

Formative Assessment Literacy and Learner Achievement Support in Secondary Education

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ABSTRACT

This study explored the extent to which formative assessment literacy predicted learner achievement support among teachers in secondary education. A cross-sectional explanatory predictive survey design was employed at Isabela National High School in the City of Ilagan, Isabela. Participants were selected through proportionate stratified random sampling across academic departments. Data were gathered using a validated questionnaire that measured learning intention clarification, evidence elicitation, assessment interpretation, actionable feedback, instructional adjustment, learner involvement, and academic support practices. The instrument demonstrated strong content validity and internal consistency. Descriptive statistics and partial least squares structural

equation modeling were used to analyze the data. Results showed high overall levels of formative assessment literacy and learner achievement support. However, learner involvement in assessment, remediation and enrichment, and support for learner self-regulation received comparatively lower ratings. Formative assessment literacy significantly and positively predicted learner achievement support, with a path coefficient of .676 and an explained variance of 45.7 percent. Instructional adjustment and interpretation of assessment evidence emerged as the most influential areas requiring improvement. The findings indicated that teachers who effectively interpreted assessment evidence and modified instruction were more likely to provide diagnostic assistance, differentiated activities, progress monitoring, and timely interventions. The study concluded that strengthening teachers' capacity to convert assessment evidence into responsive instructional action could improve learner support. Sustained professional development, collaborative analysis of learner work, structured remediation, and greater learner participation in assessment were recommended.

Keywords: *assessment evidence; formative assessment literacy; instructional adjustment; learner achievement support; secondary education; structural equation modeling*

INTRODUCTION

Assessment is woven into the daily work of teaching. In a secondary classroom, teachers continually need to determine what learners understand, where misconceptions remain, and which instructional response may help them progress. When assessment is treated mainly as a means of recording grades, much of its value appears only after a lesson or unit has ended. Formative assessment takes a different approach because evidence of learning is gathered while instruction is still taking place. Teachers use this evidence to clarify learning goals, diagnose difficulties, provide useful feedback, and adjust their teaching according to what students demonstrate. The Organisation for Economic Co-operation and Development [OECD], (2025) explained that formative assessment

becomes meaningful when information about student thinking is used to guide the next steps in teaching and learning, rather than merely document performance.

The effective use of this process depends greatly on teachers' formative assessment literacy. This form of professional literacy goes beyond knowing how to prepare quizzes, compute grades, or follow testing procedures. It includes understanding the purposes and principles of assessment, selecting suitable methods, interpreting evidence accurately, communicating results responsibly, and using findings to improve instruction. Xu and Brown (2016) described teacher assessment literacy as a dynamic professional capacity shaped by knowledge, skills, beliefs, identity, experience, and the conditions under which teachers work. DeLuca et al. (2016) likewise found that sound assessment literacy involves several connected competencies instead of a single body of technical knowledge. These competencies allow teachers to make defensible judgments while remaining attentive to fairness, learner differences, curriculum expectations, and the instructional consequences of assessment decisions.

A more focused view of formative assessment literacy recognizes conceptual, practical, and socioemotional dimensions. Conceptual literacy concerns what teachers know about formative assessment, including its purposes, principles, and relationship with learning. Practical literacy refers to their capacity to plan assessment activities, elicit evidence, interpret responses, give feedback, and modify instruction. Socioemotional literacy concerns sensitivity to the way assessment affects learners' confidence, motivation, participation, and willingness to improve. Yan and Pastore (2022) argued that these three dimensions are necessary because technically correct assessment may still fail to support learning when teachers cannot apply it well or when students experience feedback as discouraging, unclear, or unfair. Formative assessment literacy, therefore, involves both professional judgment and an understanding of how learners respond to assessment experiences.

Learner achievement support grows from what teachers do with the evidence they collect. It can be seen when teachers communicate clear expectations, identify gaps in understanding, provide specific guidance, revisit difficult content, vary instructional strategies, organize remediation, and give learners opportunities to monitor their own progress. Research has shown that feedback can produce meaningful gains, but its effect depends on the type and quality of information given. A meta-analysis of 435 studies reported a moderate overall effect of feedback on student learning, while also showing considerable differences across feedback approaches. Information that addresses the task, learning process, and possible next steps tends to be more useful than praise, rewards, punishment, or comments directed at a learner's personal traits (Wisniewski et al., 2020). This finding suggests that the presence of feedback alone is not enough. Teachers need the literacy required to make feedback timely, understandable, and usable.

Evidence concerning formative assessment also calls for careful interpretation rather than broad claims that every assessment activity will improve achievement. Xuan et al. (2022), in a meta-analysis involving 48 studies and 116,051 kindergartens to Grade 12 learners, found that formative assessment produced a positive but modest effect on reading achievement. Stronger outcomes appeared when assessment was combined with differentiated instruction and when teachers and students both took an active part in the process. These findings show that formative assessment works best when it becomes part of responsive teaching. A short quiz, oral recitation, exit ticket, written task, or digital activity becomes formative only when the information gathered leads to a suitable response. Without interpretation and instructional action, repeated testing may increase the amount of data available without improving the support received by learners.

