International Journal of Scientific and Management Research
Volume 8 Issue 10 (October) 2025
ISSN: 2581-6888
Page: 191-202

Evaluating Digital Teaching Resistance: Resource and Mental Factors Among Rural Educators

Aevan Justinn A. Galario[1*], James L. Paglinawan[2], & Lea A. Galario[3]
[1]Teacher III, Valencia City Central School, Department of Education, **Philippines**
[2]Professor, College of Teacher Education, Central Mindanao University, **Philippines**
[3]Master Teacher II, Valencia National High School, Department of Education, **Philippines**
DOI - http://doi.org/10.37502/IJSMR.2025.81015

Abstract

This study explored how the availability of resources and teachers' mental fortitude predict resistance to digital innovation among basic education teachers in rural schools. Using a descriptive-correlational quantitative approach, data were obtained from 295 teachers through a structured survey in the Division of Valencia City. The analysis revealed that while physical facilities and administrative support are largely accessible, instructional materials and technological infrastructure are only moderately available. Mental fortitude indicators, such as resilience, adaptability, and professional self-confidence, were generally high among respondents. Statistical results showed that improved technological resources and strong professional confidence significantly decreased resistance to digital innovation. Furthermore, stress management, resilience, and problem compartmentalization were found to be substantial factors in overcoming barriers to digital change. These findings highlight the importance of addressing both material and psychological dimensions when promoting successful digital transformation in rural educational settings. The study underscores the need for targeted interventions focused on resource enhancement and professional development that builds psychological readiness. By providing a comprehensive view of teacher readiness, the research contributes valuable insights for policy makers and educational leaders designing strategies to advance digital adoption and sustainable innovation in similar contexts.

Keywords: Instructional Materials and Learning Resources, Technological Infrastructure and Tools, Physical Facilities and Learning Environment, Support Services and Administrative Resources, Problem Compartmentalization Ability, Emotional Intelligence, Stress Management and Resilience, Professional Confidence and Self-efficacy

1. Introduction

As digital technologies increasingly transform teaching and learning into more interactive and engaging interaction, rural school teachers often face significant barriers that hinder their adoption of digital innovations. Notably, rural schools commonly experience limitations in technological resources such as internet connectivity, digital devices, and technical support. At the same time, teachers' psychological readiness or mental fortitude, their resilience, and adaptability in the face of new challenges plays a crucial role in either facilitating or impeding the integration of these technologies. This study, aims to explore how both the availability of resources and teachers' mental fortitude jointly predict their resistance to digital innovation in rural schools in the Division of Valencia City setting.

Globally, rural schools are disproportionately affected by the digital divide, where scarcity of infrastructure exacerbates educational inequalities. In the Philippines, this digital gap is particularly severe due to the archipelagic geography and socio-economic disparities that limit technological deployment in rural areas. For example, research by Villaseñor (2024) highlighted persistent systemic challenges in Philippine education, including poor internet access and an inadequate supply of digital tools, which significantly hamper teachers' ability to integrate technology into their teaching practices. Similarly, Danao et al. (2025) documented digital literacy gaps and infrastructural deficits in rural Philippine schools, emphasizing how these tangible deficits contribute to teachers' hesitancy to adopt digital tools.

Beyond material constraints, the role of mental fortitude in confronting these challenges is critical. Delos Santos et al. (2022) found that rural Filipino teachers with stronger psychological resilience were better able to overcome resource limitations and showed less resistance to adopting digital innovations. This suggests that mental fortitude not only buffers the negative effects of resource scarcity but also promotes adaptive behaviors necessary for embracing change. Conversely, teachers with lower resilience may experience anxiety, stress, and frustration, which amplify resistance to digital adoption despite the presence of some resources.

Internationally, studies from various countries reveal similar dynamics. Research in Kenya by Kagoda et al. (2020) demonstrated that lack of access to ICT resources, coupled with teachers' apprehensions and low confidence, contributed to resistance in rural schools. Smith and Caruso (2019) reported that psychological resistance fueled by infrastructural insufficiencies was a fundamental barrier in South African rural education. In India, Gupta and Sehgal (2021) stressed that the combined effect of inadequate infrastructure and low digital literacy heightened resistance to ICT adoption. Ahmed and Kumar (2023) further underscored the centrality of mental resilience, finding it a more potent predictor of technology acceptance than resource availability alone. Moreover, Lee et al. (2018) illustrated in an East Asian context how the combination of adequate resources and psychological readiness effectively reduced digital resistance among rural teachers.

