NEXUS
International Journal of Science and Education

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Pedagogical Skills in Relation to Reflective Thinking Process of Teachers

Jean O. Rasonabe

Abstract. The study determined the extent of pedagogical skills in relation to the reflective thinking process of teachers in Cluster 16, Davao City Division. The study used a non-experimental descriptive-correlational research design, utilizing an adapted survey instrument to gather responses from the randomly selected teacher-respondents. Data gathered were treated using Mean scores with descriptive interpretation, Pearson r and Simple Linear Regression Analysis. Findings revealed that the teachers' pedagogical skills in terms of strategies in classroom communication, promote fairness, respect and care, establish learning environment, application of knowledge of content is extensive, and likewise, reflective thinking process of teachers in terms of choosing the best solution available, defining the problem, teasing out a possible solution, analyzing the problem and naming the needs for the solution is extensive. There was a significant relationship between teachers' pedagogical skills and reflective thinking processes. Domains of teachers' pedagogical skills in terms of application of knowledge of content, strategies in classroom communication, promote fairness, respect, and care significantly influenced the reflective thinking process of teachers. Future research may engage in partnerships to implement and evaluate interventions to enhance pedagogical skills and reflective thinking in real-world educational settings. Identify effective strategies and interventions that enhance pedagogical skills and promote reflective thinking among teachers. Share research findings with educational institutions, policymakers, and professional development providers to inform practice.

KEY WORDS

1. pedagogical skills 2. reflective thinking process 3. pedagogical skills 4. interventions

1. Introduction

Pedagogy is important because it gives teachers an insight into the best practices for a classroom setting. It allows them to understand how different students learn so they can tailor their lessons to suit these needs. As a result, this improved the quality of their teaching as it will be well received by students. Pedagogy is formed by an educator's teaching beliefs and concerns the interplay between culture and different ways to learn. Recent research in fields as diverse as educational philosophy and psychology, as well as in the neurobiological sciences, has underlined the need to reassess many of the assumptions that underpin the role of the school, the teacher, and education in general. Among the international circumstances are those using the California Academic Index as a guide, which were able to show a correlation be-

tween high-quality values (character) development and strengthened academic achievement. Davidson et al. (2020) provide explanation and evidence for a similar correlation in their linking 'performance character' and 'moral character' as integrally related to personhood development. The authors offer further evidence of these joint effects in showing that the teacher provides quality content in the context of effective pedagogy and establishes positive, values-rich relationships with students who elicit a greater academic effect in students. In other words, establishing values-rich relationships with students is itself part of effective pedagogy, and, in a circular effect, high-quality teaching has its own positive impact on strengthening the value-richness of these relationships, in turn impacting the effectiveness of the learning ambiance. In confirming this twin effect, Osterman (2020) cites results of a study that showed positive, value-rich relationships with students to be an inherent feature of teachers achieving optimal results. Arthur and Wilson (2020) reported consisting of five projects aimed at different age levels, constituting between them the largest values education study of its kind. The study not only concentrates on character, but on the specific virtues and values most associated with it and their developmental and educability potential. Consistent with all the works cited above, findings from this huge, most comprehensive and exhaustive study entailing top educational researchers concluded that a concentration on character by the teacher whose pedagogy models the virtues and values that underpin it has flow-on effects that can transform the learning environment from one that naturally excludes those who lack dispositional readiness for learning to one that includes them. In the Philippines, experts explored the binary relationship between performance and morality in terms of a disjunction in the way that moral and developmental psychologies have developed and impacted the education profession. This account provides insight into why it is that many of the so-called 'foundations' of teaching have failed to inform and prepare teachers for holistic education and, in turn, why academic achievement for all students remains such a challenge. Currently, DepEd Region XI and the Schools Division of Davao City are speaking of academic performance, together with behavior and character as the 'new basics' needed for successful living, that the research on the role that character formation plays on academic well-being is decisive but that education systems nonetheless persistently fail to draw these basics together. In light of the abundant evidence available around the effects of values pedagogy on student development across the measures, it is perhaps surprising that teacher education is not showing more signs of adjusting to accommodate this evidence. There are instances where this has occurred but, for the most part, teacher education presents as a conservative industry, known more for its reactivity than pro-activity, and so it is unlikely that there will be a wholesale response from teacher education until school systems are saturated in values pedagogy and/or similarly oriented holistic pedagogies, together with their learning assumptions and results. As a result, in Cluster 13, Elementary, Junior High Schools and Integrated Schools have found it hard enough to associate the academic performance and the values formation of the learners, teachers and administration have found a vast gap in reality versus expectations among learners and this is due to teachers pedagogical skills, and while educational priorities have been increasingly formed around improving academic performance while problems of behavior have been exacerbated at the same time as academic performance has stalled. Davao City has to instill values pedagogies in teachers and on the major impact noted of enhanced self-esteem and wellbeing on the part of teachers as they experienced the students' improved learning responses wrought by the pedagogies. As sug-