The movement from assessment knowledge to consistent classroom practice remains difficult for many teachers. Schildkamp et al. (2020) reviewed 54 studies and found that the effective implementation of formative assessment depends on assessment knowledge, data literacy, pedagogical content knowledge, teacher beliefs, confidence, collaboration, and social support within the school. Pastore's (2023) systematic review reached a similar conclusion, noting that teachers often struggle to transfer assessment theories and new approaches into actual classroom decisions. These findings point to a gap between recognizing the value of formative assessment and carrying it out with sufficient quality. Teachers may conduct frequent activities, check written work, or provide comments, yet the resulting information may not always be interpreted deeply enough to guide reteaching, differentiation, enrichment, or remediation.

This concern carries particular weight in secondary education. Subject teachers handle specialized content, several classes, varied levels of learner readiness, curriculum pacing requirements, and formal grading responsibilities. Within the same class, some learners may need clarification of basic concepts while others are prepared for extension tasks. Teachers must make decisions within limited instructional time and often with incomplete evidence of how each learner is thinking. Yan et al. (2022) found that teachers' formative assessment practices were influenced by both personal and school-related factors, including self-efficacy, professional experience, teacher rank, school size, and institutional support. The OECD (2025) also noted that school systems, monitoring arrangements, available resources, and opportunities for professional collaboration shape how well teachers can respond to individual learning needs. Formative assessment literacy should therefore be viewed not only as an individual competence but also as a capacity strengthened or limited by the working environment.

The need for stronger learner achievement support is evident in the performance of Filipino secondary learners. In the 2022 Programme for International Student Assessment, 15-year-old learners in the Philippines obtained average scores of 355 in mathematics, 347 in reading, and 356 in science. These were below the corresponding OECD averages of 472, 476, and 485 points (OECD, 2023). Such results do not provide a direct measure of individual teachers' assessment literacy, nor should national performance be attributed to a single classroom factor. They do, however, show that many Filipino learners require sustained instructional support in applying knowledge, understanding complex texts, solving problems, and explaining their reasoning. Classroom assessment can contribute to this work when it helps teachers detect difficulties before they become firmly established and when the evidence leads to specific teaching responses.

Although teacher assessment literacy has received considerable scholarly attention, important questions remain at the school level. Much of the available research has been conducted outside the Philippines, and many studies have concentrated on general assessment competence, measurement instruments, or teachers' reported practices. DeLuca et al. (2016) observed that several measures of assessment literacy remained tied to earlier views that emphasized testing and measurement. Pastore (2023) also found that the field continued to rely heavily on descriptive research and called for closer examination of how assessment literacy develops and operates within particular educational settings. Since assessment is influenced by curriculum demands, school expectations, available resources, professional relationships, and learner characteristics, findings from one educational system cannot be applied automatically to every secondary school.

Examining formative assessment literacy offers an opportunity to understand how teachers' assessment knowledge and practices are connected with the support provided to learners. Teachers may differ in how they establish learning targets, formulate assessment activities, interpret learner responses, communicate feedback, involve students in assessment, and use results for instructional adjustment. These differences may shape the quality and consistency of remediation, enrichment, differentiation, progress monitoring, and other forms of achievement support. Identifying areas of strength and aspects that need further development can provide a sound basis for school-based professional learning, collaborative assessment planning, instructional supervision, and targeted capacity-building activities.

Guided by these concerns, the study examines teachers' formative assessment literacy and the extent of learner achievement support practiced in secondary education. It aims to determine whether teachers' formative assessment literacy is significantly related to their ability to provide responsive academic support. By examining these variables together, the study treats assessment not as an isolated requirement but as part of the teaching process through which evidence is translated into appropriate assistance for learners. Its findings may help strengthen assessment practices that are educationally sound, sensitive to learner needs, and useful in improving daily instruction.

Literature Review

Formative Assessment Knowledge and Professional Judgment

Formative assessment literacy begins with a teacher's ability to understand the purpose of assessment and make sound judgments from evidence gathered during instruction. It requires more than familiarity with assessment techniques because teachers must decide what evidence is needed, how it should be collected, and what the results reveal about learner understanding. Heitink et al. (2016) found that effective assessment for learning rests on several connected conditions involving teachers, learners, assessment quality, and the school environment. Teachers need the knowledge and skill to interpret learner responses while a lesson is taking place, recognize misconceptions, and choose an appropriate instructional response. They must also develop constructive attitudes toward assessment so that it is viewed as part of learning rather than as a separate grading requirement. The quality of professional judgment matters because the same assessment result may lead to different decisions depending on how well a teacher understands the curriculum, the subject matter, and the needs of the learner. Formative assessment literacy is therefore reflected in the thoughtful connection between learning goals, assessment evidence, and teaching decisions. This connection enables teachers to determine whether learners need clarification, additional practice, remediation, or more challenging activities before instruction moves forward.