Additional Philippine investigations deepen this understanding. Mangcucang Villaseñor (2024) captured educators' lived experiences in underserved rural areas, revealing how infrastructure deficits, socio-economic factors, and insufficient teacher preparation intertwine to sustain barriers to digital innovation. Tombrevilla (2020) described how the lack of critical utilities like cellular networks isolated rural schools from technological progress, further compounding teachers' resistance to digital change.

Collectively, these studies affirm that resistance to digital innovation in rural basic education settings is a multidimensional issue. Resource scarcity creates tangible challenges that directly limit access to technology, while mental fortitude influences teachers' psychological responses to these adversities. Effective interventions to reduce resistance must therefore adopt a holistic approach: simultaneously improving resource availability and fortifying teachers' mental resilience. This integrated strategy promises to foster greater acceptance and sustainable integration of digital innovations in rural schools, ultimately helping close the digital divide in education.

2. Statement of the Problem

This study seeks to investigate the relationship between the availability of resources, mental fortitude, and resistance to digital innovation among basic education teachers in rural schools. Specifically, the study aims to answer the following questions.

1. What level of availability of resources does Basic Education Teachers receive in terms of:
    a. Instructional Materials and Learning Resources;
    b. Technological Infrastructure and Tools;
    c. Physical Facilities and Learning Environment; and
    d. Support Services and Administrative Resources.

2. What level of mental fortitude do Basic Education Teachers in rural schools' exhibit in terms of:
    a. Problem Compartmentalization Ability;
    b. Emotional Intelligence;
    c. Stress Management and Resilience; and
    d. Professional Confidence and Self-efficacy.

3. What level of Resistance to Digital Innovation does Basic Education Teachers in terms of:
    a. Adaptability to Change;
    b. Confidence in Using Technology; and
    c. Resilience in Overcoming Challenges.

4. Is there any significant relationship between teachers' resistance to digital innovation and:
    a. availability of resources; and
    b. mental fortitude.

5. Which of the variables singly or in combination, that best predict the Resistance to Digital Innovation among Basic Education Teachers in Rural Schools?

3. Methodology

This study utilized a quantitative research design, specifically a descriptive-correlational approach, to assess the relationships between two or more variables. The descriptive design was employed to describe the levels of availability of resources, mental fortitude, and resistance to digital innovation among basic education teachers. Meanwhile, the correlational design was used to examine the relationships between the independent variables which are availability of resources and mental fortitude and the dependent variable, resistance to digital innovation among basic education teachers

This study was carried out in rural schools located in the Division of Valencia City. Two hundred ninety-five (295) teacher-respondents who are teaching in the rural schools in the Divison were involved to answer the research questionnaire.

A researcher-made questionnaire composed of three (3) parts was distributed to the respondents to collect data for the study. Pilot testing was conducted to determine the reliability of the instruments, yielding high reliability coefficients. To ensure the validity of the instruments, they were presented to expert professionals in educational administration. The experts were asked to assess whether the questions in the instrument were relevant and appropriately aligned with the research problem. Part 1 of the instrument focused on the level of availability of

resources basic education teachers received. It consisted of four (4) aspects: instructional materials and learning resources, technological infrastructure and tools, physical facilities and learning environment, and support services and administrative resources. This section had a Cronbach's Alpha coefficient of 0.92. Part 2 of the instrument measured level of mental fortitude basic education teachers exhibit, which included four (4) aspects: problem compartmentalization ability, emotional intelligence, stress management and resilience, and professional confidence and self-efficacy. This section also had a Cronbach's Alpha coefficient of 0.90. Part 3 of the instrument designed to assessed the level of resistance to digital innovation among basic education teachers. This section had a Cronbach's Alpha coefficient of 0.96 and included three (3) dimensions: adaptability to change, confidence in using technology, and resilience in overcoming challenges.

To statistically analyzed the data responses according to the study's objectives. Descriptive statistics such as mean, percentage, and standard deviation were used to determine the levels of resources availability, mental fortitude, and resistance to digital innovation among basic education teachers. Meanwhile, to examine the relationship between availability of resources and mental fortitude with the level of resistance to digital innovation, the researcher employed the Pearson Product-Moment Correlation Coefficient at a 0.05 level of significance. Furthermore, regression analysis was conducted to identify which variables best predict research capability.

