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TEACHER'S PROFICIENCY AND DIGITAL RESILIENCY ON CLASSROOM INSTRUCTIONAL DELIVERY PRACTICES

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Abstract: *The study investigated the teachers' proficiency and digital resiliency on instructional delivery practices in public schools. The research sample consisted of 100 teachers working in public schools in the Division of Valencia City, Bukidnon, school year 2024-2025. The study used a descriptive and correlational research design. The 90-item survey questionnaire patterned from the study "The Relationship Between Instructional Delivery and Student Engagement in Selected Classrooms: A Cross Case Study Analysis" of Canales, Y. (2020), Teachers' Competency and Students' Digital Literacy in Digital Environment" developed by Reblinca M. (2020), "Digital Competencies and Experiences in Using Digital Technologies of Public School Teachers in Island Municipalities in Quezon, Philippines" by Lagos, G. (2023), and "Digital Literacy and Digital Competence of Selected Filipino Teachers: Basis for a Post-Pandemic Pedagogy" developed by Nabos, J. and Abella, J. (2023), validated by panel of experts and has a reliability of 0.889, was used to collect data. The data gathered were analyzed and interpreted using mean, correlation coefficient and regression. Findings revealed that the teachers' proficiency, digital resiliency, and the level of instructional delivery practices were high. In addition, it is also revealed that online communication and support, and resources significantly impacts the teachers' ability to navigate technological challenges.*

Keywords – *Teacher's proficiency, digital resiliency, instructional delivery practices*

I. INTRODUCTION

The study examined the relationship between public school teachers' digital proficiency and resiliency in digital environment on instructional delivery practices. Utilizing a quantitative method, the research employed a structured questionnaire to collect data from a sample of public school teachers, focusing on their self-reported proficiency and resiliency with digital tools and in navigating challenges related to the use of technology in teaching.

This study aimed to provide insights into how teachers' digital skills and resiliency impact their instructional delivery practices. By identifying the current proficiency and resiliency of teachers, the research sought to enhance teaching effectiveness in digital learning settings, fostering a more effective learning environment for all students.

The conduct of this study rooted from the significant challenges public school teachers face in integrating digital technologies into their instructional practices. Many teachers experienced barriers such as inadequate training, lack of resources, and insufficient technical support, which hinder their ability to effectively utilize technology in teaching-learning process (Jamalaudin et al., 2023). These problems impact the quality of education delivered to students. Additionally, problems in access to technology among students further add to the challenging situation in the use of digital tools in classroom instructional delivery (Diale, 2022).

Furthermore, the dynamic evolution of technology demands that teachers not only keep pace with the new tools but also adapt their teaching methodologies with it (Eri et al., 2021).

This study, additionally, enhances the instructional practices of public-school teachers by addressing the important impacts of digital proficiency and resiliency of teachers. As educational settings nowadays heavily rely on technology, understanding how teachers navigate these changes is essential for improving teaching effectiveness and student engagement. This study also provides insights into the development of digital literacy programs of the Department of Education towards the teachers in integrating technology in instructional delivery. By equipping the

teachers, the teaching-learning process can foster a more effective learning environment that meets the diverse needs of the learners in a fast-evolving landscape of education (Diale, 2022).

This study also allows policymakers and educational leaders to allocate resources and implement strategies that promote equitable access to digital tools.

The integration of digital technologies in education has become increasingly vital, particularly in public schools, where teachers face numerous challenges in utilizing technology. Gamit (2023) emphasizes the difficulties educators encounter when incorporating digital tools into mathematics education, highlighting the need for effective training and support. Similarly, Gironikina (2023) explores the opportunities and obstacles presented by digital technologies in distance learning, noting that inadequate resources and training can significantly hinder teachers' efforts to engage students effectively.

