



Implementation of Modular Learning and Students Attitudes as Predictors of Skill Proficiency Development in Reading

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International Journal of Interdisciplinary Viewpoints (2)9, 1-8, 2026

<https://doi.org/10.64612/ijiv.v2i9.217>

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Abstract

This study examined the relationship between modular learning implementation, students' attitudes, and reading skill proficiency among Grade 5 and Grade 6 pupils in Laak South District, Schools Division of Davao de Oro, Philippines. A quantitative, non-experimental descriptive-correlational design was employed with 230 pupils selected through proportionate stratified random sampling. Data were collected using adapted instruments measuring modular learning implementation, students' attitudes, and reading skill proficiency. Descriptive statistics, Pearson product-moment correlation, and multiple regression analysis were used to analyze the data. The findings showed that modular learning implementation was Much Extensive ($M = 4.12$, $SD = 0.588$), students' attitudes were High ($M = 4.12$, $SD = 0.601$), and reading skill proficiency was High ($M = 4.15$, $SD = 0.581$). All four modular learning domains were significantly and positively related to reading proficiency, with health and safety protocols demonstrating the strongest correlation ($r = .599$, $p < .001$). All seven attitude dimensions were also significantly and positively related to reading proficiency, with the social dimension demonstrating the strongest correlation ($r = .651$, $p < .001$). Regression analysis showed that modular learning domains collectively explained 50.6% of the variance in reading proficiency, while students' attitude dimensions explained 72.1%. All modular learning predictors were significant, with health and safety protocols providing the largest unique contribution. Six attitude dimensions were significant predictors, whereas grades did not contribute significant unique variance. The study concluded that both modular learning implementation and students' attitudes were significantly associated with reading skill proficiency. It is recommended that schools strengthen comprehension-focused instruction, learner engagement, formative assessment, social interaction, and teacher support within modular learning environments.

Keywords

modular learning, students' attitudes, reading proficiency, elementary pupils, flexible learning

How to Cite

Gripo, E., & Vallejo, A. J. (2026). Implementation of Modular Learning and Students Attitudes as Predictors of Skill Proficiency Development in Reading. *International Journal of Interdisciplinary Viewpoints*, 2(9), 1–8. <https://doi.org/10.64612/ijiv.v2i9.217>

Received: 26 July 2026

Accepted: 25 August 2026

Published: 30 September 2026

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Peer Review Statement

This article underwent a double-anonymous peer review process in accordance with the editorial policies of the *International Journal of Interdisciplinary Viewpoints*. Both authors and reviewers remained anonymous throughout the review process.

Open Access Statement

The *International Journal of Interdisciplinary Viewpoints* is a fully open-access, peer-reviewed journal. All articles are freely available online immediately upon publication without subscription or access fees.

Funding Statement

The authors received no financial support for the research, authorship, and/or publication of this article.

Conflict of Interest

The authors declared no conflicts of interest.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions

The authors contributed to conceptualization, methodology, investigation, writing—original draft preparation, writing—review and editing, and supervision. The authors approved the final manuscript.

Ethics Statement

This study was conducted in accordance with ethical standards.

INTRODUCTION

Reading is a fundamental component of academic learning because it enables learners to access information, construct meaning, develop language, and participate successfully in educational activities. Contemporary perspectives on reading emphasize that proficient reading involves the interaction of multiple processes rather than the development of a single isolated skill. Word recognition, phonological processes, language comprehension, vocabulary, fluency, and higher-order processes contribute to learners' ability to understand and use written texts effectively (Duke & Cartwright, 2021; Duke et al., 2021). International evidence has also demonstrated continuing differences in reading achievement among school-age learners, highlighting the importance of sustained instructional support and effective literacy practices (Mullis et al., 2017). In addition to instructional conditions, students' motivation and attitudes toward reading are relevant because learners'

expectations, perceived value of activities, and social experiences can influence their engagement with academic tasks (Eccles & Wigfield, 2020; Ryan & Deci, 2020). Research on reading motivation further indicates that interventions designed to strengthen learners' motivation can contribute to positive reading-related outcomes (van der Sande et al., 2023). These considerations make both instructional implementation and students' attitudes important areas of investigation in reading development.

