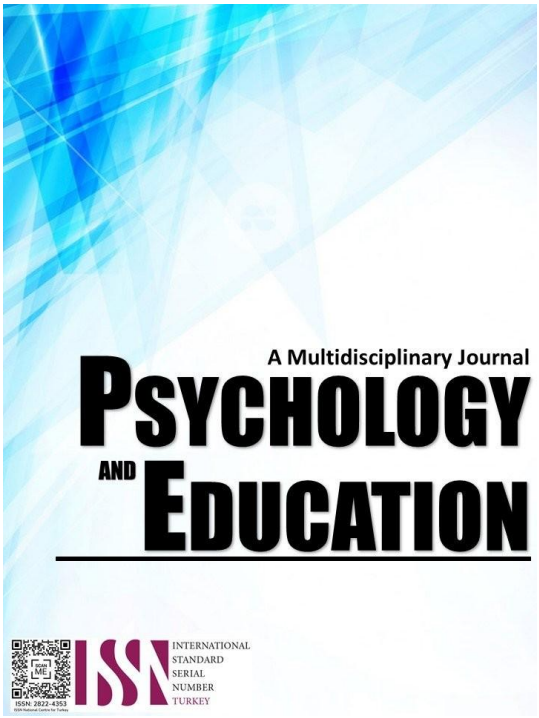
EVALUATING ALTERNATIVE DELIVERY MODES (ADM) UNDERSTANDING, SUPPORT, AND EFFECTIVENESS ON STUDENTS' MATHEMATICS PERFORMANCE



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Research Article

Evaluating Alternative Delivery Modes (ADM) Understanding, Support, and Effectiveness on Students' Mathematics Performance

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Abstract

Alternative Delivery Modes (ADMs) in education aim to address barriers and broaden access to learning opportunities beyond traditional classroom settings. This study examined the relationship between parents' demographic profiles and their levels of understanding, support, and perceptions of ADM effectiveness regarding their children's academic performance in Mathematics. A descriptive-correlational research design was employed using a survey questionnaire and an achievement test. The sample consisted of 270 respondents selected through stratified random sampling from General Climaco National High School, Division of Toledo City, for the school year 2024–2025. Data were analyzed using percentages, frequency counts, weighted means, and Pearson's r correlation to determine significant relationships. Findings revealed that parents generally demonstrated a high level of understanding, support, and positive perception of ADM effectiveness. Most were middle-aged mothers who actively fostered supportive home learning environments. While parental involvement positively influenced students' academic performance, its effect was limited, indicating that other factors also contributed to achievement. Results further showed a weak but significant relationship between parents' understanding, support, and perception of ADM effectiveness and their children's Mathematics performance. The study recommends implementing the proposed Intervention Plan: Enhancing Math Achievement Through Homeschool Collaboration in ADM, to strengthen teacher-parent collaboration and improve students' performance in Mathematics.

Keywords: *teaching mathematics, alternative delivery methods, parental involvement, academic performance, correlational analysis, descriptive correlational research design, Philippines*

Introduction

Parental support is a pivotal factor in the effectiveness of Alternative Delivery Modes (ADMs), in which students are required to assume greater independence and self-regulation than in traditional classroom settings. Beyond providing academic assistance, parents serve as facilitators of learning by establishing structured routines, monitoring progress, and creating environments conducive to study. They also play a vital role in offering emotional encouragement, fostering resilience, and reinforcing motivation—elements that are particularly significant in modular and blended learning contexts. Adequate parental support further includes maintaining open communication with teachers, guiding the use of learning materials, and modeling positive attitudes toward education. Such engagement not only strengthens students' persistence and self-discipline but also bridges potential gaps created by limited face-to-face interaction with teachers. Within ADMs, where accessibility challenges and the demand for self-directed learning can hinder student achievement, parental involvement emerges as a critical determinant of academic success.

Building on this, the disruption of classes in recent years has highlighted the necessity of systemic strategies to sustain education during crises. The implementation of Alternative Delivery Modes (ADM) under the Department of Education's (DepEd) Basic Education Learning Continuity Plan (BE-LCP) exemplifies a strategic response to these challenges. This initiative, in line with UNESCO's global call for educational continuity, aims to establish resilient and inclusive learning ecosystems. By providing flexible and accessible pathways, ADMs mitigate learning losses and psychosocial impacts during emergencies. Thus, while parental support strengthens student engagement at the household level, DepEd's institutional adoption of ADM ensures that educational continuity and equity are upheld during times of disruption (UNESCO, 2019).

Evidently, Niez (2023) illuminated the multifaceted landscape of Alternative Delivery Mode (ADM) implementation in junior high schools and its direct impact on academic performance. The findings revealed that successful ADM deployment requires more than technological infrastructure alone. Specifically, parental, teacher, and school head support emerged as critical components that directly influence student engagement and learning. Teacher training was also identified as essential, ensuring educators have the skills to implement ADM strategies effectively. In addition, community engagement played a key role in fostering collaboration and strengthening students' support networks. The study further highlighted persistent challenges related to technology access, underscoring the need for targeted interventions. Collectively, these findings emphasize the importance of adopting a holistic ADM approach that recognizes the interconnected roles of parents, educators, school leaders, and communities in shaping educational outcomes during emergencies.

