

Competence of Alternative Learning System Teachers in Numeracy Instruction

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Abstract

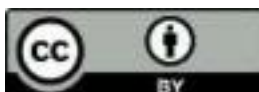
The competence of ALS teachers in numeracy instruction, as assessed by the Junior High School learners, is a critical factor in ensuring effective teaching practices within the program. Hence, this study examined the competence of ALS teachers in numeracy instruction as a basis for a capability enhancement plan. Using a descriptive-survey design, data were collected from a sample of Junior High School ALS learners through a researcher-made questionnaire assessing teachers' content knowledge, pedagogical strategies, and assessment practices. Analyses revealed that learners from more advantaged backgrounds were more likely to participate and persist in the program, while the overall competence of ALS teachers in numeracy instruction was moderate. Furthermore, learners across all groups consistently perceived their teachers' proficiency to be only moderate, as being largely reliant on standard ALS modules rather than differentiated instructional support. No significant differences were found in teachers' competence across demographic groups, indicating that instructional proficiency is applied uniformly regardless of learners' background. These findings suggest that while ALS teachers possess essential skills, there is room to enhance instructional strategies and responsiveness to diverse learner needs. Implicitly, the study underscores the importance of professional development and adaptive teaching practices to ensure more effective, learner-centered numeracy instruction, ultimately supporting equitable learning outcomes across all ALS participants.

Keywords: *Alternative learning system, ALS teachers' competence, numeracy instruction, content knowledge, pedagogical strategies, assessment practices.*

Bio-Profile:

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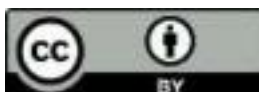


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Introduction

Rationale

The competence of Alternative Learning System (ALS) teachers in teaching numeracy plays a vital role in ensuring that out-of-school youth and adult learners develop essential numeracy skills needed for daily life and further education (DepEd Order 21, 2019). Effective numeracy instruction requires teachers to demonstrate strong content knowledge, apply appropriate pedagogical strategies, and conduct meaningful assessments tailored to diverse learners. As Ufer and Neumann (2018) emphasize, teacher competence includes the learnable resources such as knowledge, skills, and attitudes that are needed to meet professional teaching demands effectively.

This study aligns with the institution's research agenda on Curriculum Development and Evaluation – Pedagogical Innovations, as it provides evidence on effective teaching strategies that improve learners' mathematical achievement. In a similar manner, this aligns with the UNSDG on Quality Education (SDG 4) as it promotes equitable access to effective teaching and learning by enhancing teachers' capacity to deliver high-quality numeracy instruction that supports all learners' foundational skills and lifelong learning (United Nations, 2015).

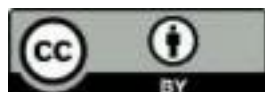
Truly, competence in numeracy instruction in ALS requires a strong foundation in mathematical knowledge, effective teaching strategies, and the ability to foster positive attitudes toward learning. However, there is a noticeable lack of systematic evaluation of ALS teachers' competence in numeracy instruction, particularly in terms of content knowledge, pedagogical strategies, and assessment practices. While the ALS program aims to equip learners with essential life skills, observations in the research venue indicate that numeracy instruction often lacks consistency and effectiveness. There is also limited data available on how well ALS teachers are prepared to address the unique learning needs of out-of-school youth and adults in mathematics.

The gap underscores the need for a focused investigation to assess teachers' competence and inform targeted professional development initiatives. The researcher, an ALS teacher at the research venue, intends to further investigate the competence of ALS teachers in numeracy instruction to identify strengths and gaps in their content knowledge, pedagogical strategies, and assessment practices, to inform a targeted capability-building program.

Literature Review

The Alternative Learning System (ALS) in the Philippines serves as a parallel education program that provides opportunities for individuals who are unable to access or complete formal basic education due to economic, geographic, or personal constraints. It integrates non-formal and informal learning to ensure that all Filipinos can exercise their right to free basic education through flexible and context-responsive approaches (Department of Education, 2016). Within this system, teaching competence in numeracy is essential, as it equips out-of-school youth and adult learners with practical mathematical skills needed for everyday life and employment. Effective ALS numeracy instruction requires teachers to possess strong content knowledge and the ability to contextualize lessons based on learners' real-life experiences, while applying flexible, learner-centered, and differentiated strategies (Malipot, 2020).