Interpretation of Assessment Evidence for Instructional Support

Assessment evidence becomes useful only when teachers can transform it into information that guides instruction. Secondary teachers gather evidence through written work, classroom questioning, performance tasks, quizzes, observation, discussion, and other learning activities. These sources may reveal patterns in achievement, but interpreting them requires attention to the quality of the task, the expected learning outcome, and the possible reasons behind a learner's response. Lee et al. (2024) explained that teachers' data literacy includes knowledge about data, skills in using data, dispositions toward evidence, practical applications, and professional behaviors connected with data use. Their review showed that data literacy is not limited to reading scores or preparing reports. It includes identifying a learning problem, collecting suitable evidence, analyzing patterns, communicating findings, and using the results to make decisions. For learner achievement support, this process may lead teachers to adjust lesson pacing, regroup learners, provide targeted exercises, revise explanations, or develop enrichment activities. The value of assessment evidence lies in the action that follows its interpretation. Teachers who possess stronger skills in working with evidence are better positioned to avoid decisions based solely on impressions and to provide support that responds to demonstrated learning needs rather than applying the same intervention to every learner.

Feedback Understanding and Learner Response

Feedback contributes to achievement when learners understand its meaning and use it to improve their work. A teacher may provide accurate comments, yet these comments will have limited value when learners cannot identify what should be corrected or how improvement can be achieved. Lui and Andrade (2022) examined how Grade 7 learners interpreted and responded to teacher feedback in an English language arts class. Their findings showed that learners' judgments about feedback and the meaning they formed from it were closely related to the decisions they made about their next learning steps. This indicates that feedback is not simply transferred from teacher to learner. It is interpreted through the learner's emotions, motivation, prior knowledge, and understanding of the task. Teachers with formative assessment literacy must therefore consider whether feedback is clear, manageable, and connected with specific learning goals. Comments should help learners recognize the difference between their present performance and the expected standard while also identifying a practical course of action. Learners may need opportunities to ask questions, discuss feedback, revise their work, and demonstrate improvement. Feedback becomes part of learner achievement support when it encourages constructive action rather than merely pointing out mistakes. Its effectiveness depends not only on what teachers communicate but also on how learners receive, understand, and apply the information provided.

Learner Participation and Shared Regulation of Learning

Formative assessment is strengthened when learners participate in examining and improving their own learning. Secondary learners should not remain passive recipients of scores and comments because meaningful participation can help them understand expectations, evaluate the quality of their work, and take greater responsibility for improvement. Veugen et al. (2024) studied how secondary school teachers used formative assessment to create co-regulated learning. They described a formative assessment cycle that involved clarifying expectations, eliciting learner responses, analyzing evidence, communicating about performance, and taking follow-up action. Their findings showed that teachers could encourage learners to participate actively in assessment through questioning, peer analysis, reflection, and decisions about subsequent learning steps. Such participation does not remove the teacher's responsibility. Instead, the teacher provides guidance while learners gradually develop the capacity to monitor their understanding and respond to difficulties. This shared regulation is important to learner achievement support because students become more aware of what they are learning, how well they are progressing, and what they should do next. Teachers need sufficient assessment literacy to design participation that is purposeful and appropriate for learners' readiness. Self-assessment or peer assessment conducted without clear criteria may produce unreliable judgments, while carefully guided participation can strengthen reflection, independence, and sustained engagement with learning.

METHODS

Research Design

The study employed a cross-sectional explanatory predictive survey design. This design was selected because the inquiry went beyond describing teachers' formative assessment literacy and learner achievement support. It examined whether formative assessment literacy explained and predicted variations in the academic support provided to secondary learners. Data were collected at a single period, allowing the researchers to examine the existing conditions without introducing an intervention or manipulating the school environment. A hierarchical construct approach was used because each major variable consisted of several related dimensions. Formative assessment literacy was treated as a professional capacity reflected in the teachers' understanding of learning goals, elicitation of evidence, interpretation of learner responses, delivery of feedback, instructional adjustment, and involvement of learners in assessment. Learner achievement support was examined through diagnostic assistance, differentiated instruction, remediation and enrichment, progress monitoring, and support for learner self-regulation. This design provided a suitable basis for testing the measurement properties of the constructs and estimating the predictive contribution of formative assessment literacy to learner achievement support.

Research Locale

The study was conducted at Isabela National High School, located in San Vicente, City of Ilagan, Isabela. The school offered secondary education programs and served learners with varied academic needs, levels of readiness, and learning experiences. Its instructional setting required teachers to use classroom assessment in monitoring understanding, identifying learning difficulties, providing feedback, and planning appropriate academic interventions. The school was selected because its teaching environment provided a relevant setting for examining how formative assessment knowledge and practices were translated into learner achievement support. The locale also allowed the study to consider the demands experienced by secondary school teachers in handling subject-specific content, curriculum standards, classroom assessment requirements, and diverse learner needs.

Participants and Sampling Technique

The participants were secondary school teachers who were actively involved in classroom instruction, assessment, feedback, and learner support at Isabela National High School. Only teachers who had direct responsibility for planning lessons, assessing learning, interpreting classroom evidence, and implementing

instructional responses were included. School personnel without regular teaching assignments and teachers who were unavailable throughout the data collection period were excluded.

Proportionate stratified random sampling was used to secure appropriate representation from the different academic teaching departments. The teachers were first grouped according to their assigned departments, after which the required participants from each group were determined proportionately. Computer-generated random numbers were then used to select the participants from the official faculty lists. The required sample was established through an a priori statistical power analysis using a significance level of .05, a statistical power of .80, and an anticipated medium effect. This procedure reduced selection bias and ensured that the sample was adequate for the predictive analysis used in the study.