Furthermore, Acang (2024) investigated the effectiveness of Alternative Delivery Modes (ADMs) using modular print as the primary learning modality, particularly in areas with limited connectivity. While modular print supported educational continuity, the study revealed that its impact on academic success was complex. Accessibility alone did not guarantee improved outcomes; rather, teaching

quality emerged as a decisive factor, underscoring that effective instruction remains essential regardless of delivery mode. In addition, student engagement—an integral component of active learning—significantly influenced performance beyond the availability of physical materials.

Equally important, the study emphasized the role of parental and guardian support in shaping student achievement. Although modular print ADMs address accessibility challenges, the quality of educational experiences and the strength of home support structures were shown to be paramount. Tangible parental support, as noted by Nielsen and Hoj (2019), serves as a cornerstone of ADM success by bridging the gap between school and home. This support can take many forms, such as providing a dedicated study space, ensuring access to learning materials, assisting with assignments, and fostering a positive learning atmosphere. Moreover, open communication between parents, teachers, and school leaders strengthens collaboration, enabling challenges to be addressed more effectively and student progress to be closely monitored. By consistently reinforcing the value of education, parents cultivate stability, motivation, and resilience in their children. Ultimately, such engagement transforms the home into an extension of the classroom, enhancing student engagement, academic performance, and the overall effectiveness of ADMs.

The scenario in this study will be helpful in Cebu, both in the Provinces and in the City Proper, given its current condition and certain impediments to parental participation, especially when the Alternative Delivery Mode is to be implemented. The main difficulty arising from its predominantly rural setting is that it affects the level of parental involvement in educating their children. Other such factors, including their readiness to teach, technical skills, educational background, and socioeconomic constraints, would affect a parent's capacity to contribute fully to their children's education. Thus, knowledge of the local dynamics of these matters is essential and provides a basis for tailored interventions with the family unit, since parents lack a thorough understanding of how to implement ADM successfully as an alternative to emergency education.

Thus, this research examined the significant relationship between parent-students' demographic profile and their level of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM) in relation to their academic performance at General Climaco National High School, Toledo City Division, for the school year 2024-2025 as the basis for an intervention plan.

Research Question

This research examined the significant relationship between parent-students' demographic profile and their level of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM) in relation to their academic performance at General Climaco National High School, Toledo City Division, for the school year 2024-2025 as the basis for an intervention plan. Specifically, it sought answers to the following queries.

1. What is the demographic profile of the parent-respondents in terms of:
    1.1 age; and
    1.2 gender?
2. What is the level of perception of the parent respondents on the Alternative Delivery Mode (ADM) program in terms:
    2.1 understanding;
    2.2 support; and
    2.3 effectiveness?
3. What is the level of academic performance of the children of the parent respondents in Mathematics?
4. Is there a significant relationship between the:
    4.1 parents' understanding of ADM and the academic performance of their children in mathematics;
    4.2 parental support of ADM and the academic performance of their children in Mathematics; and
    4.3 parents' perceived effectiveness of ADM and the academic performance of their children in Mathematics?
5. Based on the findings, what intervention plan can be proposed?

Literature Review

Parental involvement fosters supportive learning environments, which in turn enhance academic performance, strengthen social competence, and reduce behavioral problems. It encompasses both school-based participation and home support as essential components of children's development. Moreover, OECD (2019) emphasizes that parental engagement is critical not only for academic achievement but also for social and emotional development, providing a broader context for the present study.

This study theorizes the evaluation of Alternative Delivery Modes (ADMs) in terms of understanding, support, and effectiveness on students' mathematics performance. To ground this inquiry, it draws on three major theories: Social Cognitive Theory (Bandura, 1986), Ecological Systems Theory (Bronfenbrenner, 1979), and Constructivist Learning Theory (Piaget, 1954; Vygotsky, 1978). Specifically, Social Cognitive Theory highlights the role of observational learning and self-efficacy in fostering student engagement within ADMs. In addition, Ecological Systems Theory considers how family, community, and technology influence the effectiveness of ADM, particularly during emergencies. Meanwhile, Constructivist Learning Theory emphasizes how students actively construct knowledge through modular learning and parental support, reinforcing the importance of personalized learning experiences. Taken together, these theoretical perspectives provide a comprehensive framework for analyzing the impact of ADM on student performance.

Social Cognitive Theory

Social Cognitive Theory (SCT), developed by Albert Bandura, emphasizes the dynamic interaction between personal factors, environmental influences, and behavior in the learning process (Bandura, 1986). Central to SCT is the principle of triadic reciprocal determinism, which explains how individuals acquire knowledge through the continuous interplay of personal beliefs, environmental contexts, and observed behaviors (Devi et al., 2017). In the context of Alternative Delivery Modes (ADMs), this framework helps explain how students navigate flexible learning environments. Observational learning enables students to model the behaviors of teachers, parents, or peers when engaging with ADM resources, influencing their own learning strategies. Equally important is self-efficacy—the belief in one's ability to succeed—which strengthens persistence and motivation in modular or home-based learning contexts.