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

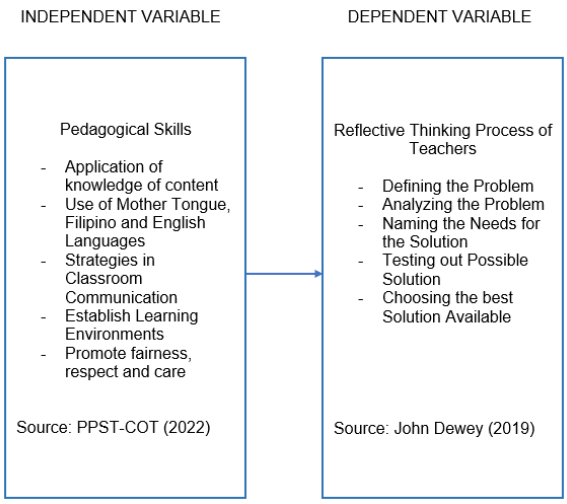

Fig. 1. Conceptual Framework of the Study

gested, teacher education tends to react to what is required in schools once this has been demonstrated to be an enduring rather than fleeting requirement, and especially once the requirement has been endorsed by a teacher employment bureaucracy. It also reacts to findings from educational research, although this is itself a conservative industry bounded by guardianship and not always quick to allow findings outside the orthodoxy to be disseminated for impact and transformation. Hence, there is a tendency for teacher education to function on the basis of an 'old order' of beliefs and priorities, and so, if not studiously reflective of its own practice, to miss what is happening in the wider world, including the schools and even educational research. In a word, it tends to rely on often dated paradigms of learning, the 'chestnuts' as it were, and so the effects of new paradigms may genuinely surprise those embedded in its culture. Thus, this research is conducted.

2. Methodology

This chapter contains the processes and steps in the conduct of the study. This includes the selection of the design of the study, the respondents and its sampling method, the research instruments to be used in data gathering, the procedure, and the ethical consideration and lastly, the data analysis. These steps are considered essentials to assume appropriateness and correctness to produce sound data process collection, analysis and interpretation.

2.1. Research Design—This study used non-experimental descriptive-correlational and predictive research design. A correlational research design investigates relationships between variables without the researcher controlling or manipulating any of them. A correlation reflects the strength and/or direction of the relationship between two (or more) variables. The direction of a correlation can be either positive or negative. (Pallant, 2020). Findings from correlational research can be used to determine prevalence and relationships among variables, and to forecast events from current data and knowledge. In spite of its many uses, prudence is required when using the methodology and analysing data. On the other hand, this type of research tries to extrapolate from the analysis of existing phenomena, policies, or other

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

entities in order to predict something that has not been tried, tested, or proposed before (Gujarati, 2020). In this study, indicators under independent variable pedagogical skills in teaching enumerates application of knowledge of content, use of Mother Tongue, Filipino and English Languages, strategies in classroom communication, establish learning environment and promote fairness, respect and care. These assumed to be correlated with dependent variable, learners' reflective thinking process, where its indicators are defining the problem, analyzing the problem, naming the needs for the solution, teasing our possible solutions and choosing the best solution available in Cluster 13, Davao City Schools Division. Using the design mentioned, it was assumed that variables, along with the indicators mentioned, the researcher empirically provided evidence that the presented hypothesis shall be null and void in nature.

2.2. Research Respondents—Respondents of the study were the Secondary School Teachers of Davao Oriental Schools Division. She used the Raosoft sample size calculator, where a total of 90 respondents were taken randomly from each respective School within Cluster 16, Davao City Schools Division. Once randomly determined, the respondents were informed through online platforms and face-to-face, considering the availability of the Wifi Connections; they were likewise oriented about the purpose and importance of the study and its contribution to their professional development status. These teacher-respondents were the teachers teaching three years and above in the public school service and teaching Edukayon sa Pagpapakatao in the respective schools to measure their competence in responding to the queries of the study. They are qualified for they are expected to have performed and contributed to the betterment of the schools and the learners' literacy development stages on the practical skills of instruction and reflective practices given the new normal learning system during SY 2022-2023. Further, they have frequently engaged in various seminars and trainings including SLAC sessions on the pedagogies in integrating pedagogical skills in teaching ESP in the school management and curriculum development delivery system. Moreover, assumptions in the respective schedule of classes during data collection were explicitly discussed with the respondents, and even observance of health protocol was strictly implemented based on Executive Order 31 S 2020 to avoid possible and lower the risk of contamination.

2.3. Research Instrument—This research study used the adapted instrument taken from The Philippine Professional Standards for Teachers – Classroom Observation Tool (2022) and John Dewey' theories of learning (2022). The researcher gathered and read reviews of related literature to develop concepts for the content that support the instrument and its corresponding strands in articulating the set of question items, reducing threats to validity. Items were adapted from the contents of the reviewed literature as argued by the authors. There were two parts of the survey questionnaire, which consisted of the first phase on measuring the extent of teachers' pedagogical skills in teaching Edukasyon sa Pagpapakatao in terms of application of knowledge of content, use of MTB, Filipino and English Languages, strategies in classroom communication, and establishing learning environment and promoting fairness, respect, and care. Likewise, the second part of the survey measured the extent of learners' reflective thinking process in terms of defining the problem, analyzing it, naming the needs for the solution, and choosing the best solution available. The content of the statements of the survey was placed in the contexts based on the definition of the variables. Further, the survey statements were subjected to a test-retest or validity and reliability testing using Cronbach Alpha at a .05 level of confidence and generated an alpha Cronbach of 0.897, which means that 89.7 percent

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

level of confidence in the validity and reliability of the survey statement constructs (Pallant 2010).