In the Philippine educational context, flexible and modular learning provided an important mechanism for maintaining educational continuity when conventional classroom instruction was constrained. Modular learning required teachers and schools to organize instructional delivery, learning and development activities, assessment, and learner support while maintaining appropriate conditions for participation. However, implementing reading instruction through modular distance learning presented challenges for teachers, particularly in monitoring learner progress, providing instructional support, maintaining engagement, and addressing differences in learners' needs (Alauya & Alangca-Azis, 2024). The Philippine context also required attention to the nature of transactional distance in flexible learning because physical separation between teachers and learners could influence communication, learner autonomy, and engagement with instructional activities (Tria, 2024). At the same time, research indicated that instructional quality and reading engagement were associated with reading achievement, suggesting that the quality of learning experiences remained important even when instruction was delivered through flexible modalities (Qiu & Liu, 2024). Collaborative and self-regulated learning approaches also showed potential for supporting the development of reading skills in flexible or technology-supported environments (Wang, 2023). These conditions highlighted the need to examine how modular learning implementation and students' attitudes were related to reading skill development among Filipino elementary learners.

Despite the growing literature on reading instruction, motivation, and flexible learning, an important contextual and empirical gap remained concerning the combined relationship between modular learning implementation, students' reading attitudes, and reading skill proficiency among elementary pupils in a Philippine district setting. Existing research examined teachers' experiences with modular distance learning, instructional quality, reading motivation, and reading development, but these areas were not always examined simultaneously within the same population and learning context (Alauya & Alangca-Azis, 2024; Qiu & Liu, 2024; van der Sande et al., 2023). Moreover, reading proficiency encompassed several interconnected components, including vocabulary, phonemic awareness, phonics, fluency, and comprehension, and these components could develop at different levels (Duke & Cartwright, 2021; Petersen et al., 2024). There was therefore a need for empirical evidence examining whether specific dimensions of modular learning implementation and students' attitudes were associated with reading proficiency and whether these dimensions provided significant explanatory contributions when considered simultaneously. Addressing this gap provided a basis for developing a more comprehensive understanding of the learning and motivational conditions associated with reading development in modular learning contexts.

Accordingly, this study examined the relationship between modular learning implementation, students' attitudes, and reading skill proficiency among Grade 5 and Grade 6 pupils in Laak South District, Schools Division of Davao de Oro, Philippines. Specifically, the study determined the extent of modular learning implementation in terms of delivery of instruction, learning and development, learning assessment, and health and safety protocols; examined the extent of students' attitudes in terms of curiosity, involvement, preference for challenge, recognition, grades, social orientation, and competition; and determined the level of reading skill proficiency in vocabulary, fluency, phonemic awareness, phonics, and comprehension. The study further examined the relationships between modular learning domains and reading proficiency, as well as between students' attitude dimensions and reading proficiency, and determined which domains significantly predicted reading skill proficiency. The study employed a descriptive-correlational approach and multiple regression analysis to examine these relationships. Its findings provided empirical evidence that could inform teachers, school administrators, and other education stakeholders in strengthening modular reading instruction and designing learning experiences that supported both reading development and learner engagement. Because the study used a cross-sectional, non-experimental design, the findings were interpreted as associations and statistical predictors rather than evidence of causal relationships.

METHODOLOGY

Design

The study employed a quantitative, non-experimental descriptive-correlational research design with multiple regression analysis. It was situated within a post-positivist orientation, in which relationships among observable and measurable variables were examined probabilistically rather than deterministically. The design was appropriate because the study examined naturally occurring relationships among modular learning implementation, students' attitudes, and reading skill proficiency development, without manipulating the variables within the school setting. The descriptive component established the extent of each variable, while the correlational and regression analyses examined the strength of relationships and the unique predictive contributions of the identified domains. Modular learning implementation was operationalized through delivery of instruction, learning and development, learning assessment, and health and safety protocols; students' attitudes were represented by curiosity, involvement, preference for challenge, recognition, grades, social, and competition; and reading skill proficiency development was assessed through phonemic awareness, phonics, vocabulary development, reading fluency, and reading comprehension.

Locale and Respondents

The study was conducted in public elementary schools in Laak South District, Schools Division of Davao de Oro, Philippines. The participants consisted of 230 Grade 5 and Grade 6 pupils. These grade levels were selected because the pupils had completed Grades 1 to 4 under modular learning arrangements and therefore had direct experience with

instructional delivery, learning support, assessment, and health and safety procedures associated with the modality. They were also considered appropriate respondents for reporting on the development of phonemic awareness, phonics, vocabulary, reading fluency, and reading comprehension.

