

# Instructional Leadership and Technological Competence on Educational Assessment Capability of Teachers

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DOI: <https://doi.org/10.47772/IJRISS.2026.100400412>

Received: 19 April 2026; Accepted: 24 April 2026; Published: 12 May 2026

## ABSTRACT

This study examined the influence of instructional leadership and technological competence on the educational assessment capability of public-school teachers in Kitaotao Districts 2 and 3, Division of Bukidnon, during the second term of School Year 2025–2026. A stratified random sampling technique was employed, involving 310 public elementary and secondary school teachers as respondents in a descriptive-correlational research design using a survey questionnaire. The findings revealed that teachers exhibit very high levels of instructional leadership and high levels of technological competence. In addition, their educational assessment capability was rated very high in both formative and summative assessment practices. Results further showed significant positive relationships among the variables. Instructional leadership and technological competence were both significantly correlated with educational assessment capability. Moreover, regression analysis confirmed that adaptability, sustainability, and significantly predict teachers' assessment capability. These results indicate that strengthening leadership practices and enhancing technology integration contribute to more effective assessment of student learning and improved instructional quality.

**Keywords:** Adaptability, Sustainability, Developing and Communicating Shared Goals, Correlation, And Regression

## INTRODUCTION

The Department of Education (DepEd) emphasizes the crucial role of teachers in ensuring meaningful learning and improved educational outcomes (Department of Education, 2018). In response to 21st-century educational demands, teachers are now expected to demonstrate not only effective instruction but also strong instructional leadership and technological competence, which are essential in strengthening educational assessment capability. These competencies ensure that assessment is used not only for grading but also as a tool for improving instruction and addressing diverse learner needs. International and national assessment reports such as the Programme for International Student Assessment (PISA) and the National Achievement Test (NAT) continue to highlight persistent challenges in student learning outcomes, reinforcing the need to strengthen teacher competencies in assessment practices. However, despite various reforms and policy initiatives, there remains a gap between policy expectations and classroom implementation due to limited training, resources, and institutional support (Cabardo, 2018). Research further indicates that many teachers still feel unprepared in using effective assessment strategies and data-driven instruction (Seay, 2023), while the lack of sustained professional development further limits the translation of assessment standards into practice (Worrell et al., 2014). These challenges highlight the continuing need to enhance teachers' assessment capability in actual classroom settings.

Instructional leadership is identified as a key factor in improving teachers' assessment capability as it enables them to set clear learning goals, monitor student progress, and provide meaningful feedback that supports instruction. In the same manner, technological competence enhances assessment practices by allowing teachers to integrate digital tools, improve engagement, and adapt to modern educational demands. Studies emphasize that effective instructional leadership and technology integration significantly improve teaching effectiveness and assessment quality (Cayetano, 2024; Nellitawati et al., 2024), while professional development programs

further strengthen teachers' instructional and assessment practices (Hassan et al., 2019; Worrell et al., 2014). In the local context of Kitaotao, Bukidnon, similar challenges are observed, including limited training, inadequate resources, and gaps in integrating instructional leadership and technology in assessment practices (Cabardo, 2018; Batan et al., 2022; Abulencia et al., 2024). Although these variables have been widely studied separately, there is limited research examining their combined influence on teachers' educational assessment capability in the Philippine context. This study therefore addresses this gap by examining the influence of instructional leadership and technological competence on the educational assessment capability of public school teachers.

## Objectives of the Study

The study examined the relationship between instructional leadership and technological competence and the teachers' educational assessment capability among public elementary and secondary school teachers in the Kitaotao Districts of the Division of Bukidnon. Specifically, this study sought to answer the following: (1) ascertain the level of instructional leadership among teachers; (2) determine the level of technological competence practiced by teachers; (3) assess the level of educational assessment capability of teachers; (4) determine the correlation between teachers' educational assessment capability and instructional leadership and technological competence; and (5) identify the variables that best predict teachers' educational assessment capability.

## METHODOLOGY

### Research Design and Locale

This study utilized a quantitative-correlational research design to determine the relationship between instructional leadership and technological competence and educational assessment capability of public elementary and secondary school teachers in the Kitaotao Districts of the Division of Bukidnon. The study was conducted in the public secondary schools within the Kitaotao II, and III Districts in the Division of Bukidnon, located in Region X (Northern Mindanao), Philippines.

### Research Respondents and Sampling

This study employed the total enumeration technique in selecting respondents. Under this method, 310 public elementary and secondary school teachers from Kitaotao II and III Districts, Division of Bukidnon, were included as respondents, during the second term of the School Year 2025–2026.

