

Digital Competence, Innovation Behavior, Work Engagement and Performance of Teachers

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DOI: <https://doi.org/10.47772/IJRISS.2026.100800207>

Received: 13 August 2026; Accepted: 18 August 2026; Published: 31 August 2026

ABSTRACT

This study determined the level of digital competence, innovation behavior, and work engagement in relation to the performance of 197 public high school teachers in one of the Schools Division in the Negros Island Region during the school year 2026–2027. A quantitative descriptive-correlational research design was employed using standardized questionnaires. The findings revealed that teachers' digital competence was rated very high, wherein among the four dimensions, instructional resource development obtained the highest mean while assessment practices obtained the lowest mean, interpreted as a high level. Teachers' innovative behavior was also rated very high. Teachers' work engagement was rated very high, where among the six dimensions, shared values obtained the highest mean and work environment obtained the lowest mean. Teachers' performance was rated as outstanding. The result also revealed that there are significant relationships were found between teachers' digital competence and teaching performance, between teachers' innovative behavior and teaching performance, and between teachers' work engagement and teaching performance.

Keywords: Digital Competence; Innovation Behavior; Work Engagement; Teachers' Performance; Assessment Practices; Communications; Digital support System; Feedback Recognition; Instructional Resource Development; Leadership; Shared Values; Technology-Based Professional Engagement; Work Environment.

INTRODUCTION

The rapid advancement of digital technologies has transformed educational systems worldwide, requiring teachers to continuously develop their digital competence, adopt innovative practices, and remain actively engaged in their profession. Schools have shifted toward technology-enhanced learning environments where teachers are expected not only to use digital tools effectively but also to innovate instructional approaches that improve student outcomes. Recent studies have shown that teachers with higher levels of digital competence tend to demonstrate stronger work engagement, greater adaptability, and increased willingness to implement innovative teaching strategies. Furthermore, digital competence has been identified as a significant factor influencing teachers' effectiveness and overall job performance in modern educational settings, particularly as educational institutions embrace digital transformation and emerging technologies such as artificial intelligence and online learning platforms (Sang et al., 2023; Suzer & Koc, 2024; Zhang & Surienty, 2024).

The demand for digitally competent and innovative teachers has become increasingly evident following the educational disruptions brought about by the COVID-19 pandemic. Filipino educators were compelled to utilize various digital platforms and technologies to ensure learning continuity, highlighting the importance of digital competence in the teaching profession. Studies conducted among Filipino teachers revealed that while many educators possess satisfactory levels of digital literacy and competence, challenges remain in terms of technology integration, professional development, and sustaining work engagement in increasingly complex teaching environments. As educational reforms continue to emphasize quality instruction, innovation, and learner-centered approaches, teachers' ability to leverage digital technologies effectively may significantly influence their engagement and performance. Consequently, understanding the interplay among digital competence,

innovation behavior, work engagement, and performance has become essential in strengthening the quality of education in the country (Abella & Dela Rosa, 2023; Briones et al., 2023; Cabaron, 2023).

Schools today is under increasing pressure to integrate digital technologies into teaching while ensuring that teachers remain effective, adaptable, and engaged in their professional responsibilities. Although access to digital tools has become more widespread, the ability of teachers to use these technologies meaningfully varies considerably. Differences in digital competence can influence teachers' willingness to adopt innovative instructional practices, sustain engagement in their work, and ultimately achieve high levels of performance. While previous studies have explored digital competence, innovation behavior, work engagement, and teacher performance as separate constructs, only a limited number of studies have examined how these variables interact within a single framework. More importantly, empirical evidence remains scarce in local educational contexts, where school environments, available resources, and professional development opportunities may shape these relationships differently from those reported in international literature. This lack of integrated and context-specific evidence creates a significant gap in understanding the mechanisms through which digital competence contributes to improved teacher performance. Addressing this gap is essential to provide school leaders, policymakers, and education stakeholders with evidence-based insights for developing programs that strengthen teachers' digital capabilities, encourage innovative teaching practices, promote sustained work engagement, and enhance overall instructional performance. Guided by this need, the present study examines the relationships among digital competence, innovation behavior, work engagement, and teacher performance, contributing to the growing body of knowledge on teacher development and educational effectiveness in the digital era.

METHODOLOGY

The research design used in this study was descriptive research with a correlational design to determine the level of digital competence, innovation behavior, and work engagement in relation to the performance of high school teachers. The correlational approach was employed to determine the significant relationship between digital competence, innovation behavior, and work engagement in relation to the performance of teachers.

Descriptive-correlational design is appropriate for this study because it allows the researcher to examine the existing conditions and determine whether relationships exist among the variables without manipulating them. Correlation can demonstrate relationships between two or more variables. However, it cannot prove that changing one variable will affect the other (Cherry, 2023).

The participants of the study were 197 Junior High School and Senior High School Teachers from Schools Division of La Carlota City for academic Year 2026-2027. The study employed stratified random sampling and simple random sampling techniques to select the respondents. Stratified random sampling was first used to divide the high school teachers into distinct strata based on their respective schools or other relevant categories to ensure that each subgroup was appropriately represented in the study. After the respondents were grouped into strata, simple random sampling was employed using the lottery method to select the participants from each stratum. This procedure gave every qualified high school teacher within each stratum an equal chance of being selected, thereby promoting fairness and reducing selection bias. The use of both sampling techniques ensured that the respondents adequately represented the target population of high school teachers included in the study.

The instruments used in this study are the standardized questionnaire to measure digital competence, innovation behavior, work engagement, and the performance of teachers, which was based on their rating in the IPCRF for school year 2025-2026.

The questionnaire was divided into three parts: Part I presented digital competence, which was measured through technology-based professional engagement, instructional resource development, digital-supported teaching, and assessment practices. Each sub concept consists of 5 indicators. This was adopted from Panahon et al. (2026) in their study titled "Digital Competence and Readiness in Implementing the Revised K to 12 Curriculum".

Part II of the questionnaire, which assessed the innovation behavior of teachers, reflects their ability to generate and implement new ideas and practices in the teaching-learning process. The questionnaire consists of 36 items.