Sampling

Proportionate stratified random sampling was employed, with the strata formed according to school and grade level. This procedure ensured that participating schools and both grade levels were represented according to their respective enrollment shares. Within each stratum, respondents were selected through simple random sampling. The inclusion criteria were current enrollment in a public elementary school, at least one year of continuous enrollment in the current school and grade level, membership in any section type, and willingness to participate with written child assent and parent or guardian informed consent. Pupils who were not currently enrolled, transferees with less than one year of enrollment, pupils on extended medical or disciplinary leave, and those enrolled exclusively in non-mainstream programs such as Special Education or the Alternative Learning System were excluded.

Instruments

Three adapted instruments were used to measure the study variables. Each instrument employed a five-point summated rating scale. The modular learning instrument measured delivery of instruction, learning and development, learning assessment, and health and safety protocols. The students' attitudes instrument measured curiosity, involvement, preference for challenge, recognition, grades, social, and competition. The reading skill proficiency instrument measured phonemic awareness, phonics, vocabulary development, reading fluency, and reading comprehension. The operationalization of the variables followed the study's conceptual framework and the corresponding adapted instruments identified in the manuscript.

Validity and Reliability

The adapted instruments underwent expert content validation before administration. The validation examined the clarity of directions and items, organization, relevance and suitability, adequacy of categories, objectivity, and appropriateness of the rating scale. A pilot test was subsequently conducted with approximately 30 Grade 5 and Grade 6 learners who were not included in the final sample. Internal consistency was estimated for each scale and subscale using Cronbach's alpha, and minor item revisions were undertaken before the final administration. These procedures were implemented to establish the content appropriateness and internal consistency of the instruments prior to data collection.

Collection

Data were collected from October to November 2025 through paper-and-pencil administration in a quiet school setting during scheduled sessions that did not disrupt regular instruction. Standardized instructions were provided, and administration required approximately 30 to 45 minutes. Recruitment, distribution, and retrieval of consent forms and questionnaires were handled by designated neutral school personnel rather than the pupils' own teachers. After retrieval, questionnaires were checked for completeness, assigned anonymous Study IDs, and double-encoded before data cleaning and tabulation. For interpretation, modular learning implementation was categorized as Very Much Extensive for means from 4.20 to 5.00, Much Extensive for 3.40 to 4.19, Extensive for 2.60 to 3.39, Less Extensive for 1.80 to 2.59, and Not Extensive for 1.00 to 1.79. Students' attitudes and reading skill proficiency were categorized as Very High for 4.20 to 5.00, High for 3.40 to 4.19, Moderate for 3.00 to 3.39, Low for 1.80 to 2.99, and Very Low for 1.00 to 1.79.

Analysis

Descriptive and inferential statistical procedures were employed to address the research objectives. Mean and standard deviation were used to summarize the extent of modular learning implementation, students' attitudes, and reading skill proficiency at both the domain and composite levels. Pearson product-moment correlation was used to examine the bivariate relationships between each modular learning domain and reading proficiency and between each attitude dimension and reading proficiency. Two multiple regression models were subsequently estimated using simultaneous entry of predictors. The first model included the four modular learning domains as predictors of reading skill proficiency, while the second model included the seven students' attitude dimensions. These analyses were used to determine the unique contribution of each predictor while the other predictors in the respective model were statistically controlled. Before inferential analysis, scale reliability was confirmed and the assumptions relevant to the regression analyses were examined. These included inspection of outliers, approximate normality of composite scores, linearity, homoscedasticity of residuals, and the absence of problematic multicollinearity. All hypotheses were tested at the .05 level of significance. The analyses were performed using jamovi, which generated the descriptive summaries, correlation matrices, regression model summaries, analysis of variance for the regression models, and unstandardized and standardized regression coefficients.

