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Teacher Self-Efficacy and Information Literacy as Predictors of Work Effectiveness among Elementary School Teachers

Ipong Dekawati
Universitas Wiralodra, Indonesia
ipongdekawati@unwir.ac.id

Rizki Satria Nugraha
Universitas Pendidikan Indonesia, Indonesia
rizkisatrianugraha@upi.edu

Yesi Yolanda Lestari
Universitas Wiralodra, Indonesia
yesiyolanda86@gmail.com

Abstract: This study aims to examine teacher self-efficacy and information literacy as predictors of work effectiveness among elementary school teachers. The study was motivated by the increasing demand for teachers to demonstrate professional confidence, instructional adaptability, and the ability to access, evaluate, and use information effectively in school practices. A quantitative approach with descriptive and verificative methods was employed. The participants were 60 public elementary school teachers in the Martadinata Cluster, Kuningan District, Indonesia. Data were collected using a structured Likert-scale questionnaire measuring teacher self-efficacy, information literacy, and teacher work effectiveness. The data were analyzed using descriptive statistics, assumption testing, correlation analysis, simple regression, and multiple regression. The results showed that all variables were in the high category. Teacher self-efficacy had a positive and significant effect on teacher work effectiveness, explaining 64.5% of the variance. Information literacy also had a positive and significant effect when tested separately, explaining 34.2% of the variance. Simultaneously, teacher self-efficacy and information literacy explained 65.7% of teacher work effectiveness, with self-efficacy emerging as the dominant predictor. The study concludes that teacher work effectiveness is strongly supported by professional confidence and strengthened by information-based competence. Schools are recommended to improve teacher development programs by integrating classroom management training, content mastery, digital literacy, information evaluation skills, and reflective professional practice.

Keywords: Elementary School Teachers; Information Literacy; Teacher Professionalism; Teacher Self-Efficacy; Work Effectiveness.

INTRODUCTION

The effectiveness of elementary school teachers has become a crucial issue in contemporary education systems because teachers are no longer viewed merely as curriculum implementers but as key agents who shape learning quality, student development, and school improvement. In many education systems, particularly in low- and middle-income contexts, the central challenge is no longer only expanding access to schooling but ensuring that schooling produces meaningful learning outcomes (Angrist et al., 2023). This shift places teacher

work effectiveness at the center of educational reform. Effective teachers are expected to design meaningful learning experiences, manage classrooms productively, use available resources efficiently, respond to diverse student needs, and adapt to institutional expectations. At the elementary level, these demands are particularly important because early schooling forms the foundation for children's cognitive, social, and emotional development (Alan & Turkum, 2024; Salvo-Garrido et al., 2024).

Teacher work effectiveness is shaped by both personal and organizational factors. Recent studies have shown that school effectiveness is associated with teacher motivation, leadership trust, organizational climate, and teachers' attitudes toward instructional innovation (Baxter & Ehren, 2023; Khun-Inkeeree et al., 2022; Qafa et al., 2024). Transformational and trust-based leadership have been found to support teacher innovation and organizational effectiveness by strengthening professional relationships, meaning at work, and commitment to school improvement (Bao, 2024; Karakose et al., 2023). At the same time, teachers' ability to remain effective depends on their occupational well-being, emotional regulation, and coping strategies, particularly because teaching is emotionally demanding and often associated with stress, anxiety, workload pressure, and burnout risk (Fuentes-Vilugrón et al., 2024; Nwoko et al., 2024). These findings indicate that teacher effectiveness is not a single-dimensional construct; rather, it reflects the interaction between psychological capacity, professional competence, digital readiness, and the school environment.

Among the psychological factors influencing teacher effectiveness, self-efficacy is one of the most important. Bandura (1997) conceptualized self-efficacy as an individual's belief in his or her ability to organize and execute actions required to achieve desired outcomes. In the teaching profession, self-efficacy influences how teachers interpret challenges, persist in difficult situations, select instructional strategies, regulate emotions, and maintain confidence in supporting student learning. Recent empirical evidence confirms that self-efficacy is positively associated with resilience and prosocial behavior among elementary school teachers (Salvo-Garrido et al., 2024). It also contributes to teachers' coping strategies, well-being, professional motivation, and ability to manage challenging classroom situations (Nwoko et al., 2024; Tarantul & Berkovich, 2025). In this sense, teacher self-efficacy is not merely a personal belief but a professional resource that enables teachers to transform competence into effective action.

