall Teachers' Teaching Competence

Variables	Mean	SD	Description	Interpretation
Content Knowledge and Pedagogy	4.36	0.53	At all times	Very High
Learning Environment	4.34	0.53	At all times	Very High
Diversity of Learners	4.19	0.52	Most of the time	High
Assessment and Reporting	4.31	0.52	At all times	Very High
Overall Mean	4.30	0.52	At all times	Very High

Note: 4.20-5.00 Very High 3.40-4.19 High 2.60-3.39 Moderately high 1.80-2.59 Low 1.00-1.79 Very Low

To sum up, DepEd Order No. 42, s. 2017 is a key document for raising the caliber of teachers and enhancing pupils' performance in the Philippines. This directive offers a thorough framework for professional development for teachers at all career levels by implementing the Philippine Professional Standards for Teachers (PPST). It lists seven essential areas that help instructors with their practice and professional development, ranging from pedagogy and content knowledge to professional development and personal improvement. By ensuring that teachers' competencies are in line with the nation's educational objectives, the PPST makes professional development programs, career advancement, and performance reviews more transparent. Teachers can regularly evaluate and improve their teaching strategies by incorporating these criteria into their everyday work, which eventually benefits the students' varied learning needs.

In the same table, the highest rated variable is *Content Knowledge and Pedagogy* with Mean of 4.36 and SD=0.53, with the description of At all times and with the interpretation of Very High. As the basis for successful instruction, this suggests that the teachers were able to attain the greatest degree of knowledge. Pupils can be inspired, meaningful learning experiences can be created, and long-term academic success is achievable by a teacher who is an expert in their field and knows how to teach it effectively. Effective teaching is based on pedagogy and content knowledge. It describes a teacher's capacity to be an expert in their field while utilizing the best teaching techniques to support pupils' learning. In addition to teaching knowledge, a competent instructor fosters curiosity, critical thinking, and a love of learning. Teachers may equip pupils to thrive in a world that is constantly changing by consistently enhancing their subject-matter expertise and instructional techniques. (Manigbas et al., 2024)

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Meanwhile, the lowest rated indicator is *Diversity of Learners* with the Mean of 4.19 and SD= 0.52, with the description of Most of the time and with the interpretation of High. This means that the teachers need more targeted training, support and resources to help teachers become more responsive to learner diversity. This emphasizes the importance of continuous professional development, mentoring, and collaborative learning among educators. Ultimately, improving this area is not just about compliance with teaching standards it's about creating inclusive learning environment where all pupils feel seen, valued and supported. According to Soylu et al. (2020) addressing this gap will lead to better pupil engagement, higher achievement, and more equitable education system.

Problem 2. What is the level of pupils' 21st century skills for the school year 2024 - 2025?

Table 2 shows the Pupils' 21st Century Skills. It registered an overall Mean of 4.26 and SD=0.53, with the description of At all times and with the interpretation of Very High. Moreover, majority of the variables were rated Very High. This implies that the teachers are able to achieve highest level of learning skills. The world is rapidly evolving, and education must adapt to prepare pupils to success in the digital age. Equip pupils with abilities to think, innovate, and collaborate effectively in technology – driven world (Zhou, 2022)

Table 2.

Pupils' 21st Century Skills

Indicators	Mean	SD	Description	Interpretation
<i>As a teacher, I have observed that my pupils...</i>				
1. have a strong desire to learn.	4.34	0.52	At all times	Very High
2. value the importance of reflecting on meaningful learning experiences	4.31	0.52	At all times	Very High
3. search for the meaning and significance of various things on their own.	4.21	0.55	At all times	Very High
4. convey information in a logical and clear manner.	4.14	0.56	Most of the time	High
5. create diverse options for themselves.	4.20	0.55	Most of the time	High
6. find other options for daily life.	4.39	0.51	At all times	Very High
7. have the ability to generate new and innovative ideas	4.18	0.55	Most of the time	High
8. have the appropriate thinking for situations.	4.27	0.54	At all times	Very High
9. can work in pairs or small groups to collaborate.	4.38	0.51	At all times	Very High
10. can provide feedback to friends or evaluating the work of others.	4.31	0.52	At all times	Very High
11. can push themselves to adapt to working with friends.	4.32	0.52	At all times	Very High
12. can clearly answer questions in front of a large group of people.	4.22	0.54	At all times	Very High
13. can utilize media and technology effectively and impactfully.	4.16	0.56	Most of the time	High
14. can communicate effectively in various situations.	4.22	0.54	At all times	Very High
15. choose the appropriate technological tools to successfully accomplish tasks.	4.26	0.53	At all times	Very High
Overall Mean	4.26	0.53	At all times	Very High
Note: 4.20-5.00 Very High 3.40-4.19 High 2.60-3.39 Moderately high 1.80-2.59 Low 1.00-1.79 Very Low				

The indicator with the best score is indicator 9, *As a teacher, I have observed that my pupils can work in pairs or small groups to collaborate*, described as At all times and interpreted as Very High Level, with a Mean of 4.38 and SD=0.51. This means that they can work in pairs or small groups, which is considered Very High. This implies teachers go above and beyond traditional methods to establish an engaging, active, and captivating learning environment. Because it promotes the improvement of cooperation, communication, and leadership skills. Collaboration is one of the most important 21st century learning skills. Pupils learn how to accept different points of view, share ideas, and work as a team when they collaborate in small groups or pairs. According to Attila (2024) pupils can collaborate with others on a shared learning task in an efficient manner. It highlights the value of teamwork, teaching pupils how to solve problems together and developing their social and emotional intelligence.