Ethical Considerations

The study commenced only after ethical approval had been obtained from the Graduate School and the University of Mindanao Research Ethics Committee and written permission had been secured from the Schools Division Office and participating school heads. Because the participants were minors, written informed consent was obtained from parents or guardians and written assent was obtained from the pupils. Before participation, the pupils received an age-appropriate orientation concerning the study's purpose, procedures, minimal risks, potential benefits, confidentiality safeguards, and voluntary nature. Participants and their parents or guardians were informed that pupils could skip items or withdraw from the study at any time without consequences to their grades, class standing, school services, or relationships with school personnel. Where a pupil experienced discomfort, fatigue, or anxiety, the activity was paused or discontinued and appropriate school support was made available. Confidentiality was maintained by not requiring participants to provide their names on the questionnaires. Each participant was assigned a Study ID, while the document linking identities to Study IDs was stored separately from the completed questionnaires. Classroom teachers and personnel with evaluative authority

did not receive individual responses, and the findings were reported only in aggregate form. Paper records were stored in a locked cabinet, while electronic files were maintained in password-protected and encrypted storage. De-identified records were retained for five years in accordance with the Data Privacy Act of 2012 (Republic Act No. 10173). A school-supply pack was provided as a non-contingent token of appreciation and was not dependent on questionnaire completion. Pupils who were under the researcher's direct instructional, supervisory, or grading authority were not recruited to minimize potential conflicts of interest.

Limitations and Rigor

Several methodological limitations were considered when interpreting the findings. First, the cross-sectional and correlational design established associations rather than causal relationships. Second, all three principal variables were measured through learner self-report rather than direct performance assessment of reading; consequently, reported proficiency may have differed from objectively measured proficiency, and common-method variance may have influenced the observed relationships. Third, the study was conducted in one district within a single schools division, which limited the generalizability of the findings to other educational contexts. Fourth, the regression models did not include other factors that may influence reading development, such as prior reading ability, home literacy environment, parental involvement, and access to reading materials. Despite these limitations, methodological rigor was supported through expert content validation, pilot testing with reliability estimation, proportionate stratified random sampling, standardized administration procedures, the use of neutral personnel for data collection, double encoding of responses, and examination of regression assumptions before interpretation. These procedures strengthened the consistency, transparency, and credibility of the data collection and analysis processes.

RESULTS AND DISCUSSION

The findings indicate that modular learning implementation among the respondents was generally extensive, with an overall mean of 4.12 (SD = 0.588), interpreted as Much Extensive. Among the four dimensions, delivery of instruction obtained the highest mean of 4.21 (SD = 0.636), interpreted as Very Much Extensive. This was followed by learning and development with a mean of 4.17 (SD = 0.698), learning assessment with a mean of 4.09 (SD = 0.700), and health and safety protocols with a mean of 4.02 (SD = 0.714), all interpreted as Much Extensive.

The relatively high rating for delivery of instruction suggests that schools were generally able to maintain instructional continuity through modular learning. However, the results also show that effective modular learning involves more than the provision and delivery of learning materials. Learning support, assessment, and organizational procedures are also necessary to sustain learners' participation and progress when conventional classroom interaction is limited. Flexible learning environments require appropriate instructional structure, learner autonomy, and mechanisms that reduce transactional distance between teachers and learners (Tria, 2024).

The findings are also consistent with the difficulties identified among primary-grade teachers implementing reading through modular distance learning, particularly concerns involving instructional support, monitoring, assessment, and learner engagement (Alauya & Alangca-Azis, 2024). Professional development is likewise important because teachers require appropriate preparation and instructional knowledge to support literacy development effectively (Porche et al., 2012). Thus, the results suggest that schools should sustain the relatively strong implementation of instructional delivery while continuing to strengthen assessment, feedback, teacher support, and other mechanisms that contribute to effective modular learning.

Table 1
Extent of Modular Learning Implementation

Modular Learning Domain	Mean (M)	Standard Deviation (SD)	Descriptive Equivalent
Delivery of instruction	4.21	0.636	Very Much Extensive
Learning and development	4.17	0.698	Much Extensive
Learning assessment	4.09	0.700	Much Extensive
Health and safety protocols	4.02	0.714	Much Extensive
Overall	4.12	0.588	Much Extensive

Note. N = 230. Scale: 4.20–5.00 = Very Much Extensive; 3.40–4.19 = Much Extensive; 2.60–3.39 = Extensive; 1.80–2.59 = Less Extensive; 1.00–1.79 = Not Extensive.

The results demonstrate that students generally exhibited a high level of positive attitudes toward reading, as reflected by an overall mean of 4.12 (SD = 0.601). Curiosity and recognition obtained the highest mean ratings, both at 4.25, and were interpreted as Very High. Competition followed with a mean of 4.20, also interpreted as Very High. Preference for challenge obtained a mean of 4.11, social 4.04, grades 3.98, and involvement 3.89, with all four dimensions interpreted as High.