Scale, Descriptive Rating, and Interpretation

Scale	Descriptive Rating	Interpretation
4.20 – 5.00	Very Extensive	The pedagogical skills are always manifested
3.40 – 4.19	Extensive	The pedagogical skills are oftentimes manifested
2.60 – 3.39	Moderately Extensive	The pedagogical skills are sometimes manifested
1.80 – 2.59	Less Extensive	The pedagogical skills are rarely manifested
1.00 – 1.79	Not Extensive	The pedagogical skills are not manifested

Scale, Descriptive Rating, and Interpretation for Reflective Thinking Process

Scale	Descriptive Rating	Interpretation
4.20 – 5.00	Very Extensive	The reflective thinking process is always manifested
3.40 – 4.19	Extensive	The reflective thinking process is oftentimes manifested
2.60 – 3.39	Moderately Extensive	The reflective thinking process is sometimes manifested
1.80 – 2.59	Less Extensive	The reflective thinking process is rarely manifested
1.00 – 1.79	Not Extensive	The reflective thinking process is not manifested

2.4. Data Gathering Procedure—The preceding statements steps explain the data gathering procedure steps where the researcher must comprehensively consider and follow. The statements are based on the policies and guidelines of the Rizal Memorial Colleges and the existing guidelines in the gathering of pertinent data most especially in the current full face to face interaction. Permission to conduct the study. In the second week of March 2023, the researcher started conceptualizing the thesis proposal's contents and objectives. She then prepared documents such as letter requests for the study. As soon as the research proposal presentation was approved by the panel of members and the dean of the college, the researcher wrote and sent a letter of permission to the office of the Schools Division Superintendent of Davao City channel and sought permission to collect data and conduct the study within the secondary schools of Davao City Schools Division. Distribution and retrieval of the questionnaire. The researcher prepared and created a Google sheet form for the online survey collection process, which was sent to the randomly selected respondents via email addresses and to respondents without internet access. Likewise, a prepared hard copy of the survey sheets was given to each of them.

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Once done, the link was sent, and right away, responses were generated, thus, ready for sorting, analyzing, and interpreting. This activity was done right after the approval of the Schools Division Superintendent to proceed with data gathering, which commenced on the third week of April 2023. Collation and statistical treatment of data. The results of the preliminary analysis were given to the thesis adviser during the second week of March 2023. For coaching and in terms of statistical treatment, the thesis adviser sought the assistance of the graduate school statistician for providing technical discussions in running the data and its interpretations and implications of the study, sometime on the fourth week of April 2023, and further deepening the analysis to make more meaning with the interpretations of results on the second week of May 2023.

2.5. Data Analysis—Mean scores and standard deviation were used to address statement problems posed in number one, on the extent of teachers' pedagogical skills, and statement problem number two, on the extent of reflective thinking process in the Cluster 16 of Davao City Schools Division. Pearson Product Moment Correlation Coefficient or Pearson-r was used to determine its strength/direction significant relationship between the pedagogical skills and the extent of the reflective thinking process in Cluster 16 of Davao City Schools Division. Simple Linear Regression analysis was used to address statement problem number 4 on the indicators of teachers' pedagogical skills that significantly influence reflective thinking processes (Pallant, 2000) and (Gujarati, 2000). All data processing and analysis were performed using Jeffrey's Statistics Amazing Program (JASP) version 0.12.20. Discussions and interpretations followed when results yielded.

3. Results and Discussion

This chapter deals with presenting, analyzing, and interpreting the data gathered. Tabular and textual presentation is used to make the analysis and drawing of implications more meaningful. This further shows evidence to support the claim posed in the hypothesis.

Table 1 shows the summary of the extent of teachers' pedagogical skills. The result is focused on the highest and lowest mean ratings of indicators which are as follows: strategies in classroom communication (3.89), promote fairness, respect and care (3.70) and establish learning environment (3.46) and application of knowledge of content (3.44) are oftentimes manifested, while, use of Mother Tongue, Filipino and English Languages (3.36) is sometimes manifested. The overall mean rating of 3.57 denotes the extent of teachers' pedagogical skills is extensive, thus, oftentimes manifested. Gökçek and Yilmaz (2019) aimed to adapt the Pedagogical Knowledge and Skills in Teaching (PKST) survey developed by Wong, Chong, Choy and Lim (2012) to Turkish. EFA shows that the survey has six factors and 37 items. The coefficient was 0.94 for the survey, whereas it ranged between 0.70 and 0.88 for its factors. The analyses and findings show that the survey is a valid and reliable data collection tool. Meanwhile, Tsortanidou et al. (2022) identified how imaginative teaching methods and low-technology prototyping promote social-emotional (SE) skills development in elementary school students. Particularly, two are the objectives of the study, firstly to test the research designs feasibility and validate the research tools and secondly, to ex-

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

plore the relationships between the employed teaching methods and social-emotional skills development. Further research needs to be carried out to gain greater insight into the cross-curricular infusion of these methods and skills across different grades. The added value of this work is the exploration of imaginative teaching methods exploiting age responsiveness so that children gain social-emotional benefits within low-technology learning situations. Reflective Thinking Process of Teachers Reflective thinking practices are about becoming more aware of your own thought processes. Reflexive thinking focuses on our impact on others in the teaching and learning environment and on the knowledge and understanding we create. Reflection is a systematic reviewing process for all teachers, which allows you to make links from one experience to the next, making sure your students make maximum progress.