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Meanwhile, the lowest rated is indicator 4, *As a teacher, I have observed that my pupils convey information in a logical and clear manner* with the Mean of 4.14 with SD=0.56 described as Most of the time and interpreted as High. This indicates that teachers require enhanced presentation of lessons in a coherent, comprehensible, and systematic manner to facilitate pupils' understanding of concepts. This ensures that learning is effective, engaging and meaningful. Ramadhona (2023) stated that effective presentation of information entails arranging ideas logically and putting out arguments that demonstrate the relationships between concepts. Content must be organized logically and clearly so that ideas flow into one another naturally improving understanding and engagement.

Problem 3. What is the level of pupils' performance for the school year 2024 - 2025?

Table 3.
Pupils' Performance

Grading Scale	Frequency	Percentage	Mean & SD	Interpretation
90% - 100%	132	44	89.24 (2.37)	Very Satisfactory
85% - 89%	116	39		
80% - 84%	27	9		
75% - 79%	25	8		
74% and below	0	0		
Total	300	100		
Note: 90% - 100%: Outstanding 85%-89%: Very Satisfactory 80%-84% Satisfactory 75%-79% Fairly Satisfactory 74% & below Did not Meet Expectations				

Table 3 exhibits the learners' performance. It registered an overall Mean of 89.24 and SD= 2.37 interpreted as Very Satisfactory. One hundred-sixteen (116) or 39% of the pupils have Very Satisfactory level of performance, one hundred thirty-two (132) or 44% of the pupils achieved Outstanding Level of Performance, twenty-seven (27) or 9% of the pupils got Satisfactory level of performance and twenty-five (25) or 8% of the pupils got the Fairly Satisfactory Level of Performance. It means that the pupils were able to perform at the second-highest level. Teachers still need to assist pupils who perform poorly, even if almost all of the students' academic achievements reached an extremely high level, satisfactory and outstanding. The key to progressing up to a new curriculum level is the academic success of the pupils. Additionally, it reflects their problems or accomplishments in school. Therefore, it is essential to provide them with appropriate extracurricular activities and enough time to improve themselves while they are having difficulties.

Furthermore, parents or guardians at home need to keep an eye on their children's activities since they might harm their academic performance if they spend less time studying and more time playing online games or utilizing social media. Re-enforcing lessons taught in school requires practice and study at home. The pupils will be able to recall completely and review the lessons they learned in school. Given this, authorities and educational institutions ought to think about creating a pleasant atmosphere for pupils to learn.

According to Idulog et al. (2023), the academic performance is influenced by many factors, but pupils can improve by developing good habits, staying motivated, and using effective learning strategies. Schools, teachers, and families also play vital roles in shaping pupils' success. Pupils must give their utmost effort in every topic they are offered, not just in one. Since the pupils are still very young and readily affected by negative emotions like discouragement, teachers and parents must be present to mentor, support, and encourage them.

Moreover, Brew et al. (2021) stated that pupils who are given access to educational materials, library resources, and experimental facilities acquire skills that are more beneficial to their learning, which ultimately leads to increased academic performance. Providing pupils with the right resources is essential for their learning. These resources help them acquire valuable skills and knowledge that contribute directly to better academic outcomes.

Problem 4. Is there a significant relationship between the teachers' teaching competence and the level of pupils' 21st century skills?

Table 4 displays the Tested Correlation on Teaching Competence and Pupils' 21st Century Skills. The independent variable is on teachers' gained information of PPST Domains in terms of Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, and Assessment and Reporting while the dependent variables the Pupils' 21st Century Skills and Pupil's Performance.

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For *Content Knowledge and Pedagogy*, it registered as computed r-value of 0.601 with computed p-value of 0.001. The computed p-value is lower than the critical p-value of 0.05 level of significance. This data imply that moderate association between content knowledge and pupils' performance was registered. This means that the teachers' gained information on Content Knowledge and Pedagogy is significantly correlated with the pupils' 21st century skills. Thus, the null hypothesis is rejected.

Table 4.