However, self-efficacy alone may not be sufficient in the current era of educational digitalization. Teachers are increasingly required to access, evaluate, integrate, and use information from multiple sources to support instruction,

assessment, and professional decision-making. The rapid growth of digital platforms, artificial intelligence, online learning resources, multimedia tools, and game-based learning has expanded the information environment in which teachers work (Chou et al., 2024; Tomczyk & Majkut, 2025; Yaman et al., 2024). Studies on teachers' digital competence emphasize that teachers need not only basic digital skills but also the ability to select appropriate digital resources, design multimedia materials, integrate technology into pedagogy, and adapt to technological change (Galustyan et al., 2025; Smagulova et al., 2021). In this regard, information literacy becomes a critical professional competence because it enables teachers to identify information needs, locate reliable sources, evaluate the quality of information, and apply information meaningfully in instructional practice.

The importance of information literacy is further strengthened by studies on technology-supported learning and assessment. Staberg et al. (2023) showed that teachers interact with both analog and digital resources for formative assessment purposes and select resources based on effectiveness, practicality, and relevance. Agrati and Vinci (2022) highlighted the importance of evaluative knowledge and assessment skills in teacher education, while Yespolova et al. (2023) demonstrated that learning technology can support the development of students' research skills in primary education. Educational games and computational thinking studies also show that digital learning tools can improve motivation, engagement, and skill development when teachers understand how to use them appropriately (Giannakoulas & Xinogalos, 2024; Yaman et al., 2024). Nevertheless, technology integration may be hindered by teachers' attitudes, lack of training, limited resources, policy barriers, and insufficient digital or media literacy (Sharma, 2023; Yaman et al., 2024). Therefore, information literacy should be examined not only as a technical skill but also as a predictor of teachers' work effectiveness.

The current state of the art indicates that teacher self-efficacy, digital competence, information literacy, teacher well-being, leadership, and school effectiveness have been widely examined, but often as separate research domains. Studies have explored self-efficacy in relation to resilience, AI-supported teaching, emotional regulation, and performance (Chou et al., 2024; Dubey et al., 2025; Salvo-Garrido et al., 2024). Other studies have investigated digital competence, media competence, technology-enhanced learning, and game-based learning as elements of educational innovation (Galustyan et al., 2025; Giannakoulas & Xinogalos, 2024; Smagulova et al., 2021; Tomczyk & Majkut, 2025). Meanwhile, research on school effectiveness has emphasized motivation, leadership trust, teacher attitudes, and organizational support (Baxter & Ehren, 2023; Khun-Inkeeree et al., 2022; Qafa et al., 2024). Although

these studies are valuable, limited research has simultaneously tested teacher self-efficacy and information literacy as predictors of work effectiveness among elementary school teachers.

This gap is important because elementary school teachers face a dual demand: they must maintain confidence in their pedagogical and classroom management abilities while also becoming information-literate professionals in an increasingly digital and data-rich school environment. Teachers with strong self-efficacy may be more persistent and confident in handling instructional challenges, whereas teachers with strong information literacy may be better able to select credible resources, evaluate learning materials, integrate digital tools, and improve instructional decisions. The combination of these two capacities may provide a more comprehensive explanation of teacher work effectiveness than either factor alone. Therefore, this study aims to examine teacher self-efficacy and information literacy as predictors of work effectiveness among elementary school teachers. By doing so, the study contributes to the literature on educational management, teacher professional development, and primary school improvement by offering empirical evidence on how psychological belief and information-based competence jointly support effective teacher performance.

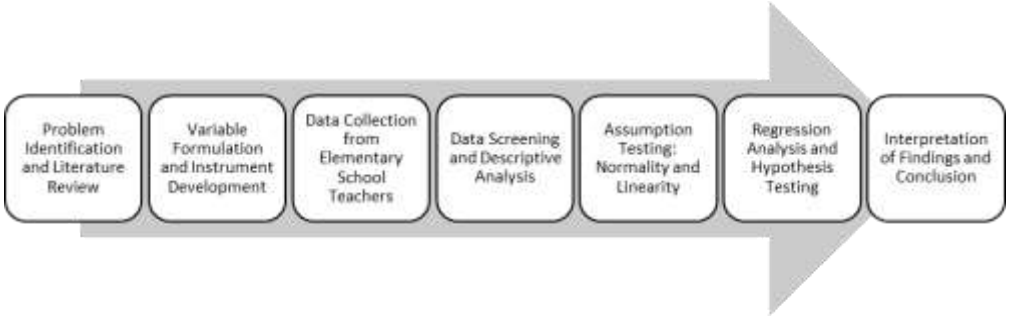
RESEARCH METHODOLOGY

This study employed a quantitative, cross-sectional survey with descriptive and verificative components to examine teacher self-efficacy (X1) and information literacy (X2) as predictors of teacher work effectiveness (Y). The descriptive component summarized variable levels, while the verificative component tested individual and joint predictive relationships using regression, consistent with quantitative research design principles (Creswell & Creswell, 2018).

