

Creativity, digital literacy, support system and performance of kindergarten teachers

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Received: 24 February 2026

Revised: 27 March 2026

Accepted: 30 March 2026

Available Online: 31 March 2026

Volume 1 (2026), Issue 1, P-ISSN – 3116-3769; E-ISSN - 3116-3777

<https://doi.org/10.63498/injelps28>

Abstract

Aim: In contemporary early childhood classrooms, teachers are expected to demonstrate not only strong instructional competence but also creativity, digital proficiency, and adaptability within supportive institutional environments. This study aimed to examine the influence of teachers' creativity, digital literacy, and support systems on the teaching performance of early childhood educators in selected schools in Bukidnon.

Methodology: A quantitative predictive-correlational research design was employed, involving 200 early childhood educators selected through stratified sampling during the school year 2025–2026. Data were gathered using a survey questionnaire composed of researcher-developed instruments measuring creativity, digital literacy, and support systems, as well as an adapted Results-Based Performance Management System (RPMS) tool to assess teaching performance. Descriptive statistics, canonical correlation analysis, multiple regression analysis, and structural equation modeling were used for data analysis.

Results: The findings revealed that teachers demonstrated high levels of creativity, digital literacy, support systems, and teaching performance. Significant relationships were found between teaching performance and teachers' creativity, digital literacy, and support systems. Among these variables, support systems emerged as the strongest predictor of teaching performance. Structural equation modeling further showed that support systems had a strong direct effect on teaching performance, while digital literacy influenced performance both directly and indirectly.

Conclusion: The findings suggest that although teachers' creativity and digital literacy contribute to instructional effectiveness, strengthening institutional support systems remains the most critical factor in enhancing teaching performance in early childhood education.

Keywords: *teaching performance, teachers' creativity, digital literacy, support systems, early childhood education*

INTRODUCTION

Teaching performance is a critical factor in ensuring quality education and improving student outcomes, as it directly influences learners' academic, social, and overall development. Globally, the role of teachers has evolved in response to rapid technological advancements and the increasing demand for 21st-century skills. Contemporary educators are expected to demonstrate not only strong pedagogical competence but also creativity, adaptability, and the ability to effectively integrate digital technologies into instruction. Recent studies highlight that teachers' professional competencies, particularly in creativity and digital literacy, significantly enhance instructional quality and learner engagement (Monares & Dasig, 2024; Olvido et al., 2024).

In early childhood education, the importance of teaching performance becomes even more pronounced, as teachers play a fundamental role in shaping young learners' foundational skills and attitudes toward learning. Studies from 2021 to 2025 emphasize that creative teaching strategies and the integration of digital tools foster critical thinking, collaboration, and meaningful learning experiences among young children (Lin et al., 2025; Yang et al., 2022). Furthermore, research indicates that teachers who are digitally competent and innovative are better equipped to design engaging learning environments that support holistic child development.

However, despite these global advancements, teaching performance is not solely dependent on individual competencies but is also influenced by institutional support systems. Recent research underscores that professional support, access to resources, and effective leadership significantly contribute to teachers' instructional effectiveness



and job satisfaction (Carmel et al., 2023; Mamauag, 2022). In the Philippine context, teaching quality is guided by the Philippine Professional Standards for Teachers (PPST), which outlines key competencies across various domains to ensure effective teaching practices. Despite the presence of these standards, many teachers continue to face challenges in meeting expected competencies due to limited resources, insufficient training opportunities, and varying levels of institutional support (Monares & Dasig, 2024).

These challenges are particularly evident in early childhood education, where teachers are expected to balance multiple responsibilities while addressing the developmental needs of young learners. Kindergarten teachers often encounter difficulties in fostering creativity within classroom instruction, integrating digital technologies into learning activities, and accessing sufficient professional and institutional support. Such challenges may affect their ability to fully implement innovative teaching practices and achieve optimal teaching performance. Understanding the factors that influence teaching performance is therefore essential for improving instructional quality and strengthening early childhood education programs. Recent studies further emphasize that creativity and digital literacy play a significant role in enhancing educational practices, particularly in improving instructional strategies and learner engagement (Lin et al., 2025). These competencies, when combined with adequate institutional support, contribute to more effective teaching practices and improved educational outcomes.

Thus, there is limited research examining how creativity, digital literacy, and support systems collectively affect the teaching performance of kindergarten teachers, particularly in the Philippine context. While existing studies have explored these variables individually, few have investigated their combined and structural relationships in influencing teaching performance. Understanding these relationships is crucial, as both individual competencies and institutional support shape instructional effectiveness. The findings of this study may inform professional development, strengthen support systems, and guide policies that enhance teaching quality and promote holistic learning among young learners.