Table 1. Teachers' Pedagogical Skills

No	Teachers' Pedagogical Skills	Mean	Descriptive Equivalent
1	Application of knowledge of content	3.44	Extensive
2	Use of Mother Tongue, Filipino and English Languages	3.36	Moderately Extensive
3	Strategies in classroom communication	3.89	Extensive
4	Establish learning environment	3.46	Extensive
5	Promote fairness, respect and care	3.70	Extensive
	Overall Mean	3.57	Extensive

Table 2 shows the summary of the extent of reflective thinking process of teachers. The result is focused on the highest and lowest mean ratings of indicators which are as follows: choosing the best solution available (3.98), defining the problem (3.71), teasing out possible solution (3.47), analyzing the problem (3.54) and naming the needs for the solution (3.44) are oftentimes manifested. The overall mean rating of 3.62 denotes that extent of reflective thinking process of teachers is extensive, thus, oftentimes manifested.

Reflection allows you to identify and appreciate positive experiences and better identify ways to improve your practice and service delivery. It can also be useful when more challenging experiences; helping process and learn from them. The literature commonly refers to the following as being the skills required of reflective practice: self-awareness, description, critical analysis, synthesis, and evaluation. Examples of reflective teaching include keeping a journal, gathering feedback from students and colleagues, and recording a class. These methods can help a teacher reflect on how the class went, what did or did not work, and what improvements could be made to improve student outcomes. Reflective thinking is a form of critical thinking that reflects on experiences and learnings. This thinking process, popularized by U.S. philosopher John Dewey's How We Think book, requires intense introspection and can improve decision-making and problem-solving processes (Caza and Nelson, 2019).

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Table 2. Reflective Thinking Process of Teachers

No	Reflective Thinking Process of Teachers	Mean	Descriptive Equivalent
1	Defining the problem	3.71	Extensive
2	Analyzing the problem	3.54	Extensive
3	Naming the needs for the solution	3.44	Extensive
4	Teasing out possible solution	3.47	Extensive
5	Choosing the best solution available	3.98	Extensive
	Overall Mean	3.62	Extensive

Table 3. Significant Relationship between Teachers' Pedagogical Skills and Reflective Thinking Process

Variables	Reflective Thinking Process	r-value	p-value	Interpretation	Decision
Teachers' Pedagogical Skills		0.897	¡0.000	Significant	Reject H0

*significant @p<0.05.

Table 3 revealed the significant relationship between managing the learner's information system and instructional delivery. It provides information that the posed null hypothesis, stating that there is no significant relationship between teachers' pedagogical skills and reflective thinking process, must be rejected, for it provided empirical evidence to show its correlation. It can be depicted that Pearson's Correlation generated a strong positive significant correlation between teachers' pedagogical skills (r=0.897; p<.000) and reflective thinking process. Pedagogical skills form the foundation of effective instructional strategies. Teachers with a diverse repertoire of pedagogical skills can employ various teaching methods, such as active learning, cooperative learning, and differentiated instruction, to engage students and meet their diverse learning needs. However, the reflective thinking process is essential to critically evaluate the effectiveness of their chosen instructional strategies. Reflective thinking allows teachers to assess whether their pedagogical skills align with the specific needs of their students and adjust their instructional approaches accordingly. This iterative process enables teachers to refine their pedagogical skills and optimize their instructional strategies over time. Teachers with strong pedagogical skills can create dynamic and interactive learning environments that captivate students' interest and promote active participation. Through effective questioning techniques, classroom management strategies, and the use of appropriate resources, teachers can facilitate meaningful learning experiences. Reflective thinking complements pedagogical skills by allowing teachers to assess the level of student engagement and identify areas for improvement. Teachers can reflect on their instructional practices, explore alternative ap-

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

proaches, and adapt their pedagogical skills to maximize student engagement. By constantly evaluating their teaching methods, teachers can create an environment that supports active learning and enhances students' motivation and enthusiasm for learning. Through differentiated instruction, teachers can adapt their pedagogical approaches to accommodate students with varying abilities, interests, and learning styles. By utilizing a range of instructional strategies, teachers can provide targeted support, challenge advanced learners, and scaffold concepts for struggling students. Reflective thinking is crucial in this context, as it allows teachers to critically evaluate the impact of their pedagogical skills on individual student progress. Through reflective thinking, teachers can assess the effectiveness of their differentiated instructional practices, identify areas of improvement, and make informed adjustments to better meet the diverse needs of their students. Reflective thinking enhances this growth by enabling teachers to critically analyze their teaching practices, identify strengths and areas for improvement, and set professional development goals. By engaging in reflective practices, such as journaling, peer observations, and collaborative discussions, teachers can deepen their understanding of their pedagogical skills and continuously enhance their instructional effectiveness. When teachers actively engage in reflective thinking, they demonstrate a commitment to ongoing self-improvement and professional growth. This mindset encourages teachers to seek out professional development opportunities, engage in collaborative learning communities, and stay abreast of research and best practices in education. By continuously refining their pedagogical skills through reflective thinking, teachers become lifelong learners themselves and serve as role models for their students.