For instance, parental support within the home environment can enhance student engagement with modular tasks, leading to improved academic outcomes. Moreover, SCT highlights the importance of motivation, goal setting, and feedback in sustaining engagement and performance. By applying SCT, ADMs can be designed to foster self-efficacy, encourage independent learning, and bridge the gap between theoretical knowledge and practical application (Calamaan & Trinidad, 2025).

Ecological Systems Theory

Ecological Systems Theory (EST), introduced by Bronfenbrenner (1979), provides a lens for analyzing the multiple, interconnected systems that shape a student's learning experiences. The theory posits that development is influenced by interactions within and across environmental layers, including the microsystem (family, peers, teachers), mesosystem (school–home relationships), exosystem (community and institutional supports), macrosystem (cultural values, socioeconomic conditions), and chronosystem (changes across time).

Within ADMs, this perspective underscores how family involvement, community support, and technological access interact to influence student performance. For example, parental guidance within the home (microsystem), school policies on ADM implementation (mesosystem), and the availability of digital resources in the community (exosystem) all contribute to shaping student outcomes. By applying EST, the study situates ADM within a broader social context, recognizing that academic performance is not determined solely by individual effort but by the complex interplay of familial, institutional, and societal factors.

Research emphasizes the relevance of Ecological Systems Theory (EST) in understanding educational outcomes across diverse contexts. Yang and Oh (2024) demonstrated that interactions among ecological systems significantly influence children's cognitive, emotional, and social development. Ruppar et al. (2016) applied EST to examine curriculum access for students with significant disabilities, framing their findings within all five ecological systems. Similarly, Seginer (2006) used EST to examine parental educational involvement, finding that both home- and school-based support are positively associated with student achievement. More recently, Kitchen et al. (2019) developed practical tools for applying EST in higher education research, illustrating how family, community, and institutional factors collectively shape students' academic experiences and outcomes.

Constructivist Learning Theory

Constructivist Learning Theory, advanced by Piaget (1954) and Vygotsky (1978), emphasizes that learners actively construct knowledge through interaction with their environment, rather than passively absorbing information. In the context of ADMs, this theory highlights the role of modular learning and parental support in enabling students to make meaning from learning materials. Piaget's cognitive constructivism emphasizes developmental stages and hands-on exploration, while Vygotsky's social constructivism emphasizes collaboration, scaffolding, and the zone of proximal development.

Together, these perspectives suggest that effective ADM implementation requires both independent engagement and guided support from parents or teachers. Constructivist principles also reinforce the value of personalized learning, where learners connect new information to prior knowledge and apply it in real-world contexts. By grounding ADM in constructivist approaches, educators can promote deeper understanding, critical thinking, and active participation among students.

This perspective has profoundly shaped modern education, shifting instruction from teacher-centered to student-centered approaches that foster cognitive development and more profound understanding (Erawati & Adnyana, 2024). In contemporary classrooms, constructivist principles align with 21st-century learning goals such as critical thinking, collaboration, creativity, and personalized learning, often realized through project-based and inquiry-driven strategies (Rai, 2025). The theory also informs the design of Learning Management Systems, where innovations like artificial intelligence, gamification, and collaborative tools enhance active engagement and knowledge construction (Zin et al., 2024).

Moreover, constructivism has transformed curriculum development by prioritizing inquiry-based learning, problem-solving, and authentic assessment. However, challenges remain in teacher readiness and in balancing student autonomy with appropriate instructional guidance (Yakubu et al., 2025).

International Legal Instruments

International human rights law provides a robust framework for understanding the imperative of Alternative Delivery Modes (ADMs)

during emergencies. The Universal Declaration of Human Rights (UDHR) (1948), in Article 26, establishes the foundational principle that education is a universal right, obligating states to ensure its accessibility even in challenging circumstances. The International Covenant on Economic, Social, and Cultural Rights (ICESCR) (1966), through Article 13, elaborates on this right, mandating states to take measures, including the implementation of ADMs, to maintain educational services during emergencies, thus emphasizing the progressive realization of education for all. The Convention on the Rights of the Child (CRC) (1989), in Article 28, specifically addresses the child's right to education, requiring states to prioritize the child's best interests and ensure that education is not disrupted, making ADMs a crucial tool for fulfilling this obligation. Finally, while the Geneva Conventions and their Additional Protocols (1949 and 1977) do not explicitly mention education, they protect civilians, including children, during armed conflict by prohibiting attacks on schools and emphasizing humanitarian assistance, which indirectly supports the implementation of ADMs in conflict zones by providing a framework for protecting educational access. These instruments establish a clear obligation for states to protect the right to education during emergencies. They provide the legal and moral foundation for implementing ADMs to ensure learning continuity, mitigate the impact of crises, and prevent educational backsliding. They also provide a framework for accountability, holding states responsible for fulfilling their academic obligations, even in challenging circumstances.

National Legal Frameworks

National legal frameworks are essential for operationalizing the right to education, particularly during emergencies that require Alternative Delivery Modes (ADMs). Constitutions and national laws, such as the Philippines' Republic Act No. 10533 (Enhanced Basic Education Act of 2013), provide the legal foundation for educational continuity and outline provisions for distance learning, online education, and alternative learning systems. These frameworks define roles, allocate resources, and establish procedures to ensure effective and equitable implementation of ADMs.