Review of Related Literature and Studies

Teachers' Creativity

Tok (2022) examined the relationship between kindergarten teachers' roles during free play and their ability to foster creativity in the classroom. The study involved 166 foundation-phase teachers and utilized the Teacher Roles in Free Play Scale and the Creativity Fostering Teacher Index Scale (CFTIndex) to assess creativity-related behaviors. Results indicated that the co-player and onlooker-stage manager roles were most preferred and positively correlated with creativity-fostering behaviors, while the uninvolved role showed a statistically significant negative correlation. The director role did not demonstrate a significant relationship with creativity-fostering behaviors. Moreover, teacher age, professional experience, and class size were not significantly associated with roles that promote creativity. These findings highlight the importance of interactive and facilitative teaching roles in enhancing creativity among young learners.

Digital Literacy

Munawar et al. (2021) investigated the management of digital literacy curriculum in kindergartens to address the demands of the digital era and promote cyber wellness. Surveying 122 kindergartens, the study found that only a small number had integrated digital literacy into their programs, while the majority lacked structured initiatives. Through focus group discussions, six key indicators were identified, including digital infrastructure, teacher competence, curriculum objectives, learning experiences, teaching strategies, and parental involvement. The study emphasized the urgent need for structured technology integration to support both teachers and learners.

Similarly, Sufanti et al. (2025) conducted a community-based initiative aimed at enhancing digital literacy among kindergarten teachers through targeted training on Microsoft PowerPoint. The program resulted in significant improvements in teachers' technical skills and motivation, demonstrating that structured professional support can effectively build digital competence. The findings underscore the importance of continuous training in strengthening teachers' ability to integrate technology into instruction.

Furthermore, Li (2025) explored the development of digital literacy among kindergarten teachers in the context of emerging intelligent technologies such as artificial intelligence and big data. The study proposed a multidimensional framework including technological application, data thinking, pedagogical innovation, ethical awareness, and lifelong learning. These findings suggest that digital literacy extends beyond basic skills and plays a critical role in enhancing instructional innovation and effectiveness.

Support System

Ali et al. (2021) examined the educational policy system governing public kindergartens and identified systemic challenges such as inadequate funding, outdated curricula, and shortages of qualified teachers. The study highlighted that limited institutional support significantly affects the quality of instruction and the overall effectiveness of early childhood education programs.

Lin et al. (2025) investigated the relationship between kindergarten teachers' professional motivation and their emotional support competence. Findings revealed that prosocial motivation, professional mission, empathy, and agreeableness significantly enhance teachers' ability to provide emotional and instructional support. The study further emphasized that strong support systems contribute to improved teacher effectiveness and positive classroom environments

Teaching Performance

Carmel et al. (2023) examined factors influencing the integration of new kindergarten teachers into the workplace. The findings showed that professional support, self-efficacy, and motivation significantly contribute to teachers' effectiveness and successful adaptation within educational settings.

Monares and Dasig (2024) assessed the implementation of the Results-Based Performance Management System (RPMS) and its relationship to teacher performance. The study revealed that structured supervision, clear goal setting, and constructive feedback significantly enhance instructional practices and overall teaching performance.

Mamaug (2022) investigated the implementation of RPMS and found that strong institutional support and targeted interventions improve teachers' role clarity and professional growth, resulting in higher teaching performance.

Olvido et al. (2024) examined the quality of teacher education graduates and found that well-prepared teachers consistently demonstrate strong teaching performance, emphasizing the importance of quality training and institutional support in developing competent educators.

Synthesis and Research Gap

Despite the growing body of literature highlighting the individual roles of teachers' creativity, digital literacy, and support systems in enhancing instructional practices, existing studies predominantly examine these variables in isolation. There is limited empirical research that investigates their combined and structural relationships in influencing teaching performance, particularly among early childhood educators in the Philippine context. Moreover, few studies utilize advanced analytical approaches, such as structural equation modeling, to explain how these factors interact to shape teaching outcomes. This gap underscores the need for a comprehensive investigation that integrates these variables to better understand their collective impact on teaching performance and to inform evidence-based educational interventions.

Theoretical Framework

This study was anchored on several established educational theories that explain how teachers' creativity, digital literacy, and support systems influence teaching performance in early childhood education. Margaret Boden's Theory of Creativity emphasizes the role of exploratory, transformational, and combinational creativity in generating innovative ideas and practices, which are essential in designing engaging and meaningful learning experiences. Similarly, Howard Gardner's Multiple Intelligences Theory highlights the importance of addressing diverse learner needs through varied instructional strategies, reinforcing the role of teacher creativity in enhancing learning outcomes.

Moreover, Lev Vygotsky's Social Constructivism Theory underscores the significance of social interaction, collaboration, and guided learning in knowledge construction. This theory supports the idea that teachers must adopt flexible and interactive teaching approaches to facilitate meaningful learning experiences.