The study was conducted among public elementary school teachers in the Martadinata Cluster, Kuningan Regency, Indonesia. The target population comprised 66 teachers. Total-population sampling (census) was intended; 60 usable questionnaires (90.9% of the population) were analyzed. Responses were collected through a structured, self-reported questionnaire with 20 items per construct, rated on a five-point Likert scale (1–5). Self-efficacy covered pedagogical, content, and change-oriented efficacy; information literacy comprised identification, access, evaluation, and use; work effectiveness covered target attainment, resource efficiency, role alignment, and adaptability to school leadership and communication.

Items were developed from the study's operational indicators and pilot-tested with 20 teachers outside the main survey. Item validity was examined using Pearson item–total correlations, and internal consistency was evaluated using Cronbach's alpha. Recalculation from the 60 respondents' item-level scores yielded alpha coefficients of .943 (X1), .890 (X2), and .930 (Y). Expert-based content validation and confirmatory factor analysis were not documented in the source thesis.

Data were processed using descriptive statistics, normality and linearity tests, Pearson correlations, and simple and multiple linear regression in SPSS 25. Model significance and explanatory contribution were evaluated using F tests, regression coefficients, and R^2. Common method variance was screened using Harman's unrotated single-factor procedure (Podsakoff et al., 2003), whereas inter-predictor correlation, tolerance, and variance inflation factors were examined for multicollinearity (Hair et al., 2019).



Source: Authors' illustration of the research procedure, informed by Creswell and Creswell (2018).

Figure 1. Research Procedure

RESULTS AND DISCUSSION

Results

Respondent Profile

The study involved 60 elementary school teachers from the Martadinata Cluster, Kuningan District. The respondents consisted of 19 male teachers (31.67%) and 41 female teachers (68.33%), indicating that the sample was dominated by female teachers. Based on age distribution, most respondents were in the 31–40-year age group (38.33%), followed by the 21–30-year group (28.33%), the 41–50-year group (23.34%), and the 51–60-year group (10.00%). In terms of teaching experience, the largest group had 1–10 years of service (46.67%), followed by 11–20 years (43.33%), 21–30 years (8.33%), and 31–40

years (1.67%). This profile indicates that the respondents represented a combination of early-career and experienced teachers, allowing the data to reflect diverse professional backgrounds in elementary education.

Table 1. Respondent Demographic Profile

Characteristic	Category	Frequency	Percentage
Gender	Male	19	31.67%
	Female	41	68.33%
Age	21–30 years	17	28.33%
	31–40 years	23	38.33%
	41–50 years	14	23.34%
	51–60 years	6	10.00%
Teaching experience	1–10 years	28	46.67%
	11–20 years	26	43.33%
	21–30 years	5	8.33%
	31–40 years	1	1.67%

Source: Primary survey data (2026).

Descriptive Findings of the Main Variables

The descriptive analysis showed that all three variables were in the high category. Teacher self-efficacy obtained a total score of 4,036 out of a maximum score of 6,000, with an achievement percentage of 67.26%. Information literacy obtained a total score of 4,102, or 68.36% of the maximum score. Teacher work effectiveness reached 4,024, equivalent to 67.07%. These findings indicate that teachers generally perceived themselves as having strong self-efficacy, adequate information literacy, and effective work performance in carrying out instructional and professional duties.

Table 2. Descriptive Achievement of Research Variables

Variable	Number of Items	Maximum Score	Achieved Score	Mean per Respondent	Achievement Percentage	Category
Teacher self-efficacy (X1)	20	6,000	4,036	67.26	67.26%	High
Information literacy (X2)	20	6,000	4,102	68.36	68.36%	High

Teacher work effectiveness (Y)	20	6,000	4,024	67.07	67.07%	High

Source: Authors' analysis of primary data (2026).

A more detailed analysis of teacher self-efficacy showed that the highest dimension was psychological efficacy toward change (70.40%), followed by pedagogical efficacy (66.20%) and content efficacy (64.80%). This indicates that teachers were relatively confident in adapting to change, although their confidence in mastering and transforming content knowledge still required strengthening.