In the Philippines, the Department of Education (DepEd) implements ADM to maintain learning continuity, especially for students in remote areas or during crises. DepEd's policies—including Department Order No. 1, s. 2022 on homeschooling—institutionalize flexible learning modalities such as modular instruction, blended learning, and Education in Emergencies (ADM-EiE). These initiatives enable schools to deliver the K–12 curriculum outside traditional classrooms, particularly when face-to-face instruction is disrupted. However, challenges remain, especially in geographically isolated schools that lack trained personnel, sufficient learning materials, or administrative support. Although policies such as DepEd Order No. 54, s. 2012 and capacity-building programs, such as Division Memorandum No. 178, s. In 2023, aim to strengthen ADM implementation. Field feedback highlights the need for more precise role delineation and more equitable resource distribution. Addressing these gaps is crucial to ensuring that ADM remains effective and sustainable across diverse school contexts in the country.

Interplay of International and National Law

International law sets the overarching framework for the right to education, while national laws translate these principles into action. States have a dual obligation: to uphold international standards and implement them through national legal and policy frameworks. Regarding ADMs, this means states must not only respect the right to education during emergencies but also develop and implement national strategies to ensure its realization. The legal basis for ADMs in emergencies rests on the fundamental human right to education, as enshrined in international and national legal instruments. These frameworks compel states to take proactive steps to ensure educational continuity during crises, making ADMs a legally and ethically sound strategy for mitigating disruptions and protecting learners' rights. This legal foundation underscores the urgency and importance of research and the practical implementation of ADMs, which will serve as the guiding insights for crafting the action plan as the final output of the study.

Methodology

This section presents the research design, instrument, data gathering, and ethical considerations.

Research Design

This study examined the significant relationship between parents' and students' demographic profiles and their levels of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM) with respect to their academic performance at General Climaco National High School. According to Bhandari (2023), a descriptive-correlational research design investigates relationships between variables without the researcher controlling or manipulating any of them. Thus, this study used a descriptive-correlational research design to examine the relationships between parents' and students' demographic profiles and their levels of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM) with their academic performance. It helps in determining whether there is a significant correlation between these variables. Stratified random sampling was used to determine the sample size. Lastly, the data were analyzed using appropriate statistical tools, such as the Frequency distribution, the Percentage formula, Weighted Mean, Linearity and Normality Tests, and Pearson's r correlation.

Respondents

In determining the respondents of the study, a set of inclusion criteria was established and met by the participants: (1) they were parents of bona fide students from the identified public high school in Toledo City Division for the School Year 2024–2025, and (2) their

children were enrolled in the Grade 7 level. These criteria ensured that the data gathered were both relevant and consistent with the objectives of the study, which examined the significant relationship between students' demographic profile and their level of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM) in relation to their academic performance at General Climaco National High School. Furthermore, stratified random sampling was employed to guarantee that the sample was representative of the target population, thereby enhancing the validity and reliability of the findings. Given that the Grade 7 level consisted of 270 parents, stratified random sampling was employed to obtain a representative sample from this population. The strata were determined based on the different Grade 7 sections, ensuring each section was proportionally represented in the sample. This approach ensured that variations across sections were accounted for, thereby enhancing the validity, reliability, and overall representativeness of the study's findings. Table 1 presents the distribution of the student-respondents from the identified public high school.

Table 1. *Distribution of the Respondents*

Respondents	*Female*		*Male*		*Total*	
	f	*%*	*m*	*%*	*f*	*%*
G7- Parents in General Climaco NHS	248	91.85	22	8.15	270	100

Instrument

In this study, a questionnaire was used to gather the necessary data. The instrument consisted of four parts. The first section collected demographic information from the parent respondents. In contrast, the second section measured their perceptions of ADM implementation in Mathematics using a Likert scale focused on understanding, support, and perceived effectiveness. The assessment tools were adapted from the Department of Education (DepEd, 2020), specifically DO 54, s. 2012: Guidelines on the Implementation of Alternative Delivery Modes. Students' academic performance was obtained from their Fourth Quarter grades in Mathematics 7, retrieved from the Registrar's Office, and validated by the subject teacher. According to George and Mallery (2003), as cited in Allevato (2019), Cronbach's alpha values above .90 are considered Excellent, above .80 Good, above .70 Acceptable, above .60 Questionable, above .50 Poor, and below .50 Unacceptable. The questionnaire's overall reliability coefficient was 0.9516, indicating excellent internal consistency. Reliability coefficients for the individual ADM perception scales were as follows: understanding ($\alpha = 0.9496$), support ($\alpha = 0.9695$), and effectiveness ($\alpha = 0.9699$). These values confirm that the instrument is highly reliable and appropriate for measuring the intended variables. The questionnaire was further validated by a panel of at least 3 Mathematics teachers holding Master's degrees and actively involved in research.

Procedure

The researcher followed three stages of data collection.