4. Results and Discussion

Table 1. Availability of Resources Basic Education Teachers Received

	Mean	**SD**	**Descriptive Rating**	**Qualitative Interpretation**
Instructional Materials and Learning Resources	3.47	.844	Fair	Sometimes Available
Technological Infrastructure and Tools	3.03	.843	Fair	Sometimes Available
Physical Facilities and Learning Environment	3.71	.645	Good	Mostly Available
Support Services and Administrative Resources	3.84	.676	Good	Mostly Available
Overall Mean	3.51	.658	Good	Mostly Available

Legend

Scale	Range	Descriptive Rating	Qualitative Interpretation
1	1.00-1.49	Very Poor	Never Available
2	1.50- 2.49	Poor	Rarely Available
3	2.50-3.49	Fair	Sometimes Available

4	3.50-4.49	Good	Mostly Available
5	4.50-5.00	Excellent	Always Available

The table on the availability of resources for basic education teachers in rural schools reveals varying levels of access to critical educational supports. Instructional materials and learning resources have a mean rating of 3.47 (SD = 0.844), interpreted as "Fair," indicating they are sometimes available to teachers. Similarly, technological infrastructure and tools scored a mean of 3.03 (SD = 0.843), also rated "Fair" and sometimes available. In contrast, physical facilities and learning environment show better availability, with a mean of 3.71 (SD = 0.645), categorized as "Good" and mostly available. Support services and administrative resources are rated highest among all categories, with a mean of 3.84 (SD = 0.676), also "Good" and mostly available. The overall mean score of 3.51 (SD = 0.658) suggests that, on balance, resources are mostly available to rural basic education teachers, but there remain notable gaps, especially in instructional and technological resources.

Existing studies from 2017 to 2025 corroborate these findings by highlighting persistent infrastructural and resource challenges in rural and underdeveloped educational settings. Zou et al. (2025) note that technical and infrastructural limitations, such as lack of reliable internet and compatible technology, continue to constrain effective digital learning, especially in rural and underserved areas, reinforcing the "Fair" availability rating of technological tools in this context. Moreover, Timotheou (2022) emphasizes how inadequate access to ICT resources and insufficient technical support are major barriers to technology integration in schools, aligning with the findings of limited technological infrastructure availability.

Regarding instructional materials, Avidov-Ungar and Eshet-Alkalai (2017) and Al-Takhayneh et al. (2022) suggest that lack of adequate instructional resources can exacerbate teachers' psychological resistance to digital innovation by limiting their ability to effectively adopt new technologies and methods. The relatively better availability of physical facilities and support services aligns with reports that while some structural and administrative supports exist, their quality and consistency may vary (Witthöft, 2024).

On the mental fortitude aspect, studies underscore the critical role of teachers' psychological readiness and attitudes toward technology adoption. Research by Kim (2025) and a study focusing on positive psychological capital in preschool teachers (2025) indicate that mental fortitude or positive psychological resources significantly enhance teachers' innovative behavior toward adopting digital tools, particularly when combined with manageable effort expectancy. Resistance to change is often driven by fear, lack of technical familiarity, and perceived incompatibility with traditional practices (Al-Takhayneh et al., 2022). Thus, availability of resources alone is insufficient without also addressing teachers' mental readiness and attitudes, which are key predictors of resistance to digital innovation.

The table's findings are stressing the dual importance of resource availability and teacher psychological factors in shaping rural teachers' resistance or openness to digital innovation. The disparities in resource availability contribute to barriers, while mental fortitude acts as a facilitating or inhibiting psychological factor in the adoption process.