Christopoulos and Tsaparlis (2021) further illustrates the challenges faced by educators during the COVID-19 pandemic, revealing how these obstacles impact instructional delivery and student engagement. Farooq, Zaidi, and Shah (2024) analyze the integration of digital technologies in science education, identifying key barriers that affect teachers' proficiency and the overall effectiveness of technology use in classrooms. Additionally, Ertmer and Ottenbreit-Leftwich (2016) discuss the critical relationship between teachers' beliefs about technology and their integration practices, emphasizing that professional development is essential for fostering positive attitudes toward technology use.

A comprehensive review by Zhao and Frank (2019) identifies various factors influencing technology integration in schools, including the importance of ongoing support systems for educators. König and Blömeke (2020) highlight the significance of enhancing teachers' digital competencies through professional development initiatives, which can lead to improved instructional practices with technology. Collectively, these studies underscore the necessity for targeted training programs to enhance teachers' proficiency and resilience in navigating digital environments, ultimately fostering a more effective learning experience for students in public schools.

The study aimed to investigate the proficiency and digital resiliency of public school teachers in the classroom instructional delivery practices. Specifically, it investigated the level of proficiency, resiliency and instructional delivery practices of teachers. It also aimed to determine the variable that best predict the level of classroom instructional delivery practices of teachers through the use of technology. It also sought to determine the quantity of relationship between variables, and how changes in one variable affect the other variable.

The study was conducted in the Division of Valencia City, utilizing teachers as the sample of the study. The sample was drawn from the population through convenient sampling.

1.1 Objectives of the Study

This study was intended to determine the level of proficiency, digital resiliency, and instructional delivery practices of public-school teachers in the Division of Valencia City. Specifically, it aimed to:

1. Determine the level of digital proficiency teachers have in terms of
    a. Technical skills,
    b. Digital pedagogy, and
    c. Online communication?
2. Ascertain the level of digital resiliency teachers have in terms of
    a. Digital Competency
    b. Adaptability to Technology
    c. Support and Resources
3. Assess the level of teacher's instructional delivery practices in public schools in terms of
    a. Teaching Strategies
    b. Student Engagement
    c. Assessment Methods
3. Correlate between instructional delivery practices and
    a. teacher's digital proficiency, and
    b. teacher's digital resiliency.
4. Identify if there is a variable, singly or in combination, best predicts the instructional delivery practices of teachers.

II. RESEARCH METHODOLOGY

2.1 Research Design

The study utilized the quantitative descriptive research design in examining the level of teachers' proficiency, digital resiliency, and instructional delivery practices of public-school teachers. To examine the relationship between variables and the variable that best predicts the instructional delivery practices, it utilized the correlation research design.

2.2 Setting and Respondents

The respondents of this study were the purposively chosen public-school teachers of DepEd Division of Valencia City from different grade levels and subject areas. A total of 100 teachers participated in answering the structured questionnaire ensuring the wide range of perspectives from the participants.

2.3 Research Instruments

A structured survey questionnaire was utilized in this study patterned from the study "The Relationship Between Instructional Delivery and Student Engagement in Selected Classrooms: A Cross Case Study Analysis" of Canales, Y. (2020), Teachers' Competency and Students' Digital Literacy in Digital Environment" developed by Reblinca M. (2020), "Digital Competencies and Experiences in Using Digital Technologies of Public School Teachers in Island Municipalities in Quezon, Philippines" by Lagos, G. (2023), and "Digital Literacy and Digital Competence of Selected Filipino Teachers: Basis for a Post-Pandemic Pedagogy" developed by Nabos, J. and Abella, J. (2023). This instrument was subjected to reliability and validity tests by experts. The teachers' proficiency, resiliency, and instructional delivery practices were investigated critically using the 90-item questionnaire.

2.4 Data Gathering Procedure

For the data collection, the researcher sought to ask permission from the school heads to conduct the survey in their respective schools from teachers who constituted the sample of the study. The survey statements were prepared, validated by experts, pilot tested in schools outside the division. After pilot tested obtaining a good reliability score, the questionnaires were then distributed and answered by the teachers. The questionnaires were then gathered and data needed was obtained, analyzed, and interpreted.