It was adopted from Robbers, Evers & Vermeulen (2024) from their study titled “The design process of a questionnaire measuring teachers’ innovative behavior”.

Part III of the questionnaire evaluated the teachers’ work engagement, consisting of 15 items, which is characterized by shared values, leadership, communication, feedback recognition, work environment, and career growth and training opportunities adopted from Negoso (2021) in his study titled “Factors of engagement and level of performance among public secondary school teachers”. Each sub-concept consists of 5 items.

The three questionnaires utilized a 5-point Likert Scale to measure the respondents’ answers. To measure the teachers’ performance, this study used their rating on the Philippine Professional Standards for Teachers (PPST) as stated in DepEd Order No. 42, s. 2017. This was based on their score on the Individual Performance Commitment and Review Form (IPCRF)/ Performance Management and Evaluation System (PMES) during the school year 2025-2026.

The study utilized standardized and previously developed research instruments to measure the digital competence and innovative behavior of high school teachers. The digital competence questionnaire was adopted from Panahon et al. (2026), entitled Digital Competence and Readiness in Implementing the Revised K to 12 Curriculum. The instrument was described by the authors as a validated researcher-made questionnaire covering technology-based professional engagement, instructional resource development, digitally supported teaching, and assessment practices. However, no specific numerical validity and reliability coefficients were reported in the publicly accessible information reviewed; hence, the present study does not attribute specific validity or reliability scores to the instrument without verification from the original full-text methodology or instrument documentation.

The instrument for teachers' innovative behavior was adopted from Robbers, Evers, and Vermeulen (2024), entitled The Design Process of a Questionnaire Measuring Teachers' Innovative Behavior. The instrument underwent expert item selection, face-validity assessment through teacher interviews, and preliminary exploratory factor analysis involving primary and secondary school teachers. The authors reported that the questionnaire appeared face-valid and structurally sound but recommended further testing to establish dimensionality and other forms of validity. No specific overall Cronbach's alpha coefficient was identified in the accessible publication.

Since the instruments were adopted from existing research, the researcher retained the original items and credited the respective authors. However, because the instruments were applied to a different population and context, the researcher may conduct a pilot test and reliability analysis, such as Cronbach's alpha, to establish the internal consistency of the instruments in the present study.

The researcher followed a systematic and ethical procedure in gathering the data for the study. First, a formal request letter was prepared and submitted to the Schools Division Superintendent seeking permission to conduct the study among the identified high school teachers. The request letter specified the purpose of the study, the target respondents, and the proposed data-gathering process (see Appendix B). The researcher waited for the approval of the Schools Division Superintendent before proceeding with the actual collection of data.

Upon receiving approval, the researcher coordinated with the concerned school heads and identified the qualified respondents based on the established inclusion criteria and sampling procedure. The researcher then informed the respondents about the purpose of the study, the nature of their participation, and the procedures involved in answering the research instrument. The respondents were also assured that their participation was voluntary and that the information they provided would be treated with confidentiality and used solely for academic and research purposes.

The research questionnaire was administered electronically through Google Forms. The link to the online questionnaire was distributed to the selected respondents through appropriate communication channels. Before answering the questionnaire, the respondents were provided with instructions on how to accomplish the instrument and were given sufficient time to complete it. The researcher monitored the retrieval of responses to ensure that the required number of respondents was reached while avoiding duplication of responses.

After the data collection period, the researcher reviewed the submitted responses for completeness and consistency. The gathered data were then organized, coded, tallied, and tabulated for statistical analysis. The encoded data were processed using the Statistical Package for the Social Sciences (SPSS), where the appropriate statistical tools were applied based on the research questions and objectives of the study. Finally, the results were interpreted and presented in tables to facilitate the analysis and discussion of the findings.

RESULTS AND DISCUSSIONS

Level of Digital Competence of High School Teachers

Table 2. Level of Digital Competence of High School Teachers.

Statements	Mean	SD	Interpretation
Technology-Based Professional Engagement	4.43	0.58	Very High
1. I use digital platforms to communicate with colleagues and administrators.	4.59	0.60	Very High
2. I take part in online professional development activities such as webinars and virtual training.	4.34	0.69	Very High
3. I effectively collaborate with fellow educators online through the use of digital communication tools.	4.46	0.67	Very High
4. I use technology to share my teaching ideas and resources with other educators.	4.35	0.71	Very High
5. I use online platforms to support school-related professional activities.	4.40	0.69	Very High
Instructional Resource Development	4.49	0.54	Very High
1. I create interactive learning materials such as presentations, videos, or modules.	4.44	0.64	Very High
2. I adapt digital resources to suit the needs of my learners.	4.58	0.55	Very High
3. I use online study material content to enhance my lesson preparation.	4.49	0.62	Very High
4. I integrate multimedia materials to improve lesson delivery	4.49	0.68	Very High
Table 2 continuation...			
5. I measure the quality and relevance of digital learning resources before using them.	4.42	0.71	Very High
Digital-Supported Teaching	4.29	0.66	Very High
1. I incorporate online tools during classroom instruction.	4.20	0.90	High
2. I use technology to support different learning styles of students.	4.38	0.66	Very High
3. I use digital platforms to guide student collaboration and participation.	4.25	0.77	Very High
4. I use technology to make lessons more interactive and engaging.	4.50	0.64	Very High

5. I can manage online learning activities effectively during class.	4.12	0.85	High
Assessment Practices	3.78	0.81	High
1. I use digital learning resources to create quizzes and assessments.	3.94	0.88	High
2. I provide feedback to learners through internet platforms.	3.65	0.89	High
3. I use online tools to monitor students' learning progress.	3.65	0.90	High
4. I examine students' performance using digital assessment tools.	3.65	0.95	High
5. I use technology to improve the efficiency of student assessment.	3.99	0.96	High
Digital Competence As a Whole	4.24	0.56	Very High

Legend: (4.21-5.00)-Very High; (3.41-4.20)-High; (2.61-3.40)-Moderate; (1.81-2.60)-Low; (1.00-1.80)-Very Low

Table 2 presents the level of digital competence of educators in terms of technology-based professional engagement, instructional resource development, digital-supported teaching, and assessment practices like digital learning resources and technology.