Table 3. Dimensional Achievement of Teacher Self-Efficacy

Dimension	**Percentage**	**Mean Score**	**Maximum Score**
Pedagogical efficacy	66.20%	3.31	5
Content efficacy	64.80%	3.24	5
Psychological efficacy toward change	70.40%	3.52	5

Source: Authors' analysis of primary data (2026).

For information literacy, the highest achievement was found in information evaluation (69.80%), followed by information use (69.20%), information identification (67.60%), and information access (67.20%). This pattern suggests that teachers were relatively stronger in evaluating and using information than in identifying and accessing information sources.

Table 4. Dimensional Achievement of Information Literacy

Dimension	**Percentage**	**Mean Score**	**Maximum Score**
Information identification	67.60%	3.38	5
Information access	67.20%	3.36	5
Information evaluation	69.80%	3.49	5
Information use	69.20%	3.46	5

Source: Authors' analysis of primary data (2026).

Teacher work effectiveness also showed a high tendency across all dimensions. The highest dimension was role and responsibility alignment (68.80%), followed by work-target achievement (67.20%), time and resource efficiency (66.60%), and adaptability to leadership and internal communication (66.20%). These results indicate that teachers demonstrated strong professional responsibility, although adaptability to leadership patterns and internal communication remained the lowest dimension.

Table 5. Dimensional Achievement of Teacher Work Effectiveness

Dimension	Percentage	Mean Score	Maximum Score
Work-target achievement	67.20%	3.36	5
Time and resource efficiency	66.60%	3.33	5
Role and responsibility alignment	68.80%	3.44	5
Adaptability to leadership and internal communication	66.20%	3.31	5

Source: Authors' analysis of primary data (2026).

Instrument Reliability and Score Distribution

The internal consistency analysis demonstrated satisfactory reliability across the three constructs. Cronbach's alpha coefficients were .943 for teacher self-efficacy, .890 for information literacy, and .930 for teacher work effectiveness, indicating high internal consistency. Furthermore, the skewness values for teacher self-efficacy (.037), information literacy (.051), and teacher work effectiveness (.063) were close to zero, suggesting approximately symmetric score distributions without substantial skewness. These findings provide additional evidence of measurement consistency and describe the distributional characteristics of the observed variables.

Assumption Testing

Before hypothesis testing, normality and linearity tests were conducted. The Kolmogorov–Smirnov test showed that the data for all variables were normally distributed. Teacher self-efficacy and information literacy both obtained significance values of .200, while teacher work effectiveness obtained a significance value of .058. Since all values were greater than .05, the assumption of normality was fulfilled.

Table 6. Normality Test Results

Variable	N	Mean	Standard Deviation	Test Statistic	Sig.
Teacher self-efficacy (X1)	60	67.27	8.946	.100	.200
Information literacy (X2)	60	68.37	7.107	.098	.200
Teacher work effectiveness (Y)	60	67.07	9.908	.112	.058

Source: Authors' analysis using SPSS 25 (2026).

The linearity test also indicated that the relationships between the independent variables and the dependent variable were linear. The relationship between teacher self-efficacy and teacher work effectiveness had a significant

linearity value (F = 86.770, p = .000) and no significant deviation from linearity (p = .896). Similarly, the relationship between information literacy and teacher work effectiveness was linear (F = 28.527, p = .000), with no significant deviation from linearity (p = .641). Therefore, the data met the requirements for regression analysis.

Table 7. Linearity Test Results

Relationship	Linearity F	Linearity Sig.	Deviation from Linearity F	Deviation Sig.	Interpretation
X1 → Y	86.770	.000	.618	.896	Linear
X2 → Y	28.527	.000	.862	.641	Linear

Source: Authors' analysis using SPSS 25 (2026).

Common Method Bias Assessment

Common method variance was assessed using Harman's single-factor test because all constructs were measured through the same self-reported questionnaire. An unrotated principal component analysis of all 60 standardized questionnaire items showed that the first component explained 39.49% of the total variance, below the commonly applied 50% threshold. This result indicates that no single component dominated the observed variance, although potential common method bias cannot be completely excluded.

Effect of Teacher Self-Efficacy on Teacher Work Effectiveness

The first hypothesis tested whether teacher self-efficacy predicted teacher work effectiveness. The regression results showed that teacher self-efficacy had a positive and significant effect on teacher work effectiveness, with B = .890, β = .803, t = 10.273, and p = .000. The regression equation was Y = 7.219 + .890X1. This means that every one-unit increase in teacher self-efficacy was associated with an increase of .890 units in teacher work effectiveness. The model was significant, F = 105.532, p = .000, with R = .803 and R^2 = .645. Thus, teacher self-efficacy explained 64.5% of the variance in teacher work effectiveness.

