

Analysis of Effective Pedagogical Practices for Early Grade Reading Skills in Taunggyi Township

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Abstract

Background: Primary school students continue to struggle with early reading skills in Myanmar. There is limited empirical evidence on effective pedagogical practices in improving reading achievement in Taunggyi township. **Objectives:** The objective of this study was to investigate the effect of pedagogical practices on the early grade reading skills of proficient readers in Grades 1 to 3 in Taunggyi Township, Myanmar. The study adopted a cross-sectional quantitative survey design. **Methods:** Data were collected from 300 students selected through a two-stage random sampling procedure from 10 primary schools representing different levels of remoteness. Data were collected from students, teachers, and parents through structured questionnaires, and students' reading ability was assessed by means of the Early Grade Reading Assessment (EGRA). The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 27. Descriptive statistics and multiple regression analysis were used to investigate the relationships between pedagogical practices and reading achievement. **Results:** The results indicated that compound word writing activities, exercise book marking, role-play activities, adult help with homework, and adult readers in the home were positive predictors of reading performance among proficient readers. Students attending non-remote schools, female students, and students who spoke Myanmar at home had significantly higher reading scores. Conversely, the more children participated in repeated word-drilling activities and played with words, the poorer their reading achievement was. **Conclusion:** Results demonstrated the significance of active learning strategies, meaningful feedback, family support, and appropriate instructional strategies in improving early grade reading skills among proficient readers in Taunggyi Township, Myanmar.

Keywords: Early Grade Reading Skills, Pedagogical Practices, Proficient Readers, Primary Education

Introduction

Reading is one of the most important skills in education and the basis for lifelong learning. It helps children to understand information, to develop thinking skills, and to make a meaningful contribution to school and society. Success in today's education systems is no longer simply about being in school but increasingly about what learners can do. Among these results, reading proficiency is one of the most important indicators of the quality of education. However, the learning outcomes remain a matter of serious concern across the globe. According to UNESCO (2023), about 617 million children and adolescents fail to reach minimum proficiency levels in reading and mathematics, revealing a global learning crisis. It is not only an educational issue but also an economic one, as it is known that an increase in literacy is a factor in national development. Hanushek and Woessmann (2009) suggest that

cognitive skills matter more for economic growth than years of schooling alone. Their study also shows that Latin America's weak learning outcomes and low basic literacy help explain its poor long-run growth. They also add that basic functional literacy can be used to identify students who have mastered the basic skills of reading and those who do not.

In Southeast Asia, many countries have made vigorous efforts to improve literacy through curriculum reform, teacher training, and new approaches to teaching. Vietnam, Malaysia, and Thailand have made impressive gains in student learning. However, other countries, including Myanmar, Cambodia, Lao PDR, and the Philippines, continue to struggle to ensure that all children acquire fundamental reading skills upon completion of primary schooling. According to the Southeast Asia Primary Learning Metrics (SEA-PLM), a lot more needs to be done to enhance foundational literacy (ACER, 2021), with many learners still lagging behind the expected proficiency in reading.

Quality education has become a national priority for Myanmar. In order to solve the above problems and improve teaching and learning processes, the government of Myanmar initiated the Comprehensive Education Sector Review (CESR) in 2012 and the National Education Strategic Plan (NESP) in 2015 (Phyu & Siriwato, 2022). While enrollment in primary schools has been increasing in Myanmar, the pace of learner achievements has been slow. As per the ACER (2021) study, many children are facing problems of obtaining reading fluency and comprehension skills. Therefore, while expanding access to education is essential, effective teaching and learning strategies are equally important in improving students' reading skills.

The situation in Myanmar has also been made complex due to the above linguistic, geographical, and socio-economic challenges. Many children speak ethnic minority languages at home and have to learn to read in the Myanmar language at school. A study in Taunggyi Township found that students who spoke Myanmar at home scored better on reading tests. And students who went to school in non-remote areas did much better on reading tests than students who attended school in remote areas. The findings indicate that language background and unequal access to educational resources are among the factors that contribute to inequities in early grade reading achievement (Aung & Kyi, 2026).

Among the many factors influencing reading development are the organizational and instructional practices of teachers. Pedagogical practices are the instructional strategies teachers use, the types of classroom interactions that occur, and the assessment methods they employ that impact students' learning experiences. There has been evidence that there is a high correlation between effective teaching, enhanced student involvement, and success. The use of formative assessment and constructive criticism is particularly beneficial to students in knowing their strong points and weak points. Self-assessment and peer assessment will inspire students to play an active role in their learning. These approaches will improve students' learning outcomes when incorporated into classroom instruction (Hattie, 2009; Black & Wiliam, 1998).