Preliminary Stage. A transmittal letter was first secured from the Schools Division Superintendent to obtain approval for the study. Once approved, the letter was forwarded to the School Head/Principal for authorization of the research. The researcher was then referred to the Research Coordinator to coordinate with the Grade 7 Parents.

Data Gathering Stage. An orientation was conducted with the subject teacher and the selected respondents to explain the study's ethics and objectives. This stage also focused on the level of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM) in relation to the student's academic performance. The researchers personally administered the questionnaires.

Post–Data Gathering Stage. After retrieving the questionnaires, the data were tabulated and analyzed using the Statistical Package for the Social Sciences (SPSS) with assistance from a statistician. Finally, the results were interpreted, analyzed, and presented.

Data Analysis

The data gathered from the survey questionnaires were tabulated and organized. Additionally, the data were treated and analyzed using the subsequent statistical tools:

Frequency Count was used to tally respondents' responses on age, gender, and academic performance. The percentage was used to determine the proportion of the total for each demographic age, gender, and academic performance. Weighted Mean was used to describe the level of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM). Standard Deviation was used to measure how spread out or dispersed the data values are around the weighted mean (average). Pearson's r was used to examine the relationship between students' demographic profiles and their levels of understanding, support, and perceived effectiveness of the Alternative Delivery Mode (ADM) with respect to their academic performance. Normality and Linearity statistical techniques were used to evaluate the hypotheses and determine whether the data deviated significantly from normality.

Ethical Considerations

In conducting this study, the researcher strictly followed established standards and ethical guidelines. Before implementation, the study underwent ethical review and received approval from the appropriate authorities, the University Research Ethics Board and the Division Research Committee, respectively. All research procedures, particularly data collection through survey questionnaires, were carried out in compliance with the highest standards of human rights, safety, and ethical conduct.

During the survey process, participants were fully informed of their rights, and voluntary participation was emphasized, ensuring that parents understood they could decline or withdraw from the study at any time without negative consequences. Their protection from potential harm was ensured through confidentiality measures and the requirement of informed consent. Each participant provided informed consent after being briefed on the study's purpose, procedures, potential risks, and benefits.

The researcher upheld the principles of integrity and honesty throughout the process, avoiding any form of fabrication, falsification, or plagiarism. Finally, all study-related materials were securely disposed of upon completion of the research to safeguard participants' confidentiality.

Results and Discussion

This section presents the analysis and interpretation of data on the profiles and perspectives of parent respondents regarding the Alternative Delivery Mode (ADM). Using a structured survey questionnaire, results are presented in tables and narratives, highlighting the relationships between parents' understanding, support, and perceptions of ADM and their children's Mathematics performance.

Profile of the Parent-Respondent

Age and Gender

These fundamental demographic characteristics underpin the respondent profiles, shaping the diversity of parental experiences and perspectives examined in this study. Recognizing these distinctions was essential to understanding the subtle variations in parental attitudes and behaviors.

Table 2. *Profile of the Parent-Respondent*

Age (in years)	*Female*		*Male*		*Total*	
	f	*%*	*f*	*%*	*f*	*%*
above 56	1	0.37	0	0.00	1	0.37
47-56	34	12.59	2	0.74	36	13.33
37-46	102	37.78	11	4.07	113	41.85
27-36	111	41.11	9	3.33	120	44.44
Total	248	91.85	22	8.15	270	100.00

Based on Table 2, the majority of parent-respondents were female (91.85%), while only a small portion were male (8.15%), with most falling within the age range of 27–46 years (86.29%). The findings indicate that middle-aged mothers, who often balance work and childcare, are the primary facilitators of their children's learning under ADM. Their familiarity with digital tools supports their engagement with ADM materials, but limited time may restrict their ability to tutor, especially in mathematics. Thus, ADM strategies should prioritize concise, user-friendly resources such as worked examples, brief explainer videos, and simplified parent guides. The predominance of female respondents reflects mothers' experiences, strengthening validity but underrepresenting fathers' perspectives. Although few older parents participated, they may prefer print-based materials. Overall, these demographic patterns suggest that while parents contribute positively to ADM implementation, interventions must consider their time constraints, digital skills, and household roles, while promoting broader participation across age and gender groups. Research showed that parental involvement plays a significant role in children's mathematics achievement, with noticeable gender differences in both students' responses and parents' approaches. Steiner et al. (2024) introduced a five-week literacy-focused parent intervention model that effectively enhanced students' mathematics performance by providing structured home support strategies. In the context of Alternative Delivery Modes (ADM), students often opt for these approaches to balance work, financial, or family responsibilities. Among the options, modular learning is the most preferred because of its flexibility, while online learning is less preferred due to persistent connectivity issues.

Level Of Perception of The Respondents on The Alternative Delivery Mode (ADM) Program

Explores how well participants comprehend the principles, processes, and implementation of the Alternative Delivery Mode (ADM) in education. This insight was essential in evaluating the effectiveness of ADM as a teaching strategy and identifying areas where further support or training may be needed.

Understanding of ADM

It offers flexible modalities such as modular, online, and blended learning to ensure the continuity of education. Understanding ADM is crucial in promoting inclusive, equitable, and accessible learning opportunities that align with the principles of quality education.