Table 4 depicts the simple regression coefficient analysis showing that domains of teachers' pedagogical skills significantly influence the reflective thinking process. Domains of teachers' pedagogical skills in terms of applying knowledge of content (0.001), strategies in classroom communication (0.010), and promoting fairness, respect, and care (0.002) significantly influenced the reflective thinking process of teachers, while establishing a learning environment (0.101) and using Mother Tongue, Filipino, and English Languages (0.051) did not significantly influence the reflective thinking process of teachers. Meanwhile, the R2 value of 0.879 suggests that 87.9 percent of teachers' reflective thinking processes are explained by their pedagogical skills. This provides empirical evidence that the domains of teachers' pedagogical skills can account for and explain the variability of teachers' reflective thinking processes. In addition, the F-value shows all the sums of squares, with regression being the model and Residual being the error. The F-value (254.588) and F-statistic is significant p¡.010, tells that the model is significantly a better predictor of reflective thinking process. Pedagogical skills form the foundation of effective instructional strategies. Teachers with a diverse repertoire of pedagogical skills can employ various teaching methods, such as active learning, cooperative learning, and differentiated instruction, to engage students and meet their diverse learning needs. However, the reflective thinking process is essential for teachers to evaluate the effectiveness of their chosen instructional strategies critically. Reflective thinking allows teachers to assess whether their pedagogical skills align with their students' specific needs and adjust their instructional approaches accordingly. This iterative process enables teachers to refine their pedagogical skills and optimize their instructional strategies over time. Teachers with strong

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Table 4. Regression Coefficient Analysis on Domains of Teachers' Pedagogical Skills Significantly Influence Reflective Thinking Process

Model	B	Beta	Standard Error	t-value	p-value	Decisions	
H_0 (Intercept)	4.145	0.079	60.416	0.001	4.143		
H_1 (Intercept)	0.313	0.175	1.066	0.270	0.202		
	AKC	0.807	0.107	1.010	0.315	0.001	*Reject H_0
	SCC	0.441	0.108	1.299	0.196	0.002	*Reject H_0
	PFRC	0.202	0.097	2.098	0.038	0.000	*Reject H_0
	UMFEL	0.921	0.508	1.299	0.296	0.051	Accept H_0
	ELE	0.502	0.057	3.098	0.038	0.101	Accept H_0
R^2 = 0.879 F-value = 254.588 p-value = <0.010							

*Significant @p<0.05.

AKC-application of knowledge of content;

UMFEL-use of Mother Tongue, Filipino and English Languages;

SCC-strategies in classroom communication;

ELE-establish learning environment; and

PFRC-promote fairness, respect and care

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

pedagogical skills can create dynamic and interactive learning environments that captivate students' interest and promote active participation. Through effective questioning techniques, classroom management strategies, and the use of appropriate resources, teachers can facilitate meaningful learning experiences. Reflective thinking complements pedagogical skills by allowing teachers to assess the level of student engagement and identify areas for improvement. Teachers can reflect on their instructional practices, explore alternative approaches, and adapt their pedagogical skills to maximize student engagement. By constantly evaluating their teaching methods, teachers can create an environment that supports active learning and enhances students' motivation and enthusiasm for learning.

4. Conclusions and Recommendations

This chapter presents the findings, conclusion and recommendation based on the results of the data analyzed, discussed, and drawn implications. Findings are based on the posed statement of the problem; conclusions are based on the findings generated and recommendations are based on the implications of the discussions.

4.1. Findings—The following were findings of the study given the results in the presentation, analysis and discussions. The extent of teachers' pedagogical skills in terms of strategies in classroom communication (3.89), promote fairness, respect and care (3.70) and establish learning environment (3.46) and application of knowledge of content (3.44) were oftentimes manifested, while, use of Mother Tongue, Filipino and English Languages (3.36) was sometimes manifested. The overall mean rating of 3.57 denotes the extent of teachers' pedagogical skills was oftentimes manifested, thus, extensive. The extent of teachers' reflective thinking process in terms of choosing the best solution available (3.98), defining the problem (3.71), teasing out possible solutions (3.47), analyzing the problem (3.54), and naming the needs for the solution (3.44) were often manifested. The overall mean rating of 3.62 denotes that the extent of teachers' reflective thinking process was often manifested, thus extensive. Pearson's Correlation generated a significant correlation between teachers' pedagogical skills (r=0.897; p¡.000) and reflective thinking process. Domains of teachers' pedagogical skills in terms of applying knowledge of content (0.001), strategies in classroom communication (0.010), and promoting fairness, respect, and care (0.002) significantly influenced the reflective thinking process of teachers, while establishing a learning environment (0.101) and using Mother Tongue, Filipino, and English Languages (0.051) did not significantly influence the reflective thinking process of teachers.