Test for Correlation on Teaching Competence and Pupils' 21st Century Skills

Variables	r-value	p-value	Level of Correlation	Decision	Interpretation
Content Knowledge and Pedagogy	0.601	0.001	Moderate Positive Correlation	Reject Ho	Significant
Learning Environment	0.213	0.021	Low Positive Correlation	Reject Ho	Significant
Diversity of Learners	0.341	0.016	Low Positive Correlation	Reject Ho	Significant
Assessment and Reporting	0.226	0.034	Low Positive Correlation	Reject Ho	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

The teachers' way of presenting and discussing the lessons to the pupils is vital to their learning development, acquisition and mastery. Thus, the teachers must know the lessons that they will present well as well as use various teaching strategies and instructional materials to make the pupils inspired and motivated to learn. According to Caparas (2021) shows the relationship between teachers' competency level and pupils' 21st century skills. The data show that the level of teachers' ability is important to the pupils' learning, as indicated by the Pearson-r rating, and the probability rating of less than 0.001 led to reject the null hypothesis. The respondents' perceptions and the data indicate that teaching competence has a significant and strong relationship with pupils' 21st century skills. As teachers' competence improves, pupils' 21st century skills also improve.

For *Learning Environment*, it registered as computed r-value of 0.213 with computed p-value of 0.021. The computed p-value is lower than the critical p-value of 0.05 level of significance. This indicates that low positive correlation was registered between learning environment and pupils' performance. This data implies that teachers' gained information on learning environment is significantly correlated with pupils' learning skills. Thus, the null hypothesis is rejected. Learning environment is vital to the teaching and learning process specially for the pupils. Most of the time the learning and knowledge acquisition is happening inside the classroom or the school campus. When the school has a safe and secure environment, the learning process of the pupils becomes more productive and of high level.

According to Khine (2020) learning environment is essential for the success of both teachers and pupils because it allows them to hone their management, teaching, and strategy skills. These elements are incorporated in the assessment of the work of teachers. demonstrates a comprehensive understanding of problem-solving, emphasizing the value of cognitive aspects, strategic approaches, and cooperative learning settings. These observations are essential for teachers who want to help pupils in a variety of subjects develop their problem-solving abilities.

Diversity of Learners registered a computed r-value of 0.341 with computed p-value of 0.016. The computed p-value is lower than the critical p-value of 0.05 level of significance. This data indicates that the information teachers gained on the diversity of learners is significantly (low positive) correlated with their pupils' 21st century skills. Therefore, the null hypothesis is rejected. The learners' learning capacity, capability and their learning styles must be given attention and importance by the teachers. In this manner, the teachers can properly plan and make activities that will cater the needs and the capacity of the learners so that they will not have much difficulty and that they will feel being given importance as the teachers considers their strength and weaknesses.

Qingyan et al. (2023) stated that the importance of understanding the diversity of learners should be emphasized, as it significantly impacts both teachers and pupils' learning skills. Teachers will be evaluated on their ability to create activities that address the varying needs and capacities of their pupils. Meanwhile, pupils must be provided with appropriate activities, assistance, and guidance to facilitate their learning and help them acquire the knowledge and skills necessary for their development and future endeavors.

Assessment and Reporting found to have a low positive correlation with r-value of 0.226, with a p-value of 0.034. This p-value is much lower than the critical value of 0.05, showing a significant link between teachers' teaching competence on

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assessment and learning and pupils' learning skills. Therefore, reject the null hypothesis. It comprises taking in new data, making sense of it, and then being able to use what you've learned in other situations. Assessment and reporting is important as it provides opportunity for the teachers to make diagnosis on the strengths and weakness of the pupils as well as having the chance to inform or update the parents of their pupils' status in their academics. This can be now done with ease with the presence of the advancement of technologies to make their reports and activities more efficient and effective. The ability to engage with the digital environment is a component of technology skills. A person who is technically proficient is one who is adept at working with digital or technical forms of media. Highlighted by Tugtekin et al. (2024).

Problem 5. Is there a significant relationship between the teachers' teaching competence and the level of pupils' performance? Table 5 displays the Test Correlation on Teaching Competence and Pupils' Performance. The independent variable is on teachers' gained information of PPST Domains in terms of Content Knowledge and Pedagogy, Learning Environment, Diversity of Learners, and Assessment and Reporting while the dependent variable was the Pupil's Performance.

Table 5.

Test for Correlation Between Teaching Competence and Pupils' Performance

Variables			r-value	p-value	Level of Correlation	Decision	Interpretation
Content Knowledge and Pedagogy			0.608	0.001	Moderate Positive Correlation	Reject Ho	Significant
Learning Environment			0.219	0.021	Low Positive Correlation	Reject Ho	Significant
Diversity of Learners			0.346	0.016	Low Positive Correlation	Reject Ho	Significant
Assessment and Reporting			0.228	0.034	Low Positive Correlation	Reject Ho	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

For *Content Knowledge and Pedagogy*, the computed r-value was 0.608, with a computed p-value of 0.001. The computed p-value is less than the required p-value of 0.05 significance level. This data indicates a significant correlation between teachers' acquired knowledge in Content Knowledge and Pedagogy and Pupils Performance. Consequently, the null hypothesis is rejected. Teachers who not only possess but also implement both of these qualities are better suited to improve the learning results of their pupils. Consequently, in order to create greater educational accomplishments, professional development programs ought to center their attention on enhancing both subject matter mastery and teaching abilities.