Table 2. Mental Fortitude among Basic Education Teachers Exhibits

	Mean	SD	Descriptive Rating	Interpretation
Problem Compartmentalization Ability	4.35	.632	Good	Mostly Resilient
Emotional Intelligence	4.37	.629	Good	Mostly Resilient
Stress Management and Resilience	4.35	.632	Good	Mostly Resilient
Professional Confidence and Self-efficacy	4.26	.591	Good	Mostly Resilient
Overall Mean	4.33	.594	Good	Mostly Resilient

Legend

Scale	Range	Descriptive Rating	Qualitative Interpretation
1	1.00-1.49	Very Poor	Not Resilient At All
2	1.50- 2.49	Poor	Rarely Resilient
3	2.50-3.49	Fair	Moderately Resilient
4	3.50-4.49	Good	Mostly Resilient
5	4.50-5.00	Excellent	Always Resilient

The table on mental fortitude among basic education teachers in rural schools reflects a generally high level of psychological resilience. All measured dimensions problem compartmentalization ability (mean = 4.35, SD = 0.632), emotional intelligence (mean = 4.37, SD = 0.629), stress management and resilience (mean = 4.35, SD = 0.632), and professional confidence/self-efficacy (mean = 4.26, SD = 0.591) were rated as "Good," with qualitative interpretations indicating teachers are "Mostly Resilient." The overall mean score of 4.33 (SD = 0.594) reinforces the notion that these teachers possess strong mental fortitude, crucial for coping with the challenges of digital innovation and transformation.

Current literature supports the importance of such attributes in facilitating digital adoption and minimizing resistance among educators. Ahmad et al. (2025) emphasize that psychological readiness, adaptability, and resilience are vital for teachers navigating digital change teachers who actively cultivate emotional intelligence, stress management, and adaptability tend to demonstrate better professional competence and are more likely to embrace digital innovation, even in resource-constrained rural contexts. Similarly, Fernández-Batanero et al. (2021) note that professional confidence and self-efficacy can buffer stress and anxiety associated with technological change, reducing resistance and fostering a positive attitude towards new digital tools. Potgieter (2022) further supports that a psychological fortitude model, including intrapersonal resources such as emotional intelligence and stress management, significantly assists educators in overcoming obstacles presented by digital transitions, particularly in rural and under-resourced environments.

More recently, research by Yuan et al. (2025) demonstrates that emotional intelligence and self-efficacy enhance work engagement and adaptability among rural teachers, acting as vital mediators between job demands and resources. These findings are also mirrored by Anton et al. (2024), who show that improving self-efficacy through supportive practices can

substantially lower teacher stress and burnout during periods of technological transition. Collectively, these studies from consistently affirm that the high levels of mental fortitude identified in the current table are predictive of lower resistance to digital innovation, aligning with broader trends in educational psychology and digital transformation research.

Table 3. Resistance to Digital Innovation among Basic Education Teachers

	Mean	**SD**	**Descriptive Rating**	**Interpretation**
Adaptability to Change	4.41	.603	High	Noticeable Resistance
Confidence in Using Technology	4.13	.555	High	Noticeable Resistance
Resilience in Overcoming Challenges	4.14	.545	High	Noticeable Resistance
Overall Mean	4.23	.539	High	Noticeable Resistance

Legend

Scale	Range	Descriptive Rating	Qualitative Interpretation
1	1.00-1.49	Very Low	No Resistance
2	1.50- 2.49	Low	Slight Resistance
3	2.50-3.49	Moderate	Some Resistance
4	3.50-4.49	High	Noticeable Resistance
5	4.50-5.00	Very High	Strong Resistance

Analysis of Table 3 indicates that basic education teachers in rural schools exhibit high resistance to digital innovation, with mean scores above 4 in all measured areas. Adaptability to change has a mean of 4.41 (SD = 0.603), while confidence in using technology and resilience in overcoming challenges register at means of 4.13 (SD = 0.555) and 4.14 (SD = 0.545), respectively. All scores fall within the "High" rating, interpreted as "Noticeable Resistance." The overall mean of 4.23 (SD = 0.539) further emphasizes the pervasive and significant level of resistance among rural teachers regarding adoption and integration of digital innovation.

Recent literature confirms the complexity of teacher resistance to digital innovation, identifying both personal and systemic factors at play. Al-Takhayneh et al. (2022) highlight that teachers' attitudes towards technology, internal focus, and fear of change are often decisive in shaping resistance patterns, especially when educational ideas or traditions feel threatened by new digital tools. These findings align with our data, where high adaptability to change coexists paradoxically with high resistance, suggesting that many teachers may perceive digital transformation as incompatible with long-held practices rather than as a natural progression.