In addition, the study is supported by the Technological Pedagogical Content Knowledge (TPACK) Framework, which emphasizes the integration of technology, pedagogy, and content knowledge as essential components of effective teaching. This framework highlights the critical role of digital literacy in enabling teachers to design, implement, and evaluate technology-enhanced instruction.

Furthermore, Bronfenbrenner's Ecological Systems Theory explains how various environmental systems, particularly institutional and organizational support, influence teachers' performance and professional development. Complementing this, the Developmentally Appropriate Practice (DAP) Framework ensures that instructional strategies align with the developmental needs, interests, and abilities of young learners.

Collectively, these theories provide a comprehensive foundation for understanding how creativity, digital literacy, and support systems interact to influence teaching performance in early childhood education.

Conceptual Framework

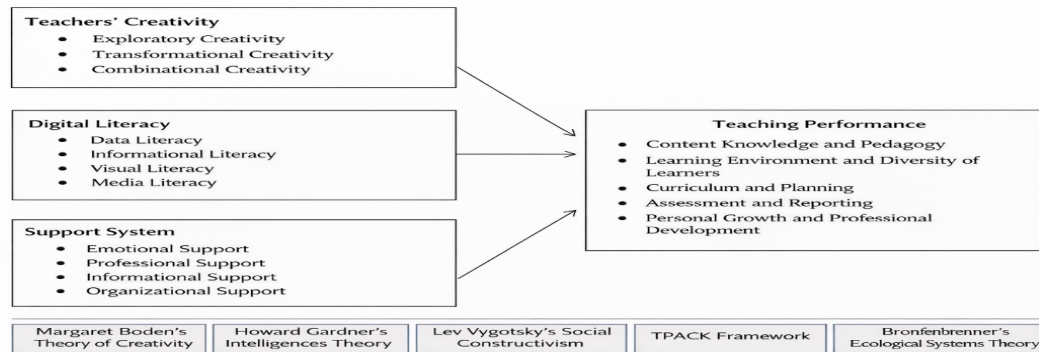


Figure 1. Research Paradigm

The conceptual framework of the study illustrates the relationship between the independent variables, teachers' creativity, digital literacy, and support systems and the dependent variable, teaching performance. Teaching performance is assessed across key domains, including content knowledge and pedagogy, learning environment and diversity of learners, curriculum and planning, assessment and reporting, and personal growth and professional development, which reflect the competencies outlined in the Results-Based Performance Management System (RPMS). Teachers' creativity is examined in terms of exploratory, transformational, and combinational creativity, while digital literacy includes data literacy, informational literacy, visual literacy, and media literacy. Support systems are categorized into emotional, professional, informational, and organizational support. The framework assumes that higher levels of teachers' creativity, digital literacy, and support systems lead to improved teaching performance. Furthermore, it suggests that these variables may interact and collectively influence instructional effectiveness, highlighting the importance of both individual competencies and institutional support in enhancing teaching quality.

Statement of the Problem

Despite the increasing demands placed on early childhood educators to demonstrate creativity, digital competence, and adaptability within supportive institutional environments, many teachers continue to experience difficulties in effectively integrating these competencies into their instructional practices. Limitations in access to digital resources, varying levels of professional training, and inconsistencies in institutional support systems may hinder teachers' ability to deliver high-quality instruction and achieve optimal teaching performance. While existing studies have examined creativity, digital literacy, and support systems as individual factors, there remains insufficient empirical evidence on how these variables collectively influence teaching performance, particularly among early childhood educators in the Philippine context. This gap highlights the need to investigate the combined effects of these factors and to develop a model that explains their interrelationships in influencing teaching performance.

Research Objectives

General Objective

To examine the influence of teachers' creativity, digital literacy, and support systems on the teaching performance of early childhood education teachers.

Specific Objectives

1. To determine the level of teachers' creativity in terms of exploratory creativity, transformational creativity, and combinational creativity.
2. To determine the level of teachers' digital literacy in terms of data literacy, informational literacy, visual literacy, and media literacy.
3. To determine the level of support systems received by teachers in terms of emotional support, professional support, informational support, and organizational support.
4. To determine the level of teaching performance of early childhood education teachers based on the Results-Based Performance Management System (RPMS) in terms of content knowledge and pedagogy, learning

environment and diversity of learners, curriculum and planning, assessment and reporting, and personal growth and professional development.

5. To determine the significant relationship between teaching performance and the following variables: creativity, digital literacy, and support systems.
6. To determine which of the variables, singly or in combination, significantly predict early childhood education teachers' teaching performance.
7. To determine the model that best fits the interrelationship among teachers' creativity, digital literacy, and support systems in influencing teaching performance.