Competence in numeracy instruction among Alternative Learning System (ALS) teachers reflects their ability to effectively teach mathematical concepts and help learners apply these in real-life contexts. Numeracy is now recognized as a vital life skill that extends beyond the classroom (Goos et al., 2024). Central to this competence is strong content knowledge, which enables teachers to understand subject



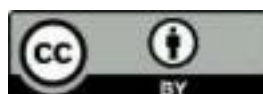
matter deeply and align it with curriculum goals (Bold et al., 2017). This is complemented by pedagogical content knowledge, general teaching skills, and teachers' beliefs and attitudes, all of which influence instructional decisions and classroom practices (Charalambous, 2016). Effective numeracy instruction also requires the use of appropriate pedagogical strategies, such as progressing from simple to complex concepts and from concrete to abstract understanding, ensuring that lessons are meaningful and accessible to learners (Murkatik et al., 2020).

Teacher competence, therefore, encompasses not only subject mastery but also pedagogical skills that foster meaningful and holistic learning environments (Cahyanti et al., 2024). This includes the integration of content knowledge and research-based teaching approaches that are developmentally appropriate and connected across disciplines (Pablo, 2021). Equally important is classroom assessment, which plays a vital role in monitoring student progress, evaluating instructional effectiveness, and ensuring accountability in education (Rural, 2021). With varied assessment tools and strategies, teachers can better understand learners' capabilities and guide instruction accordingly. Assessment and reporting further support this process by providing feedback that enhances learning and informs instructional decisions, ultimately ensuring the effectiveness of ALS programs (Pablo, 2021).

Moreover, teachers' competence extends to their ability to design inclusive instructional approaches and adapt content to diverse learners (Cezar et al., 2020). Pedagogical strategies serve as a framework for selecting methods, anticipating student difficulties, and delivering content effectively (Villegas-Reimers, 2003, as cited in Cezar et al., 2020). Equally important is assessment competence, which involves using appropriate tools to evaluate learning and inform instruction (Smoleusova, 2015). Teachers' ability to conduct classroom assessments plays a critical role in improving teaching quality and supporting educational reforms (Looney et al., 2018). Thus, integrating content knowledge, pedagogy, and assessment practices is essential for ALS teachers to achieve effective numeracy instruction and enhance student learning outcomes.

Research findings present mixed insights on factors influencing teaching and learning outcomes. For instance, relative age within a class does not significantly affect most outcomes, with only a slight advantage observed among younger students in terms of reading self-concept, challenging the assumption that they are at a disadvantage (Kretschmann et al., 2021). Socioeconomic factors also show nuanced effects, as lower-income learners may require more supportive teaching despite not necessarily perceiving tasks more favorably (Bloem et al., 2024). Effective teaching, therefore, relies on a combination of strong content knowledge, instructional design, digital literacy, and the ability to promote active learning, underscoring the need for continuous pedagogical development (Moreira et al., 2023). While parental involvement and educational background are linked to improved mathematics performance, parental education alone does not consistently shape students' perceptions of teaching strategies (Hernandez-Padilla et al., 2023; Letzel et al., 2022). Additionally, challenges persist in teachers' assessment competence, with studies highlighting the need for improved training in formative assessment and data-driven instruction to better align evaluation practices with learning objectives (Podkhodova, 2020; DeLuca & Klinger, 2020).

Studies on the Philippine Alternative Learning System (ALS) reveal both strengths and challenges in teachers' numeracy competence. On one hand, issues such as limited mathematics specialization and difficulty simplifying complex concepts hinder effective instruction and may affect learners' performance (Tan, 2019; Escote, 2022). Misalignment between tasks and learners' actual skill levels further contributes to poor outcomes (Arciosa & Cerado, 2020). While some studies report high ratings in content knowledge and communication skills among ALS teachers (Saron et al., 2023; Parto & Yango, 2023), others highlight gaps in applying critical thinking strategies and pedagogy, indicating a



need for continuous professional development (Pablo, 2021; Elorta-Cherry et al., 2025). Learner-related factors, such as parents' educational background and age, also influence perceptions, with learners relying more on teachers for clear explanations and older learners showing greater appreciation of contextualized teaching (Asenjo & Regidor, 2024; Fernandez, 2015).