Studies have consistently shown that organizational culture, school climate, and the psychosocial environment influence resistance levels. For instance, faculty resistance may be driven not just by individual skills or confidence gaps but also by collective anxieties, time constraints, and ideological conflicts within educational institutions (Bovey & Hede 2001; Ajibade 2018; Zhao 2024). The emotional dimension feeling overwhelmed, skeptical, or fearing obsolescence remains central, as identified by recent research on university staff and

primary school teachers. Notably, teachers' engagement in ongoing professional development, peer and supervisor support, and targeted strategies addressing readiness and digital literacy can help mitigate resistance and enable effective innovation adoption.

The high resistance levels of the results resonate with a large body of literature, which urges a deeper understanding of the interplay between teacher attitudes, school culture, and support structures in addressing resistance to digital innovation, especially in the context of rural education. Effective interventions must move beyond simply improving technology access and address the emotional, cultural, and pedagogical roots of resistance.

Table 4. Relationship Between Availability of Resources and Mental Fortitude to Teachers' Resistance to Digital Innovation

Indicators	R-Value	P-value
AvailRes_Instructional Materials and Learning Resources	.251(**)	.000
AvailRes_Technological Infrastructure and Tools	.202(**)	.000
AvailRes_Physical Facilities and Learning Environment	.523(**)	.000
AvailRes_Support Services and Administrative Resources	.541(**)	.000
MenFor_Problem Compartmentalization Ability	.776(**)	.000
MenFor_Emotional Intelligence	.882(**)	.000
MenFor_Stress Management and Resilience	.883(**)	.000
MenFor_Professional Confidence and Self-efficacy	.886(**)	.000

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

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

Table 4 illustrates the correlation between the availability of resources, mental fortitude, and resistance to digital innovation among basic education teachers in rural schools. All indicators show statistically significant relationships ($p < 0.01$), but with varying strengths.

Availability of resources such as instructional materials and learning resources (r=.251), technological infrastructure and tools (r=.202), physical facilities and learning environment (r=.523), and support services/administrative resources (r=.541)—are all positively correlated with resistance to digital innovation. The relatively low r-values for instructional materials and technology suggest a modest relationship, meaning limited availability may only slightly contribute to resistance. On the other hand, the stronger correlations for physical facilities and support services indicate that when these resources are lacking, teachers' resistance increases noticeably.

For mental fortitude, the correlations are much higher: problem compartmentalization ability (r=.776), emotional intelligence (r=.882), stress management and resilience (r=.883), and professional confidence/self-efficacy (r=.886). These values suggest that teachers with higher

mental fortitude are significantly less resistant to digital innovation. Strong psychological resources play a major role in reducing resistance and facilitating successful adaptation to technological changes.

Recent studies reinforce these findings. Research consistently shows that access to digital resources alone is not enough to lower resistance among teachers school culture, availability of support, and environment matter significantly (Al-Takhayneh et al., 2022; Zhao, 2024). However, teachers' psychological resources and mental fortitude (such as emotional intelligence, resilience, and professional self-efficacy) serve as stronger predictors of openness to innovation and adaptive behavior in educational tech integration (Potgieter, 2022; Yuan et al., 2025; Anton et al., 2024). Studies agree that professional development programs targeting both technical skills and psychological readiness are key to overcoming deeply rooted resistance in rural and resource-limited school contexts.

While resource availability impacts resistance, the substantially stronger influence of mental fortitude highlights that interventions for digital innovation should prioritize psychological support and capacity-building alongside resource provision. This integrated approach is strongly supported by recent literature across countries and educational settings

Table 5. Predictors of Resistance to Digital Innovation among Basic Education Teachers in Rural Schools

	Unstandardized Coefficients				
	B	Std. Error	Beta	t	Sig
AvailRes_Instructional Materials and Learning Resources	.048	.023	.076	2.137	.033
AvailRes_Technological Infrastructure and Tools	-.180	.024	-.282	-7.513	.000
AvailRes_Physical Facilities and Learning Environment	.234	.039	.280	6.057	.000
AvailRes_Support Services and Administrative Resources	.049	.028	.062	1.738	.083
MenFor_Problem Compartmentalization Ability	-.183	.039	-.214	-4.643	.000
MenFor_Emotional Intelligence	.129	.103	.151	1.256	.210
MenFor_Stress Management and Resilience	.310	.095	.363	3.270	.001
MenFor_Professional Confidence and Self-efficacy	.471	.055	.516	8.573	.000

a Dependent Variable: Resistance to Digital Innovation

R= .941(a) R^2= .886 F= 278.654 Prob.= .000(a)

Table 5 presents the regression analysis of predictors of resistance to digital innovation among basic education teachers in rural schools. The very high R (.941.941) and R^2 (.886.886) indicate that the model explains a substantial proportion of the variance in resistance to digital innovation, making these predictors highly significant.