Research Instrument

Data were gathered through a structured questionnaire composed of two principal scales. The first scale measured formative assessment literacy through statements concerning the clarification of learning intentions and success criteria, collection of evidence during instruction, interpretation of learner responses, construction of actionable feedback, modification of teaching strategies, and learner participation in assessment. The second scale measured learner achievement support through statements concerning diagnostic assistance, differentiated learning activities, remediation and enrichment, progress monitoring, timely instructional intervention, and the development of learner responsibility. Responses were recorded using a five-point agreement scale ranging from strongly disagree to strongly agree.

The initial questionnaire was submitted to a panel of specialists in educational assessment, secondary education, research methodology, and educational measurement. The validators examined each statement for relevance, clarity, alignment with the research variables, appropriateness for secondary teachers, and absence of overlapping content. Statements considered vague, repetitive, double-barreled, or unrelated to the intended construct were revised or removed. The instrument obtained an item-level content validity index ranging from .83 to 1.00 and a scale-level content validity index based on the average method of .95. These results indicated that the retained statements had satisfactory content validity.

The revised questionnaire was pilot-tested among secondary school teachers from a comparable public school that was not included in the main investigation. The pilot participants evaluated the clarity of the directions, readability of the statements, adequacy of the response choices, and estimated completion time. Item-total correlations were also examined to identify statements that did not function consistently with their assigned scales. The formative assessment literacy scale obtained a Cronbach's alpha coefficient of .93, while the learner achievement support scale obtained a coefficient of .94. The complete instrument produced an overall Cronbach's alpha of .96. The coefficients indicated a high degree of internal consistency without suggesting unnecessary duplication of all the statements. The pilot responses were used only for instrument refinement and were excluded from the final dataset.

Construct validity was subsequently examined through the measurement model. Indicator loadings, average variance extracted, composite reliability, and heterotrait-monotrait ratios were evaluated before the predictive relationships were interpreted. Statements with weak loadings or substantial conceptual overlap were reviewed according to both statistical evidence and theoretical relevance. Items were not removed solely to improve numerical results when their retention was necessary for adequate coverage of the construct.

Data Gathering

Approval to conduct the study was obtained from the appropriate school and education authorities before any participant was approached. After permission was granted, the researchers coordinated with the school administration regarding the schedule and manner of questionnaire administration. The official faculty lists were used only to carry out the sampling procedure and were not attached to the accomplished questionnaires.

Selected teachers received an information sheet explaining the purpose of the research, the expected form of participation, the voluntary nature of involvement, and the measures used to protect their responses. Participants who agreed to join signed an informed consent form before answering the instrument. The questionnaire was

administered during a schedule that did not interfere with regular classroom instruction and official school duties. Participants completed the instrument individually and were asked not to write their names, employee numbers, or other direct identifiers on the questionnaire.

The accomplished instruments were checked for completeness without tracing the responses to individual teachers. Each questionnaire was assigned a numerical code for data entry and verification. The encoded data were reviewed against the original responses to minimize transcription errors. Incomplete questionnaires that lacked substantial portions of either scale were excluded according to the predetermined data-screening rule. The cleaned dataset was then prepared for measurement and structural analysis.

Data Analysis

The analysis was conducted in several stages. Item responses were first screened for missing entries, out-of-range values, unusually repetitive response patterns, and potential data-entry errors. Missing data were evaluated according to their extent and pattern. Cases with substantial missing information were excluded, while isolated missing responses were handled through an appropriate imputation procedure when the assumption of random missingness was reasonable.

The distribution of responses for each indicator was described using the median and interquartile range because the questionnaire used ordered response categories. Construct-level scores were also summarized through the mean and standard deviation to allow clearer comparison across the principal dimensions. These descriptive measures were used to determine the prevailing level of formative assessment literacy and learner achievement support.

Partial least squares structural equation modeling was used as the primary statistical treatment. This method was chosen because it allowed the study to test the quality of the measurement scales and examine the predictive relationship between the major variables within one analytical framework. A two-stage hierarchical component procedure was applied to represent formative assessment literacy and learner achievement support through their corresponding dimensions.

The measurement model was examined before the structural relationship was tested. Indicator reliability was assessed through outer loadings, while internal consistency was evaluated through Cronbach's alpha, composite reliability, and rho_A. Convergent validity was established using an average variance extracted value of at least .50. Discriminant validity was evaluated through the heterotrait-monotrait ratio, with values below .85 indicating that the dimensions measured sufficiently distinct concepts. Collinearity was examined through variance inflation factors to ensure that the predictor dimensions did not contain harmful redundancy.

The structural model was evaluated through standardized path coefficients, coefficients of determination, effect sizes, and predictive relevance. Statistical significance was tested using a bias-corrected bootstrapping procedure with 10,000 resamples. The null hypothesis was rejected when the confidence interval did not include zero and the probability value was below .05. The coefficient of determination showed the proportion of variation in learner achievement support explained by formative assessment literacy, while the effect size indicated the practical contribution of each formative assessment literacy dimension.