### Research Instruments

This study used a survey questionnaire to gather data on instructional leadership, technological competence, and educational assessment capability among public elementary and secondary school teachers in the Kitaotao District of the Division of Bukidnon. The researcher sought permission from the respective authors to adapt their questionnaires through email. The questionnaire comprises three parts: instructional leadership, technological competence, and educational assessment capability. Part I focused on instructional leadership and covered developing and communicating shared goals, monitoring and providing feedback, and promoting professional development. The instrument was adapted from Solatorio (2014) with a Cronbach's alpha of 0.943, indicating high reliability. Part II focused on technological competence and was adapted from Capili (2024) with a Cronbach's alpha of 0.976. Lastly, Part III focused on educational assessment capability and was adapted from Bonggo (2024) with a Cronbach's alpha of 0.97, likewise indicating high reliability.

### Data Analysis

Data Analysis Means were used to describe the levels of teachers' instructional leadership, technological competence, and educational assessment capability. The Pearson Product-Moment Correlation was applied to determine the strength and direction of the relationships between instructional leadership, technological competence, and educational assessment capability. Furthermore, linear regression analysis was used to identify the best predictor of teachers' educational assessment capability among the identified variables

## RESULTS AND DISCUSSION

After gathering the data, it is being analyzed using SPSS to find the total mean score, Pearson Product-Moment Correlation (r), and regression analysis results.

Table 1: Summary of Teachers' Instructional Leadership

Indicators	Mean	Descriptive Rating	Qualitative Interpretation
Developing and Communicating Shared Goal	4.61	Always	Very High Instructional Leadership
Monitoring and Providing Feedback	4.51	Always	Very High Instructional Leadership
Promoting Professional Development	4.47	Usually	High Instructional Leadership
Overall Mean	4.53	Always	Very High Instructional Leadership

Legend:

Rating	Scale	Descriptive Rating	Qualitative Interpretation
5	4.51-5.00	Always	Very High Instructional Leadership
4	3.51-4.50	Usually	High Instructional Leadership
3	2.51-3.50	Sometimes	Moderate Instructional Leadership
2	1.51-2.50	Seldom	Low Instructional Leadership
1	1.00-1.50	Never	Very Low Instructional Leadership

The overall level of instructional leadership was rated high, but a critical look at the pattern of indicators is important. The strongest dimension—developing and communicating shared goals—suggests that teachers perceive leadership to be present mainly at the level of direction and alignment. This is meaningful because assessment capability depends on whether assessments are anchored on intended learning outcomes. When goals are clearly communicated, teachers are more likely to design assessment tasks that match competencies and learning targets rather than treating assessment as a separate or purely grading activity.

Meanwhile, monitoring and providing feedback also ranked very high, indicating that teachers recognize supervision and feedback as relevant supports for instructional improvement. However, the fact that promoting professional development was comparatively lower—even while still “high”—may signal a structural issue: instructional leadership can be strong in communication and feedback, yet still be limited in sustained development that directly strengthens assessment literacy (e.g., formative assessment skills, item writing, rubric construction, and use of assessment data). In other words, leadership may be operating, but the “capacity-building” mechanism might be less consistent or less visible to teachers.

Conceptually, these findings align with Transformational Leadership Theory (Bass, 1985) and Hallinger’s Instructional Leadership Framework, where teachers act as instructional leaders who influence learning through goal setting and feedback. However, the weak differentiation across indicators suggests that the multidimensional nature of instructional leadership may not be fully reflected in practice.

Supporting literature from Hallinger (2018) and Leithwood et al. (2020) confirms that instructional leadership enhances teaching effectiveness, while Cabardo (2018) and Reyes (2020) emphasize its role in improving classroom instruction and learning outcomes.

Table 2: Summary of Teachers' Technological Competence

Indicators	Mean	Descriptive Rating	Qualitative Interpretation
Applicability	4.22	Agree	High Technological Competence
Adaptability	4.21	Agree	High Technological Competence
Sustainability	4.11	Agree	High Technological Competence
Overall Mean	4.19	Agree	High Technological Competence

Legend:

Rating	Scale	Descriptive Rating	Qualitative Interpretation
5	4.51-5.00	Strongly Agree	Very High Technological Competence
4	3.51-4.50	Agree	High Technological Competence
3	2.51-3.50	Neutral	Moderate Technological Competence
2	1.51-2.50	Disagree	Low Technological Competence
1	1.00-1.50	Strongly Disagree	Very low Technological Competence

Technological competence obtained an overall high rating, with applicability as the strongest indicator. A critical implication is that technology is likely being adopted as a functional tool—used because it works and fits classroom needs—rather than as a transformative practice for assessment. This matters because assessment capability improves not only when tools are available, but when teachers integrate them to support assessment processes such as tracking progress, generating timely feedback, analyzing learner results, and adjusting instruction.