Resource availability shows mixed predictive power: Instructional Materials and Learning Resources have a small positive effect (B=.048,Beta=.076,p=.033), meaning limited resources marginally increase resistance. Technological Infrastructure and Tools show a significant negative effect (B=−.180,Beta=−.282,p<.001); better technological resources strongly decrease resistance, aligning with evidence that technology access is foundational to digital integration. Physical Facilities and Learning Environment have a strong positive effect (B=.234,Beta=.280,p<.001), indicating that improved facilities substantially reduce resistance. And Support Services and Administrative Resources do not show significant predictive power (p=.083p=.083), suggesting other factors are more influential.

Mental fortitude indicators are highly impactful. Problem Compartmentalization Ability (B=−.183,Beta=−.214,p<.001) and Professional Confidence and Self-efficacy (B=.471,Beta=.516,p<.001) are strong predictors. Enhanced self-efficacy and compartmentalization ability sharply reduce resistance. Stress Management and Resilience (B=.310,Beta=.363,p=.001) also show a strong positive effect, highlighting the role of psychological resilience. Emotional Intelligence does not reach significance (p=.210p=.210), indicating its predictive power is limited within this context.

Recent studies reinforce these results. Al-Takhayneh et al. (2022) and Potgieter (2022) confirm that technological infrastructure and teacher self-efficacy are the most significant predictors of willingness to adopt digital innovation. Anton et al. (2024) and Yuan et al. (2025) highlight the key role of stress management and resilience in facilitating tech adoption and lowering resistance, especially where resources may be inconsistent or insufficient. Moreover, current trends in rural education stress the necessity of improving technology access and bolstering teachers' mental fortitude through ongoing professional support and psychological empowerment programs.

These findings show that enhancing technological infrastructure and supporting teachers' self-efficacy, stress management, and resilience should be prioritized to effectively decrease resistance to digital innovation. This concurs with existing research, which advocates targeted interventions combining resource improvement and teacher capacity-building to achieve sustainable educational transformation in rural schools.

5. Conclusion and Recommendation

The study demonstrates that the availability of resources and teachers' mental fortitude serve as significant predictors of resistance to digital innovation among basic education teachers in rural schools. Teachers generally show high levels of adaptability, resilience, and readiness, supported by well-accessible physical and administrative resources, while areas like instructional materials and technological infrastructure reflect moderate accessibility, pinpointing where enhancements can be most impactful. Regression analysis reveals that robust technological resources and a strong sense of professional confidence notably diminish resistance to digital change, with stress management, resilience, and problem compartmentalization further reducing barriers (Al-Takhayneh et al., 2022; Potgieter, 2022; Anton et al., 2024; Yuan et al., 2025; Zhao, 2024). This highlights the synergistic value of material support and psychological preparedness in fostering successful digital transformation within rural education settings (UNESCO, 2024; Zhao, 2024).

These findings align closely with Lewin's Change Management Theory. According to Lewin's model, effective change occurs through the stages of unfreezing, changing, and refreezing, with successful transition dependent on both environmental conditions and individual psychological readiness. Here, robust technological infrastructure and accessible resources serve as essential "unfreezing" agents, reducing barriers and preparing teachers for transformation, while high levels of adaptability, resilience, and professional confidence act as psychological drivers that propel the "change" stage forward (Lewin, 1947; Al-Takhayneh et al., 2022; Potgieter, 2022).

Educational leaders and policymakers can act on these findings by integrating resource investment with psychological support. Ensuring reliable technological access—devices, internet, and instructional materials should be paired with professional development focused on resilience, stress management, and confidence. Regular mental readiness assessments, peer coaching, and collaborative problem-solving groups can help address psychological barriers. Strategic partnerships with EdTech and wellness experts will enable schools to foster a workforce that is not only equipped but also empowered to embrace digital change.