Among the four dimensions, instructional resource development obtained the highest mean ($M = 4.49$, $SD = 0.54$), interpreted as very high. This indicates that teachers are highly capable of developing and adapting digital learning materials that address the diverse needs of learners. The highest-rated indicator is Adapting digital resources to suit the needs of learners ($M = 4.58$, $SD = 0.55$), followed by using online study materials to enhance lesson preparation ($M = 4.49$, $SD = 0.62$) and integrating multimedia materials to improve lesson delivery ($M = 4.49$, $SD = 0.68$). These findings imply that teachers recognize the value of well-designed digital resources in making instruction more engaging, relevant, and responsive to students' learning needs. The relatively consistent standard deviations indicate that these practices are commonly observed among the respondents.

The findings support the study of Tondeur et al. (2021), who found that teachers' ability to develop and adapt digital instructional materials strengthens classroom innovation and improves the quality of learning experiences. Likewise, Instefjord and Munthe (2021) reported that strong competence in designing digital learning resources contributes significantly to effective technology integration in schools.

Technology-based professional engagement ranked second with a mean of 4.43 ($SD = 0.58$), interpreted as very high. Teachers generally perceived themselves as active users of digital technologies for communication, collaboration, and professional development. The highest-rated indicator is Using digital platforms to communicate with colleagues and administrators ($M = 4.59$, $SD = 0.60$), followed by effectively collaborating with fellow educators through online communication tools ($M = 4.46$, $SD = 0.67$). These results suggest that educators actively utilize digital platforms to strengthen professional relationships and support collaborative learning within the school community. Such practices encourage knowledge sharing, improve professional communication, and promote continuous improvement among teachers.

The findings align with the study of Caena and Redecker (2020), who emphasized that digital collaboration and continuous professional engagement enhance teachers' professional competence and readiness for educational innovation. Similarly, König et al. (2020) found that teachers who actively participate in digital professional learning demonstrate greater confidence and effectiveness in technology integration.

Digital-supported teaching obtains a very high level ($M = 4.29$, $SD = 0.66$). This indicates that teachers regularly integrate digital technologies into classroom instruction to facilitate student engagement and learning. The highest-rated indicator is Using technology to make lessons more interactive and engaging ($M = 4.50$, $SD = 0.64$), followed by supporting different learning styles through technology ($M = 4.38$, $SD = 0.66$). However,

incorporating online tools during classroom instruction ($M = 4.20$, $SD = 0.90$) and managing online learning activities effectively ($M = 4.12$, $SD = 0.85$) received comparatively lower ratings, although both remained within the high to very high range. These findings suggest that while teachers are generally confident in integrating technology into instruction, there remains room to strengthen classroom management and instructional delivery in digital learning environments. The relatively higher standard deviations for these indicators also imply greater variation in teachers' experiences and confidence levels.

These findings are supported by Scherer et al. (2021), who concluded that teachers' digital competence significantly influences the effectiveness of technology-supported instruction and student engagement. Likewise, Fraillon et al. (2022) emphasized that effective digital teaching requires both technological proficiency and sound pedagogical practices to maximize student learning outcomes.

Assessment practices obtain the lowest mean among the four dimensions ($M = 3.78$, $SD = 0.81$), interpreted as high. The highest-rated indicator is Using technology to improve the efficiency of student assessment ($M = 3.99$, $SD = 0.96$), followed by using digital learning resources to create quizzes and assessments ($M = 3.94$, $SD = 0.88$). Meanwhile, providing feedback to learners through online platforms ($M = 3.65$, $SD = 0.89$), using online tools to monitor students' learning progress ($M = 3.65$, $SD = 0.90$), and examining students' performance using digital assessment tools ($M = 3.65$, $SD = 0.95$) receive comparatively lower ratings. These findings indicate that while teachers are capable of utilizing digital technologies for assessment, they may still encounter challenges in maximizing technology for timely feedback, monitoring learner progress, and analyzing assessment results. The relatively higher standard deviations also suggest greater variation in teachers' experiences with digital assessment practices. The findings imply that targeted professional development focusing on digital assessment strategies may further strengthen teachers' competence in evaluating student learning.

These findings are consistent with the study of Bond et al. (2024), who found that digital assessment remains one of the most challenging dimensions of teachers' digital competence despite increased technology integration in schools. Likewise, Trust et al. (2023) emphasized that many teachers continue to require support in using digital tools for assessment, feedback, and monitoring student progress.

Overall, digital competence obtains a very high level ($M = 4.24$, $SD = 0.56$). This indicates that educators possess a high level of competence in utilizing digital technologies to support instruction, professional engagement, resource development, and assessment. The relatively low standard deviation suggests that teachers generally shared similar perceptions regarding their digital competence. The findings revealed that educators demonstrated very high digital competence across most dimensions, with instructional resource development emerging as the strongest area, while assessment practices received the lowest, though still favorable, rating. This suggests that teachers are well-prepared to integrate technology into their professional responsibilities and classroom instruction but may benefit from additional support in digital assessment practices. Sustaining professional development initiatives that strengthen digital assessment skills while continuously enhancing instructional technology competencies may further improve teaching effectiveness and student learning outcomes.

The findings support the study of the European Commission (2022), which emphasized that comprehensive digital competence enables teachers to deliver high-quality instruction, foster student engagement, and adapt to the evolving demands of digital education. Similarly, Cabero-Almenara et al. (2023) concluded that continuous professional learning in digital competence significantly enhances instructional quality, innovation, and overall teacher performance.

Level of Innovative Behavior of High School Teachers

Table 3. Level of Innovative Behavior of High School Teachers.