Predictive performance was further examined through Q^2_{predict} and out-of-sample prediction error. This procedure determined whether the model could predict learner achievement support rather than merely fit the collected data. An importance-performance map analysis was also carried out to identify which dimensions of formative assessment literacy had the strongest influence on learner achievement support and which dimensions showed the greatest need for improvement. This additional analysis allowed the findings to provide more useful priorities for professional development, instructional supervision, and school-based assessment programs.

Possible common method bias was examined because both variables were measured through the same survey. Procedural controls included anonymous participation, neutral item wording, separation of the two scales, and the absence of statements suggesting preferred responses. Statistical assessment was conducted through full collinearity variance inflation factors. Values below the established threshold were interpreted as evidence that common method bias was unlikely to distort the principal relationship.

Ethical Consideration

The study followed the ethical principles of voluntary participation, informed consent, confidentiality, privacy, fairness, and responsible data management. The participants were informed that joining the study was optional and that refusing or withdrawing would not affect their employment, teaching assignments, performance evaluations, or professional relationships. They were allowed to discontinue participation at any point before the submission of the questionnaire without providing a reason.

No direct personal identifiers were collected. The questionnaires were coded only for data processing, and the results were presented in aggregated form. Individual answers were not disclosed to school administrators, department heads, colleagues, learners, or other unauthorized persons. The study did not obtain individual learner grades, student records, or personally identifiable learner information because the investigation focused on teachers' reported assessment literacy and achievement-support practices.

Electronic files were stored in a password-protected device accessible only to the researchers, while printed materials were kept in a secured location. The data were used solely for the stated research purposes and were retained only for the period required by institutional and publication policies. After the retention period, electronic files were permanently deleted and printed materials were destroyed through secure disposal. The researchers also ensured that the findings were reported honestly, including results that did not support the proposed relationship, and that no data were altered, omitted, or presented in a misleading manner.

RESULTS AND DISCUSSION

Table 1. Descriptive Results for Formative Assessment Literacy and Learner Achievement Support

Construct and dimension	Mean	Standard Deviation	Interpretation	Rank
Formative Assessment Literacy	3.68	0.50	High	
Clarification of learning intentions and success criteria	4.08	0.51	High	1
Elicitation of assessment evidence	3.89	0.55	High	2
Interpretation of assessment evidence	3.47	0.67	High	5
Provision of actionable feedback	3.71	0.61	High	3
Instructional adjustment	3.54	0.64	High	4
Learner involvement in assessment	3.38	0.70	Moderate	6
Learner Achievement Support	3.55	0.53	High	
Diagnostic academic assistance	3.74	0.58	High	2
Differentiated instructional support	3.46	0.65	High	3
Remediation and enrichment	3.39	0.69	Moderate	4
Progress monitoring	3.80	0.57	High	1
Support for learner self-regulation	3.35	0.71	Moderate	5

Note. Mean ranges were interpreted as follows: 4.21 to 5.00, very high; 3.41 to 4.20, high; 2.61 to 3.40, moderate; 1.81 to 2.60, low; and 1.00 to 1.80, very low.

Table 1 shows that the teachers demonstrated a high overall level of formative assessment literacy, with a mean of 3.68 and a standard deviation of 0.50. The strongest area was the clarification of learning intentions and success criteria. This suggested that teachers commonly informed learners about expected outcomes and the standards used in judging their work. The elicitation of assessment evidence also received a high rating, indicating that teachers regularly used questioning, written activities, performance tasks, observations, and similar approaches to determine what learners understood.

Despite the favorable overall result, the dimensions did not develop at the same level. Learner involvement in assessment obtained the lowest mean and was interpreted as moderate. This result indicated that learners were not always given consistent opportunities to assess their own work, evaluate peer outputs, use scoring criteria, or participate in decisions about their next learning steps. The larger standard deviation of 0.70 also suggested noticeable differences in how frequently teachers practiced learner participation across classrooms.

Interpretation of assessment evidence and instructional adjustment were rated high, but their means were lower than those for learning intentions and evidence collection. Teachers appeared more confident in identifying what learners were expected to accomplish and in collecting assessment information than in converting that information into specific teaching responses. This pattern revealed a practical concern. Assessment activities were present, but the movement from evidence to targeted instructional action remained less consistent.

Learner achievement support also reached a high overall level, with a mean of 3.55 and a standard deviation of 0.53. Progress monitoring obtained the highest rating, showing that teachers regularly checked learner performance and maintained awareness of academic development. Diagnostic academic assistance also received a high rating, indicating that teachers generally identified learners who required additional explanation or support.

Remediation and enrichment, however, received only a moderate rating. Support for learner self-regulation was also moderate and obtained the lowest mean among the achievement support dimensions. These findings showed that monitoring did not always lead to sustained remediation, extension activities, independent goal setting, or learner-led improvement. Teachers knew which learners were progressing or struggling, but differences in time, class size, available materials, and competing instructional responsibilities may have affected the consistency of follow-up assistance.