Research Questions

1. What is the level of teachers' creativity in terms of exploratory creativity, transformational creativity, and combinational creativity?
2. What is the level of teachers' digital literacy in terms of data literacy, informational literacy, visual literacy, and media literacy?
3. What is the level of support systems received by teachers in terms of emotional support, professional support, informational support, and organizational support?
4. What is the level of teaching performance of early childhood education teachers based on the Results-Based Performance Management System (RPMS) in terms of content knowledge and pedagogy, learning environment and diversity of learners, curriculum and planning, assessment and reporting, and personal growth and professional development?
5. Is there a significant relationship between teaching performance and teachers' creativity, digital literacy, and support systems?
6. Which of the variables, singly or in combination, significantly predict early childhood education teachers' teaching performance?
7. Which model best fits the interrelationship among teachers' creativity, digital literacy, and support systems in influencing teaching performance?

Hypotheses

H₀₁: There is no significant relationship between the teaching performance of early childhood education teachers and their level of creativity, digital literacy, and support systems.

H₀₂: None of the variables, singly or in combination, significantly predict early childhood education teachers' teaching performance.

H₀₃: There is no structural model that best fits the interrelationship among teachers' creativity, digital literacy, support systems, and teaching performance.

METHODOLOGY

Research Design

This study employed a quantitative predictive-correlational research design to examine the relationships among teachers' creativity, digital literacy, support systems, and teaching performance. A predictive-correlational design is appropriate when the objective of the research is to determine the extent to which independent variables are associated with and predict a dependent variable. In this study, teachers' creativity, digital literacy, and support systems served as the predictor variables, while teaching performance served as the outcome variable.

Furthermore, Structural Equation Modeling (SEM) was used to test the proposed structural relationships among the variables and to determine the model that best explains teaching performance among early childhood education teachers. This design allowed the study to analyze both the direct and indirect relationships among the variables.

Population and Sampling

The study involved 200 early childhood education teachers from public elementary schools in the Schools Division of Bukidnon, selected from a total population of 378 using stratified sampling to ensure proportional representation. The inclusion criteria required participants to have at least three years of teaching experience and current employment in the Department of Education (DepEd).

Research Instruments

Data were gathered using a structured questionnaire composed of four sections: teachers' creativity, digital literacy, support system, and teaching performance based on the Results-Based Performance Management System (RPMS). The instrument utilized a five-point Likert scale to measure respondents' perceptions across the variables. The instruments for creativity, digital literacy, and support system were researcher-developed, while teaching performance indicators were adapted from the RPMS.

Content Validation

The instrument underwent content validation by experts in education and research to ensure its relevance, clarity, and alignment with the study variables. Their feedback was incorporated to refine the questionnaire and ensure content adequacy.

Reliability Testing

The instrument was pilot-tested among a group of respondents similar to the target participants but not included in the actual study. Reliability analysis using McDonald's Omega indicated high internal consistency, confirming that the instrument was reliable for data collection. Specifically, the reliability coefficients obtained were 0.988 for teachers' creativity, 0.991 for digital literacy, and 0.993 for support system, indicating excellent internal consistency.

Data Collection Procedure

Data collection was conducted through both in-person and online administration of the validated questionnaire to early childhood education teachers in the Schools Division of Bukidnon. Participants were provided with clear instructions and were given approximately 20–30 minutes to complete the instrument. All accomplished questionnaires were retrieved, encoded, and prepared for statistical analysis. Data collection was conducted from January to February 2025.

Treatment of Data

Appropriate statistical tools were employed to analyze the data in relation to the research objectives. Mean and standard deviation were used to determine the levels of teachers' creativity, digital literacy, support system, and teaching performance. Pearson Product–Moment Correlation was utilized to examine the relationships among variables. Structural Equation Modeling (SEM) was applied to determine predictive relationships and to identify the best-fitting structural model. All statistical analyses were performed using SPSS and AMOS version 27.

Ethical Considerations

Ethical standards were strictly observed throughout the study. Approval to conduct the research was obtained from the appropriate institutional authorities. Participants were informed about the purpose of the study, and informed consent was secured prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. All data collected were used solely for academic and research purposes.

RESULTS and DISCUSSION

This section presents and discusses the results of the study based on the research questions. Findings are interpreted in relation to learning theory and relevant empirical studies to explain observed outcomes.

Table 1 Level of Participants' Creativity

Teacher's Creativity	Mean	SD	Interpretation
Exploratory Creativity	4.34	1.04	High Level of Creativity
Transformational Creativity	4.35	1.00	High Level of Creativity
Combinational Creativity	4.37	0.99	High Level of Creativity
Overall	4.36	1.00	High Level of Creativity

Table 1 reveals that teachers demonstrate a high level of creativity across all dimensions, with an overall mean of 4.36. This indicates that teachers consistently apply creative approaches in their instructional practices, enabling them to design engaging and responsive learning experiences for young learners.