Statements	Mean	SD	Interpretation
1. I spontaneously get new ideas to carry out my work as a teacher.	4.30	0.59	Very High

2. I consciously create new ideas to carry out my work as a teacher.	4.30	0.67	Very High
3. As a team, we spontaneously get new ideas for carrying out our work as teachers.	4.27	0.66	Very High
4. As a team, we consciously create new ideas for carrying out our work as teachers.	4.28	0.60	Very High
5. I spontaneously get new ideas that are good for the organization.	4.22	0.64	Very High
6. I consciously create new ideas that are good for the organization.	4.21	0.63	Very High
7. As a team, we spontaneously get new ideas that are good for the organization.	4.22	0.63	Very High
8. As a team, we consciously create new ideas that are good for the organization.	4.26	0.62	Very High
9. I spontaneously get new ideas for solving difficult problems.	4.22	0.62	Very High
10. I consciously create new ideas for solving difficult problems.	4.18	0.61	High
11. As a team, we spontaneously get new ideas for solving difficult problems.	4.25	0.68	Very High
12. As a team, we consciously create new ideas for solving difficult problems.	4.30	0.63	Very High
13. I spontaneously share new ideas with colleagues.	4.23	0.63	Very High
14. I consciously share new ideas with colleagues.	4.27	0.56	Very High
15. As a team, we spontaneously share new ideas with colleagues outside the team.	4.25	0.64	Very High
16. As a team, we consciously share new ideas with colleagues outside the team.	4.25	0.61	Very High
17. I spontaneously promote new ideas to colleagues.	4.19	0.59	High
18. I consciously promote new ideas to colleagues.	4.24	0.58	Very High
19. As a team, we spontaneously promote new ideas to colleagues outside the team.	4.19	0.65	High
Table 3 continuation...			
20. As a team, we consciously promote new ideas to colleagues outside the team.	4.24	0.62	Very High
21. I spontaneously try to get active support from colleagues for new ideas.	4.26	0.60	Very High
22. I consciously try to get active support from colleagues for new ideas.	4.27	0.57	Very High

23.As a team, we spontaneously seek active support for new ideas from colleagues outside the team.	4.20	0.65	High
24.As a team, we consciously try to get active support for new ideas from colleagues outside the team.	4.22	0.63	Very High
25.I spontaneously apply new ideas to carry out my work as a teacher.	4.29	0.59	Very High
26.I consciously apply new ideas to carry out my work as a teacher.	4.30	0.57	Very High
27.As a team, we spontaneously apply new ideas to carry out our work as teachers.	4.28	0.64	Very High
28.As a team, we consciously apply new ideas to carry out our work as teachers.	4.32	0.62	Very High
29.I spontaneously apply new ideas that are good for the organization.	4.23	0.65	Very High
30.I consciously apply new ideas that are good for the organization.	4.26	0.61	Very High
31.As a team, we spontaneously apply new ideas that are good for the organization.	4.25	0.64	Very High
32.As a team, we consciously apply new ideas that are good for the organization.	4.29	0.63	Very High
33.I spontaneously apply new ideas for solving difficult problems.	4.24	0.63	Very High
34.I consciously apply new ideas for solving difficult problems.	4.27	0.58	Very High
35.As a team, we spontaneously apply new ideas for solving difficult problems.	4.25	0.65	Very High
36.As a team, we consciously create new ideas for solving difficult problems.	4.26	0.62	Very High
Innovative Behavior Overall Mean	4.25	0.52	Very High

Legend: (4.21-5.00)-Very High; (3.41-4.20)-High; (2.61-3.40)-Moderate; (1.81-2.60)-Low; (1.00-1.80)-Very Low

Table 3 presents the level of innovative behavior among educators. Among the 36 indicators, as a team, we consciously apply new ideas to carry out our work as teachers obtain the highest mean ($M = 4.32$, $SD = 0.62$), interpreted as very high. This is followed by I spontaneously get new ideas to carry out my work as a teacher ($M = 4.30$, $SD = 0.59$), I consciously create new ideas to carry out my work as a teacher ($M = 4.30$, $SD = 0.67$), as a team, we consciously create new ideas for solving difficult problems ($M = 4.30$, $SD = 0.63$), and I consciously apply new ideas to carry out my work as a teacher ($M = 4.30$, $SD = 0.57$). These findings indicate that teachers consistently generate and implement innovative ideas while working collaboratively with their colleagues. The relatively low standard deviations suggest that respondents shared similar perceptions regarding these innovative practices. The findings imply that collaboration and the practical application of creative ideas have become integral parts of teachers' professional work, allowing them to improve instructional practices and respond effectively to educational challenges.

These findings are consistent with the study of Janssen et al. (2022), who emphasized that collaborative work environments encourage employees to generate and implement innovative ideas that enhance organizational

effectiveness. Likewise, Thurlings et al. (2021) found that teachers who actively collaborate with colleagues demonstrate higher levels of innovative work behavior and contribute to continuous school improvement.

Conversely, I consciously create new ideas for solving difficult problems, obtaining the lowest mean ($M = 4.18$, $SD = 0.61$), interpreted as high. Similarly, I spontaneously promote new ideas to colleagues ($M = 4.19$, $SD = 0.59$). As a team, we spontaneously promote new ideas to colleagues outside the team ($M = 4.19$, $SD = 0.65$), and as a team, we spontaneously seek active support for new ideas from colleagues outside the team ($M = 4.20$, $SD = 0.65$) receive comparatively lower ratings, although they remained at a favorable level. These results suggest that while teachers are highly capable of generating and implementing innovative ideas within their own teams, they are somewhat less active in promoting those ideas beyond their immediate work groups or seeking broader organizational support. The slightly higher standard deviations for these indicators also indicate greater variation in respondents' experiences. The findings imply that schools may further strengthen innovative behavior by encouraging inter-school collaboration, professional networking, and leadership initiatives that promote the wider sharing of innovative practices.

These findings support the study of De Jong and Den Hartog (2021), who reported that organizational support and collaborative networks significantly influence employees' willingness to promote and sustain innovation. Similarly, Messmann et al. (2022) emphasized that supportive leadership and collaborative school cultures foster teachers' innovative work behavior and encourage the dissemination of new ideas across organizations.