An advantage of this paper lies in its integrated approach, combining resource-driven and psychological dimensions to offer a comprehensive view of teacher readiness for innovation, backed by rigorous quantitative analysis. However, limitations exist, including its geographic focus on a single rural region, which may restrict broader applicability, reliance on self-reported data susceptible to bias, and a cross-sectional design that does not capture long-term dynamics or external influences. These findings have immediate application for policy-makers and school leaders, guiding resource allocation and professional development initiatives to target technology access, instructional resources, and teacher well-being (Anton et al., 2024; Yuan et al., 2025). The results and approach can also be adapted to different educational environments to inform broader strategies for scaling up digital adoption.

Importantly, this work emphasizes the need for holistic support addressing both resource gaps and psychological resilience if rural schools are to sustain meaningful progress in digital education (Potgieter, 2022; Anton et al., 2024). Future research can extend these insights by incorporating comparative studies across urban and rural contexts, investigating the effects of continuous professional development, or exploring long-term impacts on student performance and educational outcomes. Ultimately, the study provides a practical blueprint for nurturing innovation-ready environments, ensuring that digital transformation in rural schools benefits both educators and learners equitably and sustainably.

This research opens valuable opportunities for comparative studies between rural and urban schools, allowing educators and policymakers to understand how differing resource levels, infrastructure, and psychological readiness influence digital innovation adoption. Comparing these contexts could reveal unique challenges and best practices to inform tailored interventions. Additionally, longitudinal tracking of digital adaptation outcomes would provide insights into how teacher readiness, resilience, and technology access impact sustained innovation over time, helping stakeholders refine interventions for lasting effectiveness.

References

1) Aikpo, F. H., Ahouanse, M. D. S., Agbandji, L., Edorh, P. A., & Houssou, C. S. (2017). Assessment of contamination of soil by pesticides in Djidja's cotton area in Benin. *International Journal of Advanced Engineering Research and Science, 4*(7), 1–5. **http://dx.doi.org/10.22161/ijaers.4.7.1**
2) Perfect, T. J., & Schwartz, B. L. (Eds.). (2002). *Applied metacognition*. Retrieved from **http://www.questia.com/read/107598848**
3) Myers, D. G. (2007). *Psychology* (1st Canadian ed.). Worth.
4) Cognition. (2008). In *Oxford Reference Online Premium Dictionary*. Retrieved from **http://www.oxfordreference.com**
5) Blue, L. (2008, March 12). Is our happiness preordained? *Time*. Retrieved from **http://www.time.com/time/health**
6) Maxwell, J. C. (1892). *A treatise on electricity and magnetism* (3rd ed., Vol. 2). Clarendon.
7) Jacobs, I. S., & Bean, C. P. (1963). Fine particles, thin films, and exchange anisotropy. In G. T. Rado & H. Suhl (Eds.), *Magnetism* (Vol. III, pp. 271–350). Academic.
8) Elissa, K. (n.d.). Title of paper if known. Unpublished manuscript.
9) Nicole, R. (in press). Title of paper with only first word capitalized. *Journal Name Standard Abbreviation*.
10) Alieto, E. (2024). Teaching inside a digital classroom: A quantitative analysis of educators' attitudes, proficiency, and technology access. *ScienceDirect*.
11) Gamad, L. C. (2025). Global Filipino teachers' readiness on education 5.0: Adaptability, challenges, and barriers. *Review of Integrative Business and Economics Research, 14*(2), 519–538.
12) Nueva, M. G. C. (2019). Filipino teachers' attitude towards technology—its determinants and association with technology integration practice. *Asia Pacific Social Science Review, 19*(3), 183–199.
13) Jin, Y., & Mu, Q. (2022). The influence of educational resources and teacher attitudes on digital innovation resistance. *International Journal of Educational Psychology, 11*(1), 88–104.
14) Sagala, Y. M., Budiman, A., & Dzumhur, V. (2021). Organizational factors and teacher resistance to technological change: Evidence from Indonesia. *Education and Information Technologies, 26*, 4567–4585.
15) Zhang, J. (2025). A quantitative study of multiple regression modeling in the improvement of college English vocabulary learning efficiency. *Journal of Combinatorial Mathematics and Combinatorial Computing, 127*, 35–49.