Although adaptability and sustainability were also high, the sustainability dimension, being the lowest among the three indicators (still high) may suggest that technology use may be vulnerable to practical constraints such as training gaps, device access, connectivity, and time for preparation. In many school contexts, teachers can become competent with tools when training and access are present, but maintaining consistent technology use over time becomes harder when support weakens. Thus, the technology–assessment link in this study may be strongest when technology is supported by continuous access and preparation opportunities.

From a theoretical standpoint, these findings align with the TPACK framework (Mishra & Koehler, 2006) and the Technology Acceptance Model (Davis, 1989), which emphasize perceived usefulness and integration of knowledge domains. However, the results suggest partial realization of these frameworks, particularly in sustaining technology use over time.

Supporting studies by Miranda et al. (2020) and Akram et al. (2022) highlight that technology integration is strongest when aligned with instructional goals, while Vivo (2022) notes that sustainability remains a common challenge in classroom practice.

Table 3: Summary of Teachers’ Educational Assessment Capability

Indicators	Mean	Descriptive Rating	Qualitative Interpretation
Summative Assessment	4.55	Strongly Agree	Very High
Formative Assessment	4.51	Strongly Agree	Very High
Overall Mean	4.52	Strongly Agree	Very High

Legend:

Rating	Scale	Descriptive Rating	Qualitative Interpretation
5	4.51-5.00	Strongly Agree	Very High
4	3.51-4.50	Agree	High
3	2.51-3.50	Undecided	Moderate
2	1.51-2.50	Disagree	Low
1	1.00-1.50	Strongly Disagree	Very Low

Teachers’ assessment capability was rated very high for both summative and formative assessment, with summative slightly higher. This pattern deserves critical discussion because it may reflect a common assessment reality in schools: summative assessment is usually more standardized, scheduled, and tied to grading requirements, making it easier for teachers to implement consistently. Formative assessment, by contrast, requires ongoing collection of evidence, frequent feedback, and continuous instructional adjustment—tasks that demand time, systematic tracking, and strong assessment literacy.

The “very high” rating across both formative and summative dimensions may also raise a measurement concern: when all variables are consistently rated high, it may indicate response bias or limited variability typical of self-administered surveys. Teachers may select favorable responses due to perceived expectations, professional identity, or the assumption that “good practice” is what should be reported. This does not invalidate the findings, but it suggests that the results may reflect perceived capability more than observed assessment behavior.

The findings are anchored on Assessment for Learning Theory (Black & Wiliam, 1998), Constructive Alignment Theory (Biggs, 1999), Bloom’s Taxonomy (1956), and Self-Regulated Learning Theory (Zimmerman, 1989), which emphasize feedback, alignment, and learner autonomy. Nonetheless, the results suggest that formative assessment principles may not be fully maximized in practice.

Supporting studies by Bonggo (2024) and Reyes (2022) emphasize the importance of feedback and supervision in strengthening assessment practices, while OECD TALIS (2018; 2019) and Antonio et al. (2023) highlight persistent gaps in the consistent implementation of formative assessment.

Table 4: Correlation Analysis on Educational Assessment Capability of Teachers

	r-value	Probability
Instructional Leadership	.290	.000**
Developing and Communicating Shared Goals	.157	.006**
Monitoring and Providing Feedback	.229	.000**

Promoting Professional Development	.265	.000**
Technological Competence	.463	.000**
Applicability	.343	.000**
Adaptability	.429	.000**
Sustainability	.398	.000**

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

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

The findings reveal significant positive relationships between educational assessment capability and both instructional leadership and technological competence. Instructional leadership showed a low but significant correlation with assessment capability ( $r = .290$ ), indicating that leadership practices such as goal-setting, feedback, and professional support are associated with assessment capability but only to a limited extent. This suggests that instructional leadership alone may not sufficiently explain variations in teachers’ assessment performance, as other factors such as assessment literacy, training exposure, and resource availability may also influence outcomes.