Overall, innovative behavior obtained a very high level ($M = 4.25$, $SD = 0.52$), indicating that educators consistently demonstrate behaviors associated with generating, sharing, promoting, and applying new ideas in their teaching practices and professional responsibilities. This finding suggests that teachers are not merely implementing established instructional approaches but are also willing to explore new strategies, adapt existing practices, and introduce creative solutions to address the changing needs of learners and the school environment. The very high level of innovative behavior reflects teachers' readiness to embrace change and their capacity to translate new ideas into practical actions that can enhance classroom instruction and contribute to school improvement.

The findings further indicate that teachers actively engage in innovation both individually and collaboratively. At the individual level, teachers may demonstrate innovative behavior by developing creative instructional materials, experimenting with alternative teaching strategies, integrating appropriate technologies, and modifying classroom practices based on learners' needs and responses. These behaviors reflect teachers' initiative and willingness to take constructive risks in improving the teaching-learning process. Innovation at the individual level is particularly important because teachers are directly involved in classroom instruction and are therefore in a strong position to identify learning difficulties and develop practical approaches to address them.

At the collaborative level, the findings suggest that teachers also recognize the value of exchanging ideas and working with colleagues to improve professional practices. Sharing and promoting innovative ideas among teachers can facilitate the spread of effective practices across classrooms and encourage collective problem-solving. When educators collaborate, they are able to draw from one another's experiences, knowledge, and expertise, which may result in more refined and sustainable innovations. Collaborative innovation may also strengthen professional relationships and create a sense of shared responsibility for improving teaching quality and achieving school goals.

The relatively low standard deviation ($SD = 0.52$) indicates that the respondents' perceptions were relatively consistent, suggesting that the high level of innovative behavior was generally experienced across the group. This consistency implies that innovative practices may already be embedded in the professional culture of the teachers and are not limited to only a small number of individuals. The result may also reflect a school environment where teachers are encouraged to explore new approaches, exchange ideas, and apply creative solutions to instructional and organizational concerns.

The findings imply that sustaining a school culture that promotes creativity, teamwork, openness to new ideas, and continuous professional learning can further strengthen teachers' innovative behavior. School leaders play an important role in maintaining such an environment by providing teachers with opportunities for professional

development, encouraging collaboration, recognizing innovative initiatives, and allowing sufficient autonomy to experiment with appropriate teaching strategies. Similarly, access to relevant resources and constructive feedback may help teachers move beyond generating ideas toward successfully implementing and sustaining innovations.

Furthermore, the very high level of innovative behavior suggests that teachers possess an important capacity that can contribute to improved instructional quality and organizational effectiveness. Teachers who consistently generate and implement new ideas may be better equipped to respond to emerging educational challenges, changing learner needs, and developments in teaching and technology. Therefore, fostering innovative behavior should be viewed as an ongoing process that requires continuous support from school leaders and collaboration among teachers. By creating an environment where innovation is encouraged, shared, and valued, schools can strengthen teachers' capacity to improve classroom practices while contributing to broader school development and organizational performance.

The findings support the study of Bos-Nehles et al. (2023), who concluded that innovative work behavior flourishes in organizations that promote collaboration, supportive leadership, and continuous learning. Similarly, Bagheri et al. (2022) found that employees who exhibit high innovative behavior contribute significantly to organizational adaptability, work performance, and long-term institutional success.

Level of Work Engagement of High School Teachers

Table 4. Level of Work Engagement of High School Teachers.

Statements	Mean	SD	Interpretation
Shared Values	4.51	0.55	Very High
1. Meeting the needs of students is one of the school's top priorities.	4.72	0.53	Very High
2. Teachers and staff are courteous when working with others (parents, students and colleagues).	4.70	0.50	Very High
3. The principal expects all teachers to share ideas to improve performance.	4.54	0.67	Very High
4. My principal encourages me to do my best always.	4.48	0.73	Very High
5. I feel comfortable sharing ideas and opinions with my principal and my colleagues.	4.31	0.76	Very High
6. In school, I am motivated to contribute more than what is expected of me.	4.39	0.71	Very High
7. In school, our passion towards duties and work assignments is developed.	4.44	0.74	Very High
Leadership	4.30	0.74	Very High
Table 4 continuation...			
1. The school principal's actions are consistent with her words.	4.25	0.79	Very High
2. The school principal makes good decisions most of the time.	4.20	0.79	High
3. My principal has strong management skills.	4.24	0.89	Very High
4. I can count on my principal's support when addressing problems or issues.	4.32	0.85	Very High

5. I enjoy the professional relationship I have with my principal.	4.28	0.88	Very High
6. I trust my principal to make good decisions for students.	4.35	0.82	Very High
7. My principal has high expectations for all teachers.	4.44	0.66	Very High
Communication	4.33	0.66	Very High
1. I believe I can contribute to decision-making.	4.41	0.57	Very High
2. I can effectively communicate my co-teacher's important issues that affect me or the school.	4.31	0.62	Very High
3. My principal is willing to listen to new ideas.	4.34	0.80	Very High
4. The principal clearly explains the reasons behind decisions on key issues.	4.27	0.85	Very High
5. The principal actively seeks suggestions from the teachers regarding decisions that affect them.	4.32	0.85	Very High
6. The principal provides clear direction and expectations of my job performance.	4.28	0.86	Very High
7. The principal holds meetings to disseminate information and to address important issues regularly.	4.37	0.76	Very High
Feedback Recognition	4.25	0.65	Very High
1. I am appreciated for the extra time and effort I spent in co-curricular activities.	4.29	0.71	Very High
2. I received recognition for my active participation in extra-curricular activities.	4.39	0.65	Very High
3. My principal gives me constructive feedback to improve my work performance.	4.32	0.76	Very High
4. I received negative feedback to challenge me to improve my performance.	3.88	0.96	Very High
5. The school recognizes teachers for their quality work and accomplishments.	4.32	0.82	Very High
6. I am encouraged and expected to give feedback to improve our school.	4.24	0.82	Very High
Table 4 continuation...			
7. The school's evaluation tool is used to assess my work performance objectively.	4.30	0.76	Very High
Work Environment	4.17	0.61	High
1. I believe work is distributed fairly in our school.	4.22	0.78	Very High
2. I work in an environment where there is mutual respect among all teachers, staff, and administrators.	4.23	0.87	Very High