The descriptive results therefore presented a favorable but uneven condition. Teachers demonstrated substantial assessment knowledge and support practices, yet clear weaknesses remained in learner participation, remediation, enrichment, and self-regulation. These areas required attention because formative assessment becomes more useful when evidence leads to concrete intervention and when learners understand how to act on the information they receive.

Table 2. *Reliability and Convergent Validity Results*

Construct	Standardized Loading Range	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted
Learning intentions and success criteria	.74 to .88	.86	.87	.90	.65
Elicitation of assessment evidence	.72 to .85	.84	.85	.89	.61
Interpretation of assessment evidence	.76 to .89	.88	.88	.91	.68
Actionable feedback	.73 to .87	.86	.86	.90	.64
Instructional adjustment	.77 to .90	.89	.89	.92	.69
Learner involvement in assessment	.71 to .86	.83	.84	.88	.59
Diagnostic academic assistance	.75 to .88	.87	.87	.91	.66
Differentiated instructional support	.74 to .89	.88	.88	.91	.67
Remediation and enrichment	.72 to .87	.85	.85	.89	.62
Progress monitoring	.76 to .90	.89	.90	.92	.70
Learner self-regulation support	.73 to .88	.86	.87	.90	.65

Table 2 indicates that the measurement scales demonstrated satisfactory reliability and convergent validity. Standardized indicator loadings ranged from .71 to .90. All retained statements therefore contributed adequately to their assigned constructs. None of the indicators fell below the acceptable loading requirement used in the analysis.

Cronbach's alpha coefficients ranged from .83 to .89, while rho_A values ranged from .84 to .90. Composite reliability coefficients ranged from .88 to .92. These results showed that the statements within each dimension measured closely related aspects of the same concept. The values were high enough to demonstrate internal consistency but remained below levels that might indicate unnecessary repetition among questionnaire items.

Average variance extracted values ranged from .59 to .70. Each construct therefore explained more than half of the variance in its indicators. Progress monitoring obtained the highest average variance extracted value at .70, followed by instructional adjustment at .69 and interpretation of assessment evidence at .68. Learner involvement in assessment obtained the lowest value at .59, although it remained above the minimum criterion. The results supported the retention of all first-order constructs in the succeeding structural analysis.

Table 3. *Heterotrait-Monotrait Ratio Results*

Construct Pair	HTMT Value	Decision
Differentiated support and remediation and enrichment	.82	Established
Interpretation of evidence and instructional adjustment	.81	Established
Diagnostic assistance and progress monitoring	.80	Established
Actionable feedback and instructional adjustment	.79	Established
Evidence elicitation and evidence interpretation	.78	Established
Differentiated support and self-regulation support	.77	Established
Actionable feedback and learner involvement	.74	Established
Learning intentions and evidence elicitation	.72	Established

Note. Values below .85 supported discriminant validity.

The heterotrait-monotrait ratios in Table 3 ranged from .72 to .82. All values remained below the conservative threshold of .85, indicating that the dimensions represented related but sufficiently distinct concepts. For example, interpretation of evidence and instructional adjustment were strongly connected, yet they did not measure the same professional behavior. Interpretation involved making sense of learner responses, while instructional adjustment involved acting upon that interpretation.

The highest HTMT value was observed between differentiated support and remediation and enrichment. The result was reasonable because both dimensions concerned responses to learner differences. They remained empirically distinct, however, because differentiated support involved adapting instruction during regular classroom teaching, while remediation and enrichment involved more focused follow-up activities for learners with particular academic needs.

The discriminant validity results supported the conceptual structure of the instrument. The dimensions were not interchangeable, and each contributed a separate aspect of formative assessment literacy or learner achievement support. This distinction was important because the study aimed to identify specific areas that could be strengthened rather than relying only on broad overall scores.

Table 4. Loadings of First-Order Dimensions on the Higher-Order Constructs

Higher-Order Construct	First-Order Dimension	Loading	t-value	p-value
Formative assessment literacy	Learning intentions and success criteria	.80	18.42	< .001
Formative assessment literacy	Elicitation of assessment evidence	.83	21.17	< .001
Formative assessment literacy	Interpretation of assessment evidence	.88	27.36	< .001
Formative assessment literacy	Actionable feedback	.85	23.84	< .001
Formative assessment literacy	Instructional adjustment	.90	31.09	< .001
Formative assessment literacy	Learner involvement in assessment	.77	16.55	< .001
Learner achievement support	Diagnostic academic assistance	.84	22.48	< .001
Learner achievement support	Differentiated instructional support	.87	25.71	< .001
Learner achievement support	Remediation and enrichment	.80	18.96	< .001
Learner achievement support	Progress monitoring	.89	29.14	< .001
Learner achievement support	Learner self-regulation support	.82	20.37	< .001

Table 4 shows that all first-order dimensions loaded significantly on their corresponding higher-order constructs. The loadings for formative assessment literacy ranged from .77 to .90. Instructional adjustment obtained the strongest loading, followed by interpretation of assessment evidence. These results indicated that the ability to respond to assessment information formed a central part of teachers' formative assessment literacy.

Learner involvement obtained the lowest loading on formative assessment literacy, although its value remained adequate and statistically significant. This dimension was therefore an important part of the construct, but it appeared less strongly practiced than the teacher-directed dimensions. The result corresponded with the descriptive finding that learner involvement received the lowest mean.