Notably, combinational creativity obtained the highest mean, suggesting that teachers are highly capable of integrating ideas, materials, and strategies to create meaningful and effective instruction. This reflects their ability to

adapt to diverse classroom situations and maximize available resources. Meanwhile, the presence of strong exploratory and transformational creativity indicates that teachers are open to innovation and capable of improving existing teaching practices, which is essential in addressing the dynamic needs of early childhood education.

These findings imply that creativity is a key professional competence that enhances instructional effectiveness and learner engagement. This supports Tok (2022), who emphasized that teachers who adopt interactive and facilitative roles significantly promote creativity and meaningful learning among learners. Furthermore, the results align with studies highlighting that creative teaching practices improve instructional quality and support learners' cognitive and social development.

Table 2 Level of Participants' Digital Literacy

Digital Literacy	Mean	SD	Interpretation
Data Literacy	4.29	1.01	High Digital Literacy
Informational Literacy	4.28	1.02	High Digital Literacy
Visual Literacy	4.27	0.92	High Digital Literacy
Media Literacy	4.31	0.95	High Digital Literacy
Overall	4.29	0.95	High Digital Literacy

Table 2 reveals that teachers demonstrate a high level of digital literacy across all dimensions, with an overall mean of 4.29. This indicates that teachers are generally capable of integrating digital tools, accessing information, and utilizing media resources to support effective instruction. The high ratings suggest that digital competence has become an essential component of teaching practice in early childhood education.

Notably, media literacy obtained the highest mean, implying that teachers are particularly effective in using multimedia platforms to enhance student engagement and deliver content in more interactive ways. This reflects teachers' ability to adapt to technology-driven learning environments and utilize digital resources to improve instructional delivery. This finding supports Sufanti et al. (2025), who emphasized that teachers' proficiency in digital tools enhances instructional quality and learner engagement.

However, visual literacy recorded the lowest mean among the dimensions, indicating that teachers may have comparatively less confidence in designing and interpreting visual-based instructional materials. This suggests a need for further professional development in visual communication and data presentation skills. Similarly, Li (2025) highlighted that effective digital literacy involves not only technological skills but also the ability to present information clearly and visually.

Overall, the findings imply that while teachers possess strong digital competencies, targeted training in visual literacy can further enhance their ability to deliver more effective and engaging instruction. These results reinforce the importance of continuous professional development in strengthening teachers' digital capabilities.

Table 3 Level of Support System Received by Participants

Support system	Mean	Interpretation	SD
Emotional Support	4.30	High Support System	0.95
Professional Support	4.36	High Support System	0.98
Informational Support	4.29	High Support System	1.00
Organizational Support	4.30	High Support System	0.98
Overall	4.31	High Support System	0.96

Table 3 reveals that teachers experience a high level of support across all dimensions, with an overall mean of 4.31. This indicates that teachers generally work in supportive environments that promote their well-being, professional growth, and instructional effectiveness.

Notably, professional support obtained the highest mean, suggesting that teachers benefit from strong guidance, access to instructional resources, and opportunities for professional development. This highlights the important role of institutional support in enhancing teaching competence and classroom effectiveness. This finding supports Monares and Dasig (2024), who emphasized that structured professional support, such as mentoring and leadership guidance, significantly improves teaching performance.

On the other hand, informational support recorded the lowest mean, indicating that while teachers have access to resources, there may be limitations in the availability or clarity of information needed for instructional tasks.



This suggests a need to improve access to timely and well-organized instructional resources. Similarly, Ali et al. (2021) noted that insufficient access to relevant information and resources can affect teachers' instructional effectiveness.

Overall, the findings imply that strong support systems, particularly professional support, play a crucial role in enhancing teaching performance, while improvements in informational support can further strengthen instructional practices.

Table 4 Level of the Participants' teaching performance based on Results-Based Performance Management System (RPMS)

Teaching Performance	Mean	SD	Interpretation
Content Knowledge and Pedagogy	4.36	1.12	Very Satisfactory
Learning Environment and Diversity of Learners	4.34	1.11	Very Satisfactory
Curriculum and Planning	4.32	1.12	Very Satisfactory
Assessment and Reporting	4.36	1.10	Very Satisfactory
Personal Growth and Professional Development	4.41	1.09	Very Satisfactory
Overall	4.36	1.10	Very Satisfactory

Table 4 reveals that teachers demonstrate a very satisfactory level of teaching performance across all RPMS domains, with an overall mean of 4.36. This indicates that teachers consistently meet expected standards in instruction, classroom management, assessment, and professional responsibilities, reflecting strong overall teaching competence. Notably, personal growth and professional development obtained the highest mean, suggesting that teachers actively engage in continuous learning, collaboration, and professional improvement. This highlights the importance of professional development in enhancing teaching effectiveness. This finding supports Monares and Dasig (2024), who emphasized that continuous professional development significantly improves instructional practices and overall teaching performance. In contrast, curriculum and planning recorded the lowest mean, although still within the very satisfactory level, indicating that some teachers may experience challenges in consistently designing well-structured and standards-aligned lesson plans. This suggests the need for strengthened support in curriculum development and instructional planning. Similarly, Damanik and Widodo (2024) highlighted that strengthening instructional competencies through ongoing development contributes significantly to improved teaching performance. Overall, the findings imply that while teachers demonstrate strong teaching performance, sustained professional development and institutional support are essential in ensuring consistency and further enhancing instructional quality across all domains.