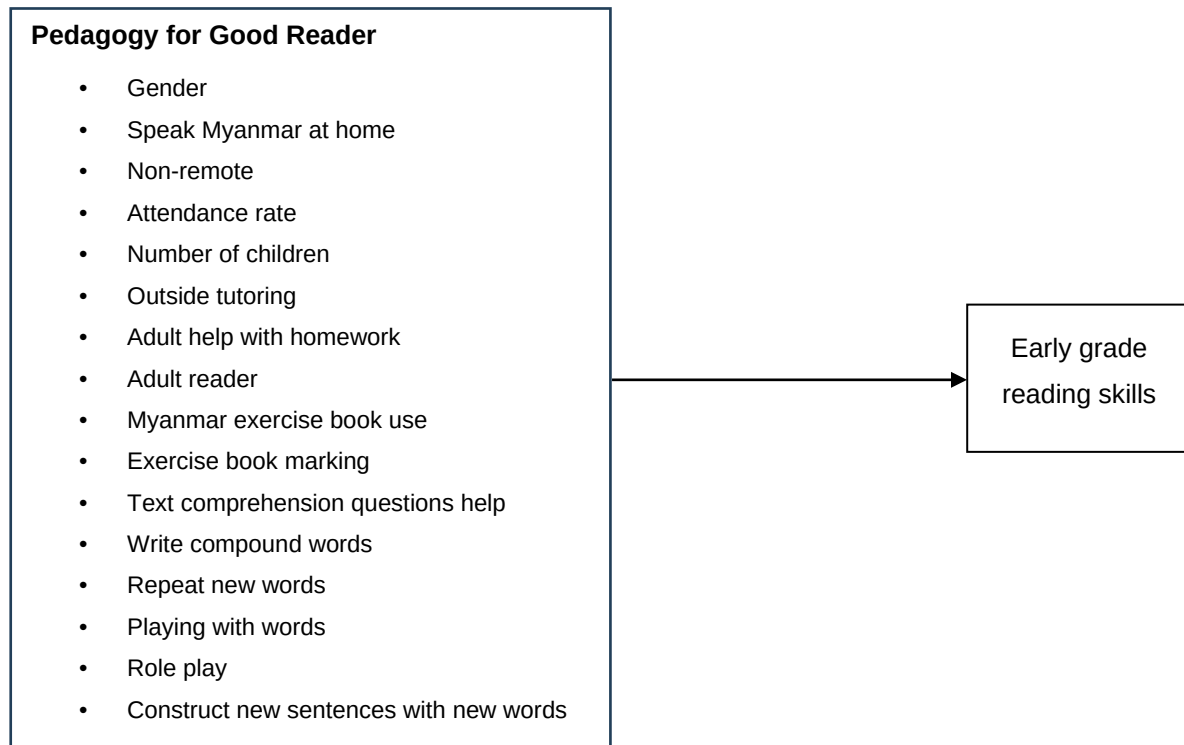
Theories of reading point out that proficient reading not only involves word recognition. As per the Simple View of Reading theory, reading success results from the skills of decoding and linguistic comprehension (Gough & Tunmer, 1986). Decoding is the skill that enables an individual to translate words on paper into speech, while linguistic comprehension is the ability to understand what one reads. Any weakness in either of the two skills will limit success in reading, the theory suggests. It means that reading teaching must involve helping the learners with word recognition and language comprehension skills.

Research shows that classroom activities such as sentence construction, writing compound words, role play, and teacher feedback can improve students' language comprehension and develop reading skills. Formative assessment practices such as checking students' exercise books and giving feedback also enable teachers to identify learning gaps and adjust their teaching accordingly (Black & Wiliam, 1998). Family support, such as helping children with homework or encouraging them to read at home, has also been shown to improve reading achievement and motivation (Aung & Kyi, 2026; Bus *et al.*, 1995).

While these factors are important, there has been little research in Myanmar on which pedagogical practices are most effective in improving early-grade reading skills. Present research is generic in its implications for literacy outcomes and does not specify classroom practices that will lead to enhanced reading achievement. There is very little research done, particularly in Taunggyi Township, where the students come from various linguistic, cultural, and socio-economic backgrounds. This makes it difficult for teachers and policymakers to know what teaching strategies work best in different contexts.

Taunggyi Township, the capital of Shan State, is an important site for early grade reading research because it includes both remote and non-remote schools. Students in this township come from different language backgrounds and different learning environments, and so it is a useful setting to understand how teaching practices impact reading achievement under real classroom conditions. In Myanmar, which is still reforming its education sector, it is essential to determine effective teaching methods to ensure good results and the development of reading skills in all children.

The purpose of this research is to determine the effectiveness of the teaching methods used to strengthen the early reading skills of students in Grades 1-3 in Taunggyi Township, Myanmar. It also explores the influence of teacher support and certain student and school characteristics on reading achievement. The findings of this study are expected to provide useful evidence for teachers, school leaders, and policymakers to enhance classroom instruction and reinforce early literacy development in Myanmar.



Source: World Bank Group (2015)

Figure 1: Conceptual Framework of Pedagogy for Good Readers' Early Grade Reading Skills

Figure 1 shows the conceptual framework of teaching methods for early-grade reading skills that are appropriate for more advanced reading skills at the primary level and that influence early-grade reading skills.