According to Kocama (2022) the correlation between teachers' competency levels and pupils' performance. The statistics demonstrate that teachers' competency significantly influences pupil learning, as evidenced by the Pearson correlation coefficient, and the probability rating of less than 0.001 necessitated the rejection of the null hypothesis. The respondents' judgments and the results suggest that teaching competence is significantly and strongly correlated with pupils' performance. As educators' proficiency enhances, pupils' performance also advanced.

The Learning Environment resulted in a computed r-value of 0.219 and a computed p-value of 0.021. The calculated p-value falls below the critical threshold of 0.05 for significance. The data suggests a significant correlation between the information teachers acquire regarding the Learning Environment and their performance outcomes. Consequently, the null hypothesis has been rejected.

The learning setting is very important for both teachers and pupils to do well. For teachers, it is a place to try out new ways of teaching and get better at managing others. For pupils, it's a place to get involved, work together, and do well in school overall. A positive and supportive setting that encourages personal growth, engagement, and success is good for everyone. Because everything is connected, it is important to make and keep a dynamic, welcoming, and well-structured learning setting so that teaching and learning can go well.

Khine (2020) emphasized that the learning environment plays a crucial role in the performance of both teachers and pupils, serving as the setting where educators can implement their teaching strategies, techniques, and management skills. The evaluation of teachers' performance encompasses these aspects. The findings indicated that pupils' performance declined in relation to their perceptions of teachers' competence. A perception of teachers' competence positively influences pupils' performance. The teachers who effectively foster an environment of warmth and support can enhance pupil achievements significantly.

The analysis for the Diversity of Learners yielded a computed r-value of 0.346 and a computed p-value of 0.016. The calculated p-value falls below the critical threshold of 0.05 for significance. The data indicates a significant correlation between the information

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teachers have on the diversity of pupils and their performance. Consequently, the null hypothesis has been rejected. It is possible for teachers to build a learning environment that is more inclusive and engaging by addressing the diversity of learners. This environment should be one in which all pupils feel encouraged and empowered to attain their greatest potential. Teachers must always think about what they do and change how they do things to better meet the needs of all of their pupils. This could mean seeking professional development chances in areas like special education, inclusive teaching, or learning about new ways to teach that are more open to different types of pupils.

Fatahi (2019) underscored the significance of recognizing learner diversity, as it profoundly influences the learning outcomes of teachers as well as pupils. Educators will be assessed on their proficiency in designing activities that cater to the diverse needs and abilities of their pupils. Pupils must get suitable activities, support, and direction to enhance their learning and enable them to gain the knowledge and skills essential for their development and future goals.

The analysis yielded a computed r-value of 0.228 and a computed p-value of 0.034 for Assessment and Reporting. The calculated p-value falls below the critical level of 0.05 for significance. The data suggest a significant correlation between the information teachers acquire regarding Assessment and Reporting and their performance outcomes. Consequently, the null hypothesis is rejected. In the field of education, assessment involves the collection, analysis, and utilization of data regarding the processes and results of learning. It exists in multiple forms and can be utilized in numerous ways. This tool serves to determine a pupil's strengths and challenges, monitor and document achievements, and establish the most effective strategies for pupils within a tailored curriculum. Although formative, summative, and diagnostic assessments can be implemented through various methods, the main goal of assessment and reporting is to enhance pupil learning. To achieve this, it is essential to accurately reflect the curriculum's objective (Rao & Banerjee, 2023).

IV. CONCLUSIONS

Based on the findings presented, the following conclusions can be drawn from the study:

1. Teachers are well-versed and perform the PPST competencies.
2. Pupils nowadays are updated with the 21st century skills which are essential to their academic activities.
3. Pupils in the 21st century performed better in academics.
4. Teachers' teaching competence on Content Knowledge and Pedagogy is associated with pupils' 21st century skills.
5. Content Knowledge and Pedagogy was also associated with the pupils' performance.

V. RECOMMENDATIONS

In light of the findings and conclusions outlined above, the following recommendations are presented:

1. Teachers may maintain their high level of competence. Moreover, to ensure that teachers can effectively operate in holistic manner, schools may consider implementing additional training sessions and informational initiatives focused on the utilization of Differentiated Instruction since this competency came out low in this study.
2. Pupils can maintain their high level of 21st century skills when supported by the school and at home. It is possible to ensure that all pupils are adequately equipped in facing the difficulties that lie ahead if by placing an emphasis on the development of essential abilities such as problem-solving, creativity, and communication and giving emphasis of their diversity.
3. Teachers and administrators can therefore create programs and training courses that will raise pupils' learning and performance levels specially for those that are still struggling in some skills.
4. Teachers may continuously use diversified instruction to satisfy the diverse learning needs of their students in order to improve the relationship between their teaching competency and the level of their students' learning skills.
5. Teachers may use active learning techniques into their lessons to improve their ability to instruct. Teachers can enhance students' academic performance and skill development by implementing more strategies.