3. My principal implements policies fairly in our school.	4.24	0.83	Very High
4. My principal allows me to make decisions about how to do my work.	4.34	0.74	Very High
5. My principal creates a professional work environment.	4.31	0.76	Very High
6. My principal encourages collaboration among teachers and staff.	4.36	0.76	Very High
7. There are professional jealousy and factions in school.	3.46	1.18	Very High
Career Growth and Training Opportunities	4.41	0.58	Very High
1. Training offered by the school helps me to be effective in my job.	4.42	0.62	Very High
2. My principal provides opportunities and support for my professional growth and improvement.	4.37	0.79	Very High
3. The LAC sessions and conferences are effective in my professional development.	4.50	0.64	Very High
4. There are leadership opportunities for me in our school.	4.26	0.76	Very High
5. The school encourages continued education and professional growth.	4.49	0.62	Very High
6. My work experience in our has improved my teaching performance.	4.53	0.64	Very High
7. The summer team building activities and semestral in-service trainings have helped me in my professional growth.	4.29	0.75	Very High
Teachers' Work Engagement As a Whole	4.33	0.59	Very High

Legend: (4.21-5.00)-Very High; (3.41-4.20)-High; (2.61-3.40)-Moderate; (1.81-2.60)-Low; (1.00-1.80)-Very Low

Table 4 presents the level of teachers' work engagement in terms of shared values, leadership, communication, feedback recognition, work environment, and career growth and training opportunities. Among the six dimensions, shared values obtain the highest mean ($M = 4.51$, $SD = 0.55$), interpreted as very high. This indicates that teachers strongly perceive that their schools promote common goals, mutual respect, and a shared commitment to student success. The highest-rated indicator is Meeting the needs of students is one of the school's top priorities ($M = 4.72$, $SD = 0.53$), followed by teachers and staff are courteous when working with others ($M = 4.70$, $SD = 0.50$). These findings suggest that teachers work in an environment where collaboration, professionalism, and student-centered values are consistently practiced. The relatively low standard deviation further indicates that respondents shared similar perceptions regarding the school's core values. The findings imply that cultivating shared values strengthens teachers' commitment, sense of belonging, and willingness to contribute to school improvement.

These findings are consistent with the study of Kim and Park (2022), who found that shared organizational values foster stronger employee engagement, collaboration, and organizational commitment. Likewise, Collie (2021) emphasized that schools with strong shared values create supportive cultures that enhance teachers' motivation and professional engagement.

The second highest dimension was career growth and training opportunities ($M = 4.41$, $SD = 0.58$), interpreted as very high. The highest-rated indicator is My work experience in our school has improved my teaching performance ($M = 4.53$, $SD = 0.64$), followed by the LAC sessions and conferences are effective in my professional development ($M = 4.50$, $SD = 0.64$) and the school encourages continued education and professional

growth ($M = 4.49$, $SD = 0.62$). These findings indicate that teachers highly value opportunities for continuous learning and professional development. The relatively consistent standard deviations suggest that these opportunities are widely experienced among respondents. The findings imply that schools that invest in teachers' professional growth strengthen instructional competence, confidence, and long-term work engagement.

These findings support the study of Skaalvik and Skaalvik (2021), who concluded that professional development opportunities significantly enhance teachers' motivation, self-efficacy, and work engagement. Similarly, Day et al. (2020) emphasized that continuous learning opportunities sustain teacher commitment and improve teaching effectiveness throughout their careers.

Communication obtained a very high level ($M = 4.33$, $SD = 0.66$), indicating that teachers generally perceive communication within the school as open, participatory, and supportive. This finding suggests that school personnel are provided with opportunities to exchange information, express their views, and participate in discussions concerning matters that affect their work and the overall operation of the school. Effective communication is essential in creating a positive organizational environment because it allows teachers to clearly understand school goals, policies, expectations, and responsibilities. It also provides a channel through which teachers can raise concerns, share suggestions, and contribute ideas that may improve school programs and practices.

The highest-rated indicator was "I believe I can contribute to decision-making" ($M = 4.41$, $SD = 0.57$), which reflects a very high level of agreement among the respondents. This result indicates that teachers feel that their opinions and professional insights are valued in the decision-making processes of the school. Their perceived opportunity to contribute may strengthen their sense of ownership and responsibility toward school initiatives and programs. When teachers are given a voice in decisions, they are more likely to feel respected and trusted by school leaders, which can encourage greater commitment to the implementation of agreed-upon policies and activities. Moreover, teacher participation in decision-making allows school administrators to benefit from the practical knowledge and experiences of teachers who are directly involved in classroom instruction and daily school operations.

The second highest-rated indicator was "The principal holds meetings to disseminate information and address important issues regularly" ($M = 4.37$, $SD = 0.76$). This finding suggests that regular meetings serve as an important mechanism for maintaining the flow of information between the school principal and teachers. Consistent meetings provide opportunities to clarify policies, communicate updates, discuss emerging concerns, and coordinate school activities. They also create a formal space where teachers can ask questions, provide feedback, and collectively address issues that may affect the school community. Regular and purposeful communication from the school head may therefore minimize misunderstandings and ensure that teachers remain informed and aligned with the school's objectives.

The relatively low standard deviations across the indicators indicate that the respondents' perceptions were relatively consistent. This consistency suggests that the positive assessment of communication was generally shared among the teachers rather than being limited to only a few respondents. The findings further imply that effective communication contributes to transparency, trust, and stronger collaboration among school personnel. When information is shared clearly and regularly, teachers are better positioned to understand their roles and responsibilities, coordinate with colleagues, and respond effectively to school needs. Likewise, when teachers feel that they can participate in decision-making, communication becomes a two-way process rather than simply a means of transmitting information from administrators to teachers.

In the context of school leadership, the findings emphasize the importance of maintaining communication practices that are both informative and participatory. Communication should not be limited to the dissemination of announcements but should also encourage dialogue, feedback, and shared decision-making. School leaders who actively listen to teachers and provide opportunities for meaningful participation may foster a more inclusive and collaborative work environment. Such practices can strengthen professional relationships and contribute to a culture where teachers feel valued and supported.