Literature Review

Two instruments were used to collect data for this study: the Myanmar Early Grade Reading Assessment (EGRA) and a structured questionnaire. The Myanmar EGRA was employed to assess students' early reading skills. Rather than creating a new reading assessment, this study used the

established EGRA framework adapted for the Myanmar language and primary school context. The assessment measured nine reading components: letter-name knowledge, initial-sound identification, letter-sound knowledge, familiar-word reading, invented-word decoding, oral passage reading, oral passage comprehension, listening comprehension, and dictation. Each component was converted to a score ranging from 0 to 100, resulting in a possible composite score of 0 to 900. Among the participating students, the average composite score was 450.86 (SD=247.58).

The timed reading tasks measured the number of letters or words that students read correctly within the allotted time. Reading and listening comprehension were scored according to the number of correct responses, while the dictation task evaluated students' spelling and writing accuracy. All assessments were administered in the Myanmar language using the officially adapted Myanmar EGRA procedures.

Since this study adopted an existing standardized assessment, no new reading test was developed. Likewise, the study does not report a separate pilot-test reliability coefficient, Cronbach's alpha, inter-rater reliability, or any other reliability statistic for the 2025 data collection because these measures were not calculated. The content validity of the instrument was supported through the use of the well-established EGRA framework and its Myanmar adaptation. Nevertheless, the absence of a study-specific reliability estimate is acknowledged as one of the methodological limitations.

A structured questionnaire was also used to collect information on students' backgrounds and the educational factors that may influence early reading achievement. The questionnaire was adapted from the World Bank and EGRA-related survey instruments that have been applied in Myanmar early-grade reading studies. It was administered through face-to-face interviews using closed-ended questions.

The questionnaire consisted of two main sections. The first section gathered demographic and background information about the students. The second section focused on educational inputs, home literacy support, classroom teaching practices, and pedagogical activities related to reading development. The variables included gender, home language, school remoteness, attendance rate, family size, outside tutoring, assistance with homework from adults, the presence of adult readers in the household, preschool experience, the use and marking of Myanmar exercise books, classroom assessment practices, and various reading-related instructional activities.

Most categorical variables were coded as binary variables, with 0 representing the reference category (such as No, Male, ethnic language, or remote school) and 1 representing Yes, Female, Myanmar language, or non-remote school. Attendance was recorded as a percentage, whereas variables such as the number of children in the household, travel time to school, duration of preschool attendance, and measures related to assessment practices were recorded as numerical values.

Similar to the EGRA instrument, the questionnaire was adapted from an established survey framework. Therefore, this study does not report a separate pilot-study reliability coefficient or formal factor-analysis results for the questionnaire, and no additional validity or reliability statistics are claimed beyond those actually examined in the study.

The theoretical and empirical studies on early-grade reading and the teaching methods that help children develop reading skills. It discusses the main parts of early reading development, the ways these skills are assessed, and their importance for improving literacy among young learners. It also provides a foundation for examining effective teaching practices in Taunggyi Township.

Theory of Early Grade Reading

According to the theory of Stanovich *et al.* (1986) on reading, early disparities in the ability to read may influence literacy development throughout one's life. Proficient readers usually learn quickly because they do more reading, have greater vocabularies and more background knowledge, and become more fluent readers. On the other hand, poor readers become even poorer due to a lack of practice and experience in reading. The Matthew effect explains the importance of early interventions at primary school.

Early reading occurs through the interdependent skills of phonemic awareness, alphabet knowledge, phonological decoding, reading fluency, vocabulary, and comprehension. Phonemic awareness is the ability to hear and work with the sounds in spoken words. Alphabetic knowledge is the understanding of how those sounds are represented by letters. These skills are important because children must connect spoken language to written symbols to be able to learn to read independently (World Bank Group, 2015).

Decoding means turning written letters and words into spoken language. It is a crucial part of learning to read because children must be able to recognize words correctly to understand the meaning of a text. Fluency in reading develops when decoding is smooth and automatic. Good readers are accurate, fast, and expressive. This allows them to spend more time on understanding what they are reading instead of figuring out the words. The primary purpose of reading is reading comprehension, which is a process that involves both decoding skill and understanding of language. As such, weakness in either of these areas can impact reading success (World Bank Group, 2015). Reading development also depends on writing and spelling.

Children who start writing early obtain a more profound understanding of letter-sound relationships and word patterns, which helps them decode words and build orthographic knowledge. These basic skills are essential for success in reading alphabetic languages. Thus, effective early-grade reading instruction should support not only word recognition but also understanding of meaning.

Measuring Early Grade Reading Skills

Early-grade reading is typically assessed using direct, one-on-one assessments focused on the foundational skills for reading. The EGRA was developed using the RTI/World Bank toolkit and was developed to measure foundational literacy skills in the early primary grades and has been used in country studies such as Timor-Leste. The assessment in the Timor-Leste report is described as looking at the main building blocks of reading, including phonics, phonemic awareness, vocabulary, fluency, and comprehension (World Bank, 2010). EGRA tasks are typically brief and timed tasks, often one minute in duration. Skills assessed are letter knowledge, reading familiar and unfamiliar words, decoding, oral reading fluency, and comprehension of text. The Timor-Leste adaptation also shows that fluency is recorded as the number of correct words a child can read in one minute, which helps to identify specific strengths and weaknesses in early reading development.