REFERENCES

- 1) Acharya, D. (2022). An analysis of student assessment practices in higher education of nepal. *Molung Educational Frontier*, 12(01), 37-55. <https://doi.org/10.3126/mef.v12i01.45898>
- 2) Acharya, Manaswini & Dass, Mayukh. (2022). "A Theoretical Model on the Role of Marketing in Strategic Exits of Corporate Venture Capitalists," 2022 INFORMS Marketing Science Conference. (June 16-18, 2022).
- 3) Ali, B. J., & Anwar, G. (2021). Employee turnover intention and job satisfaction. *International Journal of Advanced Engineering Management and Science*, 7(6), 22–30. <https://doi.org/10.22161/ijaems.76.3>

- 4) Andres, H. (2020). The role of active teaching, academic self-efficacy, and learning behaviors in student performance. *Journal of International Education in Business*, 13(2), 221- 238.
- 5) Attila, F. L., Peasah, B. S. O., Ofori, S., Buabeng, D. N., Amoako, M., Ray, S., & Yeboah, G. (2024). Exploring the importance of collaborative approaches to community-based counselling interventions in local communities. *Advances in Research*, 25(4), 167–175. <https://doi.org/10.9734/air/2024/v25i41092>
- 6) Awalia, U., Subiyantoro, S., & Margana, M. (2022). Analysis of 12th-Grade Student Creative Thinking Abilities in Theatre Art Concept for Cultural Art. Conference: Proceedings of the 1st International Conference on Language, Literature, Education and Culture, ICOLLEC 2021, 9-10 October 2021, Malang, Indonesia
- 7) Bayram, İ., & Bıkmaz, F. (2021). Implications of lesson study for Tertiary-Level EFL teachers' professional development: a case study from Turkey. *SAGE Open*, 11(2).
- 8) Brew, E. A., Nketiah, B., & Koranteng, R. (2021b). A Literature Review of Academic Performance, an Insight into Factors and their Influences on Academic Outcomes of Students at Senior High Schools. *OALib*, 08(06), 1–14. <https://doi.org/10.4236/oalib.1107423>
- 9) Bonetto, E., Arciszewski, T., Pichot, N., Pavani, J., Guiller, T., Girandola, F., & Bonnardel, N. (2023). Boosting Scientific Creativity Among Researchers: How Efficient are Creativity Trainings? *Sciend*. <https://doi.org/10.31234/osf.io/t9d5e>
- 10) Bourgeois-Bougrine, S., Bonnardel, N., Burkhardt, J., Thornhill-Miller, B., Pahlavan, F., Buisine, S., Guegan, J., Pichot, N., & Lubart, T. (2022). Immersive virtual environments' impact on individual and collective creativity. *European Psychologist*, 27(3), 237–253. <https://doi.org/10.1027/1016-9040/a000481>
- 11) Butler, H. A. (2024). Predicting Everyday Critical Thinking: A review of critical thinking assessments. *Journal of Intelligence*, 12(2), 16. <https://doi.org/10.3390/jintelligence12020016>
- 12) Call, L. (2018), "Teacher Leadership: Influences of Chinese Context on the Capacity of Professional Learning Communities to Empower the Classroom teacher," *Journal of Education Change* vol.1
- 13) Caparas, L. (2021). Implementation of Results-Based Performance Management System -Philippine Professional Standards for Teachers and Its Effects on Teachers' Professional Practice. *International Journal of Academic Multidisciplinary Research (IJAMR)*, 5, 80–83. <http://ijeais.org/wp-content/uploads/2021/9/IJAMR210909.pdf>
- 14) Chernovol, Ye. O., Chepeliuk, A.V., & Kurtiak, F.F.(2023). On the digitalisation of the educational process in higher education institutions of Ukraine: new opportunities and prospects. *Academic Visions*, (15). <https://academy-vision.org/index.php/av/article/view/132>
- 15) Chirove, M., Mogari, D., & Ugorji, O. (2022). Students' mathematics-related belief systems and their strategies for solving non-routine mathematical problems. *Waikato Journal of Education*, 27(3), 101–121. <https://doi.org/10.15663/wje.v27i3.822>
- 16) Cilliers, J., Fleisch, B., Prinsloo, C., & Taylor, S. (2019). How to Improve Teaching Practice? *Journal of Human Resources*, 55(3), 926–962. <https://doi.org/10.3368/jhr.55.3.0618-9538r1>
- 17) Colbert, C. and Bierer, S. (2022). The importance of professional development in a programmatic assessment system: one medical school's experience. *Education Sciences*, 12(3), 220. <https://doi.org/10.3390/educsci12030220>
- 18) Colbert, C. Y., & Bierer, S. B. (2022). The importance of professional development in a programmatic assessment system: One medical school's experience. *Education Sciences*, 12(3), 220.
- 19) DepEd Order No. 42, s. 2017, otherwise known as National Adoption and Implementation of the Philippine Professional Standard for Teachers (PPST), 2017
- 20) Diocos, C. B. (2023). 21st Century Skills of Practice Teachers: Inputs to curriculum enhancement and instructional development. *International Journal of Research Publication and Reviews*, 04(01), 300–306. <https://doi.org/10.55248/gengpi.2023.4104>
- 21) Doktorová, D., & Baranovská, A. (2024). Determining the connection between creativity in pupils and teachers. *Brain Broad Research in Artificial Intelligence and Neuroscience*, 15(1), 558–571. <https://doi.org/10.18662/brain/15.1/569>
- 22) Ellison, A. M., & Borden, D. B. (2022). Constructive friction creates a third space for Art/Science collaborations. *Leonardo*, 55(3), 283–288. https://doi.org/10.1162/leon_a_02200
- 23) Esen, E., Taştan, S., Bulgur, N. E., & Gençoğlu, S. (2023). Perceived communication barriers with Career Management: An assessment in terms of demographic variables. *Revista Romaneasca Pentru Educatie Multidimensionala*, 15(4), 60–80. <https://doi.org/10.18662/rrem/15.4/780>
- 24) Fatahi, S. (2019). An experimental study on an adaptive e-learning environment based on learner's personality and emotion. *Education and Information Technologies*, 24(4), 2225–2241. <https://doi.org/10.1007/s10639-019-09868-5>