Despite these challenges, many findings show generally positive perceptions of ALS teaching competence, particularly in instructional clarity, innovation, and lesson delivery (Albert et al., 2024; Servano & Satojito, 2025; Tachado, 2017). Teachers are often viewed as competent in pedagogy and capable of breaking down lessons effectively, though assessment practices remain an area for improvement, especially in using results to enhance learning (Gepila, 2020). Learners' evaluations of ALS implementation—including teaching, materials, and assessment—are typically high and not significantly influenced by most demographic factors, although some variations appear in relation to sex and parental educational background (Besmonte, 2023; Amorin et al., 2025). Overall, while ALS teachers demonstrate commendable competence in many domains, consistent enhancement in content mastery, pedagogy, and assessment practices is essential to further improve numeracy instruction and learner outcomes.

Theoretical Underpinnings

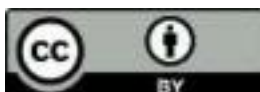
This study is anchored on the Competence Motivation Theory by Harter (1978). Competence Motivation Theory explains that individuals are driven to engage in activities that help them develop and demonstrate competence. The theory assumes that when people experience success, they feel more competent and are more likely to continue pursuing and improving their skills. Further, this theory is designed to explain individuals' motivation to participate, persist, and work hard in each achievement context when they feel competent.

The theory strongly supports the idea that ALS teachers' motivation to improve their numeracy teaching skills is influenced by their perceived competence and experiences of success in the teaching-learning process. Teachers with strong numeracy content knowledge, effective pedagogy, and sound assessment practices tend to deliver quality instruction. Further, this theory aligns with the study's aim to assess ALS teachers' competence in numeracy instruction as a foundation for designing capability-building programs that enhance their skills and motivation.

Objectives

This study aimed to determine the level of competence of Alternative Learning System (ALS) teachers in numeracy instruction in a district of a small-sized division in the Negros Island Region for the school year 2025-2026 as a basis for a capability enhancement plan. Specifically, it answered the following questions: 1) is the profile of the respondents in terms of age, sex at birth, parents' educational attainment, and average family monthly income; 2) the level of competence of Alternative Learning System (ALS) teachers in numeracy instruction according to content knowledge, pedagogical strategies, and assessment practices; and 3) the significant difference in the level of competence of Alternative Learning System (ALS) teachers in numeracy instruction when grouped and compared according to the aforementioned variables.

Methodology



This section discusses the methods used to gather and analyze data based on the specific predetermined objectives. This outline includes research design, subject-respondents, research instruments, data collection procedures, ethical considerations, data analysis, and statistical methods.

Research Design

In this study, the researcher used a descriptive research design to determine the level of competence of Alternative Learning System (ALS) teachers in numeracy instruction in a district of a small-sized division in the Negros Island Region for the school year 2025-2026 as a basis for a capability enhancement plan. According to Siedlecki (2020), descriptive research is a structured and systematic approach aimed at uncovering facts and offering an accurate interpretation of findings. It is especially useful for examining current conditions, common practices, existing situations, or observed phenomena. The descriptive method is suitable for this study because it allows the researcher to systematically measure, describe, and interpret the current state of teachers' competence in numeracy instruction. This approach provides a clear picture of the current practices and conditions without manipulating variables, making it suitable for identifying strengths and areas for improvement.

Respondents

The respondents in this study were Junior High School learners at ALS. From a total enrolment of 210, a sample of 137 was selected using Cochran's formula. According to Ahmed (2024), Cochran's formula is normally used when the population is large or infinite and applies to both proportions and means. Furthermore, the 137 sample respondents were further determined using stratified random sampling to ensure a more representative distribution across key subgroups. Stratified random sampling enhances sample representativeness by ensuring that every significant subgroup within the population is included (Etikan et al., 2016). Finally, a table of random numbers was used to identify the sample from each subgroup.