The high rating for curiosity suggests that learners were generally interested in discovering information through reading, while the rating for recognition indicates that acknowledgment may also be important to their reading experiences. However, involvement received the lowest mean of 3.89 and the largest standard deviation of 0.795. This indicates that although students generally expressed positive attitudes, there was greater variation in the extent to which they became actively involved in reading activities.

Motivation is influenced by the value learners attach to academic activities, their expectations of success, and the social and contextual conditions surrounding learning (Eccles & Wigfield, 2020). Self-Determination Theory similarly emphasizes the importance of autonomy, competence, and relatedness in sustaining motivation (Ryan & Deci, 2020). Research on reading motivation interventions further indicates that motivational support can contribute to improved reading-related outcomes (van der Sande et al., 2023). Therefore, the relatively lower rating for involvement suggests that modular reading activities should provide opportunities for learner choice, meaningful participation, appropriate challenge, and interaction with

others. Reading for pleasure may also contribute to positive reading experiences when learners have meaningful access to texts and supportive reading environments (Cremin & Scholes, 2024).

Table 2
Extent of Students' Attitudes

Attitude Dimension	Mean (M)	Standard Deviation (SD)	Descriptive Level
Curiosity	4.25	0.636	Very High
Recognition	4.25	0.650	Very High
Competition	4.20	0.656	Very High
Preference for challenge	4.11	0.609	High
Social	4.04	0.717	High
Grades	3.98	0.783	High
Involvement	3.89	0.795	High
Overall	4.12	0.601	High

Note. N = 230. Scale: 4.20–5.00 = Very High; 3.40–4.19 = High; 3.00–3.39 = Moderate; 1.80–2.99 = Low; 1.00–1.79 = Very Low.

The findings indicate that the respondents demonstrated a high level of reading skill proficiency development, with an overall mean of 4.15 (SD = 0.581). Vocabulary development obtained the highest mean of 4.21 (SD = 0.636), interpreted as Very High. Reading fluency followed with a mean of 4.17 (SD = 0.650), phonemic awareness with 4.15 (SD = 0.690), phonics with 4.11 (SD = 0.662), and reading comprehension with 4.09 (SD = 0.688). All components were therefore rated positively, although comprehension obtained the lowest mean among the five dimensions.

The results suggest that pupils reported relatively stronger development in vocabulary and foundational reading skills than in comprehension. Contemporary reading research emphasizes that successful reading involves the interaction of word recognition, language comprehension, and other cognitive processes rather than a single isolated skill (Duke & Cartwright, 2021). Reading comprehension instruction must therefore explicitly support learners in constructing meaning, integrating information, making inferences, and monitoring their understanding of texts (Duke et al., 2021).

The comparatively lower rating for comprehension is important because proficiency in component skills does not necessarily guarantee equivalent proficiency in comprehension. Research has shown that reading fluency has a limited relationship with comprehension of academic language, indicating that fluency should not be treated as a substitute for direct comprehension development (Petersen et al., 2024). Similarly, evidence concerning reading fluency interventions indicates the importance of addressing broader comprehension processes rather than assuming that gains in fluency automatically result in equivalent comprehension gains (Maki & Hammerschmidt-Snidarich, 2022).

Consequently, modular reading instruction should continue developing vocabulary, phonics, phonemic awareness, and fluency while providing additional opportunities for comprehension-focused activities. Questioning, summarizing, predicting, inferencing, connecting ideas, and monitoring understanding may help learners integrate foundational reading skills into deeper comprehension.

Table 3
Extent of Reading Skill Proficiency Development

Reading Skill Component	Mean (M)	Standard Deviation (SD)	Descriptive Level
Vocabulary development	4.21	0.636	Very High
Reading fluency	4.17	0.650	High
Phonemic awareness	4.15	0.690	High
Phonics	4.11	0.662	High
Reading comprehension	4.09	0.688	High
Overall	4.15	0.581	High

Note. N = 230. Scale: 4.20–5.00 = Very High; 3.40–4.19 = High; 3.00–3.39 = Moderate; 1.80–2.99 = Low; 1.00–1.79 = Very Low.