Oral or written tasks in which children are asked to name pictures, define words, answer questions about a passage, or recall a story are common measures of vocabulary and comprehension. Listening comprehension is also a component in many reading assessments, as it helps to distinguish decoding problems from general language comprehension problems. Dictation also tests phonics, spelling, and writing skills in a single task (World Bank Group, 2015).

In Myanmar, EGRA was adapted to the local language and school context to measure early literacy development among primary school children. The Myanmar EGRA includes tasks such as letter-name knowledge, initial sound identification, letter-sound knowledge, familiar word reading, invented word reading, oral reading fluency with comprehension, listening comprehension, and dictation and is well suited for studies in Taunggyi Township because it captures the core reading skills children need in the early grades.

Empirical Review

Empirical research in a variety of settings consistently finds that the quality of classroom instruction has a strong impact on early reading achievement. The most effective method of teaching phonemic awareness, phonics, vocabulary, fluency, and comprehension skills is through direct instruction. It has been observed through research that practice, feedback, guided reading, and exposure to print help build confidence in young readers (Mwoma, 2017).

Evidence from EGRA and other similar assessments has shown that a large proportion of learners in low- and middle-income countries struggle with basic reading skills even after several years of

schooling. Therefore, researchers and policymakers have focused more attention on instructional quality, teacher preparation, and assessment-based support. In Myanmar, the adaptation of EGRA offered proof that basic literacy can be assessed in a manner suitable for the local language and context (World Bank Group, 2015)

Evidence on early grade reading interventions suggests that good pedagogical practices include phonics-based teaching, oral language development, guided reading, use of reading aloud, and regular formative assessment. Such approaches result in gains in decoding and fluency, as well as comprehension, particularly when consistently used and with teacher training. The literature suggests that reading outcomes are thus a function of the quality of classroom pedagogy in addition to pupil ability (Mwoma, 2017).

Methodology

Research Design and Study Participants

This study employed a cross-sectional survey design to investigate the relationship between educational input and early grade reading skills in Taunggyi Township. The study was conducted with a sample of 300 students from Grades 1 to 3 who were selected from 10 primary schools in Taunggyi Township. In addition to student data, information from parents and teachers was collected to provide background and contextual variables related to each participating student. To obtain comprehensive information on factors influencing students' reading achievement, data were also collected from the parents of the sampled students and from the teachers responsible for teaching the selected classes. Accordingly, the study included 300 parents and 30 teachers, in addition to the 300 participating students. The study used 300 people as subjects, consisting of students from Classes 1, 2, and 3 as well as their teachers.

Study Variables and Unit of Analysis

The student served as the unit of analysis throughout the statistical analysis. Each student's overall EGRA score was treated as the dependent variable, while information obtained from the questionnaires was used as the independent variable. These variables represented student characteristics, home literacy environment, school context, and teacher-related factors. All questionnaire data were linked to the corresponding student's EGRA results to examine how educational inputs and pedagogical practices were associated with early-grade reading performance.

Sampling Procedure

A two-stage random sampling procedure was used to select the participants. In the first stage, all 276 primary schools in Taunggyi Township were classified into five groups (A–E) according to their level of remoteness and accessibility from the Township Education Office (TEO). Two schools were then randomly selected from each group using computer-generated random numbers in SPSS, resulting in a total of 10 schools.

In the second stage, students were selected from each of the chosen schools using simple random sampling without replacement. Ten students were randomly chosen from each grade (Grades 1, 2, and 3), giving a total of 30 students per school. This process produced the final sample of 300 students.

Data Collection Period

Data collection was carried out during January 2025.

Classification of Reading Proficiency

Throughout this manuscript, the terms 'good readers' and 'proficient readers' refer to an analytical framework used to investigate the teaching practices associated with higher levels of reading achievement. These terms should not be interpreted as indicating that a separate group of students

was selected before the study. Instead, all 300 sampled students were included in the regression analyses, regardless of their reading ability.

Students' reading performance was classified using the EGRA proficiency categories, including non-readers, poor readers, limited comprehension, and fluent readers. The analysis also compared differences in performance across the various EGRA reading components. Therefore, the title 'Pedagogy for Good Readers' refers to the analytical model developed to identify instructional practices associated with stronger reading outcomes, rather than to a sample consisting only of students who were already fluent readers. This clarification accurately reflects the sampling procedure and clearly defines the study population.

Research Instrument

The study's questionnaire was adapted from a survey developed and cited by the World Bank Group (2015). It was developed with input from students, teachers, and parents to make sure it was capturing the main factors around early grade reading in Taunggyi Township. The instrument was divided into two parts: demographic information and items related to educational input and early grade reading skills. Data were collected and analyzed more easily by using closed-ended questions.

Data Collection Procedure

Data were collected through face-to-face questionnaire administration in both remote and non-remote areas of Taunggyi Township. The researcher approached students and teachers at appropriate times on campus and administered the questionnaires. The researcher gave a brief explanation about the purpose of the study in an amiable and clear way to put participants at ease prior to conducting the questionnaire. Participants were encouraged to ask questions whenever they needed clarification during the interview process, and their responses were carefully recorded.

Data Analysis

The data were analyzed using SPSS version 27. Descriptive statistics and regression analysis were used to analyze the influence of teaching practices on children's reading performance.