Among the learner achievement support dimensions, progress monitoring obtained the strongest loading at .89. Differentiated instructional support followed with a loading of .87. Remediation and enrichment received the lowest loading at .80. The results showed that learner achievement support was expressed most strongly through ongoing monitoring and classroom differentiation, while structured follow-up interventions were less firmly established.

All t-values exceeded the required critical value, and all probability values were below .001. The higher-order model was therefore retained. Formative assessment literacy and learner achievement support could be interpreted as broad constructs composed of several connected dimensions.

Table 5. Structural Model Results

Structural Relationship	Path Coefficient	Standard Error	t-value	p-value	95% Confidence Interval	Effect Size
Formative assessment literacy → Learner achievement support	.676	.051	13.255	< .001	[.574, .765]	.842
Model Criterion Result	Interpretation					
R ²	.457	Moderate explanatory power				
Adjusted R ²	.453	Moderate explanatory power				
Q ²	.402	Strong predictive relevance				
SRMR	.061	Acceptable model fit				
NFI	.912	Acceptable model fit				

Table 5 reveals that formative assessment literacy had a positive and statistically significant effect on learner achievement support. The standardized path coefficient of .676 indicated that stronger formative

assessment literacy was associated with more consistent academic support for learners. The bootstrapped t-value of 13.255 exceeded the required critical value, while the probability value was below .001. The confidence interval ranged from .574 to .765 and did not include zero. The null hypothesis stating that formative assessment literacy did not significantly influence learner achievement support was therefore rejected.

The coefficient of determination showed that formative assessment literacy explained 45.7 percent of the variance in learner achievement support. This represented moderate explanatory power. Nearly half of the differences in the support provided by teachers could be accounted for by their ability to clarify learning goals, gather evidence, interpret learner responses, provide feedback, adjust instruction, and involve learners in assessment.

The remaining 54.3 percent of the variance may have been associated with factors not included in the model. These could have involved teaching workload, availability of instructional resources, class size, time allotted for remediation, administrative support, learner attendance, parental involvement, or differences among subject areas. The unexplained variance showed that formative assessment literacy was important but did not operate independently of the wider teaching environment.

The effect size of .842 indicated a substantial practical contribution. Removing formative assessment literacy from the model would have considerably reduced its ability to explain learner achievement support. The result showed that assessment literacy was not merely a technical teaching competence. It was closely connected with how teachers diagnosed difficulties, adapted activities, monitored progress, provided intervention, and guided learners toward improvement.

The Stone-Geisser Q^2 value of .402 confirmed that the model possessed predictive relevance. The model did not only describe relationships within the collected responses. It also showed an acceptable capacity to predict learner achievement support from teachers' formative assessment literacy. The standardized root mean square residual of .061 was below .08, while the normed fit index of .912 exceeded .90. These values indicated that the proposed model represented the observed relationships adequately.

The strong path coefficient should be interpreted together with the descriptive weaknesses identified earlier. Teachers who demonstrated greater assessment literacy generally provided stronger learner support, but several teachers reported only moderate practices in learner participation, remediation, enrichment, and learner self-regulation. The main problem was therefore not the absence of formative assessment. It was the inconsistent conversion of assessment information into sustained and individualized assistance.

Table 6. *PLSPredict Results for Learner Achievement Support*

Learner Achievement Support Dimension	Q^2_{predict}	PLS-SEM RMSE	Linear Model RMSE	Predictive Result
Diagnostic academic assistance	.311	.545	.567	PLS-SEM performed better
Differentiated instructional support	.276	.604	.623	PLS-SEM performed better
Remediation and enrichment	.241	.652	.663	PLS-SEM performed better
Progress monitoring	.328	.523	.546	PLS-SEM performed better
Learner self-regulation support	.219	.681	.689	PLS-SEM performed better

Table 6 presents the out-of-sample predictive performance of the structural model. All Q^2_{predict} values were greater than zero, demonstrating that formative assessment literacy had predictive relevance for every dimension of learner achievement support. Progress monitoring obtained the highest predictive relevance, followed by diagnostic academic assistance. Learner self-regulation support obtained the lowest value, although its Q^2_{predict} remained positive.

The root mean square error produced by PLS-SEM was lower than the corresponding error from the linear benchmark model for all dimensions. The differences were not extremely large, but they consistently favored the PLS-SEM model. This pattern indicated moderate to strong predictive performance.

The model predicted teacher-directed support practices more accurately than practices requiring substantial learner independence. Progress monitoring and diagnostic assistance were more directly controlled by teachers and were already practiced at relatively high levels. Self-regulation support depended not only on teacher competence but also on learner motivation, confidence, study habits, and readiness to take responsibility. These additional influences may have reduced the model's predictive accuracy for that dimension.

Remediation and enrichment also produced a comparatively lower Q^2_{predict} value and higher prediction error. This finding reinforced the concern that assessment evidence did not always result in systematic follow-up programs. Remediation and enrichment may have required additional time, instructional materials, scheduling arrangements, coordination, and monitoring beyond the regular classroom period.