Instrument

The study utilized a self-developed questionnaire consisting of two parts: Part I gathered respondents' demographic profile (age, sex at birth, parents' highest educational attainment, and average monthly family income), while Part II assessed ALS teachers' competence in numeracy instruction across three domains—Content Knowledge, Pedagogical Strategies, and Assessment Practices—each with 10 items rated on a 5-point Likert scale. The instrument's validity, defined as its ability to measure what it intends to measure (Middleton, 2022), was established through evaluation by three experts in education and ALS, using the Good and Scates criteria, yielding an overall score of 4.82, interpreted as excellent. Reliability, which refers to the consistency of the instrument (Middleton, 2022), was determined using Cronbach's alpha (Taber, 2017) after a dry run with 30 ALS learners from another district, resulting in a coefficient of 0.737, indicating acceptable internal consistency.

Procedure for Data Collection



Before gathering the actual data, the researcher obtained permission from the school division superintendent to conduct the study. Upon approval, he secured parents' consent before administering the questionnaires by sending letters delivered by the District ALS Coordinator. The questionnaires were administered by the respective ALS teachers in the learning centers. Accomplished questionnaires were retrieved after the administration.

Data Analysis and Statistical Treatment

Objective no. 1 used a descriptive analytical scheme and frequency count and a simple percentage formula to describe the profile of the respondents in terms of age, sex at birth, parents' highest educational attainment, and average family monthly income.

Objective no. 2 also used the descriptive-analytical scheme and meant to determine the level of competence of ALS teachers in numeracy instruction across content knowledge, pedagogical strategies, and assessment practices.

Objective no. 3 uses a comparative-analytical scheme and the Mann-Whitney U test to determine significant differences in the level of competence of ALS teachers in numeracy instruction when grouped and compared according to the variables.

Ethical Considerations

In conducting this study, ethical standards were upheld to ensure voluntary, informed, and safe participation. The researcher ensured that respondents were free from coercion and fully aware of the study's purpose, risks, and benefits. They were assured that refusal to participate would have no negative consequences. Their privacy and confidentiality were protected, with all personal data anonymized. The study minimized potential harm, and the researcher maintained integrity by avoiding plagiarism and reporting findings truthfully.

Results and Discussions

This section summarizes the study's findings, which come from careful data gathering, in-depth analysis, and thoughtful interpretation. After this, meaningful conclusions were drawn from the initial phase, offering valuable insights.

Profile of the Respondents in Terms of Variables Age, Sex at Birth, Parents' Educational Attainment, and Average Family Monthly Income

This portion discusses the profile of the respondents in this study. The profile variables considered include age, sex at birth, parents' educational attainment, and average family monthly income.

Table 1

Profile of the Respondents

Variables	Categories	Frequency	Percentage
Age	Younger (below 18 years old)	67	48.90



	Older (18 years old and above)	70	51.10
Sex at Birth	Male	73	53.30
	Female	64	46.70
Parents' Educational Attainment	Lower (Elementary Level/Graduate)	66	48.20
	Higher (High School Level/Graduate and above)	71	51.80
Average Family Monthly Income	Lower Income (below 9 000 pesos)	68	49.60
	Higher (9 000 pesos and above)	69	50.40
	Total	137	100.00

Table 1 shows the profile of the respondents. As shown in the table, 67, or 48.90 percent, belonged to the younger age group, while 70, or 51.10 percent, belonged to the older age group. It is evident that there is a nearly balanced age distribution among the Junior high school ALS learners, indicating that both younger and older ALS learners are well represented; hence, there is a mix of age-related experiences on their teachers' competence.

With respect to sex at birth, 73 respondents or 53.30 percent were male, while 64 or 46.70 percent were female. This indicates a slightly higher number of male ALS learners compared to females. Among respondents, 66 (48.20%) belonged to the lower group whose parents reached only the elementary level of education, while 71 (51.80%) were in the higher group with parents who completed high school and above. This nearly even distribution suggests that the learners come from families with varied educational backgrounds that may influence the level of academic support and motivation they receive at home.

Lastly, with a median family monthly income of ₱9,000, 68 respondents (49.60%) belonged to the lower-income group, while 69 respondents (50.40%) belonged to the higher-income group. Like the rest of the profile grouping, the data indicate nearly equal distribution; thus, the respondents represent both economically disadvantaged and relatively stable households.