The results show that all four modular learning domains were positively and significantly related to reading skill proficiency. Delivery of instruction demonstrated a significant positive relationship with reading proficiency ($r = .548$, $p < .001$). Learning and development also showed a significant positive relationship ($r = .592$, $p < .001$), as did learning assessment ($r = .578$, $p < .001$) and health and safety protocols ($r = .599$, $p < .001$). The null hypothesis was therefore rejected for all four domains.

The findings indicate that stronger implementation of the different components of modular learning was associated with higher reported reading proficiency. The results also suggest that reading development is related to multiple dimensions of the learning environment rather than only to the delivery of learning materials. Instructional support, learning activities, assessment, and organizational conditions may operate together in creating an environment that supports learners' academic engagement.

The finding is consistent with research showing a relationship between instructional quality and reading achievement, with reading engagement identified as an important factor in this relationship (Qiu & Liu, 2024). Flexible learning research also emphasizes the importance of instructional structure, dialogue, and learner autonomy in reducing transactional distance and supporting learner participation (Tria, 2024). Similarly, collaborative and self-regulated learning approaches have been associated with improvements in English reading skills and learning processes (Wang, 2023).

Health and safety protocols demonstrated the strongest correlation with reading proficiency at $r = .599$. This result should be interpreted as an association rather than evidence of direct causation. The mean score and correlation coefficient represent different statistical properties: the mean describes the overall level of implementation, while the correlation

describes the association between variation in implementation and variation in reading proficiency. Therefore, the result does not mean that health and safety protocols directly cause higher reading proficiency. It may instead reflect broader consistency in school-level implementation.

Table 4
Relationship between Modular Learning Domains and Reading Skill Proficiency Development

Modular Learning Domain	r	p	Decision
Delivery of instruction	.548	< .001	Reject H_0
Learning and development	.592	< .001	Reject H_0
Learning assessment	.578	< .001	Reject H_0
Health and safety protocols	.599	< .001	Reject H_0

Note. N = 230. Dependent variable: reading skill proficiency development. Tested at $\alpha = .05$.

The findings demonstrate that all seven dimensions of students' attitudes were positively and significantly associated with reading skill proficiency. Curiosity demonstrated a significant relationship with reading proficiency ($r = .606$, $p < .001$), while involvement showed $r = .543$ ($p < .001$), preference for challenge $r = .586$ ($p < .001$), recognition $r = .579$ ($p < .001$), grades $r = .549$ ($p < .001$), social $r = .651$ ($p < .001$), and competition $r = .618$ ($p < .001$). Thus, the null hypothesis was rejected for all seven dimensions.

The strongest relationship was observed between the social dimension and reading proficiency ($r = .651$). This finding suggests that students who reported stronger social orientations toward reading also tended to report higher reading proficiency. Social reading experiences may provide opportunities to discuss texts, explain interpretations, clarify meaning, and obtain feedback from peers or others. These processes can support engagement and comprehension, particularly when learners have fewer opportunities for direct classroom interaction.

The significant relationship between curiosity and reading proficiency further highlights the relevance of motivation in reading development. Learners who perceive reading as interesting or valuable may be more willing to invest effort in reading activities. Situated expectancy-value theory explains motivation in relation to learners' expectations, task values, and social-cultural contexts (Eccles & Wigfield, 2020). Self-Determination Theory likewise identifies autonomy, competence, and relatedness as important motivational conditions (Ryan & Deci, 2020).

The findings are also consistent with research indicating that reading motivation interventions can foster more positive motivational outcomes and support reading-related achievement (van der Sande et al., 2023). The lower correlation for involvement should not be interpreted as evidence that involvement is unimportant. Rather, its significant positive association and its comparatively lower mean in Table 2 suggest that sustained involvement may be an area that requires additional instructional support.

Table 5
Relationship between Students' Attitude Dimensions and Reading Skill Proficiency Development

Attitude Dimension	r	p	Decision
Curiosity	.606	< .001	Reject H_0
Involvement	.543	< .001	Reject H_0
Preference for challenge	.586	< .001	Reject H_0
Recognition	.579	< .001	Reject H_0
Grades	.549	< .001	Reject H_0
Social	.651	< .001	Reject H_0
Competition	.618	< .001	Reject H_0

Note. N = 230. Dependent variable: reading skill proficiency development. Tested at $\alpha = .05$.