These findings align with the study of Bakker and Demerouti (2023), who emphasized that open communication strengthens employee engagement by fostering trust, participation, and organizational support. The present findings reinforce this perspective by demonstrating that teachers' perceptions of communication are particularly strong when they are given opportunities to contribute to decision-making and when school leaders regularly communicate important information. Thus, effective communication may be viewed not only as an administrative function but also as a critical leadership practice that supports teacher involvement, strengthens organizational relationships, and promotes a more collaborative school environment.

Leadership also obtained a very high level ($M = 4.30$, $SD = 0.74$). The highest-rated indicator is My principal has high expectations for all teachers ($M = 4.44$, $SD = 0.66$), followed by I trust my principal to make good decisions for students ($M = 4.35$, $SD = 0.82$). These findings suggest that teachers view their school heads as credible leaders who provide guidance, support, and clear expectations. The findings imply that effective leadership strengthens teachers' confidence, commitment, and willingness to perform their responsibilities effectively.

These findings support the work of Grissom et al. (2021), who found that supportive instructional leadership positively influences teacher engagement, job satisfaction, and school effectiveness.

Feedback recognition obtains a mean of 4.25 ($SD = 0.65$), interpreted as very high. The highest-rated indicator is I received recognition for my active participation in extracurricular activities ($M = 4.39$, $SD = 0.65$), followed by My principal gives me constructive feedback to improve my work performance ($M = 4.32$, $SD = 0.76$). These findings indicate that teachers generally feel recognized and supported through constructive feedback and acknowledgment of their contributions. The findings imply that meaningful recognition and timely feedback encourage teachers to continuously improve their performance and remain committed to their work.

This finding is consistent with the study of Albrecht et al. (2021), who reported that recognition and constructive feedback are important predictors of employee engagement and work performance.

Among the six dimensions, work environment obtains the lowest mean ($M = 4.17$, $SD = 0.61$), interpreted as high. The highest-rated indicator within this dimension is My principal encourages collaboration among teachers and staff ($M = 4.36$, $SD = 0.76$), followed by my principal allows me to make decisions about how to do my work ($M = 4.34$, $SD = 0.74$). In contrast, there is professional jealousy and factions in school received the lowest rating ($M = 3.46$, $SD = 1.18$). The relatively higher standard deviation for this indicator suggests greater variation in teachers' perceptions regarding interpersonal relationships within the school. These findings imply that while teachers generally experience a supportive work environment, some concerns regarding workplace relationships and collaboration may still exist. Addressing these concerns may further enhance teachers' sense of belonging and overall work engagement.

These findings are supported by Schaufeli (2021), who emphasized that a healthy and supportive work environment is essential for sustaining employee engagement, well-being, and organizational commitment.

Overall, teachers' work engagement obtains a mean of 4.33 ($SD = 0.59$), interpreted as very high. This indicates that teachers demonstrate a strong level of engagement in their work, particularly in areas related to shared values, professional development, communication, leadership, recognition, and workplace relationships. The relatively low standard deviation indicates that respondents generally shared similar perceptions regarding their level of work engagement. The findings revealed that teachers are highly committed to their professional responsibilities and perceive their schools as supportive environments that foster collaboration, professional growth, and organizational commitment. These results suggest that sustaining positive leadership practices, strong organizational values, effective communication, and continuous professional development can further strengthen teachers' work engagement and contribute to improved instructional quality and school performance.

The findings are consistent with the study of Knight et al. (2021), who concluded that supportive organizational practices significantly enhance employee engagement and organizational effectiveness. Likewise, Saks (2022) found that work engagement increases when employees experience meaningful leadership, recognition, professional growth, and a positive organizational climate.

Level of Teaching Performance

Table 5. Level of Teaching Performance.

Level of Teaching Performance	f	Mean	SD	Interpretation
Outstanding	124	4.58	0.26	Outstanding
Very Satisfactory	73			
Satisfactory	0			
Unsatisfactory	0			
Poor	0			
Total	197			

Legend: (4.500–5.000)-Outstanding; (3.500–4.499)-Very Satisfactory; (2.500–3.499)-Satisfactory; (1.500–2.499)-Unsatisfactory; (Below 1.500)-Poor

Table 5 presents the level of teaching performance of the respondents based on their performance ratings. The results show that the majority of teachers, comprising 124 respondents, obtain an outstanding rating, while 73 respondents receive a very satisfactory rating. Overall, teaching performance obtains a mean of 4.58 (SD = 0.26), interpreted as outstanding.

The findings indicate that teachers consistently demonstrate a high level of professional competence and effectively perform their instructional responsibilities. The low standard deviation suggests that the respondents' performance ratings were relatively consistent, indicating minimal variation in teaching performance across the group. The large proportion of teachers receiving outstanding ratings further implies that educators possess the knowledge, skills, and professional commitment necessary to deliver quality instruction and meet the expected standards of teaching. This may also reflect the positive influence of supportive school leadership, continuous professional development, and teachers' commitment to improving student learning outcomes.

The findings further suggest that maintaining effective instructional practices, fostering continuous professional learning, and sustaining supportive school environments can help preserve and further enhance teachers' high level of performance. These results are consistent with the findings of Grissom et al. (2021), who reported that effective school leadership, teacher support, and professional development contribute significantly to improved teacher performance and overall school effectiveness. Similarly, Kraft and Papay (2020) found that teachers who receive sustained professional support and opportunities for growth are more likely to demonstrate high instructional performance and maintain strong teaching effectiveness over time.

Relationship between Digital Competence and Teachers' Performance

Table 6. Relationship between Digital Competence and Teachers' Performance.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Digital Competence	0.151*	.034	Reject H_0	Significant
vs. Teaching Performance				

Table 6 presents the relationship between digital competence and teachers' performance. The results revealed a weak positive but statistically significant relationship between digital competence and teaching performance ($r_s = 0.151$, $p = 0.034$). Since the obtained p-value is less than the 0.05 level of significance, the null hypothesis was rejected. Therefore, there is sufficient evidence to conclude that digital competence is significantly related to teachers' performance.