Technological competence showed a positive correlation with assessment capability ( $r = .463$ ), indicating a stronger association compared to instructional leadership. This suggests that teachers who are more competent in using technology tend to demonstrate better assessment capability, particularly in tasks such as monitoring student progress, organizing assessment data, and providing timely feedback. The indicators of adaptability and sustainability are particularly relevant, as they reflect teachers’ ability to adjust and consistently use technology in support of assessment practices.

However, these relationships should be interpreted with caution since correlation does not imply causation. It is also possible that teachers with stronger assessment capability are more likely to develop technological skills and engage with instructional leadership practices, rather than these variables directly causing improved assessment performance.

The findings emphasize that both instructional leadership and technological competence significantly influence teachers’ educational assessment capability, with technological competence having a stronger moderate effect and instructional leadership having a low but meaningful effect. These results are supported by Howard et al. (2021), König et al. (2020), Capili (2024), and Velasquez and Ocampo (2022), which highlight that adaptability to technology, professional development, and sustained use of digital tools enhance teachers’ effectiveness in instruction and assessment practices.

Table 5: Regression Analysis on Educational Assessment Capability of Teachers

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	3.133	.143		21.885	.000
Adaptability	.158	.038	.267	4.210	.000
Sustainability	.149	.038	.250	3.934	.000
Developing and Communicating Shared Goals	.006	.002	.162	3.195	.002
R = 0.489		R2 = 0.240		F-value = 32.136	
Probability = 0.000					

The regression analysis indicates that instructional leadership and technological competence significantly predict teachers' educational assessment capability. Among the variables, technological adaptability emerged as the strongest predictor, followed by technological sustainability and developing and communicating shared goals. This suggests that teachers' capacity to adjust technology use to instructional needs, maintain consistent integration of digital tools, and establish clear learning directions are key determinants of effective assessment practice. In the context of the conceptual framework, this reflects the idea that teachers function as classroom leaders who not only guide instruction but also align assessment with learning goals while integrating appropriate technological tools to enhance evaluation processes.

From a theoretical standpoint, these results support the framework's grounding in Transformational Leadership Theory (Burns, 1978; Bass, 1985) and the Instructional Leadership Framework (Hallinger & Murphy, 1985), which emphasize that teachers influence learning through guidance, goal-setting, and instructional direction. The significance of shared goals reinforces Goal-Setting Theory (Locke & Latham, 1990), where clear academic targets strengthen alignment between instruction and assessment. Likewise, the strong influence of technological adaptability and sustainability supports TPACK (Mishra & Koehler, 2006), which emphasizes the integration of technology with pedagogy and content knowledge, suggesting that assessment capability improves when teachers can effectively merge these domains in practice.

The model explains 24% of the variance in educational assessment capability ( $R^2 = 0.240$ ), indicating a moderate level of explanatory power. This implies that while instructional leadership and technological competence are important components of the conceptual framework, a substantial proportion of assessment capability is influenced by other factors not included in the model. These may include assessment literacy, professional development exposure, institutional support, workload demands, and classroom contextual factors. This reinforces the framework's assumption that assessment capability is multifaceted and not solely determined by leadership and technology.

Additionally, the significant positive relationships among the predictors suggest that instructional leadership and technological competence work in a complementary manner rather than in isolation. In line with the conceptual framework, teachers who demonstrate strong leadership practices are more likely to align assessments with learning goals, while those with higher technological competence are better able to design, implement, and interpret assessments efficiently. This interaction reflects the framework's central proposition that assessment capability is strengthened when leadership and technology intersect in instructional practice.

However, the relatively moderate explanatory power also suggests that the relationship may not be fully comprehensive, indicating that the influence of instructional leadership and technological competence is enhanced or constrained by contextual and professional factors. This aligns with the framework's assumption that assessment capability develops through a combination of leadership support, technological readiness, and sustained professional practice rather than from isolated variables alone.

The findings suggest that improving teachers' educational assessment capability requires a balanced integration of technological adaptability, sustained technology use, and clear instructional leadership practices. These results are supported by previous studies, which highlight the importance of technological adaptability, continuous professional development, and shared instructional goals in enhancing assessment practices and teaching effectiveness (Howard et al., 2021; König et al., 2020; Velasquez & Ocampo, 2022; Hallinger & Murphy, 2019; Leithwood et al., 2020).