The multiple regression analysis demonstrates that the four modular learning domains collectively provided a statistically significant prediction of reading skill proficiency, $F(4, 225) = 57.67$, $p < .001$. The model produced $R = .712$ and $R^2 = .506$, indicating that the four predictors collectively accounted for 50.6% of the variance in reported reading proficiency. All four predictors made statistically significant unique contributions to the model. Delivery of instruction had $\beta = .184$ ($p = .003$), learning and development had $\beta = .230$ ($p < .001$), learning assessment had $\beta = .180$ ($p = .006$), and health and safety protocols had $\beta = .277$ ($p < .001$).

The results indicate that the different components of modular learning collectively contribute explanatory information regarding differences in reading proficiency. The significance of all four predictors suggests that effective modular learning involves an interconnected set of instructional and organizational processes. Instructional delivery alone may not adequately explain differences in reading development when learning and assessment support are also considered.

Learning and development made a significant contribution to reading proficiency, which is consistent with the importance of teachers' instructional knowledge and professional support in literacy instruction (Porche et al., 2012). Difficulties experienced by teachers in modular distance learning can also involve instructional planning, monitoring, assessment, and learner support (Alauya & Alangca-Azis, 2024). These findings reinforce the importance of supporting teachers as they implement reading instruction through flexible learning arrangements.

Health and safety protocols had the largest standardized coefficient ($\beta = .277$). However, this result should not be interpreted as evidence that health and safety protocols directly cause improvements in reading proficiency. The predictor may be associated with broader implementation consistency within schools. The model also leaves 49.4% of variance unexplained, indicating that additional factors not included in the model may contribute to differences in reading proficiency.

Table 6
Regression Analysis of Modular Learning Domains as Predictors of Reading Skill Proficiency Development

Predictor	B	SE	β	t	p	Decision
Constant	1.363	0.188	—	—	—	—
Delivery of instruction	0.154	0.051	.184	2.984	.003	Reject H_0
Learning and development	0.175	0.049	.230	3.587	< .001	Reject H_0
Learning assessment	0.137	0.050	.180	2.759	.006	Reject H_0
Health and safety protocols	0.210	0.047	.277	4.478	< .001	Reject H_0

Note. N = 230. Dependent variable: reading skill proficiency development. $R = .712$; $R^2 = .506$; $F(4, 225) = 57.67$, $p < .001$. Tested at $\alpha = .05$.

The regression analysis presented in Table 7 indicates that students' attitude dimensions collectively provided a statistically significant prediction of reading skill proficiency, $F(7, 222) = 82.11$, $p < .001$. The model produced $R = .849$, $R^2 = .721$, and adjusted $R^2 = .713$. Thus, the seven attitude dimensions collectively accounted for 72.1% of the variance in reported reading proficiency. Six dimensions made statistically significant unique contributions: curiosity ($\beta = .191$, $p < .001$), involvement ($\beta = .171$, $p < .001$), preference for challenge ($\beta = .157$, $p < .001$), recognition ($\beta = .123$, $p = .008$), social ($\beta = .317$, $p < .001$), and competition ($\beta = .222$, $p < .001$). Grades did not make a statistically significant unique contribution ($\beta = .012$, $p = .803$).

The results indicate that students' motivational and social orientations collectively provide substantial explanatory information concerning differences in reported reading proficiency. Social orientation demonstrated the largest standardized coefficient ($\beta = .317$), indicating that it contributed the greatest unique amount of explanatory information among the attitude dimensions included in the model. This finding is consistent with the correlation results in Table 5, where social orientation also had the strongest bivariate relationship with reading proficiency.

The significant contributions of curiosity, involvement, preference for challenge, recognition, and competition indicate that reading proficiency is associated with multiple dimensions of students' motivation and engagement. Expectancy-value theory emphasizes the importance of learners' expectations and the values they attach to learning activities within their social and cultural contexts (Eccles & Wigfield, 2020). Self-Determination Theory similarly emphasizes autonomy, competence, and relatedness as important conditions for sustained motivation (Ryan & Deci, 2020). Research on reading motivation interventions also supports the importance of motivational conditions in reading development (van der Sande et al., 2023).

The non-significant contribution of grades requires careful interpretation. Grades demonstrated a significant bivariate relationship with reading proficiency in Table 5 ($r = .549$, $p < .001$), but grades did not make a significant unique contribution in the regression model ($\beta = .012$, $p = .803$). This difference indicates that the association between grades and reading proficiency overlaps with the other attitude dimensions included in the model. Therefore, the regression result does not mean that grades have no relationship with reading proficiency; rather, grades did not explain additional unique variance after the other attitude dimensions were statistically controlled.