Table 8. Simple Regression of Teacher Self-Efficacy on Teacher Work Effectiveness

Predictor	B	Std. Error	Beta	t	Sig.
Constant	7.219	5.876	—	1.229	.224
Teacher self-efficacy (X1)	.890	.087	.803	10.273	.000

Source: Authors' analysis using SPSS 25 (2026).

Table 9. Model Summary for Teacher Self-Efficacy

R	R^2	Adjusted R^2	Std. Error of Estimate	F	Sig.
.803	.645	.639	5.951	105.532	.000

Source: Authors' analysis using SPSS 25 (2026).

Effect of Information Literacy on Teacher Work Effectiveness

The second hypothesis tested whether information literacy predicted teacher work effectiveness. The regression results indicated that information literacy had a positive and significant effect on teacher work effectiveness, with B = .816, β = .585, t = 5.494, and p = .000. The regression equation was Y = 11.305 + .816X2. This result indicates that every one-unit increase in information literacy was associated with an increase of .816 units in teacher work effectiveness. The model was statistically significant, F = 30.184, p = .000, with R = .585 and R^2 = .342. Therefore, information literacy explained 34.2% of the variance in teacher work effectiveness.

Table 10. Simple Regression of Information Literacy on Teacher Work Effectiveness

Predictor	B	Std. Error	Beta	t	Sig.
Constant	11.305	10.203	—	1.108	.272
Information literacy (X2)	.816	.148	.585	5.494	.000

Source: Authors' analysis using SPSS 25 (2026).

Table 11. Model Summary for Information Literacy

R	R^2	Adjusted R^2	Std. Error of Estimate	F	Sig.
.585	.342	.331	8.104	30.184	.000

Source: Authors' analysis using SPSS 25 (2026).

Simultaneous Effect of Teacher Self-Efficacy and Information Literacy on Teacher Work Effectiveness

The multiple regression analysis examined the simultaneous effect of teacher self-efficacy and information literacy on teacher work effectiveness. The results showed that the overall model was significant, F = 54.516, p = .000, with R = .810 and R^2 = .657. This means that teacher self-efficacy and information literacy jointly explained 65.7% of the variance in teacher work effectiveness, while the remaining 34.3% was explained by other factors outside the model.

However, the coefficient analysis showed different patterns for each predictor. Teacher self-efficacy remained a significant predictor of teacher work effectiveness, with B = .795, β = .718, t = 7.225, and p = .000. In contrast, information literacy had a positive but non-significant partial effect when entered together with teacher self-efficacy, with B = .190, β = .137, t = 1.374, and p = .175. The multiple regression equation was $\hat{Y}$ = .561 + .795X1 + .190X2. These results indicate that teacher self-efficacy was the dominant predictor, while information literacy contributed positively to the overall model but did not reach statistical significance as an independent predictor in the simultaneous model.

Additional analysis revealed a significant positive correlation between teacher self-efficacy and information literacy (r = .625, p < .001). Multicollinearity diagnostics showed tolerance values of .610 and variance inflation factor (VIF) values of 1.640 for both predictors. These values indicate that serious multicollinearity was not present in the multiple regression model. Therefore, the non-significant partial coefficient of information literacy cannot be attributed to severe multicollinearity between the predictors.

Table 12. Multiple Regression Results

Predictor	**B**	**Std. Error**	**β**	**t**	**Sig.**	**Tolerance**	**VIF**
Constant	.561	7.583	—	.074	.941	—	—
Teacher self-efficacy (X1)	.795	.110	.718	7.225	.000	.610	1.640
Information literacy (X2)	.190	.139	.137	1.374	.175	.610	1.640

Source: Authors' analysis of primary data (2026).