- 25) Fikriyatii, A., Agustini, R., & Sutoyo, S. (2022). Critical thinking cycle model to promote critical thinking disposition and critical thinking skills of pre-service science teacher. *Cypriot Journal of Educational Sciences*, 17(1), 130–143. <https://doi.org/10.18844/cjes.v17i1.6690>
- 26) Gepila, E. C., Jr. (2020). Assessing teachers using Philippine standards for teachers. *Universal Journal of Educational Research*, 8(3), 739–746. <https://doi.org/10.13189/ujer.2020.080302>
- 27) Ghasya, D. a. V., & Kartono, K. (2022). Technical Guidance 21st Century Learning Application to improve the pedagogic and professional competence of elementary school teacher. *ABDIMAS Jurnal Pengabdian Masyarakat*, 4(2), 753–759. <https://doi.org/10.35568/abdimas.v4i2.1309>
- 28) Grecu, V. (2023). Investigating critical thinking among engineering students in Romania. *Acta Universitatis Cibiniensis Technical Series*, 75(1), 21–29. <https://doi.org/10.2478/aucts-2023-0003>
- 29) Hamstead, B.H. (2024). Fostering Inclusive Classrooms for Diverse Learners. *Linkedin*. <https://www.linkedin.com/pulse/fostering-inclusive-classrooms-diverse-learners-hebert-hamstead-tdwdc>
- 30) He, W., & Chiang, T. (2024). From growth and fixed creative mindsets to creative thinking: an investigation of the mediating role of creativity motivation. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1353271>
- 31) Hiver, P., Al-Hoorie, A. H., Vitta, J. P., & Wu, J. (2021). Engagement in language learning: A systematic review of 20 years of research methods and definitions. *Language Teaching Research*, 28(1), 201–230.
- 32) Idulog, M. V., Gadiano, R., Toledo, E., Hermosada, M., Casaldon, H., Mariposa, M., Geron, C., Dequito, E., Genanda, J., Malipot, M. A., Pentang, J. T., & Bautista, R. (2023). Filipino Pupils' Reading Abilities: A Note on the Challenges and Potential Areas for Improvement. *International Journal of Education and Teaching Zone*, 2(2), 233–242. <https://doi.org/10.57092/ijetz.v2i2.128>
- 33) Implementation of Thematic-Scientific Learning to Build High-Order Thinking Skills of Elementary School Students. 397(Iclique 2019), 846-855.
- 34) Innocent, N., Muzzamir, L., Muhammad, T., Kule, A. M., & Tumuhairwe, J. (2024). School environment and pupils' academic performance in selected primary schools in Ibaare sub county of Bushenyi District, Uganda. *Newport International Journal of Current Research in Humanities and Social Science (NIJCRHSS)*, 4(3), 140–148. <https://doi.org/10.59298/nijcrhss/2024/4.3.140148>
- 35) Isa, N. S. M., Omar, N., Fatzel, F. H. M., Ghazali, Z. M., & Anas, N. (2021). The relationship between students' learning styles and academic performance: Final year accounting students. *EDUCATUM Journal of Social Sciences*, 7(1), 1-9.
- 36) Jeschke et al., (2021). Teachers' ability to apply their subject-specific knowledge in instructional settings—A qualitative comparative study in the subjects mathematicseconomics. *Frontiers*. <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2021.683962/full>
- 37) Karafil, A. Y., & Ulaş, M. (2023). An evaluation of athletes' opinions on communication barriers caused by coaches in the interpersonal communication process. *Physical Culture and Sport Studies and Research*, 102(1), 28–40.
- 38) Khine, M. S., Fraser, B. J., & Afari, E. (2020). Structural relationships between learning environments and students' non-cognitive outcomes: secondary analysis of PISA data. *Learning Environments Research*, 23(3), 395–412. <https://doi.org/10.1007/s10984-020-09313-2>
- 39) Kicha, L., Moge, T., & Liando, N. V. F. (2023). Development, Implementation, evaluation, and comparison toward ELT Curriculum (A case in Indonesia). *Edumaspul - Jurnal Pendidikan*, 7(2), 3529–3543. <https://doi.org/10.33487/edumaspul.v7i2.6978>
- 40) Kocaman, B. (2022). Examination of Secondary School Students' Attitudes towards Communication and Collaboration Skills in Terms of Some Variables. *Asian Journal of Education and Training*, 8(3), 69–76. <https://doi.org/10.20448/edu.v8i3.4018>
- 41) Lee, G. H. (2024). Mediating Effects of Creative Home Environment And Self-Directed Learning Ability On The Relationship Between Creative Personality And Creative Achievement Intention. *Creativity Studies*, 17(1), 178–191. <https://doi.org/10.3846/cs.2024.15551>
- 42) Lee, H. (2022). Rethinking creativity: creative industries, AI and everyday creativity. *Media Culture & Society*, 44(3), 601–612.
- 43) Lincă, F. I., & Matei, F. L. (2024). Learning styles and academic performance among students. *Revista Academiei Forțelor Terestre*, 29(1), 63–68. <https://doi.org/10.2478/raft-2024-0006>
- 44) Liu, J., Peng, P., Zhao, B., & Luo, L. (2022). Socioeconomic Status and Academic Achievement in Primary and Secondary Education: a Meta-analytic Review. *Educational Psychology Review*, 34(4), 2867–2896. <https://doi.org/10.1007/s10648-022-09689-y>