Table 3 presents the respondents' level of understanding of the Alternative Delivery Mode (ADM) program across five indicators. The results show a generally high level of awareness, with an overall weighted mean of 4.18, verbally described as "High." The strongest areas of understanding were reflected in the statements "I understand the goals of my child's ADM program" (WM = 4.23, SD = 0.86) and "I know how to contact the teacher or school regarding my child's ADM program" (WM = 4.21, SD = 0.87), both rated "Very High," indicating strong parental engagement in ADM goals and communication processes. The remaining indicators—understanding the reasons for enrollment (WM = 4.19), familiarity with the learning approach (WM = 4.17), and awareness of their child's participation in ADM (WM = 4.09)—were all rated "High," showing generally solid but slightly more varied levels of understanding.

Standard deviations ranging from 0.86 to 0.98 suggest moderate consistency in responses.

Table 3. *Understanding of ADM*

S/N	*Indicators*	*WM*	*SD*	*Verbal Description*
1	I am aware that my child is participating in an Alternative Delivery Mode (ADM) program.	4.09	0.98	High
2	I understand the reasons why my child is enrolled in an ADM program	4.19	0.92	High
3	I am familiar with the learning approach used in my child's ADM program.	4.17	0.90	High
4	I know how to contact the teacher or school regarding my child's ADM program.	4.21	0.87	Very High
5	I understand the goals of my child's ADM program.	4.23	0.86	Very High
	Aggregate Weighted Mean	4.18		High
	Aggregate Standard Deviation		0.91	

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate; 1.81-2.60-Low; 1.00-1.80-Very Low

Overall, the findings indicate that parents have a firm grasp of ADM-related information, particularly regarding program goals and communication with the school. However, slightly lower familiarity with learning approaches and enrollment reasons highlights the need for stronger parental orientation and support initiatives. Studies have examined both the strengths and challenges of implementing Alternative Delivery Modes (ADM).

Ladines (2023) identified challenges in ADM implementation, such as inadequate resources, limited teacher communication, and heavier workloads for low-income students. Meanwhile, Calamaan and Trinidad (2025) reported that students often choose ADM to balance work, financial, or family responsibilities; in particular, modular learning is preferred due to connectivity issues, though difficulties with time management and comprehension persist. In contrast, Samudio (2025) found that ADM in Rizal Division schools is effectively implemented across access, enrollment, materials, and stakeholder involvement, with significant correlations between implementation and practice.

Support of ADM

This study examined the extent to which respondents support the ADM, explored the range of opinions, and identified key factors influencing their levels of support. Analysis revealed the distribution of support across different demographic groups and shed light on the underlying reasons behind varying levels of endorsement.

Table 4. *Support of ADM*

S/N	*Indicators*	*WM*	*SD*	*Verbal Description*
1	I actively support my child's learning activities at home related to the ADM program	4.26	0.77	Very High
2	I regularly communicate with my child's teacher about their progress in the ADM program.	4.19	0.76	High
3	I provide a conducive learning environment for my child at home.	4.29	0.75	Very High
4	I help my child manage their time and stay organized with their ADM assignments.	4.34	0.69	Very High
5	I encourage my child to participate actively in their ADM learning.	4.26	0.84	Very High
	Aggregate Weighted Mean	4.27		Very High
	Aggregate Standard Deviation		0.91	

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate; 1.81-2.60-Low; 1.00-1.80-Very Low

Table 4 shows that parental support for the ADM program is very high, with an overall weighted mean of 4.27 and moderate variation (SD = 0.76). Parents consistently provided a conducive learning environment (WM = 4.29), assisted with time management (WM = 4.34), supported ADM-related activities (WM = 4.26), and encouraged active participation (WM = 4.26), all rated "Very High." Communication with teachers, though slightly lower, remained "High" (WM = 4.19). These results indicate strong parental engagement in ADM implementation, though the moderate variability suggests the need for targeted strategies to support families with lower levels of involvement. Research demonstrated that parental involvement significantly influences children's academic success, with both direct and indirect support playing crucial roles. For instance, parents contribute through learning assistance, communication with teachers, the creation of conducive learning environments, and the provision of motivation and emotional support (Irzam & Nisa, 2024). Moreover, the effectiveness of parental involvement often depends on family circumstances and children's specific needs. In the context of Alternative Delivery Mode (ADM), students rely heavily on family support, alongside digital resources and peer assistance, to address challenges such as time management difficulties and limited direct teacher guidance (Calamaan & Trinidad, 2025).

Effectiveness of the ADM Program

This section explored respondents' perceptions of the ADM program's effectiveness, examining the range of opinions expressed and identifying patterns or correlations. The analysis revealed the distribution of views on the program's impact and investigated the factors influencing these perceptions.

Table 5 presents respondents' perceptions of the ADM program's effectiveness, measured on a five-point Likert scale (1 = Very Negative to 5 = Very Positive). The overall weighted mean of 4.20 indicates a generally positive perception, with a moderate variation in responses (SD = 0.78). Parents rated the program highly for supporting learning (WM = 4.21), preparing children for future academic

success (WM = 4.21), providing adequate school support (WM = 4.21), addressing individual learning needs (WM = 4.19), and facilitating school communication (WM = 4.18). These results suggest that parents view ADM as effective in enhancing learning and fostering school–family collaboration. However, moderate variability highlights the need for continuous efforts to meet diverse needs and ensure consistent program delivery.