Table 7. Importance-Performance Map for Formative Assessment Literacy Dimensions

Formative Assessment Literacy Dimension	Total Effect on Learner Achievement Support	Performance Score	Importance Rank	Priority Interpretation
Instructional adjustment	.249	63.50	1	Primary improvement priority
Interpretation of assessment evidence	.226	61.75	2	Primary improvement priority
Actionable feedback	.198	67.75	3	Important area for strengthening
Learning intentions and success criteria	.184	77.00	4	Maintain current performance
Elicitation of assessment evidence	.171	72.25	5	Maintain and refine
Learner involvement in assessment	.152	59.50	6	Secondary improvement priority

Note. Performance scores were converted to a scale from 0 to 100.

Table 7 identifies instructional adjustment as the most influential dimension of formative assessment literacy. Its total effect on learner achievement support was .249, yet its performance score was only 63.50. This combination of high importance and lower performance made instructional adjustment the leading priority for professional development. Teachers needed stronger support in deciding what to reteach, when to change instructional pacing, how to reorganize learning groups, and which intervention matched a particular learning difficulty.

Interpretation of assessment evidence was the second most important dimension and obtained a performance score of 61.75. This result showed that collecting assessment evidence was not the main difficulty. The more serious challenge involved determining what the evidence meant and identifying the most appropriate instructional response. Teachers may have recognized incorrect answers without always identifying the misconception, missing prerequisite knowledge, or ineffective learning strategy behind those answers.

Actionable feedback ranked third in importance and obtained a performance score of 67.75. The result suggested that feedback practices were generally present, but greater attention was required to make comments specific, understandable, and connected with an opportunity for revision. Feedback that only stated whether an answer was correct or incorrect may not have provided enough direction for improvement.

Learning intentions and success criteria received the highest performance score at 77.00. This dimension remained important, but it did not represent the most urgent need because teachers already practiced it consistently. Evidence elicitation also obtained a relatively favorable performance score. The school could therefore maintain these established practices while shifting more capacity-building efforts toward interpretation and instructional response.

Learner involvement obtained the lowest performance score at 59.50. Its effect on learner achievement support was lower than the effects of instructional adjustment and evidence interpretation, but the weak performance still required attention. Learners needed more opportunities to examine criteria, evaluate their work, interpret feedback, monitor progress, and identify their own next steps. This dimension could support the development of independence and reduce complete dependence on teacher-directed correction.

The importance-performance analysis provided a clearer intervention order than descriptive means alone. A low mean did not automatically indicate the first priority. Instructional adjustment and evidence interpretation required immediate attention because they combined relatively weak performance with the strongest effects on learner achievement support.

Table 8. *Full Collinearity Variance Inflation Factor Results*

Construct	Full Collinearity VIF	Decision
Formative assessment literacy	2.31	No critical collinearity
Learner achievement support	2.31	No critical collinearity
Range among first-order dimensions	1.62 to 2.74	No critical collinearity

Table 8 shows that the full collinearity variance inflation factor values remained below the conservative threshold of 3.30. The two higher-order constructs obtained VIF values of 2.31, while the values for the first-order dimensions ranged from 1.62 to 2.74. These results indicated that the constructs did not contain harmful statistical redundancy.

The full collinearity results also suggested that common method bias was unlikely to have substantially distorted the structural relationship. Although the information for both variables came from the same questionnaire, the relationship between formative assessment literacy and learner achievement support could not be explained solely by the shared data collection method.

Procedural safeguards may also have reduced response bias. The questionnaire did not request names or employee numbers, participation was voluntary, the two major scales were presented separately, and no item suggested that a particular response was preferred. The statistical and procedural evidence therefore supported the credibility of the model results.

CONCLUSION

The secondary school teachers demonstrated a generally high level of formative assessment literacy and learner achievement support, although weaknesses remained in the interpretation of assessment evidence, instructional adjustment, learner involvement, remediation and enrichment, and support for learner self-regulation. Formative assessment literacy significantly and positively predicted learner achievement support, showing that teachers who were more capable of clarifying learning expectations, gathering and interpreting evidence, providing actionable feedback, and modifying instruction were also more likely to provide responsive academic assistance to learners. The results further showed that instructional adjustment and interpretation of assessment evidence were the most influential areas requiring improvement, while learner participation and self-regulation received comparatively lower performance ratings. It was therefore recommended that Isabela National High School conduct sustained school-based professional development focused on analyzing learner responses, diagnosing misconceptions, preparing specific feedback, designing differentiated activities, and planning timely remediation and enrichment. Subject departments should strengthen collaborative assessment planning through regular learning action cell sessions, common analysis of learner outputs, and development of shared intervention materials. Teachers should also provide more structured opportunities for self-assessment, peer assessment, goal setting, reflection, and revision so that learners can participate actively in monitoring their academic progress. School administrators should allocate appropriate time, resources, and instructional support for remediation and

enrichment activities and establish a consistent monitoring system to determine whether assessment-based interventions produce improvement. Future studies should examine other factors that may influence learner achievement support, including class size, teaching workload, administrative assistance, learner attendance, resource availability, and parental involvement, using actual performance records, classroom observations, and longitudinal evidence to complement teacher-reported data.

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