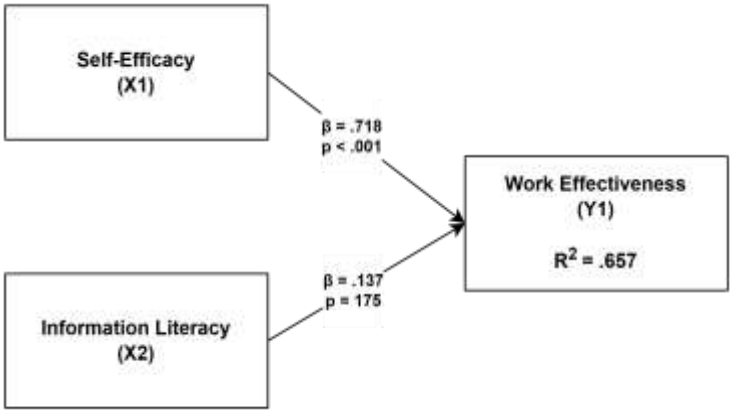
Table 13. Simultaneous Regression Model Summary

R	**R^2**	**Adjusted R^2**	**Std. Error of Estimate**	**F**	**Sig.**
.810	.657	.645	5.906	54.516	.000

Source: Authors' analysis using SPSS 25 (2026).

Structural Relationship among Variables

The structural relationship among variables shows that teacher self-efficacy had a stronger relationship with teacher work effectiveness (r = .803) than information literacy (r = .585). When both predictors were analyzed simultaneously, the model correlation increased to R = .810, indicating a strong combined relationship between teacher self-efficacy, information literacy, and teacher work effectiveness.



Source: Authors' illustration based on regression results (2026).

Figure 2. Structural Relationship among Variables

Overall, the findings demonstrate that both teacher self-efficacy and information literacy are positively associated with teacher work effectiveness. Teacher self-efficacy emerged as the most powerful predictor, while information literacy strengthened the explanatory power of the overall model. The results indicate that effective elementary school teachers are supported not only by confidence in their professional abilities but also by their capacity to access, evaluate, and use information in instructional and administrative work.

Discussion

Respondent Profile

The demographic profile of the respondents provides an important contextual basis for interpreting the findings. The sample consisted of 60 elementary school teachers, most of whom were female and were in the productive professional age range of 31–40 years. This profile reflects a teaching workforce that is relatively mature, professionally active, and likely to have accumulated sufficient experience in managing classrooms, implementing curriculum demands, and responding to school-level expectations. The dominance of teachers with 1–20 years of teaching experience suggests that the respondents were neither entirely novice nor approaching retirement, but were positioned in a professional phase where work effectiveness is strongly influenced by accumulated practice, adaptive capacity, and commitment to continuous improvement. This condition is consistent with studies emphasizing that teacher effectiveness is influenced by professional experience, motivation, organizational climate, and readiness to adapt to school demands (Khun-Inkeeree et al., 2022; Qafa et al., 2024). The profile also suggests that the

interpretation of teacher self-efficacy and information literacy should be linked to the lived reality of teachers who routinely face instructional, administrative, technological, and relational responsibilities in elementary schools.

Descriptive Findings of the Main Variables

The descriptive findings showed that teacher self-efficacy, information literacy, and teacher work effectiveness were all in the high category. This indicates that the respondents generally perceived themselves as capable of carrying out professional duties, accessing and using information, and fulfilling work expectations. The high level of teacher self-efficacy is theoretically meaningful because self-efficacy functions as a psychological mechanism that shapes persistence, effort, and resilience in challenging situations (Bandura, 1997). Recent evidence also confirms that teachers' self-efficacy is positively associated with resilience, prosocial behavior, and the capacity to respond to increasingly complex school environments (Salvo-Garrido et al., 2024). The finding that psychological efficacy toward change was the strongest dimension indicates that teachers were relatively confident in adapting to curriculum change and school transformation. However, the lower score in content efficacy suggests that strengthening teachers' mastery and transformation of subject matter remains necessary. This is aligned with studies showing that pedagogical innovation, STEM activity design, and digital resource creation require not only confidence but also deep content understanding and repeated professional practice (Kahraman & Öner Armağan, 2025; Smagulova et al., 2021).

The descriptive pattern of information literacy also deserves attention. Teachers scored higher in evaluating and using information than in identifying and accessing information. This suggests that once information is available, teachers are relatively able to judge its relevance and apply it to professional tasks. However, the lower scores in identification and access imply that teachers may still need support in formulating information needs, locating credible sources, and navigating digital environments. Although information evaluation (69.80%) and use (69.20%) scored higher than identification (67.60%) and access (67.20%), these differences were relatively modest and should be interpreted as areas for improvement rather than substantial competency deficiencies. International studies on teachers' media competence in blended learning (Galustyan et al., 2025) and generative AI adoption (Tomczyk & Majkut, 2025) similarly emphasize that digital competence involves not only technical access but also critical evaluation and meaningful pedagogical application. However, differences in educational contexts and measurement approaches limit direct comparisons across studies. In the era of abundant digital content and artificial intelligence, the ability to critically evaluate information is especially important because teachers may be exposed to biased, fragmented, or unreliable information. Kroon et al. (2022) showed that media

selection is often shaped by implicit bias, which reinforces the importance of critical information literacy in professional decision-making. Thus, information literacy should be positioned as a core element of teacher professionalism.