Table 5 Relationship Between Teaching Performance and Creativity

Variable	Cross loading	R _c	R _c ²	F(15, 530)	p
Creativity					
Exploratory Creativity	-0.36				
Transformational Creativity	-0.35				
Combinational Creativity	-0.34				
Teaching Performance		0.37	0.14	2.364*	0.003
Content Knowledge and Pedagogy	-0.33				
Learning Environment and Diversity of Learners	-0.32				
Curriculum and Planning	-0.34				
Assessment and Reporting	-0.33				
Personal Growth and Professional Development	-0.34				

*Significant at 0.05 two-tailed alpha level.

Table 5 indicates a statistically significant relationship between teaching performance and creativity ($F(15, 530) = 2.364, p = 0.003$), suggesting that creativity is an important factor associated with teaching effectiveness. The R_c^2 value of 0.14 implies that creativity explains a meaningful, though moderate, proportion of the variance in teaching performance, indicating that while creativity plays a significant role, other factors may also contribute to effective teaching. This finding suggests that teachers who incorporate creative thinking and innovative strategies into their instructional practices are more likely to enhance student engagement and overall teaching effectiveness. Moreover, among the dimensions of creativity, exploratory creativity (loading = -0.36) and transformational creativity (loading = -0.35) have the strongest contributions to the creativity construct. This indicates that teachers who actively explore new ideas and transform existing teaching practices into innovative approaches tend to demonstrate higher levels of

instructional effectiveness. Such practices enable teachers to move beyond traditional teaching methods and adopt more flexible and learner-centered strategies that address the diverse needs of students. In this context, creativity becomes a critical component in promoting meaningful learning experiences and improving teaching outcomes. Similarly, within the teaching performance construct, curriculum and planning (loading = -0.34) and personal growth and professional development (loading = -0.34) appear to be the most influential domains. This indicates that teachers who are creative are more capable of designing well-structured, engaging, and adaptive instructional plans, while also demonstrating a strong commitment to continuous professional improvement. Furthermore, the findings highlight that the promotion of exploratory and transformational creative practices contributes to improved teaching performance among early childhood educators. This supports existing literature which emphasizes that creativity enhances instructional quality by enabling teachers to respond flexibly to diverse learner needs and classroom situations (Ata-Akturk & Sevimli-Celik, 2023). Overall, the results suggest that fostering creativity among teachers is essential in strengthening teaching performance. Encouraging innovative thinking, supporting professional development, and providing opportunities for teachers to explore and transform their instructional practices can lead to more effective and meaningful teaching and learning processes.

Table 6 Relationship Between Digital Literacy and Teaching Performance.

Variable	Cross loading	R _c	R _c ²	F(20, 634)	p
Digital Literacy					
Data Literacy	-0.56				
Informational Literacy	-0.57				
Visual Literacy	-0.47				
Media Literacy	-0.61				
Teaching Performance		0.65	0.42	6.660*	<0.001
Content Knowledge and Pedagogy	-0.63				
Learning Environment and Diversity of Learners	-0.63				
Curriculum and Planning	-0.63				
Assessment and Reporting	-0.62				
Personal Growth and Professional Development	-0.64				

*Significant at 0.05 two-tailed alpha level.

Table 6 reveals a statistically significant and moderate relationship between teaching performance and digital literacy ($R_c = 0.65$, $p < .001$), indicating that digital competence plays an important role in enhancing teaching effectiveness. The R_c^2 value of 0.42 suggests that digital literacy explains a substantial portion of the variance in teaching performance, highlighting its relevance as a key factor in instructional quality. This implies that teachers who effectively utilize digital tools, manage data, evaluate information, and integrate various forms of media into instruction are better able to improve student engagement and learning outcomes. In particular, media literacy (loading = -0.61) and informational literacy (loading = -0.57) emerged as the strongest contributors under the digital literacy construct, indicating that the ability to critically analyze media content and assess information sources is essential in supporting effective teaching practices. Additionally, data literacy (loading = -0.56) also plays a meaningful role, emphasizing the importance of interpreting and using educational data in instructional decision-making. On the other hand, personal growth and professional development (loading = -0.64), content knowledge and pedagogy (loading = -0.63), learning environment and diversity of learners (loading = -0.63), and curriculum and planning (loading = -0.63) were identified as the most influenced dimensions of teaching performance. These findings suggest that strengthening teachers' digital literacy skills contributes significantly to their professional competence, instructional planning, and ability to manage diverse learning environments. This supports Khotimah and Reza (2022), who found that digital literacy enhances teachers' competence and improves teaching performance. Overall, digital literacy is essential for effective teaching, and its continuous development is crucial for improving instructional effectiveness in early childhood education.