Table 5. *Effectiveness of the ADM program*

Indicators	*WM*	*SD*	*Verbal Description*
I believe the ADM program is helping my child learn effectively.	4.21	0.74	Very Positive
I feel the school provides sufficient support for parents involved in ADM programs.	4.21	0.73	Very Positive
I am satisfied with the school's communication regarding the ADM program.	4.18	0.80	Positive
I believe the ADM program is meeting my child's individual learning needs.	4.19	0.83	Positive
I am confident that the ADM program is preparing my child for future academic success.	4.21	0.81	Very Positive
Aggregate Weighted Mean	4.20		Positive
Aggregate Standard Deviation		0.78	

Research consistently demonstrated that effective collaboration between families and schools is essential for student academic success. In particular, parents play a strategic role by providing learning assistance, maintaining communication with teachers, creating supportive home environments, and offering motivation and emotional support (Irzam & Nisa, 2024). Furthermore, studies generally report high levels of parental satisfaction with school collaboration, especially in areas related to children's emotional well-being, the quality of the partnership, and trust in both schools and teachers (Paccaud et al., 2021).

Level of Academic Performance of the Children of the Parent-Respondents in Mathematics

This section analyzed the mathematics academic performance of the children of the parent-respondents, examining the distribution of scores and identifying any significant trends. The analysis explored potential correlations between parental characteristics and children's mathematical achievement.

Table 6. *Level of academic performance of the children of the parent respondents in Mathematics*

Level	*Numerical Range*	*f*	*%*
Outstanding	90-100	14	5.19
Very Satisfactory	85-89	45	16.67
Satisfactory	80-84	54	20.00
Fairly Satisfactory	75-79	129	47.78
Did not meet the Expectations	Below 75	28	10.37
Total		270	100.00
Mean		80.51	
St. Dev.		5.16	

Table 6 presents the mathematics performance of 270 children of parent-respondents, categorized into five levels: Outstanding (90–100), Very Satisfactory (85–89), Satisfactory (80–84), Fairly Satisfactory (75–79), and Did Not Meet Expectations (Below 75). Nearly half of the students (47.78%) fell into the Fairly Satisfactory category, highlighting a critical area for improvement. Meanwhile, 20% achieved Satisfactory scores, and 16.67% reached the Very Satisfactory level. Only a small proportion (5.19%) attained Outstanding marks, while 10.37% did not meet expectations. The overall mean score was 80.51, with a standard deviation of 5.16, indicating a moderate variation in performance. Overall, the results suggested that while several students perform at satisfactory to very satisfactory levels, a significant proportion require additional support and interventions to strengthen their mathematics achievement. Recent literature underscored both the effectiveness and challenges of Alternative Delivery Modes (ADM) and targeted interventions in mathematics education. Calamaan and Trinidad (2025) found that ADM—particularly modular learning—is valued by Philippine secondary students for its flexibility. Similarly, Samudio (2025) reported that ADMs are well implemented in Rizal Division schools, with significant correlations between the extent of implementation and practice levels. However, teachers and students assess ADM practices differently. However, many learners continue to struggle with lesson comprehension and limited direct support, underscoring the need for more robust instructional materials and stronger teacher engagement.

Test of the Significance of the Relationship Between the Parents' Understanding of ADM and the Academic Performance of Their Children in Mathematics

This analysis investigated the relationship between parents' understanding of the ADM and their children's academic performance. The study determined the statistical significance of this relationship and explored the nature and strength of any observed association.

Table 7. *Test of the Significance of the Relationship Between the Parents' Understanding of ADM and the Academic Performance of Their Children in Mathematics*

Variables	*r-value*	*Strength of Correlation*	*p - value*	*Decision*	*Remarks*
Understanding of ADM and Math Performance	0.451*	Weak Positive	p < .001	Reject Ho	Significant

significant at p<0.05 (two-tailed)

Table 7 presents the statistical analysis of the relationship between parents' understanding of Alternative Delivery Mode (ADM) and their children's academic performance in mathematics. The results showed a weak positive correlation (r = 0.451), indicating that greater parental understanding of ADM is associated with slightly better math performance among students, though the relationship is limited. The p-value of p < .001, which is less than the 0.05 significance level, led to the rejection of the null hypothesis. This finding suggested that the correlation, though weak, is statistically significant and unlikely to have occurred by chance. In summary, the results provided evidence of a positive association between parental understanding of ADM and students' mathematics achievement, underscoring the potential influence of parental awareness on learning outcomes. Research consistently demonstrated a strong connection between parental involvement and students' academic performance, particularly in mathematics. For instance, Lucero (2020) identified a significant relationship between the implementation of the Alternative Delivery Mode (ADM) and student performance; however, the majority of ADM learners remained low performers. Building on this, Claudia and Paun (2024) demonstrated that parental involvement had a positive impact on students' academic outcomes, up to 42.1%, in their study of 356 parents from Saudi Arabian schools. Likewise, Hanafiah et al. (2024) confirmed a statistically significant positive relationship between parental involvement and students' mathematics achievement among 186 Form Four students. Their findings suggest that when parents actively participate—through showing interest, engaging in discussions, and assisting with homework—students not only develop a deeper interest in mathematics but also achieve improved academic performance.