The findings suggest that reading instruction should provide opportunities that encourage curiosity, active involvement, appropriate challenge, recognition, social interaction, and constructive competition. Such conditions may support sustained engagement with reading activities. However, the R^2 of .721 should not be interpreted as evidence that students' attitudes cause improvements in reading proficiency. The study design is correlational and cross-sectional, and the reported measures do not establish temporal or causal direction. Future studies using longitudinal designs, experimental approaches, and direct assessments of reading performance could provide stronger evidence concerning the mechanisms underlying these relationships.

Table 7
Regression Analysis of Students' Attitude Dimensions as Predictors of Reading Skill Proficiency Development

Predictor	B	SE	β	t	p	Decision
Constant	0.293	0.166	—	—	—	—
Curiosity	0.160	0.039	.191	4.128	< .001	Reject H_0
Involvement	0.114	0.029	.171	3.993	< .001	Reject H_0
Preference for challenge	0.137	0.039	.157	3.465	< .001	Reject H_0
Recognition	0.100	0.038	.123	2.675	.008	Reject H_0
Grades	0.008	0.033	.012	0.250	.803	Fail to reject H_0
Social	0.235	0.035	.317	6.675	< .001	Reject H_0
Competition	0.179	0.040	.222	5.098	< .001	Reject H_0

Note. N = 230. Dependent variable: reading skill proficiency development. $R = .849$; $R^2 = .721$; adjusted $R^2 = .713$; $RMSE = 0.285$; $F(7, 222) = 82.11$, $p < .001$. Tested at $\alpha = .05$.

Conclusion and Recommendations

The study concluded that modular learning implementation in Laak South District was generally extensive, as reflected by the overall mean of 4.12, while students' attitudes toward reading were high, with an overall mean of 4.12. Reading skill proficiency was likewise high, with an overall mean of 4.15. Among the modular learning domains, delivery of instruction obtained the highest implementation rating, whereas health and safety protocols obtained the lowest. For students' attitudes, curiosity and recognition obtained the highest ratings, while involvement obtained the lowest. Vocabulary development recorded the highest reading proficiency rating, whereas reading comprehension obtained the lowest. These findings indicate that the respondents generally experienced favorable instructional conditions, demonstrated positive attitudes toward reading, and reported relatively high levels of reading skill proficiency. The study further concluded that all modular learning domains and all students' attitude dimensions were significantly and positively associated with reading skill proficiency. The modular learning regression model explained 50.6% of the variance in reading proficiency, with health

and safety protocols providing the largest unique contribution. The students' attitude model explained 72.1% of the variance, with social orientation providing the largest unique contribution, while grades did not provide a significant unique contribution after the other attitude dimensions were considered. Overall, the findings indicated that both the implementation of modular learning and students' motivational and social orientations were significantly associated with reading proficiency. However, because the study employed a cross-sectional, non-experimental design, these relationships were interpreted as associations and statistical predictors rather than causal effects.

Teachers are recommended to sustain effective instructional delivery while strengthening comprehension-focused reading activities, learner involvement, formative assessment, and opportunities for meaningful interaction. Particular attention should be given to reading comprehension because it obtained the lowest mean among the reading skill components. Teachers may incorporate questioning, inferencing, summarizing, vocabulary development, guided reading, peer discussion, and appropriately challenging texts into modular learning activities. Schools may also strengthen teacher support and professional development related to modular reading instruction, assessment, learner monitoring, and engagement. These actions are consistent with the study findings showing significant relationships between modular learning implementation, students' attitudes, and reading proficiency. School administrators and education stakeholders are recommended to strengthen systems that support consistent modular learning implementation and positive reading attitudes. Programs may provide opportunities for social interaction, curiosity, active involvement, recognition of learner progress, appropriate challenge, and constructive competition while avoiding excessive reliance on grades as the primary motivational mechanism. Future researchers are recommended to conduct longitudinal, experimental, or mixed-methods studies involving multiple districts or schools and to incorporate direct measures of reading performance, particularly comprehension. Future investigations may also include variables not examined in the present study, such as prior reading achievement, home literacy environment, parental involvement, and access to reading materials, to provide a more comprehensive explanation of differences in reading proficiency.

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