Results

The present study examined the influence of effective pedagogical practices on early-grade reading skills among students in Taunggyi Township. Multiple regression analysis was used to analyze the relationships between the pedagogical variables and early-grade reading performance.

Table 1: Profile of Students

No	Demographics Factors		No. of Respondents	Percent (%)	
1	Gender	Male	157	52.3	
		Female	143	47.7	
2	Remoteness (Distance) from TEO	A	60	20.0	
		B	60	20.0	
		C	60	20.0	
		D	60	20.0	
		E	60	20.0	
3	Schools	Basic Education High School	120	40.0	
		Basic Education Secondary School	30	10.0	
		Basic Education Primary School	150	50.0	
4	Age (year)	Grade 1	6	54	54.0
			7	40	40.0
			8	6	6.0
		Grade 2	7	51	51.0
			8	40	40.0

			9	9	9.0
		Grade 3	7	1	1.0
			8	38	38.0
			9	37	37.0
			10	24	24.0
		Total Respondents			300

Source: Survey Data

Table 1 presents the demographic profile of the 300 students participating in this study across gender, remoteness from the Township Education Office (TEO), school types, and age distribution by grade level.

The relationship between the explanatory variables and students' reading achievement was examined using ordinary least-squares (OLS) multiple regression analysis. The dependent variable was the EGRA composite score, which ranged from 0 to 900. The coding for gender was coded as 0 for male and 1 for female. Home language was coded as 0 for students who primarily spoke an ethnic language at home and 1 for those who spoke Myanmar. School location was represented by a dummy variable, where 0 indicated a remote school and 1 indicated a non-remote school. Similarly, outside tutoring, adult assistance with homework, the presence of an adult reader in the household, use of Myanmar exercise books, exercise-book marking, and the pedagogical practices included in the model were each coded as binary variables (0 = No, 1 = Yes). Attendance rate was entered as a percentage, while the number of children in the household was recorded as a count. All other continuous variables were entered into the model using their original measured values.

Before interpreting the regression results, the assumptions of multiple regression were examined. The normality of the residuals was evaluated using both a histogram and a normal probability (P-P) plot, which indicated that the residuals were approximately normally distributed. Homoscedasticity was assessed by inspecting a scatter plot of standardized residuals against predicted values. The absence of a clear pattern in the plot suggested that the assumption of constant error variance was reasonably satisfied. Multicollinearity was evaluated using tolerance and Variance Inflation Factor (VIF) statistics. In the Pedagogy for Good Readers model, tolerance values exceeded the recommended threshold of 0.10, while VIF values ranged from 1.030 to 3.308. These results indicate that multicollinearity was not a concern among the explanatory variables.

The overall regression model was statistically significant ($F=29.102$, $p<0.01$), with an adjusted R^2 value of 0.601, indicating that approximately 60.1% of the variation in students' EGRA composite scores was explained by the variables included in the model.

The analysis was conducted at the student level using OLS multiple regression. However, the sampling design consisted of 300 students drawn from 10 primary schools, meaning that students were clustered within schools. Because the original analysis did not estimate school-clustered standard errors or apply a multilevel modelling approach, the possibility of within-school dependence cannot be ruled out. Consequently, the findings should be interpreted as student-level associations rather than definitive causal effects. This limitation is acknowledged in the study. Future research using the original clustered dataset should consider applying cluster-robust standard errors or multilevel (hierarchical) regression models to determine whether the estimated standard errors and levels of statistical significance remain consistent after accounting for the nested structure of the data.

Table 2: Results of Multiple Regression Model (Pedagogy for Good Readers)

Independent Variables	Coefficients	Standard Error	t	Sig.	VIF
(Constant)	-70.575	115.844	-0.609	0.543	
Gender	40.101**	18.349	2.185	0.03	1.03
Speak Myanmar at home	51.341*	26.098	1.967	0.05	1.621
Non-remote	73.251***	25.486	2.874	0.004	1.912
Attendance rate	0.674	1.063	0.634	0.527	1.201
Number of children	-6.229	7.121	-0.875	0.382	1.099

Outside tutoring	-0.49	19.728	-0.025	0.98	1.18
Adult help with homework	160.555***	23.345	6.877	0	1.638
Adult reader	91.267***	21.814	4.184	0	1.459
Myanmar exercise book use	40.895	44.177	0.926	0.355	1.627
Exercise book marking	121.289***	26.014	4.662	0	1.57
Text comprehension questions, help	33.592	32.18	1.044	0.297	1.764
Write compound words	214.906***	37.138	5.787	0	3.308
Repeat new words	-141.584***	25.077	-5.646	0	1.38
Playing with words	-128.772***	33.803	-3.81	0	2.943
Role play	93.770**	47.116	1.99	0.048	2.45
Construct new sentences, with new words	1.405	21.847	0.064	0.949	1.457
F-Value	29.102***				
Adjusted R^2	0.601				

Source: Survey Data, 2025

Note *** denotes significant at 1 % level, ** denotes significant at 5 % level, * denotes significant at 10 percent level

Table 2 presents the multiple regression results for the effective pedagogical practices for early-grade reading skills. The model is statistically significant ($F=29.102$, $p<0.01$) and explains 60.1% of the variance in early grade reading skills adjusted $R^2=0.601$), indicating a strong overall relationship between the predictors and reading outcomes.