- 45) M.P., B. (2023). Programmatic assessment in medical education – review. *International Journal of Clinicopathological Correlation*, 7(2), 38-43. <https://doi.org/10.56501/intjclinicopatholcorrel.v7i2.941>
- 46) Manigbas, J. I., Ollet, A. L., Noble, M. P. L., Angeles, J. R., Cayetano, N. M., & Fucio, M. P. (2024). Teachers' competency in content knowledge and pedagogy in Buhi South District, Philippines. *International Education Trend Issues*, 2(1), 21–30. <https://doi.org/10.56442/ieti.v2i1.365>
- 47) Manurung, E. M., Purwadi, Y. S., & Sugiharto, I. B. (2022). Digital learning Process: challenges for specific creativity. *The Electronic Journal of e-Learning*, 20(2), pp112-119. <https://doi.org/10.34190/ejel.20.2.2107>
- 48) Marin, L., & Steinert, S. (2022). Twisted thinking: Technology, values and critical thinking. *Prometheus*, 38(1). <https://doi.org/10.13169/prometheus.38.1.0124>
- 49) Mercer, S., & Dörnyei, Z. (2020). Engaging language learners in contemporary classrooms.
- 50) Mohamad, S. L. (2024). Learning environment and academic engagement in science of junior high school students. *International Journal of Research Publications*, 141(1). <https://doi.org/10.47119/ijrp1001411120246031>
- 51) Morallo, M. B., & Abay, J. R. (2019). Gaps on Quality Teaching: Assessing Teachers' Needs towards the Creation of A Framework for an Extension Program on Teachers' Professional Development. *International Multidisciplinary Research Journal*, 1(3), 28–36. <https://doi.org/10.54476/iimrj396>
- 52) Natuna, D. A., Putra, M. J. A., & Azhar, A. (2021). Teachers' Performance In Online Learning During COVID-19 Outbreak: An Analysis Based on 21st Century Proficiency. *International Journal of Educational Best Practices*, 5(2), 197. <https://doi.org/10.31258/ijebp.v5n2.p197-210>
- 53) Nugrahaningsih, T. K., Almasitoh, U. H., Darmo, M. P., & Riyadi, I. (2020). The Implementation of Thematic-Scientific Learning to Build High-Order Thinking Skills of Elementary School Students. 397(Iclique 2019), 846-855. <https://doi.org/10.2991/assehr.k.200129.105>
- 54) Owusu-Agyeman, Y., & Moroeroe, E. (2021). Professional community and student engagement in higher education: rethinking the contributions of professional staff. *Journal of Professional Capital and Community*, 7(2), 126–143. <https://doi.org/10.1108/jpcc-10-2020-0078>
- 55) Pamon, Evelyn, Oco, Richard (2024). Teachers' Competence and Learners' Academic Performance. *International Journal of Multidisciplinary Research and Analysis*. <http://dx.doi.org/10.47191/ijmra/v7-i03-63>
- 56) Park, Y. J., & Jones-Jang, S. M. (2022). Surveillance, security, and AI as technological acceptance. *AI & Society*, 38(6), 2667–2678.
- 57) Peters-George, Michelle Emmalyn. (2021). Mathematics Teachers' Pedagogical Content Knowledge and its Relation to Student Achievement Relation to Student Achievement. <https://scholarworks.waldenu>
- 58) Qingyan, G., Azar, A. S., & Ahmad, A. (2023). The impact of teacher quality management on student performance in the education sector: literature review. *World Journal of English Language*, 13(3), 156. <https://doi.org/10.5430/wjel.v13n3p156>
- 59) Ramadhona, Dendy & Syafri, Wirman & Maryani, Dedeh & Achmad, Mansyur. (2023). Government Support and Policy Design to Improve MSME's Performance. *Journal of Social Research*. 2. 2157-2172. 10.55324/josr.v2i7.1008.
- 60) Ramdani, D., Susilo, H., Suhadi, S., & Sueb, S. (2022). The effectiveness of collaborative learning on critical thinking, creative thinking, and metacognitive skill ability: Meta-Analysis on Biological Learning. *European Journal of Educational Research*, volume–11–2022(volume–11–issue–3–july–2022),1607–1628. <https://doi.org/10.12973/eu-jer.11.3.1607>
- 61) Rao, N. and Banerjee, S. (2023). Classroom assessment in higher education. *Higher Education for the Future*, 10(1), 11–30. <https://doi.org/10.1177/23476311221143231>
- 62) Republic Act No. 9155. Official Gazette of the Republic of the Philippines. <https://www.officialgazette.gov.ph/2001/08/11/republic-act-no-9155/>
- 63) Rohmah, A., Suhardi, A., & Fariyah, U. (2023). Application of authentic assessment techniques in thematic learning. *Edulec Journal of Education and Technology*, 6(3). <https://doi.org/10.29062/edu.v6i3.581>
- 64) Rohmah, Z., Hamamah, H., Junining, E., Ilma, A., & Rochastuti, L. A. (2024). Schools' support in the implementation of the Emancipated Curriculum in secondary schools in Indonesia. *Cogent Education*, 11(1).
- 65) Shnejder, L., Khmelkova, M., Golovyatenko, T., Poliakova, M., & Doroshenko, O. (2020). Development of professional competence of teachers as a factor of the education quality management in preschool institutions. *SHS Web of Conferences*, 79, 04001.
- 66) Siedlecki, Sandra. (2020). Understanding Descriptive Research Designs and Methods. *Clinical nurse specialist CNS*. 34. 8-12. 10.1097/NUR.0000000000000493.