2.5 Data Analysis

The collected data were analyzed using the SPSS 25.0 program. The data gathered from the survey was analyzed using descriptive, regression, and correlational statistics. Descriptive statistics was used to describe the basic features of the study. It provides simple summaries of the data through measuring its mean in order to identify the level of proficiency, digital resiliency, and instructional delivery practices of the respondents. Regression and correlational statistics were used in order to identify the relationship between instructional delivery practices and teachers' proficiency and digital resiliency.

III. RESULTS AND DISCUSSION

This section presents the analysis and interpretation of data which answer the research questions of the study. Data are presented and discussed in subsequent tables based on the problem presentation.

3.1 Level of Teachers' Digital Proficiency

A. Summary of mean scores of teachers' proficiency

Legend:

4.51-5.00	Very High Proficiency
3.51-4.50	High Proficiency
2.51-3.50	Moderate Proficiency
1.51- 2.50	Low Proficiency
1.00-1.50	Very Low Proficiency

Parameter	Mean	SD	Qualifying Statement
Technical Skills	4.07	0.58	High Proficiency
Digital Pedagogy	4.03	0.57	High Proficiency
Online Communication	3.96	0.55	High Proficiency
Overall Mean	**4.02**	**0.50**	**High Proficiency**

The data presented in the table above shows the teachers' digital proficiency. Based on the results, the teachers have better proficiency in technical skills with a higher mean score of 4.07 compared to digital pedagogy with 4.03 and online communication with 3.96. It indicates that teachers can comfortably use technology in educational purposes, can navigate and utilize social media in the teaching-learning process, can use software specific in different subject areas, and understands how to manage online learning platforms. Moreover, all parameters show high proficiency in which aligns to the study of Zao, et.al. (2021) where it is mentioned that teachers have basic level of digital competence, and can therefore create relevant learning strategies using appropriate digital tools to improve the quality of education.

Moreover, the results align to the claim of Dogan and Dogan (2021) that technical skills of teachers are evidences to increasing proficiency in using basic software, navigating social media for educational purposes and integrating various tools in lesson plans.

The overall mean suggests that there is a positive perception of the combined factors of competency, adaptability, and support. This indicates that the teachers feel relatively resilient to technology which is crucial in the teaching-learning process.

3.2 Level of Teachers' Digital Resiliency

B. Summary of mean scores of teachers' digital resiliency

Legend:

4.51-5.00	Very High Resiliency
3.51-4.50	High Resiliency
2.51-3.50	Moderate Resiliency
1.51- 2.50	Low Resiliency
1.00-1.50	Very Low Resiliency

Parameter	Mean	SD	Qualifying Statement
Digital Competency	3.92	0.66	High Resiliency
Adaptability to Technology	4.01	0.59	High Resiliency
Support and Resources	3.66	0.68	High Resiliency
Overall Mean	**3.86**	**1.61**	**High Resiliency**

Table 2 presents the mean scores of teachers' digital resiliency in terms of digital competence, adaptability to technology and support and resources. Based on the results, the teachers had better adaptability to technology with a higher mean score of 4.01 than the other variables. It suggests that the teachers have a high level of adaptability to new technologies. This adaptability is important in today's changing technological landscape, where the ability to learn and apply new tools can significantly impact resilience. Individuals who are adaptable to technology are better equipped in handling changes specially in the field of education (Bennett & Maton, 2016).

Furthermore, digital competency with a mean score of 3.92 suggests that teachers generally perceive their digital skills as high, which is essential in the teaching-learning process in different contexts. It also suggests that the teachers' competency enable them to utilize digital tools effectively while adapting technological changes and challenges (Hague & Payton, 2016).