The assumptions of multiple regression were examined. The normality of the residuals was evaluated using both a histogram and a normal probability (P–P) plot, which indicated that the residuals were approximately normally distributed. Homoscedasticity was assessed by inspecting a scatter plot of standardized residuals against predicted values. The absence of a clear pattern in the plot suggested that the assumption of constant error variance was reasonably satisfied. Multicollinearity was evaluated using tolerance and VIF statistics. In the Pedagogy for Good Readers model, tolerance values exceeded the recommended threshold of 0.10, while VIF values ranged from 1.030 to 3.308. These results indicate that multicollinearity was not a concern among the explanatory variables.

The overall regression model was statistically significant ($F=29.102$, $p<0.01$), with an adjusted R^2 value of 0.601, indicating that approximately 60.1% of the variation in students' EGRA composite scores was explained by the variables included in the model.

The analysis was conducted at the student level using OLS multiple regression. However, the sampling design consisted of 300 students drawn from 10 primary schools, meaning that students were clustered within schools. Because the original analysis did not estimate school-clustered standard errors or apply a multilevel modelling approach, the possibility of within-school dependence cannot be ruled out. Consequently, the findings should be interpreted as student-level associations rather than definitive causal effects. This limitation is acknowledged in the study. Future research using the original clustered dataset should consider applying cluster-robust standard errors or multilevel (hierarchical) regression models to determine whether the estimated standard errors and levels of statistical significance remain consistent after accounting for the nested structure of the data.

Discussion

Multiple regression analysis revealed that the model was statistically significant ($F=29.102$, $p<0.01$) and explained about 60.1% of the variation in early grade reading scores (Adjusted $R^2 = 0.601$). It reveals that the demographic, home environment, and pedagogical variables, which were included in the model collectively play a significant role in explaining the reading achievement of good readers in Taunggyi Township.

Gender was positively related to reading achievement ($\beta=40.101$, $p<0.05$). It indicates that the gender differences in reading performance were significant when other variables were controlled for. In case the coding of the variable indicates that females were scored with a higher score, then the findings are in agreement with international research, which has found that girls outperform boys when it comes to

reading, as they are better at developing language skills, reading, and motivating themselves. The Progress in International Reading Literacy Study (PIRLS) has always found that girls are more literate than boys in most countries.

Students who spoke Myanmar at home had significantly higher reading scores than those who mainly spoke another language ($\beta=51.341$, $p=0.050$). Using the home language of instruction can help to strengthen vocabulary, oral language development, and reading comprehension, thereby assisting children to understand classroom instruction. This particular researcher (Gobana, 2025) demonstrated that known languages are turned into educational material in order to enhance engagement among learners. As per the researchers (Ji *et al.*, 2024), the use of known languages in education can help enhance the engagement levels of students by providing access to them.

In addition, regression analysis results revealed that students studying in non-remote schools performed significantly better than those studying in remote schools ($\beta=73.251$, $p<0.01$). This probably reflects differences in school resources, availability of teachers, quality of instruction, and access to learning materials. Schools in less isolated areas tend to have better educational infrastructure and more academic support, which allows teachers to provide more effective literacy instruction. The World Bank has also observed that disparities in educational inputs are largely responsible for disparities in students' learning outcomes across regions (World Bank Group, 2015).

Among the home literacy variables, one of the strongest positive effects on reading achievement was the help of adults in homework ($\beta=160.555$, $p<0.01$). Children who were helped regularly by parents or other adults scored significantly better in reading than those who were not. All of these opportunities for additional reading practice, immediate feedback, and adult encouragement help to strengthen literacy development. Aung & Kyi (2026) findings also support the widely held belief that family involvement improves children's academic achievement by reinforcing classroom learning at home.

Writing compound words had the highest positive regression coefficient among the instructional variables ($\beta=214.906$, $p<0.01$). This activity can improve students' knowledge of word structure, spelling, and vocabulary development together with decoding skills. The study result is supported by previous research results on the contribution of morphological awareness in reading development. Xie *et al.* (2019) found that awareness of compound words promotes reading comprehension. Similarly, Zhang *et al.* (2012) found that knowledge of compound words predicts reading achievement. These results indicate that writing compound words enhances understanding of word structure, which facilitates reading fluency and comprehension.

Role-play activities had a positive and significant relationship with reading achievement ($\beta=93.770$, $p<0.05$). Role-play enables students to apply vocabulary acquired to a relevant context and develops oral language skills in addition to active participation in class. This result agrees with Boakye (2021), who found that role-play improves the engagement of students and reading comprehension. It helps build students' confidence and improves their reading skills.