In terms of age, the findings of this study are like those of Besmonte (2023), namely that ALS learners are mostly older, that is, mature and out-of-school. As to sex grouping, the finding agrees with Alarcon and Abanto (2015) and Besmonte (2023) that most respondents were male, but disagrees with Fernandez (2015), who reported more females than males. On the other hand, this finding contradicts Cabual (2025), who reported that most respondents came from lower-income families, but aligns with Serato et al. (2025), who found that a greater number of ALS learners belonged to higher-income households and had parents with higher educational attainment.

Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction in the Areas of Content Knowledge, Pedagogical Strategies, and Assessment Practices



The study's second objective was to determine the level of competence of ALS teachers in numeracy instruction. This portion discusses the areas of Content Knowledge, Pedagogical Strategies, and Assessment Practices.

Table 2

Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction According to Content Knowledge

Items	Mean	Interpretation
<i>My teacher...</i>		
1. breaks complex numeracy topics into simple, understandable parts.	3.24	Moderate Level
2. connects math problems to everyday situations for better understanding.	3.13	Moderate Level
3. demonstrates accurate and logical steps in solving math problems.	3.07	Moderate Level
4. Responds promptly and accurately to numeracy-related questions.	2.91	Moderate Level
5. integrates numeracy across subjects.	2.79	Moderate Level
6. consistently uses correct mathematical terms and symbols.	2.98	Moderate Level
7. teaches multiple ways to solve a problem based on learners' needs.	2.85	Moderate Level
8. recognizes and corrects frequent learner errors in numeracy.	2.83	Moderate Level
9. creates tasks that match learners' numeracy skills and progress.	2.71	Moderate Level
10. masters the numeracy lessons required for Junior High School ALS learners.	2.94	Moderate Level
Overall Mean	2.94	Moderate Level

Table 2 presents the level of competence of ALS teachers in numeracy instruction, by content knowledge. As shown in the table, the overall mean score was 2.94, indicating a moderate level. In particular, the highest mean score of 3.24, or moderate level, was obtained for item no. 1 on the teacher's competence to break complex numeracy topics into simple, understandable parts.

Meanwhile, the lowest mean score of 2.71, still a moderate level, was obtained in item no. 9 on creating tasks that match learners' numeracy skills and progress. This is because some ALS teachers are not Mathematics majors and therefore struggle to design differentiated numeracy tasks that align with learners' varying skill levels and learning progress. Furthermore, they must teach many different subjects each day.

This aligns with Tan's (2019) study, which found that many ALS teachers lack specialization in mathematics, resulting in limited mastery of the mathematical concepts essential for effective instruction. Likewise, this supports the findings of Arciosa and Cerado (2020), who reported that learners' poor performance in Mathematics was largely attributed to the teachers' misalignment of learning tasks with their students' actual skill levels. In contrast, Pablo's (2021) study found that knowledge of the content and application of learning areas was at a very high level, as rated by the learner-respondents. In the same



way, Parto and Yango's (2023) results were also challenged, as they showed that ALS teachers possessed high competence in content knowledge and pedagogy.

Table 3

Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction According to Pedagogical Strategies

Items	Mean	Interpretation
<i>My teacher...</i>		
1. uses objects, drawings, or charts to make math concepts concrete.	3.26	Moderate Level
2. adjusts tasks and teaching styles based on learners' readiness and pace.	3.09	Moderate Level
3. makes learning math fun and engaging through play-based methods.	2.90	Moderate Level
4. asks open-ended and probing questions to develop learners' critical thinking.	2.87	Moderate Level
5. uses examples and situations familiar to learners in teaching numeracy.	2.92	Moderate Level
6. promotes group work or pair activities for collaborative problem-solving.	3.02	Moderate Level
7. repeats or re-teaches topics if learners do not understand.	2.94	Moderate Level
8. relates numeracy lessons to learners' work, family, or community life.	3.01	Moderate Level
9. breaks lessons into manageable steps for easier understanding.	2.95	Moderate Level
10. adjusts teaching when learners are having difficulty.	3.04	Moderate Level
Overall Mean	3.00	Moderate Level

Table 3 shows the level of competence of ALS Teachers in numeracy instruction across pedagogical strategies. It obtained an overall mean score of 3.00, or a moderate level. Specifically, the highest mean result was 3.26, or a moderate level, obtained by item no. 1 on teachers' competence in using objects, drawings, or charts to make math concepts concrete.