## Implications Of The Study

The findings imply that improving teachers' assessment capability in the study locale may be supported by strengthening two key areas: (1) instructional leadership practices that emphasize goal alignment and feedback, and (2) technological competence focusing on practical, classroom-relevant, and sustainable integration. Since technological competence showed a stronger association with assessment capability, interventions may prioritize technology-enabled assessment literacy, including training on formative assessment tools, digital feedback mechanisms, and student monitoring systems.

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## CONCLUSION

Based on the findings, the study concludes that public-school teachers in Kitaotao Districts 2 and 3 demonstrate a high level of instructional leadership, particularly in developing and communicating shared goals and in monitoring and providing feedback, both of which are manifested at a very high level, while promoting professional development is observed at a high level. Teachers also exhibit a high level of technological competence across applicability, adaptability, and sustainability, indicating their ability to effectively use and integrate technology in teaching, although sustainability may still require further strengthening. In terms of educational assessment capability, teachers demonstrate a very high level of competence in both formative and summative assessment, reflecting their strong ability to monitor student learning, provide feedback, and evaluate performance effectively. Furthermore, the study establishes a significant positive relationship between educational assessment capability and both instructional leadership and technological competence, indicating that improvements in these areas enhance teachers' assessment practices. The regression analysis also confirms that these variables significantly predict educational assessment capability, both individually and collectively. The findings highlight that strengthening instructional leadership and technological competence plays a crucial role in improving teachers' ability to design, implement, and interpret assessments, ultimately contributing to more effective teaching practices and improved student learning outcomes.

### Limitations Of The Study

Despite the valuable insights generated, this study has several limitations. First, the data were obtained through a self-reported survey questionnaire administered to teachers. Self-report measures may introduce response bias such as social desirability bias and acquiescence bias, which can lead respondents to provide consistently high ratings. This concern is especially relevant because the study yielded very high ratings across key variables, potentially indicating limited response variability.

Second, the study used a descriptive-correlational quantitative design, which identifies the strength and direction of relationships among instructional leadership, technological competence, and educational assessment capability. However, this design cannot establish causality; therefore, the observed associations do not necessarily imply that one variable directly causes changes in another.

Third, the variables were measured using instruments adapted from prior studies. While reliability indices indicated high internal consistency, the study did not include direct performance-based measures (e.g., actual assessment artifacts, classroom demonstrations) to validate whether reported practices reflect classroom implementation consistently.

### RECOMMENDATIONS FOR FUTURE RESEARCH

Future research is recommended to address the limitations of self-reported and correlational data by adopting a mixed-methods design. This approach may provide a more comprehensive understanding of the relationships among instructional leadership, technological competence, and educational assessment capability.

In particular, future studies may incorporate classroom observations using structured checklists to verify whether teachers' reported practices are reflected in actual instructional and assessment behaviors. In addition, interviews or focus group discussions may be conducted to explore in depth the challenges teachers encounter, including resource constraints, workload demands, and difficulties in implementing formative assessment practices.

Further validation may also be strengthened through the analysis of actual assessment outputs such as lesson plans, assessment tools, rubrics, and both formative and summative assessment artifacts to triangulate survey findings and reduce reliance on self-reported data.

Moreover, future research may expand the scope of the study by including multiple regions in the Philippines to allow comparison across different school contexts such as urban and rural settings, varying levels of resource availability, and differences in training exposure. Such expansion would improve the generalizability of findings and provide clearer insights into contextual factors influencing teachers' assessment capability.

Lastly, future studies may enhance the explanatory power of the model by including additional variables such as assessment literacy, professional training exposure, availability of instructional resources, and internet or device accessibility. Including these factors may help better explain why certain teachers demonstrate higher levels of assessment capability and provide a more comprehensive understanding of the determinants of effective assessment practices in education.

## ACKNOWLEDGEMENT

The author expresses her sincere appreciation to the College of Education and Central Mindanao University for their scholarly advice and assistance, particularly to Dr. Raul C. Orongan, PhD, Dr. James L. Paglinawan, PhD, and Dr. Aprell L. Abellana, PhD for their knowledgeable guidance, encouragement throughout the research process, and unwavering support in the completion of this study. The Schools Division of Bukidnon, together with the principals, teachers, staff, and public schools district supervisors in Kitaotao Districts II and III, are also sincerely acknowledged for their cooperation and participation during the conduct of the research. The author likewise extends her heartfelt gratitude to her husband, Crian A. Acusar, and her daughter, Crizylle Jhairah L. Acusar, for their constant love, understanding, and support. Above all, she expresses her deepest thanks to Almighty God for His guidance, strength, and countless blessings throughout this endeavor.

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