4.2. Conclusions—Given the findings of the study presented, the following are conclusions, to wit; The teachers' pedagogical skills in terms of strategies in classroom communication, promoting fairness, respect, and care, establishing a learning environment, and applying knowledge of content were extensive. Teachers' reflective thinking processes, in terms of choosing the best solution available, defining the problem, teasing out possible solutions, analyzing the problem, and naming the needs for the solution, were extensive. There was a significant relationship between teachers' pedagogical skills and reflective thinking processes. Domains of teachers' pedagogical skills, in terms of applying knowledge of content and strategies in classroom communication, promoting fairness, respect, and care, significantly influenced teachers' reflective thinking processes.

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

4.3. Recommendations—With the presented conclusions of the study, the following are recommendations to wit; Public School District Supervisor. May allocate adequate resources to ensure that teachers and schools have access to professional development opportunities and necessary technology infrastructure to enhance their pedagogical skills and reflective thinking process. Encourage and support reflective practices among teachers and school leaders by organizing workshops, training sessions, and collaborative platforms for sharing best practices. Facilitate partnerships with universities, educational research institutions, and future researchers to conduct studies on the relationship between pedagogical skills and reflective thinking, providing valuable insights for instructional improvement. School Principal. May encourage and provide opportunities for teachers to engage in professional development activities focused on enhancing pedagogical skills and reflective thinking. Create a supportive environment where teachers feel comfortable engaging in reflective thinking and can share their experiences and insights with colleagues. Encourage collaborative learning communities within the school, where teachers can engage in peer observations, co-planning, and reflective discussions to improve instructional practices collectively. Teacher. May actively seek out professional development opportunities to enhance pedagogical skills and gain a deeper understanding of effective reflective thinking techniques. Dedicate time for regular reflection on instructional practices, student outcomes, and personal growth. Journaling, peer feedback, and self-assessment can be valuable tools for fostering reflective thinking. Collaborate with colleagues, seek feedback from administrators, and consider mentorship opportunities to receive guidance and support in developing pedagogical skills and refining the reflective thinking process. Future Researcher. Conduct research studies on the relationship between pedagogical skills and reflective thinking, examining the impact on instructional effectiveness and professional growth. Investigate various pedagogical approaches, reflective thinking techniques, and their implications for student outcomes. Identify effective strategies and interventions that enhance pedagogical skills and promote reflective thinking among teachers. Share research findings with educational institutions, policymakers, and professional development providers to inform practice. Collaborate with teachers and school leaders to design research projects that address their specific needs and challenges. Engage in partnerships to implement and evaluate interventions aimed at enhancing pedagogical skills and reflective thinking in real-world educational settings.

5. References

Abdul Razzak, N. (2020). Paulo freire's critical and dialogic pedagogy and its implications for the bahraini educational context. *Educational Philosophy and Theory*, *52*(9), 999–1010. https://doi.org/10.1080/00131857.2020.1716731

Akdemir, E. (2018). Investigating the reflective thinking skills of students for problem solving [Online Submission, spec iss]. *The Turkish Online Journal of Educational Technology*, *1*, 774–780. https://eric.ed.gov/?q=defining+the+problem+on+reflective+thinking&pg=2&id=ED595226

Arslan, K., & Costu, F. (2021). Web 2.0 applications in the teaching process: A swot analysis. *Shanlax International Journal of Education*, *9*(4), 460–479. https://eric.ed.gov/?q=teachers%27+skills+in+Analysing+the+problem&pg=4&id=EJ1309699

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Awang, S., Hassan, W. N. F. W., Abdullah, N., Zakaria, W. N. F. W., & Razak, S. S. (2022). Use of communication strategies in oral interactions: (in)effectiveness of clt approach in l2 teaching. *English Language Teaching*, *15*(10), 64–74. https://eric.ed.gov/?q=Strategies+in+classroom+communication+in+teaching+Values+Education+&id=EJ1363251

Badar, S. R., Clegg, J., & Spencer, S. (2022). Increasing teachers' use of communication-supporting strategies: Findings from an exploratory study using the communication supporting classroom observation tool (cscot) in primary schools in brunei. *Support for Learning*, *37*(2), 180–208. https://doi.org/10.1111/1467-9604.12404

Bell'Aver, J., & Rabelo, E. (2020). Applying effective teaching strategies in dual language immersion portuguese classrooms. *Hispania*, *103*(4), 523–532. https://doi.org/10.1353/hpn.2020.0112

Bishop-Williams, K. E. (2020). Wicked problems through a new lens: Combining active learning strategies for solutions-oriented teaching. *Journal of the Scholarship of Teaching and Learning*, *20*(1), 158–162. https://eric.ed.gov/?q=steps+in+testing+solution+to+a+problem+in+teaching+skills&id=EJ1254297

Burton, J. Z., & Warne, R. T. (2020). The neglected intelligence course: Needs and suggested solutions. *Teaching of Psychology*, *47*(2), 130–140. https://doi.org/10.1177/0098628320901381

Caza, A., & Nelson, E. (2019). Simplifying instructional methodology through meta-practices. *Management Teaching Review*, *4*(2), 164–172. https://doi.org/10.1177/2379298118801548

Chapman, L. R. (2021). Contemplative pedagogy: Creating mindful educators and classrooms. *Perspectives of the ASHA Special Interest Groups*, *6*(6), 1540–1553. https://doi.org/10.1044/2021_PERSP-21-00065