In contrast, the lowest mean was 2.87, which is still a moderate level, obtained for item no. 4, which asked learners to respond to open-ended questions and probe to develop learners' critical thinking. This indicates that many ALS teachers demonstrate lower competence in encouraging deeper thinking through open-ended and follow-up questions. They may avoid open-ended questions because ALS learners struggle to articulate their responses, and discussions take longer and are harder to manage. Hence, they tend to rely on closed or guided questions instead.

This finding confirms Elorta-Cherry et al. (2025), who found that ALS teachers exhibited low levels of content knowledge and pedagogical competence. The finding aligns with Pablo's (2021) study, which found that teaching strategies that could boost learners' critical thinking while having fun received the lowest rating.

Generally, the moderate finding on teachers' competence in pedagogical strategies differs from Albert et al. (2024) and Tachado (2017), who show consistently high approval among ALS learners of



their teachers' teaching quality, particularly in the clarity of instruction and the ability to explain lessons well.

Table 4

Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction According to Assessment Practices

Items	Mean	Interpretation
<i>My teacher...</i>		
1. checks if learners understand the lesson during or after teaching.	3.02	Moderate Level
2. gives quizzes, exercises, or other tasks to assess our numeracy learning.	3.06	Moderate Level
3. gives feedback that helps us understand our mistakes.	2.89	Moderate Level
4. explains test results or activity outcomes clearly.	2.87	Moderate Level
5. encourages us to improve based on our performance.	2.85	Moderate Level
6. uses different ways to assess our understanding (e.g., oral, written, practical tasks).	2.91	Moderate Level
7. design questions suited our pace and ability.	2.93	Moderate Level
8. tracks our progress in math learning over time.	2.80	Moderate Level
9. highlights strengths and areas for improvement.	2.88	Moderate Level
10. uses assessment results to adjust the next lessons or activities.	2.57	Moderate Level
Overall Mean	2.89	Moderate Level

Table 4 shows the level of competence of ALS Teachers in numeracy instruction according to assessment practices. It obtained an overall mean score of 2.89, or a moderate level. Meanwhile, the highest mean score is 3.06 with a verbal interpretation of moderate level. It is on teachers' competence in assigning quizzes, exercises, or other tasks to assess numeracy learning.

At the same moderate level of competence, the lowest mean was 2.57 for item no. 10, which asked about teachers using assessment results to adjust the next lessons or activities. It could be that ALS teachers have less time to analyze assessment results to identify learners' least mastered skills or to modify subsequent lessons or activities to align with the objectives, due to limited time for face-to-face learning engagement.

This finding supports that of DeLuca and Klinger (2020), who found that many teachers possess limited competence in classroom assessment, particularly in aligning them with learning objectives. Similarly, Gepila (2020) found that teachers were only proficient in applying assessment results as a tool for enhancing learning.

Comparative Analysis Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction in the Areas of Content Knowledge, Pedagogical Strategies, and Assessment Practices When Grouped and Compared According to Age, Sex at Birth, Parents' Highest Educational Attainment, and Average Family Monthly Income

This portion answers the third objective of this study; that is, to unfold where significant differences exist in the level of competence of ALS teachers in numeracy instruction in terms of the



content knowledge, pedagogical strategies, and assessment practices as grouped and compared as to the demographic profile considered in this study.

Table 5

Difference in the Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction According to Content Knowledge When Grouped and Compared According to Age, Sex at Birth, Parents' Highest Educational Attainment, and Average Family Monthly Income

Variable	Category	N	Mean Rank	Mann-Whitney U	p-value	Sig. level	Interpretation
Age	Younger	67	64.36	2034.00	.179		Not Significant
	Older	70	73.44				
Sex at Birth	Male	73	69.32	2313.00	.921		Not Significant
	Female	64	68.64				
Parents' Educational Attainment	Lower Educational Attainment	66	68.78	2328.50	.950	0.05	Not Significant
	Higher Educational Attainment	71	69.20				
Average Family Monthly Income	Lower Income	68	66.60	2183.00	.481		Not Significant
	Higher Income	69	71.36				

Table 5 presents the difference in the level of competence of ALS teachers in numeracy instruction according to content knowledge when grouped and compared according to age, sex at birth, parents' highest educational attainment, and average family monthly income. As to age, the mean ranks of the younger group were 64.36, while those of the older group were 73.44, having a Mann-Whitney U test value of 2034 and a p-value of 0.179. As to sex at birth, the mean rank of the male group was 69.32 while that of the female group was 68.64, having a Mann-Whitney U test value of 2313.00 and a p-value of 0.921. As to parents' educational attainment, the mean rank of the lower group was 68.78, while that of the higher group was 69.20, having a Mann-Whitney U test value of 2328.50 and a p-value of 0.950. Lastly, as to average family monthly income, the mean rank of the lower-income group was 66.60, while that of the higher group was 71.36, having a Mann-Whitney U test value of 2183.0 and a p-value of 0.481.