Table 7 Relationship Between Teaching Performance and Support System

Variable	Cross loading	R _c	R _c ²	F(20, 634)	p
Support System					
Emotional Support System	-0.71	0.72	0.52	9.991*	<0.001
Professional Support System	-0.71				



Informational Support System	-0.69
Organizational Support System	-0.70
Teaching Performance	
Content Knowledge and Pedagogy	-0.70
Learning Environment and Diversity of Learners	-0.71
Curriculum and Planning	-0.71
Assessment and Reporting	-0.71
Personal Growth and Professional Development	-0.72

*Significant at 0.05 two-tailed alpha level.

Table 7 reveals a statistically significant and strong relationship between teaching performance and support system ($R_c = 0.72$, $p < .001$), indicating that institutional and professional support plays a critical role in enhancing teaching effectiveness. The R_c^2 value of 0.52 shows that support systems explain a substantial proportion of the variance in teaching performance, highlighting it as the strongest influencing factor among the variables examined. This implies that teachers who receive strong emotional and professional support are more likely to demonstrate higher levels of motivation, confidence, and instructional competence. Notably, emotional and professional support emerged as the strongest contributors, emphasizing the importance of positive relationships with school leaders and colleagues, as well as access to mentoring and professional development opportunities. Furthermore, strong support systems enable teachers to implement effective instructional strategies and address diverse learner needs more confidently. The influence of support is also evident in teaching performance domains such as personal growth and professional development and learning environment, suggesting that supportive environments promote continuous learning and inclusive classroom practices. These findings support Yang et al. (2022), who found that social support significantly enhances teachers' job satisfaction and professional functioning. Overall, the results emphasize that strengthening institutional support systems is essential in improving teaching performance and sustaining instructional quality in early childhood education.

Table 8 Regression Analysis of Teacher's Creativity, Digital Literacy, and Support System on Teaching Performance

Predictor	Unstandardized Coefficients		β	95% CI		T	p
	B	SE		Lower	Upper		
Constant	1.08	0.28		0.52	1.63	3.832*	<.001
Creativity	-0.13	0.08	-0.119	-0.28	0.02	-1.710	0.089
Digital Literacy	0.02	0.12	0.014	-0.22	0.25	0.137	0.891
Support System	0.88	0.10	0.765	0.68	1.08	8.587*	<.001

Model Summary

R = 0.716 $R^2 = 0.513$ Adjusted $R^2 = 0.506$ $F(3,196) = 68.90^*$ $p < .001$

Note. B = unstandardized beta coefficient, SE = standard error, β = standardized beta coefficient, 95% CI = 95% confidence interval, t = t statistic, p = probability value. *Significant at 0.05 two-tailed alpha level.

Model Equation: $P = 0.885 + 1.08$

Legend: P = Teaching Performance, S = Support System

Table 8 reveals that the regression model is statistically significant ($F(3,196) = 68.90$, $p < .001$), indicating that creativity, digital literacy, and support system collectively influence teaching performance. The R value of 0.716 reflects a strong relationship between the predictors and teaching performance, while the R^2 value of 0.513 shows that approximately 51.3% of the variance in teaching performance is explained by these variables. However, among the predictors, support system emerged as the only significant predictor ($\beta = 0.765$, $p < .001$), indicating that it has the strongest and most direct influence on teaching performance. This suggests that teachers who receive strong emotional, professional, informational, and organizational support are more likely to demonstrate higher levels of instructional effectiveness. In contrast, creativity and digital literacy were not found to have significant independent effects in the model, implying that their influence on teaching performance may be indirect or dependent on the presence of strong support systems. This highlights the critical role of institutional support in maximizing teachers' capabilities and performance. These findings support Bronfenbrenner's Ecological Systems Theory (1979), which emphasizes that individuals' performance is significantly shaped by their environment. In this context, strong school-based support systems create enabling conditions that enhance teachers' effectiveness. Overall, the results underscore that while creativity and digital literacy are important, support system is the most influential factor in improving teaching performance.