The mean score of 3.66 for support and resources indicates high perception to the availability of necessary supports. However, it is noted that among the three parameters, this variable had the lowest mean. It suggests that teachers face challenges in support and resources provided to them by the institution. Celeste & Nimfa (2024) emphasizes in their study several key issues faced by the teachers and schools regarding technological support and resources. That infrastructure and resources in technology in local schools is facing diverse challenges. Furthermore, Alonzo & Roxas (2021) argues that despite high scores in support and resources, teachers often face problems in implementing effective teaching strategies due to resource limitations.

3.3 Level of Teachers' Instructional Delivery

Parameter	Mean	SD	Qualifying Statement
Teaching Strategies	4.04	0.53	High Instructional Delivery Practices
Student Engagement	4.04	0.57	High Instructional Delivery Practices
Assessment Methods	4.00	0.63	High Instructional Delivery Practices
Overall Mean	**4.00**	**0.63**	**High Instructional Delivery Practices**

C. Summary of mean scores of instructional delivery practices

Legend:

4.51-5.00	Very High IDP
3.51-4.50	High IDP
2.51-3.50	Moderate IDP
1.51- 2.50	Low IDP
1.00-1.50	Very Low IDP

Table 3 shows the mean scores of instructional delivery practices of teachers. The data presented reflects the positive evaluations of teaching strategies, student engagement, and assessment methods, all classified as high instructional delivery practices. The mean scores indicate that educators feel confident in their approaches in teaching.

The high mean score for teaching strategies (Mean = 4.04, SD = 0.53) suggests that the instructional methods of the teachers are effective. Research supports this notion, indicating that diverse teaching strategies can enhance student learning outcomes and promote student engagement (Li & Xue, 2023). Similarly, the consistent high score for student engagement (Mean = 4.04, SD = 0.57) indicates that teachers recognize the significance of actively involving the learners in the learning process. A 2018 Gallup Study entitled, "School Engagement is More than Just Talk", found that students are 2.5 times more likely to say that they get excellent grades and do well in school and significantly positively affects student growth. The mean score of 4.00 for assessment methods suggests that teachers feel their assessment practices using technology are effective. This aligns with the thought that effective assessment methods using technology are integral in fostering a resilient learning environment.

The overall mean suggests that the combined effectiveness of teaching strategies, student engagement, and assessments contributes to the instructional delivery practices of the teachers. These findings aligned with Hattie (2009) which highlights that the interconnectedness of these elements promotes students' success.

3.4 Analysis of Teachers' Delivery Practices to Digital Proficiency and Resiliency

D. Relationship of digital proficiency and resiliency on instructional delivery practices

Variables	r-value	p-value
Digital Proficiency	.762**	.000
Technical Skills	.539**	.000
Digital Pedagogy	.724**	.000
Online Communication	.755**	.000
Digital Resiliency	.504**	.000
Digital Competency	.690**	.000
Adaptability to technology	.678**	.000
Support and Resources	.593**	.000

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2-tailed)

The table above shows the correlation between proficiency and resiliency of teachers on their instructional delivery practices. The result suggests that there is a strong correlation observed between digital proficiency and technical skills (r = .762), implying that teachers with greater technical skills are likely to have a higher digital proficiency. Technical skills form a foundation foe effective digital learning engagement in today's technology-driven environment (Hague & Payton, 2016). Digital pedagogy also shows strong correlation with digital proficiency (r = .724) and online communication (r = .755). This implies that teaching practices that incorporates digital tools are associated with better online communication skills. Research indicates that pedagogical strategies that uses technology significantly improves student engagement and learning outcomes (Bannett & Maton, 2016).

The relationship between digital resiliency and digital competency (r = .690) indicate that teachers who are more digitally competent tend to display higher resilience in the face of technological challenges. Lindström et al., (2020) states that digital competence is important in fostering adaptability and resilience in educational settings.

Furthermore, the correlation with adaptability to technology (r = .678) emphasizes the role of adaptability in the changes and challenges brought by technology especially in the educational contexts.