With all the p-values being greater than the 0.05 level of significance, there is enough evidence not to reject the null hypothesis that no significant difference existed in the level of competence of ALS teachers in numeracy instruction according to content knowledge when grouped and compared according to age, sex at birth, parents' highest educational attainment, and average family monthly income. This result indicates that teachers' content knowledge in numeracy remains consistent across different demographic groups, such as age, sex at birth, parental education, and family income. This is because Junior ALS learners perceive their teachers' explanations and demonstrations to be moderately effective, regardless of their personal characteristics, as their field of specialization is not Mathematics.



This is consistent with the result of Besmonte (2023) that there was no significant difference in how learners perceived the implementation of ALS across teaching content, materials, and assessment when grouped by age, sex, civil status, educational attainment, or monthly family income.

Table 6

Difference in the Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction According to Pedagogical Strategies When Grouped and Compared According to Age, Sex at Birth, Parents' Educational Attainment, and Average Family Monthly Income

Variable	Category	N	Mean Rank	Mann-Whitney U	p-value	Sig. level	Interpretation
Age	Younger	67	69.60	2304.50	.861		Not Significant
	Older	70	68.42				
Sex at Birth	Male	73	65.08	2049.50	.213		Not Significant
	Female	64	73.48				
Parents' Educational Attainment	Lower Educational Attainment	66	69.13	2334.50	.971	0.05	Not Significant
	Higher Educational Attainment	71	68.88				
Average Family Monthly Income	Lower Income	68	71.08	2204.50	.540		Not Significant
	Higher Income	69	66.95				

Table 6 presents the difference in the level of competence of ALS teachers in numeracy instruction according to pedagogical strategies when grouped and compared according to age, sex at birth, parents' highest educational attainment, and average family monthly income. Using the Mann–Whitney U test, the analysis showed that the difference between the two groups was not statistically significant.

In terms of age, the younger group obtained a mean rank of 69.60, whereas the older group registered a mean rank of 68.42; the test statistic was 2034.50 with a p-value of 0.861. In terms of sex at birth, the male group obtained a mean rank of 65.08, whereas the female group had a mean rank of 73.48; the test statistic was 2049.50 with a p-value of 0.213. In terms of parents' educational attainment, the lower group had a mean rank of 69.13, whereas the higher group had a mean rank of 68.88; the test statistic was 2334.50 with a p-value of 0.971. In terms of average family monthly income, the lower group obtained a mean rank of 71.08, whereas the higher group got a mean rank of 66.95; the test statistic was 2204.50 with a p-value of 0.540.



The null hypothesis that there was no significant difference in the level of competence of ALS teachers in numeracy instruction according to pedagogical strategies when grouped and compared according to age, sex at birth, parents' highest educational attainment, and average family monthly income was not rejected, because all of the p-values are greater than the 0.05 level of significance. This indicates that Junior high school ALS learners perceive their teachers' instructional methods in numeracy instruction to be uniform across various groupings. This implies further that learners perceive the quality of teaching methods used in ALS to be similar and consistent, most likely in consonance with standardized training, shared instructional resources offered by the ALS system, and common program rules.

This agrees with the findings of Servano and Satojito's (2025) study, which states that no significant differences existed in teachers' pedagogical practices, competence, or creativity as assessed by ALS learners when compared by demographics such as age.