Test of the Significance of the Relationship Between the Parental Support of ADM and the Academic Performance of Their Children in Mathematics

This section examined the relationship between parental support for the ADM (please specify the ADM's full name for clarity) and their children's mathematics achievement. It assessed the statistical significance of this relationship and explored the nature and strength of any observed correlation.

Table 8. *Test of Significance of Relationship Between the Parental Support of ADM and the Academic Performance of Their Children in Mathematics*

Variables	*r-value*	*Strength of Correlation*	*p - value*	*Decision*	*Remarks*
Parental Support of ADM and Math Performance	0.363*	Weak Positive	p < .001	Reject Ho	Significant

significant at p<0.05 (two-tailed)

Table 8 presents the statistical analysis of the relationship between parental support for ADM and children's mathematics performance. The results revealed a weak positive correlation (r = 0.363), indicating that greater parental support for ADM is associated with slight improvements in students' math scores. The p-value of p < .001, being well below the 0.05 significance threshold, confirmed that this correlation is statistically significant and unlikely to have occurred by chance. Thus, although the relationship was modest, the findings provide evidence of a positive link between parental support for ADM and children's mathematics achievement, underscoring the role of family involvement in reinforcing students' learning outcomes.

Research consistently showed a positive link between parental involvement and students' mathematics performance. A meta-analysis of 25 studies reported that parental involvement significantly improves achievement, with effects varying by student characteristics, type of involvement, grade level, and region (Wang & Wei, 2024). Similarly, analysis of data from 104,973 Mexican students found that school participation and home support were positively associated with math achievement, with this association mediated by socioeconomic status (Hernández-Padilla et al., 2023). Moreover, longitudinal studies confirmed that supportive parenting styles predict higher math scores over time, even after accounting for confounding factors (Wang et al., 2024).

Test of Significance of Relationship Between Parents' Perceived Effectiveness of ADM and the Academic Performance of Their Children in Mathematics

This study examined the correlation between parental perceptions of the ADM program's effectiveness and their children's mathematical achievement. A statistical analysis determined the significance of this relationship and elucidated the nature and strength of any observed association.

Table 9. *Test of Significance of Relationship Between the Parental Support of ADM and the Academic Performance of Their Children in Mathematics*

Variables	*r-value*	*Strength of Correlation*	*p - value*	*Decision*	*Remarks*
Effectiveness of ADM and Math Performance	0.378*	Weak Positive	p < .001	Reject Ho	Significant

significant at p<0.05 (two-tailed)

Table 9 presents the results of a correlation analysis examining the relationship between parents' perceived effectiveness of ADM and their children's mathematics performance. The analysis revealed a weak positive correlation (r = 0.378), indicating that students whose parents view ADM as more effective tend to achieve slightly better math outcomes. The p-value of p < .001, being lower than the 0.05 significance threshold, confirmed that this relationship is statistically significant. Although the effect size was weak, the findings suggest that parental perceptions of ADM play a meaningful role in shaping student achievement. This result was consistent with broader literature, which reports positive but modest effects of parental attitudes and support on students' mathematics outcomes.

Choi and Han (2020) found, in a meta-analysis of 7 studies, that positive parental attitudes toward mathematics were associated with lower student math anxiety, particularly in elementary and middle school. Similarly, Wang and Wei (2024) conducted a meta-analysis of 25 studies from 2015 to 2024. They found that parental involvement significantly improves mathematics performance, with effects varying by student characteristics, type of involvement, grade level, region, and evaluation content.

Conclusions

Based on the study's results, it can be concluded that parents of learners in the Alternative Delivery Mode (ADM) in Mathematics generally demonstrated a high level of understanding, support, and a positive perception of the program's effectiveness. Most of these parents were middle-aged mothers who actively contributed to creating a supportive learning environment at home. Parents play a crucial role in the success of the ADM program, as their understanding, support, and perceptions shape their children's learning experiences. While these factors positively influence academic performance, their impact is limited, indicating that other elements also affect student achievement. It is important to note that the results indicate correlation but not causation; therefore, parental involvement cannot be interpreted as the direct cause of learners' academic outcomes.

Although significant relationships were found between parental involvement and children's performance, the correlations were weak. This underscores the need for targeted interventions that further enhance parental engagement and foster a strong homeschool partnership, ensuring that home support aligns more closely with the academic demands of the ADM program and supports students' overall academic growth. On the other hand, in light of the findings, it is recommended that schools strengthen parent engagement programs by providing continuous orientation and training on the Alternative Delivery Mode (ADM), particularly to support Mathematics learning at home. Materials such as simplified guides, activity sheets, and regular progress trackers should be distributed to help parents provide more structured support. Additionally, establish consistent communication channels between teachers and parents. Schools should also consider implementing localized intervention plans, such as parent coaching sessions and learner support groups, to assist families whose children are performing below expectations.

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