Assumption Testing

The normality and linearity tests confirmed that the data met the assumptions required for regression analysis. The fulfillment of these assumptions strengthens the credibility of the statistical procedures used in this study and indicates that the relationships among variables could be interpreted using parametric analysis. Although assumption testing is often treated as a technical stage, it is important for ensuring that conclusions about predictive relationships are not based on inappropriate statistical models. This is particularly relevant in educational research, where psychological and professional variables are often measured through perception-based instruments. Similar quantitative studies on teacher motivation, school effectiveness, digital competence, and work-related factors have also relied on structured questionnaires and regression-based or structural modeling approaches to examine predictive relationships among educational variables (Bhadana et al., 2022; Chou et al., 2024; Khun-Inkeeree et al., 2022). Therefore, the methodological adequacy of the present study provides a reasonable basis for interpreting the effects of teacher self-efficacy and information literacy on teacher work effectiveness.

Effect of Teacher Self-Efficacy on Teacher Work Effectiveness

The results showed that teacher self-efficacy had a strong, positive, and significant effect on teacher work effectiveness, explaining 64.5% of the variance. This is the most important finding of the study. It suggests that teachers who believe in their capacity to manage instruction, master content, and adapt to change tend to work more effectively. In practical terms, self-efficacy enables teachers to interpret difficulties not as threats but as professional challenges that can be managed through effort, strategy, and reflection. This finding supports Bandura's (1997) theory that perceived self-efficacy influences action, persistence, and performance. It is also consistent with Salvo-Garrido et al. (2024), who found that self-efficacy contributes positively to elementary school teachers' prosocial behavior, and with Nwoko et al. (2024), who emphasized that teacher well-being and coping strategies are essential for sustaining professional effectiveness.

The dominance of self-efficacy also indicates that teacher work effectiveness is strongly rooted in psychological readiness. Teachers with high self-efficacy are more likely to engage in instructional innovation, manage classroom challenges, and remain committed to school goals. This is relevant to

Bao's (2024) finding that teacher innovative behavior is strengthened when teachers experience meaning at work, and to Tarantul and Berkovich's (2025) study showing that teachers' emotional management is connected to motivation, professional standards, and classroom effectiveness. In this study, self-efficacy can be interpreted as an internal driver that allows teachers to translate professional knowledge into purposeful and effective action.

Effect of Information Literacy on Teacher Work Effectiveness

Information literacy also had a positive and significant effect on teacher work effectiveness in the simple regression model, explaining 34.2% of the variance. This finding confirms that teachers' ability to identify, access, evaluate, and use information contributes to how effectively they perform their professional duties. In contemporary elementary education, teachers are expected to use diverse information sources to design learning materials, assess students, communicate with stakeholders, and respond to policy changes. This is consistent with Staberg et al. (2023), who found that teachers interact with digital and analog resources based on practicality, relevance, and effectiveness. Agrati and Vinci (2022) also emphasized the importance of evaluative knowledge and assessment skills in teacher education, while Yespolova et al. (2023) showed that learning technology can support research skill development in primary education.

However, the significant bivariate association did not translate into a statistically significant independent contribution when teacher self-efficacy was included in the multiple regression model ($\beta = .137$, $p = .175$). The moderate correlation between self-efficacy and information literacy ($r = .625$) suggests that the two predictors share some explanatory variance, although the tolerance (.610) and VIF (1.640) values indicate no serious multicollinearity. Therefore, information literacy cannot be considered a statistically significant independent predictor after controlling for self-efficacy in this sample. Previous studies have highlighted the relevance of teachers' confidence and perceived competence in technology integration (Chou et al., 2024; Tomczyk & Majkut, 2025), suggesting a possible psychological mechanism linking information-related competencies to professional effectiveness. Nevertheless, mediation or interaction between the predictors was not examined in this study and should not be inferred from the present regression results.