Table 9. Structural Model Best Fits the Interrelationship of Teachers' Creativity, Digital Literacy, and Support System

Index	Model 1	Model 2*	Cut-off Criterion
Cmin/df	3.583	1.296	Between 0 and 2
P-value	0.000	0.053	>0.05
NFI	0.957	0.988	>0.95
TLI	0.962	0.996	>0.95
CFI	0.969	0.997	>0.95
GFI	0.813	0.945	>0.95
RMSEA	0.114	0.039	<0.05

Note. Cmin/df = Minimum Discrepancy divided by Degrees of Freedom; P-value = Probability Value; NFI = Normed Fit Index; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; GFI = Goodness-of-Fit Index; RMSEA = Root Mean Square Error of Approximation. *Best fit Model

Table 9 reveals that Model 1 did not achieve an acceptable level of fit, as several indices failed to meet the recommended thresholds, indicating that it does not adequately explain the relationships among the variables. In contrast, Model 2 demonstrated a good model fit, with most indices meeting the required criteria, suggesting that it provides a more accurate and reliable representation of the interrelationships among creativity, digital literacy, support system, and teaching performance. This implies that Model 2 is the best-fitting structural model, confirming that teaching performance is influenced by the combined effects of digital literacy and support system, with support system having the strongest direct effect. This highlights the critical role of institutional and professional support in enhancing teachers' effectiveness, as it provides the necessary resources, guidance, and motivation for improved performance.

Moreover, the findings indicate that digital literacy also contributes significantly to teaching performance, particularly in improving instructional delivery and learner engagement through the effective use of technology. In contrast, creativity shows a weaker direct effect, suggesting that its influence may be indirect or mediated through support systems and professional development. These results support Bronfenbrenner's Ecological Systems Theory, which emphasizes the importance of environmental support in shaping professional performance. Overall, the findings underscore that while creativity remains important, support systems and digital literacy are more immediate and influential factors in enhancing teaching performance in early childhood education.

The findings highlight the importance of strengthening institutional support systems and enhancing teachers' digital competencies to improve teaching performance. Educational leaders and policymakers may prioritize professional development programs that integrate creativity, digital literacy, and collaborative support mechanisms to ensure sustainable improvements in instructional quality.

Conclusions

1. Early childhood education teachers in public schools in Bukidnon demonstrated very satisfactory teaching performance across all RPMS domains, indicating that they consistently meet expected standards in pedagogy, curriculum planning, assessment, and professional development.
2. Teachers exhibited high levels of creativity and digital literacy, reflecting their ability to implement innovative instructional strategies and effectively integrate digital tools in teaching and learning processes.
3. Teachers experienced strong support systems, including emotional, professional, informational, and organizational support, which contributed to their motivation, instructional competence, and overall teaching effectiveness.
4. There is a significant relationship between teaching performance and teachers' creativity, digital literacy, and support system, indicating that these variables are important factors influencing teaching performance.
5. Among the variables, the support system emerged as the strongest predictor of teaching performance, highlighting the critical role of institutional and professional support in enhancing teachers' effectiveness.
6. The structural model revealed that teaching performance is best explained by the combined influence of digital literacy and support system, indicating that teachers' effectiveness is strengthened when supported by a conducive environment and when equipped with strong digital competencies.

Recommendations

Based on the findings and conclusions, the following recommendations are offered:

1. Policymakers may allocate dedicated funding for continuous professional development programs that focus on strengthening teachers' digital literacy (e.g., use of learning management systems, digital assessment tools) and creativity (e.g., innovative teaching strategies), as well as teacher well-being programs that enhance emotional and professional support.

2. School administrators may establish and sustain structured support systems by regularly conducting Learning Action Cell (LAC) sessions, mentoring programs, and in-service training (INSET) focused on curriculum planning, digital integration, and classroom innovation. Schools should also ensure access to reliable digital tools, internet connectivity, and instructional resources.
3. Teacher education institutions may integrate creativity-based pedagogy, digital literacy skills (e.g., data and information literacy), and technology-integrated teaching strategies into pre-service and in-service training curricula to better prepare teachers for modern classroom demands.
4. Curriculum developers may design and enhance early childhood education curricula by embedding technology-supported, learner-centered, and creative instructional approaches that address diverse learner needs and align with current educational trends.
5. In-service teachers may actively participate in professional development activities and collaborative learning communities to improve skills in digital tool utilization, innovative lesson planning, and reflective teaching practices that enhance student engagement and learning outcomes.
6. Pre-service teachers may engage in hands-on training, peer collaboration, and mentoring opportunities that develop competencies in creativity, digital literacy, and instructional design, particularly in using technology for teaching and assessment.
7. Parents and stakeholders may strengthen home-school partnerships by participating in school programs, supporting children's learning at home, and collaborating with teachers in promoting both digital and creative learning experiences.
8. Future researchers may conduct further studies using mixed-methods or longitudinal designs to explore additional factors influencing teaching performance and to validate the role of support systems and digital literacy in different educational contexts.

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