Chaw, L. Y., & Tang, C. M. (2023). Exploring the role of learner characteristics in learners' learning environment preferences. *International Journal of Educational Management*, *37*(1), 37–54. https://doi.org/10.1108/IJEM-05-2022-0205

Chun, T. C., & Abdullah, M. N. L. Y. (2022). The effects of language teachers' attitudes, barriers and enablers in teaching 21st century skills at chinese vernacular schools. *Malaysian Journal of Learning and Instruction*, *19*(1), 115–146. https://eric.ed.gov/?q=the+use+of+vernacular+languages+in+teaching+Values+Education+&id=EJ1333723

Creswell, J. W. (2014). *Qualitative inquiry and research design: Choosing among five approaches* (4th). Sage. https://doi.org/10.7459/ept/43.2.05

Derman-Sparks, L., & Edwards, J. O. (2020-2021). Teaching about identity, racism, and fairness: Engaging young children in anti-bias education. *American Educator*, *44*(4), 35–40. https://eric.ed.gov/?q=Promoting+fairness%2c+respect+and+care+in+teaching+&id=EJ1281980

Dolce, J. S. (2022). *Exploration of the skills gap: Hype, perceptions, problem?* [Doctoral dissertation, Northeastern University] [Ed.D. Dissertation]. http://gateway.proquest.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&res_dat=xri:pqm&rft_dat=xri:pqdiss:29064982

Dyment, J. E., Chick, H. L., Walker, C. T., & Macqueen, T. P. N. (2018). Pedagogical content knowledge and the teaching of outdoor education. *Journal of Adventure Education and Outdoor Learning*, *18*(4), 303–322. https://doi.org/10.1080/14729679.2018.1451756

Freire, J. A., & Feinauer, E. (2022). Vernacular spanish as a promoter of critical consciousness in dual language bilingual education classrooms. *International Journal of Bilingual*

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Education and Bilingualism, *25*(4), 1516–1529. https://doi.org/10.1080/13670050.2020.1775778

Gambo, Y., & Shakir, M. Z. (2023). Evaluating students' experiences in self-regulated smart learning environment. *Education and Information Technologies*, *28*(1), 547–580. https://doi.org/10.1007/s10639-022-11126-0

Gökçek, T., & Yilmaz, A. (2019). The adaptation of the pedagogical knowledge and skills survey into turkish: Validity and reliability study. *Turkish Journal of Education*, *8*(1), 52–70. https://eric.ed.gov/?q=Pedagogical+skills+in+teaching+&id=EJ1301059

Idoga, P. E., & Kazaure, A. S. (2022). Enabling teaching and learning environments in a contactless world. *Asian Journal of Contemporary Education*, *6*(1), 74–80. https://eric.ed.gov/?q=establishment+of+learning+environment+in+teaching+&id=EJ1352003

JASP. (n.d.). A fresh way to do statistics [n.d.].

Karakoc, C., & Demir, Ö. (2020). The predictive power of turkish teachers' reflective thinking skills perceptions in their problem solving skills perceptions. *International Journal of Education and Literacy Studies*, *8*(3), 12–24. https://eric.ed.gov/?q=defining+the+problem+on+reflective+thinking&id=EJ1264597

Kirkgöz, Y. (2021). Values education in foreign language curriculum through the eyes of preservice teachers. *Journal of Educational Leadership and Policy Studies*, *spec iss*. https://eric.ed.gov/?q=the+use+of+vernacular+languages+in+teaching+Values+Education+&pg=2&id=EJ1308499

Koenig, T., & MacMillan, K. (2004). Preconceptions and expectations for data analysis software in qualitative research. the wow factor. *Social Science Computer Review*.

Lala, E., Bhattacharya, K., Nieto, S., & Vilson, J. L. (2021). "walk in grace": A kitchen-table talk on cultivating care, dignity, love, and respect in education. *Equity Excellence in Education*, *54*(3), 220–235. https://doi.org/10.1080/10665684.2021.2021611

Lotich, P. (2011). What is the purpose and advantages of the focus group interviews? socialmediatoday.com

Loughlin, C., & Lindberg-Sand, Å. (2023). The use of lectures: Effective pedagogy or seeds scattered on the wind? *Higher Education: The International Journal of Higher Education Research*, *85*(2), 283–299. https://doi.org/10.1007/s10734-022-00833-9

Luimes, M. (2023). Framing policy problems and solutions in education policymaking: Prevocational education in norwegian lower secondary school. *European Educational Research Journal*, *22*(1), 77–97. https://doi.org/10.1177/14749041211044602

Nind, M. (2020). A new application for the concept of pedagogical content knowledge: Teaching advanced social science research methods. *Oxford Review of Education*, *46*(2), 185–201. https://doi.org/10.1080/03054985.2019.1644996

Osborne, M. (2021). Acts of magic: Prototyping in innovative learning environments. *set: Research Information for Teachers*, (2), 18–24. https://doi.org/10.18296/set.0199

Ozmantar, M. F., & Akkoç, H. (2017). Voices and values in shaping the subjectivity of pedagogical content knowledge. *Cogent Education*, *4*(1), Article 1401195. https://doi.org/10.1080/2331186X.2017.1401195