Simultaneous Effect of Teacher Self-Efficacy and Information Literacy on Teacher Work Effectiveness

The simultaneous regression model explained 65.7% of the variance in teacher work effectiveness, compared with 64.5% explained by teacher self-efficacy alone. Thus, adding information literacy increased the explained

variance by only 1.2 percentage points ($\Delta R^2 = .012$). This incremental contribution was not statistically significant ($\beta = .137$, $p = .175$), indicating that the overall explanatory strength of the model was primarily attributable to teacher self-efficacy. Consequently, the significance of the overall regression model should not be interpreted as evidence that both predictors independently contributed significantly to work effectiveness. Nevertheless, information literacy remains theoretically and practically relevant to teachers' ability to identify, evaluate, and apply information in increasingly digital learning environments (Lazarov et al., 2025; Oliinyk et al., 2023; Yaman et al., 2024). These findings highlight the importance of distinguishing between a variable's general association with work effectiveness and its unique explanatory contribution within a multivariable model.

The simultaneous model also implies that teacher work effectiveness should not be treated as the result of a single factor. Leadership, trust, motivation, resource availability, emotional regulation, and organizational environment also contribute to how teachers work (Baxter & Ehren, 2023; Bhadana et al., 2022; Fuentes-Vilugrón et al., 2024; Karakose et al., 2023). Therefore, although the present model is strong, the remaining 34.3% of unexplained variance may be associated with other organizational and contextual factors, such as workload, leadership style, collaboration culture, infrastructure, and professional development opportunities. Nevertheless, the remaining 34.3% of unexplained variance should not be attributed exclusively to omitted organizational factors, as measurement limitations may also influence the estimated relationships. Although the instruments demonstrated high internal consistency and Harman's single-factor test did not indicate a dominant common factor, these findings do not fully establish construct validity or eliminate potential common method bias (Podsakoff et al., 2003). This interpretation is supported by Nwoko et al. (2024), who highlighted the role of supportive leadership, colleague support, autonomy, and resource availability in teacher occupational well-being.

Structural Relationship among Variables

The structural relationship showed that teacher self-efficacy had a stronger relationship with teacher work effectiveness than information literacy. This pattern indicates that teacher self-efficacy was the stronger statistical predictor in the present sample, whereas information literacy showed a positive bivariate relationship but no significant unique association in the simultaneous model. Theoretically, these findings are compatible with a human-centered perspective on teacher development, in which professional confidence may support the meaningful application of information and digital resources. However, the cross-sectional design does not establish a causal mechanism or demonstrate that self-efficacy mediates the relationship between information literacy and work effectiveness. Studies on

educational games, computational thinking, digital collaboration, and technology-supported learning all indicate that technological tools require teacher readiness, pedagogical judgment, and contextual adaptation to become effective (Giannakoulas & Xinogalos, 2024; Ospankulov et al., 2022; Van Rompay-Bartels et al., 2025; Yaman et al., 2024).

Overall, the findings confirm that teacher work effectiveness among elementary school teachers is shaped primarily by self-efficacy and strengthened by information literacy. The study contributes to educational management by showing that improving teacher effectiveness requires more than administrative supervision or technical training. Schools need to build teachers' confidence, strengthen their professional identity, improve access to credible information, and provide continuous digital and pedagogical development. For elementary schools, this means that teacher development programs should integrate classroom management training, content mastery, digital literacy, information evaluation, and reflective practice. Such integration can help teachers become confident, adaptive, information-literate, and professionally effective in responding to the changing demands of elementary education.

CONCLUSION

This study concludes that teacher self-efficacy plays a significant role in predicting work effectiveness among elementary school teachers, while information literacy demonstrates a positive but limited independent contribution. Teacher self-efficacy emerged as the dominant predictor, reflecting the importance of professional confidence, pedagogical competence, content mastery, and adaptability to change in supporting effective teaching practices. Although information literacy was positively associated with work effectiveness when examined separately, its independent contribution was not statistically significant after accounting for teacher self-efficacy. This finding suggests that information literacy remains a relevant professional competency, but its unique predictive contribution should be interpreted cautiously.

The findings emphasize the importance of integrating psychological and information-related competencies into teacher professional development. Schools are encouraged to strengthen teachers' self-efficacy through classroom management training, content mastery, reflective practice, and professional support while simultaneously enhancing their ability to identify, evaluate, and apply credible information in instructional and administrative activities.

Nevertheless, this study has several limitations, including its restricted geographical scope, relatively small sample, cross-sectional design, and reliance on self-reported data, which may introduce common method bias and limit the

generalizability of the findings. Further construct validation is also recommended. Future research should involve more diverse samples, longitudinal approaches, and objective measures of teacher effectiveness. Additional investigations using structural equation modeling could explore potential mediating relationships among information literacy, self-efficacy, and work effectiveness, while comparative studies across teaching experience levels may provide a deeper understanding of these relationships.■

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