The negative regression coefficients observed for repeat new words ($\beta=-141.584$, $p<0.01$) and playing with words ($\beta=-128.772$, $p<0.01$) should be interpreted with caution. These findings do not necessarily imply that these instructional activities reduce students' reading achievement. Instead, they may reflect the fact that teachers provide these activities more frequently to students who are already experiencing reading difficulties. In differentiated reading instruction, teachers adapt their instructional strategies and provide additional support according to students' learning needs, with struggling readers typically receiving more intensive strategy instruction than their higher-achieving peers (Fogarty, 2006). Similarly, research has shown that educational interventions and instructional resources are often targeted toward lower-achieving students, which can produce negative regression coefficients after controlling for other factors because the interventions are concentrated among students with greater learning needs (Jacob & Lefgren, 2004). Therefore, the observed negative coefficients are more likely to reflect targeted remedial support than ineffective instructional practices.

Limitations

This study has several limitations that need to be considered when interpreting the results. First, the cross-sectional research design and the collection of data at one point in time (January 2025) allow the study to identify relationships between pedagogical practices and students' reading achievement; however, they do not allow conclusions to be drawn about cause-and-effect relationships. Second, the study was conducted with 300 students from 10 schools in Taunggyi Township. Therefore, the findings reflect the situation within the study area and should be generalized cautiously to other schools in Shan State or across Myanmar.

Third, because students were selected from different schools, the data have a hierarchical structure in which students are grouped within schools. The original ordinary least-squares regression analysis did not explicitly account for this clustering through school-level robust standard errors or multilevel modelling. As a result, the possible influence of school-level characteristics on student outcomes may not have been fully captured. Fourth, some explanatory variables were collected through questionnaires, and the responses may have been influenced by recall difficulties, personal perceptions, or social desirability bias.

Fifth, although the study employed the Myanmar-adapted EGRA instrument and a questionnaire framework based on established educational research approaches, the study does not provide a separate reliability assessment for the 2025 questionnaire, such as Cronbach's alpha, or report formal validation procedures such as factor analysis. In addition, the study did not include longitudinal data on students' reading development or detailed classroom observations that could provide deeper evidence of how teaching practices were applied in real classroom contexts. Therefore, the reported regression results should be interpreted as associations rather than definitive evidence of the effects of specific pedagogical practices.

Future Scope

Future research should consider expanding the study to include a larger and more diverse sample of schools from different regions of Myanmar to improve the generalizability of findings. Longitudinal studies following students from Grade 1 to Grade 3 and beyond would provide stronger evidence on how reading skills develop over time and how instructional practices influence this progression. Since students are nested within schools, future analyses should apply multilevel/hierarchical regression models or cluster-adjusted standard errors to better account for school-level differences and provide more reliable estimates.

Future studies should also conduct pilot testing and validation of research instruments within the Myanmar educational context and report evidence of reliability and validity. More detailed information on EGRA administration procedures and classroom implementation would further strengthen the interpretation of results. Combining classroom observations, teacher interviews, and lesson-level data with EGRA assessments could provide a clearer understanding of how different teaching strategies are used and their effectiveness in practice. Furthermore, experimental or quasi-experimental research designs could be used to examine whether specific instructional activities, such as compound-word writing, role-play, repeated word practice, and word games, improve reading outcomes among students with different levels of reading ability.

Further investigation is also needed to understand the interaction between home language, school location, family literacy support, teacher practices, and students' initial learning readiness. Such evidence would help develop more targeted and effective early-grade reading interventions that address the diverse learning needs of students.

Conclusion

According to the findings, some recommendations can be made. Firstly, schools must collaborate with parents and caregivers in developing literacy activities at home. Parents must assist their children with

homework, read with them frequently, and create a conducive environment for reading at home. Secondly, teachers must keep using instructional strategies that have proven to be effective in supporting the reading of children, such as careful marking of exercise books, provision of feedback, compound word instructions, and role-play activities. The strategies will enhance the interaction and engagement of children in classroom learning.

Thirdly, education authorities must consider the issue of the remoteness of the schools. This is because the children from non-remote schools outperformed those from remote schools. Therefore, remote schools may require more teaching aids, teacher assistance, and better learning environments. Teacher training should also emphasize practical, evidence-based reading instruction. Lastly, remedial instruction must be used prudently for children who perform poorly in reading. Strategies such as repeating new words and wordplay activities may be effective when customized for the low-performing children instead of being the same for everyone.

Overall, the research demonstrates that early-grade reading abilities depend on many elements, such as family involvement, language competence, the such as family involvement, language competence, location of the schools, and teaching methods. The results of the regression analysis reveal that there are some significant links between the mentioned variables and success in reading, and the whole model accounts for the majority of the variance in students' performance. It is possible to conclude that the improvement of the reading performance in Taunggyi Township will require the combined work of teachers, parents, and the representatives of educational authorities.

CRedit Authorship Contribution Statement

N.A.Z.A.: Conceptualization, methodology, investigation, data curation, formal analysis, and writing – original draft. Y.L.H.: Manuscript preparation, writing – review and editing, and correspondence. All authors reviewed the manuscript and approved the final version.

AI Assistance Declaration

AI-based language assistance was used during manuscript revision to improve grammar, clarity, organization, and response wording to reviewer comments. The authors reviewed and verified the revised text against the study thesis, tables, statistical results, and cited sources and retain full responsibility for the accuracy, interpretation, and integrity of the manuscript and its data.

Conflict of Interest

The authors declare that they have no competing interests.