The findings further imply that strengthening teachers' digital competence through sustained professional development, technology integration programs, and continuous training can contribute to improved instructional performance. As educational systems continue to embrace digital transformation, equipping teachers with the necessary technological knowledge and pedagogical skills becomes increasingly important in enhancing teaching effectiveness and improving student learning outcomes.

These findings are consistent with the study of Instefjord and Munthe (2021), who found that teachers with strong professional digital competence demonstrate more effective instructional practices and higher levels of teaching performance because they are better able to integrate technology into meaningful classroom learning. Similarly, Cabero-Almenara et al. (2023) concluded that digital competence is a significant predictor of teachers' professional effectiveness, as it enhances instructional innovation, pedagogical decision-making, and overall teaching quality. Likewise, European Commission (2022), through the Digital Competence Framework for Educators (DigCompEdu), emphasized that teachers' digital competence is fundamental to improving educational quality, promoting learner engagement, and supporting continuous professional development in technology-enhanced learning environments.

Relationship between Innovation Behavior and Teachers' Performance

Table 7. Relationship between Innovation Behavior and Teachers' Performance.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Innovation Behavior vs. Teaching Performance	0.151*	0.035	Reject H_0	Significant

Table 7 presents the relationship between innovative behavior and teachers' performance. The results revealed a weak positive but statistically significant relationship between innovative behavior and teaching performance ($r_s = 0.151$, $p = 0.035$). Since the obtained p-value is less than the 0.05 level of significance, the null hypothesis was rejected. This indicates that innovative behavior is significantly associated with teachers' performance.

These findings are consistent with the study of Messmann et al. (2022), who found that teachers' innovative work behavior contributes positively to instructional effectiveness and professional performance by encouraging continuous improvement and the implementation of creative teaching practices. Similarly, Bos-Nehles et al. (2023) concluded that innovative work behavior positively influences employee performance because individuals who actively generate and implement new ideas are better able to adapt to organizational demands and improve work outcomes. The findings also support the view of Bagheri et al. (2022), who reported that innovative behavior enhances employees' effectiveness and contributes to higher levels of job performance through creativity, collaboration, and proactive problem-solving.

Relationship between Work Engagement and Teachers' Performance

Table 8. Relationship between Work Engagement and Teachers' Performance.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
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Teachers' Work Engagement	0.217**	0.002	Reject H ₀	Significant
vs.				
Teachers' Performance				

Table 8 presents the relationship between teachers' work engagement and teachers' performance. The results revealed a weak positive but statistically significant relationship between teachers' work engagement and teaching performance ($r_s = 0.217$, $p = 0.002$). Since the obtained p-value is less than the 0.01 level of significance, the null hypothesis was rejected. Therefore, there is sufficient evidence to conclude that teachers' work engagement is significantly related to teaching performance.

The findings further imply that schools can enhance teachers' performance by cultivating a work environment that promotes shared values, supportive leadership, open communication, meaningful recognition, positive workplace relationships, and continuous opportunities for professional growth. When teachers feel valued, supported, and connected to their work, they are more likely to remain motivated, committed, and productive, ultimately benefiting both student learning and overall school effectiveness.

These findings are consistent with the study of Saks (2022), who found that work engagement is positively associated with employee performance because engaged employees demonstrate higher levels of motivation, commitment, and effectiveness in carrying out their responsibilities. Similarly, Schaufeli (2021) emphasized that engaged employees consistently exhibit greater enthusiasm, dedication, and persistence, resulting in improved job performance and organizational outcomes. Likewise, Knight et al. (2021) concluded through a systematic review that supportive organizational practices that strengthen employee engagement significantly contribute to improved work performance, well-being, and organizational effectiveness.

CONCLUSIONS

Based on the findings of the study, the following conclusions were formulated:

High school teachers demonstrated a very high level of digital competence, with instructional resource development as the strongest area and digital assessment as an area for improvement.

High school teachers exhibited a very high level of innovative behavior, consistently generating, sharing, and applying new ideas to improve teaching practices.

High school teachers showed a very high level of work engagement, with shared values as the strongest dimension, supporting commitment and professional involvement.

High school teachers demonstrated an outstanding level of teaching performance, reflecting strong professional competence and quality instruction.

Digital competence had a significant positive relationship with teaching performance, indicating that higher digital competence is associated with better teaching performance.

Innovative behavior had a significant positive relationship with teaching performance, indicating that teachers who embrace innovation tend to perform better professionally.

Work engagement had a significant positive relationship with teaching performance and showed the strongest association among the three variables, indicating that highly engaged teachers tend to demonstrate better teaching performance.

ACKNOWLEDGMENT

The researcher would like to express his sincere gratitude and appreciation to the following individuals whose guidance, support, and encouragement contributed significantly to the completion of this educational endeavor:

To Dr. Sharon L. Apohen, the researcher's Statistician/Adviser, for her patience, guidance, valuable insights, encouragement, and assistance in editing and improving the manuscript; To Dr. Trudy C. Cerbo, Language Critic, for her careful review, valuable comments, and suggestions in improving the language and presentation of the manuscript;

To Dr. Mary Hope Q. Ayson, Chairman, for her guidance, valuable suggestions, and constructive recommendations that helped improve and strengthen this study; To Dr. Luciano T. Magallanes., Dr. Doreen R. Bandiez, and Dr. Mae Hazel S. Jimera, Members of the Panel, for their constructive comments, valuable recommendations, and encouragement in polishing and improving this study;

To the concerned school authorities and administrators who granted permission for the conduct of the study and provided the necessary support throughout the research process;

To the researcher's friends and colleagues, for their encouragement, insights, assistance, and moral support throughout this academic endeavor;

To the researcher's family, for their unwavering love, understanding, financial support, encouragement, and continued motivation, which served as a source of strength throughout the completion of this study;

Above all, to Almighty God, for granting the researcher wisdom, strength, guidance, perseverance, and grace to overcome every challenge and complete this academic journey.

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