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- 67) Soylu, A., Kaysılı, A., & Sever, M. (2020). Refugee Children and Adaptation to School: An Analysis through Cultural Responsivities of the Teachers. TED EĞİTİM VE BİLİM. <https://doi.org/10.15390/eb.2020.8274>
- 68) Syata, N. W. M., BD, N. a. I., & Sabillah, N. B. M. (2023). Problem solving: Economic learning Strategies. IJOLEH International Journal of Education and Humanities, 2(2), 85–94. <https://doi.org/10.56314/ijoleh.v2i2.163>
- 69) Thoriq, A. (2023). Education for sustainable development (esd): a systematic literature review on curriculum development strategy design. European Journal of Education Studies, 10(5). <https://doi.org/10.46827/ejes.v10i5.4803>
- 70) Toston, R. a. S. (2023). Teachers' competency and learners' performance in English of Grade 2 pupils: basis for an intervention scheme. In Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.8344834>
- 71) Tugtekin, U., & Odabasi, H. F. (2023). Effect of multitasking and task characteristics interaction on cognitive load and learning outcomes in virtual reality learning environments. Education and Information Technologies, 28(11), 14915–14942. <https://doi.org/10.1007/s10639-023-11813-6>
- 72) Turdieva, Roza. (2024). Journal of Ethics and Diversity in International Communication Developing Communication Skills Through Oral Presentations In Teaching English
- 73) UNICEF (2023). Inclusive Education. UNICIF for Every Child. <https://www.unicef.org/education/inclusive-education>
- 74) Wodon, Quentin and Gina Cosentino. (2019). Education, Language, and Indigenous Peoples.
- 75) Zamora, J. T., & Zamora, J. J. M. (2022). 21st century teaching skills and teaching standards Competence level of teacher. *International Journal of Learning Teaching and Educational Research*, 21(5), 220–238. <https://doi.org/10.26803/ijlter.21.5.12>
- 76) Zhang, T. (2021). Chinese parents' perception of emergency remote K-12 teaching-learning in China during the COVID-19 pandemic. Zenodo (CERN European Organization for Nuclear Research). <https://doi.org/10.5281/zenodo.4567480>
- 77) Zhou, C. (2022). Integration of modern technologies in higher education on the example of artificial intelligence use. Education and Information Technologies, 28(4), 3893–3910.



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