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References

- Aung, N. A. Z., & Kyi, K. S. (2026). The effect of educational input on early grade reading skills in Taunggyi Township. *Journal of Multidisciplinary Research for SMET (JMR-SMET)*, 2(1), 1–11. <https://doi.org/10.64297/jmrsmet.v2i1.34>
- Australian Council for Educational Research (ACER). (2021, September). *Southeast Asia Primary Learning Metrics 2019 (SEA-PLM): Myanmar national report*. UNESCO International Institute for Educational Planning. https://www.seaplm.org/images/Publication/Myanmar_Report/SEA-PLM_2019_National_Results_-_Myanmar_report_English.pdf
- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74. <https://doi.org/10.1080/0969595980050102>
- Boakye, N. A. (2021). Using role play and explicit strategy instruction to improve first-year students' academic reading proficiency. *Reading & Writing*, 12(1), 1-12. <https://doi.org/10.4102/rw.v12i1.285>

- Bus, A. G., Van Ijzendoorn, M. H., & Pellegrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research*, 65(1), 1-21. <https://doi.org/10.3102/00346543065001001>
- Fogarty, E. A. (2006). *Teachers' use of differentiated reading strategy instruction for talented, average, and struggling readers in regular and SEM-R classrooms* [Doctoral dissertation, University of Connecticut]. DigitalCommons@UConn. <https://digitalcommons.lib.uconn.edu/dissertations/AAI3234303>
- Gobana, J. A. (2025). Investigating quality education in mother tongue: Ensuring children's rights to access and equity schooling. *Cogent Education*, 12(1), 2545617. <https://doi.org/10.1080/2331186x.2025.2545617>
- Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, 7(1), 6–10. <https://doi.org/10.1177/074193258600700104>
- Hanushek, E. A., & Woessmann, L. (2009). *Schooling, cognitive skills, and the Latin American growth puzzle* (IZA Discussion Paper No. 4576). Institute for the Study of Labor (IZA). <https://doi.org/10.3386/w15066>
- Hattie, J. (2009). The black box of tertiary assessment: An impending revolution. In L. H. Meyer, S. Davidson, H. Anderson, R. Fletcher, P. M. Johnston, & M. Rees (Eds.), *Tertiary assessment and higher education student outcomes: Policy, practice and research* (pp. 259–275). Ako Aotearoa. <https://findanexpert.unimelb.edu.au/scholarlywork/333618-the-black-box-of-tertiary-assessment-an-impending-revolution>
- Jacob, B. A., & Lefgren, L. (2004). The impact of teacher training on student achievement: Quasi-experimental evidence from school reform efforts in Chicago. *Journal of Human Resources*, 39(1), 50-79. <https://doi.org/10.2307/3559005>
- Ji, G. X., Chan, P. W. K., McCormick, A., Won, M., Ali, S., Jimmy, M., Gulfan, V. G., Faamanatu-Eteuati, N., Suaalii, T. F., Chesal, K., Horihaui, J., Rohoana, G. Z., Fitoo, B., & Gurung, D. (2024). Scholarly responses to 'UNESCO global education monitoring report 2024 Pacific Technology in Education: a tool on whose terms?'. *International Education Journal: Comparative Perspectives*, 23(2), 154-170. <https://doi.org/10.70830/iejcp.2302.20369>
- Mwoma, T. (2017). Children's reading ability in early primary schooling: Challenges for a Kenyan rural community. *Issues in Educational Research*, 27(2), 347-364. <https://www.iier.org.au/iier27/mwoma.pdf>
- Phyu, P. E., & Siriawato, S. (2022). The progress and challenges of higher education in Myanmar. In *Proceedings of the RSU International Research Conference 2022 on Social Science and Humanities, Education, and Management* (pp. 50–64). Rangsit University. <https://doi.org/10.14458/RSU.res.2022.95>
- Stanovich, K. E., Nathan, R. G., & Vala-Rossi, M. (1986). Developmental changes in the cognitive correlates of reading ability and the developmental lag hypothesis. *Reading Research Quarterly*, 21(3), 267. <https://doi.org/10.2307/747709>
- UNESCO. (2023, April 20). 617 million children and adolescents not getting the minimum in reading and math. <https://www.unesco.org/en/articles/617-million-children-and-adolescents-not-getting-minimum-reading-and-math>
- World Bank Group. (2015, June 4). *Myanmar early grade reading assessment for the Yangon region*. World bank Group. <https://doi.org/10.1596/27847>
- World Bank. (2010). *Timor-Leste: An analysis of early grade reading acquisition*. World Bank. <https://doi.org/10.1596/27847>
- Xie, R., Zhang, J., Wu, X., & Nguyen, T. P. (2019). The relationship between morphological awareness and reading comprehension among Chinese children. *Frontiers in Psychology*, 10, 54. <https://doi.org/10.3389/fpsyg.2019.00054>
- Zhang, D., Koda, K., & Sun, X. (2012). Morphological awareness in biliteracy acquisition: A study of young Chinese EFL readers. *International Journal of Bilingualism*, 18(6), 570–585. <https://doi.org/10.1177/1367006912450953>