Öztürk, G. (2021). Pre-service teachers' skills in analysing achievements in regard to the revised bloom's taxonomy. *International Journal of Progressive Education*, *17*(1), 277–293. https://eric.ed.gov/?q=teachers%27+skills+in+Analysing+the+problem&id=EJ1286384

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Ozyildirim-Gumus, F., & Ozyildirim, G. (2020). Reflective thinking and probabilistic thinking: An example of elementary school students. *Acta Didactica Napocensia*, *13*(1), 43–56. https://eric.ed.gov/?q=defining+the+problem+on+reflective+thinking&id=EJ1266863

Parks, M., & Oslick, M. E. (2021). Using children's literature to embed character education in primary classrooms. *Dimensions of Early Childhood*, *49*(2), 29–33. https://www.seca.info/dimensions

Quigley, B. A. (2021). "naming the elephant": Literacy classism, human rights and the need for a new conversation. *Adult Literacy Education*, *3*(3), 41–46. https://eric.ed.gov/?q=naming+the+needs+for+solution&id=EJ1334273

Rahman, M. M. (2019). 21st century skill "problem solving": Defining the concept. *Online Submission, Asian Journal of Interdisciplinary Research*, *2*(1), 71–81. https://eric.ed.gov/?q=skills+in+defining+the+problem+&id=ED593994

Raosoft. (n.d.). Raosoft sample size calculator. http://www.raosoft.com/samplesize.html

Ratner, H. H., McGoron, L., Knoff, K. A. G., Weathington, B., & Miller, A. (2022). Promoting sense of community in an early childhood care and education consortium. *Journal of Early Childhood Teacher Education*, *43*(1), 148–166. https://doi.org/10.1080/10901027.2021.1962442

Sandri, O., & Holdsworth, S. (2022). Pedagogies for sustainability: Insights from a foundational sustainability course in the built environment. *International Journal of Sustainability in Higher Education*, *23*(3), 666–685. https://doi.org/10.1108/IJSHE-01-2021-0002

Saraçoglu, M., & Kahyaoglu, M. (2021). Learning and studying approaches as a predictor of reflective thinking skills towards problem-solving of secondary school students. *International Journal of Education and Literacy Studies*, *9*(4), 132–140. https://eric.ed.gov/?q=defining+the+problem+on+reflective+thinking&id=EJ1328778

Sari, Y. I., Sumarmi, Utomo, D. H., & Astina, I. K. (2021). The effect of problem based learning on problem solving and scientific writing skills. *International Journal of Instruction*, *14*(2), 11–26. https://eric.ed.gov/?q=skills+in+defining+the+problem+&id=EJ1290959

Suyatno, Jumintono, Pambudi, D. I., Mardati, A., & Wantini. (2019). Strategy of values education in the indonesian education system. *International Journal of Instruction*, *12*(1), 607–624. https://eric.ed.gov/?q=Strategies+in+classroom+communication+in+teaching+Values+Education+&id=EJ1201358

Tabachnick, B. G., & Fidell, L. S. (20XX). *Using multivariate statistics* (5th ed., Pearson internat. ed., [Nachdr.]). Pearson Allyn; Bacon.

Tseng, J.-J., Chai, C. S., Tan, L., & Park, M. (2022). A critical review of research on technological pedagogical and content knowledge (tpack) in language teaching. *Computer Assisted Language Learning*, *35*(4), 948–971. https://doi.org/10.1080/09588221.2020.1868531

Tsortanidou, X., Daradoumis, T., & Barberá, E. (2022). Developing social-emotional skills through imaginative teaching methods in elementary education. *Early Child Development and Care*, *192*(8), 1201–1216. https://doi.org/10.1080/03004430.2020.1854241

Tusseyev, M., Torybayeva, J., Ibragim, K., Gurbanova, A., & Nazarova, G. (2021). Ensuring the safety of learning and teaching environments. *World Journal on Educational Technology: Current Issues*, *13*(4), 1029–1039. https://eric.ed.gov/?q=establishment+of+learning+environment+in+teaching+&id=EJ1322982

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024

Velempini, K., & Ketlhoilwe, M. J. (2022). Experiences with wild pedagogies in teacher education in botswana. *Canadian Journal of Environmental Education*, *25*, 155–174. https://cjee.lakeheadu.ca/article/view/1712

Vladušic, R., Bucat, R., & Ožic, M. (2020). Evidence of the development of pedagogical content knowledge related to chemical bonding during a course for preservice chemistry teachers. *Center for Educational Policy Studies Journal*, *10*(1), 59–81. https://eric.ed.gov/?q=application+of+knowledge+and+content+in+teaching+Values+Education+&pg=2&id=EJ1249356

Wu, H., & Molnár, G. (2022). Analysing complex problem-solving strategies from a cognitive perspective: The role of thinking skills. *Journal of Intelligence*, *10*, Article 46. https://eric.ed.gov/?q=skills+in+Analysing+the+problem&id=EJ1353631

Ye, L. (2021). Rebuild classroom teaching values. *Best Evidence in Chinese Education*, *8*(2), 1131–1141. https://eric.ed.gov/?q=application+of+knowledge+and+content+in+teaching+Values+Education+&id=EJ1311233

ISSN 3028-1261
10.5281/zenodo.11488761/NIJSE.2024