Table 7

Difference in the Level of Competence of Alternative Learning System (ALS) Teachers in Numeracy Instruction According to Assessment Practices When Grouped and Compared According to Age, Sex at Birth, Parents' Highest Educational Attainment, and Average Family Monthly Income

Variable	Category	N	Mean Rank	Mann-Whitney U	p-value	Sig. level	Interpretation
Age	Younger	67	65.28	2095.50	.281		Not Significant
	Older	70	72.56				
Sex at Birth	Male	73	69.72	2283.50	.820		Not Significant
	Female	64	68.18				
Parents' Highest Educational Attainment	Lower Educational Attainment	66	72.02	2143.50	.388	0.05	Not Significant
	Higher Educational Attainment	71	66.19				
Average Family Monthly Income	Lower Income	68	68.79	2331.50	.950		Not Significant
	Higher Income	69	69.21				

Table 7 presents the difference in the level of competence of ALS teachers in numeracy instruction according to assessment practices when grouped and compared according to age, sex at birth, parents' highest educational attainment, and average family monthly income. Based on the Mann–Whitney U test, the results indicate that the differences between the two groups were not statistically significant.



For age, the younger group had a mean rank of 65.28 while the older group had 72.56; the test statistic was 2095.50, with a p-value of 0.281. For sex at birth, the male group had a mean rank of 69.72 while the female group had 68.18; the test statistic was 2283.50, with a p-value of 0.820. For parents' educational attainment, the lower group had a mean rank of 72.02 while the higher group had 66.19; the test statistic was 2143.50, with a p-value of 0.388. For average family monthly income, the lower group had a mean rank of 68.79 while the higher group had 69.21; the test statistic was 2331.50, with a p-value of 0.950.

Having all the p-values exceeding the 0.05 alpha led to the non-rejection of the null hypothesis that no significant difference existed in the level of competence of ALS teachers in numeracy instruction according to assessment practices when grouped and compared according to age, sex at birth, parents' highest educational attainment, and average family monthly income. This suggests that Junior ALS learners perceive their teachers' assessment practices as generally equitable because assessment methods are based on a consistent and standardized manner, as reflected in the modules. Teachers may have less capacity for differentiating assessment methods in Math, nor may they be Math majors.

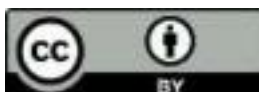
This substantiates the result of the study of Besmonte (2023) that there were no significant differences in competence on assessment when grouped by age, sex, educational attainment, and length of service. Similarly, Amorin et al. (2025) found that age, family income, and distance from the learning center did not significantly affect learners' perceptions of ALS implementation, including assessment of learning outcomes, although a significant difference emerged as to sex grouping.

Conclusion

The study found that respondents were mostly older male Junior High School ALS learners from relatively advantaged families in terms of parental education and income. Across content knowledge, pedagogical strategies, and assessment practices, ALS teachers' competence in numeracy instruction was consistently rated as moderate, regardless of learners' age, sex, parental educational attainment, and family income, with no significant differences observed among these groups. These findings suggest that while teachers possess essential skills, there is a need for further professional development to enhance instructional effectiveness and responsiveness to diverse learners. Additionally, the uniform moderate ratings imply that teachers tend to rely on standardized ALS modules and shared instructional approaches, possibly due to limited specialization in mathematics, resulting in consistent but not highly differentiated teaching practices across learner groups.

Recommendation

Based on the findings and conclusions, it is recommended to enhance ALS implementation by increasing participation among underrepresented groups, such as younger, female, and lower-income learners, through targeted outreach and flexible scheduling. Additionally, numeracy training should be provided to ALS teachers, particularly those without a Mathematics specialization, to strengthen their content knowledge, pedagogical strategies, and assessment practices. Teachers should also apply differentiated instruction during face-to-face sessions to better address diverse learner needs, while engaging in peer-teaching workshops and collaborative lesson design to develop more contextualized and varied numeracy activities beyond reliance on standard modules.



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Authorship Contribution Statement

Gimagan: Concept and design, literature review, data collection, analysis, interpretation, and editing. **Tumarong:** Reviewing, supervision, and material support.

Conflict of Interest

The authors declare no conflict of interest related to the conduct, authorship, and publication of this research. All procedures and interpretations were performed independently, and no financial, professional, or personal relationships influenced the results of this study.

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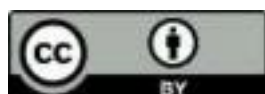
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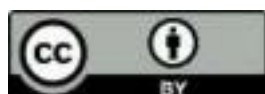
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