Support and resources also show a significant correlation with digital resiliency (r = .593), suggesting that access to technological resources and support positively impacts the teachers' ability to navigate technological challenges. Overall, all correlations are statistically significant (p = .000), indicating that these variables have strong positive relationship.

E. Regression analysis of variables that best predict the instructional delivery practices of teachers

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.111	.305		-.365	.716
	Technical Skills	-.062	.096	-.057	-.645	.520
	Digital Pedagogy	.210	.114	.191	1.846	.068
	Online communication	.429	.107	.372	4.025	.000
	Digital Competency	.128	.096	.135	1.330	.187
	Adaptability to Technology	.143	.098	.134	1.452	.150
	Support and Resources	.203	.065	.221	3.141	.002

R = .839 R^2 = .703 F-value = 36.717 Sig. = .000

The regression model shows a strong overall fit, with an R^2 value of .703. This indicates that approximately 70.3% of the variance in the outcome variable can be explained by the predictors included in the model. The F-value of 36.717, coupled with a significance level (Sig.) of .000, suggests that the model is statistically significant, meaning that at least one of the predictors significantly contributes to explaining the variance in the dependent variable.

The unstandardized coefficient of technical skills (B = -.062) is negative and not statistically significant (p = .520), suggesting that the technical skills do not meaningfully impact the outcome of variable in this model. Digital pedagogy (B = .210) is positive, indicating a potential positive relationship with the outcome variable. However, the p-value (p = .068) is marginally above the conventional significance level pf .05, suggesting that it is significant but not conclusive evidence.

Online communication has a strong positive coefficient (B = .429) and is statistically significant (p - .000). This finding indicates that effective online communication is a significant predictor of the outcome variable. It means that improvements in online communication skills are likely to lead to positive changes. Digital competency on the other hand, has a coefficient of B = .128 and is positive but not statistically significant with a p-value of .187. It indicates that it does not significantly impact the outcome variable in this model.

Adaptability to technology has a positive coefficient (B = .143) but is not statistically significant (p = .150), which means that there is potential positive relationship but lacks statistical conclusiveness. Lastly, the coefficient for support and resources (B = .203) is positive and statistically significant (p = .002). This indicates that the support and resources have a meaningful impact on the outcome of the variable, highlighting the importance of technological support and resources for enhancing the dependent variable.

The regression analysis indicates that while some predictors show potential relationships with the outcome variable, only online communication and support and resources are statistically significant. Garrison & Akyol (2015) emphasizes the role of online communication in promoting collaborative learning and improving educational outcomes. The significance of support and resources is also reinforced by Huang et. Al. (2020) who found that adequate resources and support significantly enhances students' educational outcomes.

IV. CONCLUSION

The findings of this study highlight the critical role of technology in the instructional delivery practices of public-school teachers. It provides a comprehensive analysis of the relationship between proficiency, digital resiliency, and the teachers' instructional delivery practices. It underscores the importance of integrating effective online communication practices in the teaching learning process while ensuring support and resources from the institution. These are vital in equipping teachers with the necessary skills to thrive in the digital learning environment. The findings moreover, advocate for instructional strategies that prioritize the development of communication skills and resource availability, as these factors significantly contribute to the improvement of digital competency and resilience of the teachers.

V. RECOMMENDATION

It is recommended that future studies could explore deeper on the impact of external factors such as age, socio-economic status, experiences with technology, and learning styles to the digital proficiency and resiliency of teachers. Moreover, a longitudinal study is recommended in order to track changes in digital proficiency and resiliency over time

as students progress through education, providing insights to the long-term effects of technology in the teaching-learning process. Furthermore, training programs that develop teachers' proficiency and resiliency in technology is recommended, as teachers are encouraged to integrate digital pedagogy into their teaching practices. By addressing these recommendations, teachers can create a more effective learning environment that enhance digital proficiency and resiliency not just among teachers but also to the learners in a technology-driven world.

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