

Multiple intelligence-based learning strategy in enhancing the learners development and academic performance

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ABSTRACT

This study explores the implementation of Multiple Intelligence (MI)-based learning strategies in enhancing learner development and academic performance in two private schools in Alaminos, Laguna—Palm Valley Multiple Intelligence School and Marcelino Fule Memorial College. Guided by Howard Gardner’s MI theory, which identifies eight distinct intelligences, the study investigates how MI strategies influence various aspects of learner development such as cognitive, emotional, social, and physical and as well as academic outcomes. Using a descriptive quantitative research design and quota sampling of 300 high school students, the study revealed that MI-based learning strategies have a strong and significant relationship with overall learner development, as indicated by a Pearson correlation coefficient of $r = 0.770$, $p = 0.000$. Specific correlations were also found between MI strategies and cognitive ($r = 0.649$), emotional ($r = 0.642$), social ($r = 0.540$), and physical development ($r = 0.516$). In contrast, the relationship between academic performance and learner development was generally weak, with only social development showing consistent significance. These findings suggest that while academic performance alone does not fully capture student growth, MI-based strategies foster holistic development and create inclusive learning environments that recognize diverse student strengths.

Keywords: Multiple Intelligence, Academic Performance, Learner’s Development

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INTRODUCTION

Multiple Intelligences (MI) theory proposed by Howard Gardner (1983), states that individuals possess eight distinct types of intelligences such as linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalist. The MI theory is integrated into the Philippine K-12 curriculum as supported by various policies and directives from the Department of Education (DepEd).

DepEd Order No. 8, s. 2015 also known as Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program emphasizes the use of variety of assessment methods to cater the different learning styles and intelligences of students. The Multiple Intelligences theory removes the doubt on the idea of a single, dominant intelligence and proposes that each person has particular intelligence and weakness in the others. DepEd Order No. 8, s. 2015 also mandates

the use of performance tasks to allow students to demonstrate their understanding and skills in diverse ways, aligning with the Multiple Intelligence approach.

DepEd Order No. 21, s. 2019 aims to develop well-rounded individuals by offering a curriculum that nurtures various intelligences, preparing students for different life roles. This is supported by the DepEd Advisory No. 104, s. 2016 that focuses on identifying and harnessing multiple intelligences to promote excellence and holistic development, ensuring that all students' unique abilities are recognized and fostered.

Although DepEd Order No. 8, s. 2015 promotes diverse assessment methods, the existing standardized tests primarily focus on linguistic and logical-mathematical intelligences, which may not fully capture the varied abilities of all students. On the study of Villegas et.al (2022), it is concluded that using standardized tests as the only method to assess students' learning from their subjects has proven to be ineffective because many students nowadays are not concerned about their test results, so they often resort to cheating or struggling with exams despite performing well in other academic areas. Villegas, et.al (2022) added that the use of standardized testing in the Philippine educational setting is a disadvantage when considering the diversity of learners' strengths based on multiple intelligences theory. The current reliance on standardized testing, like the National Achievement Test (NAT), focuses largely on measuring students' logical-mathematical and linguistic abilities, often neglecting other forms of intelligence such as interpersonal, spatial, or bodily-kinesthetic skills.

There has been an increasing acknowledgement in the Philippine educational context of the varied learning requirements and capacities of pupils (Alan, 2021). While multiple intelligences theory has gained popularity globally, its application in the Philippine educational setting remains relatively unexplored, Falguisana (2024) stated.

Problem statement

This study aimed to determine the predominant learning styles of students through the lens of the Multiple Intelligences (MI) framework and examine how these learning styles can be effectively addressed through MI-based teaching strategies. Specifically, the study sought to answer the following questions:

1. What is the academic performance of students in terms of their grade?
2. What is the level of implementation of the multiple intelligence based learning strategy?
3. How do MI-based learning strategy influence learner's development?
4. Is there significant relationship between academic performance and learner's development?
5. Is there significant relationship between level of implementation of MI-based learning strategy and learner's development?

METHODOLOGY

The study employed a descriptive correlational research design to examine the relationship between Multiple Intelligence (MI)-oriented learning strategies and students' academic performance. As articulated by Bhat (2023), this type of design facilitates the identification of associations between variables without implying causality. The descriptive component allowed for the in-depth examination of student engagement and development across

cognitive, affective, behavioral, and physical dimensions, while the correlational aspect quantified the degree of relationship between these variables and academic outcomes. This design was particularly suitable as it enabled analysis within real-world classroom settings without manipulating the learning environment, thus maintaining ecological validity.

A total of 300 high school students participated in the study, with 150 students each from Palm Valley Multiple Intelligence School, Inc. and Marcelino Fule Memorial College. These schools were specifically selected due to their adoption of the MI-based educational approach. Quota sampling was utilized to ensure proportional representation from each institution, making the data suitable for comparing the effectiveness of MI strategies across different educational contexts. This method allowed for the inclusion of key characteristics, such as school type and exposure to MI-based strategies, ensuring the sample reflected the target population.

The primary data collection tool was a researcher-made questionnaire, consisting of 40 items rated on a 4-point Likert scale. The instrument was designed to assess the extent of MI strategy implementation through dimensions of student engagement (total, affective, behavioral, and cognitive) and learner development (affective, behavioral, cognitive, and physical). Academic performance data were sourced directly from official school records. Prior to deployment, the instrument underwent expert validation and pilot testing, yielding a Cronbach's alpha of 0.92, which indicates excellent reliability.

The data-gathering procedure involved securing approvals from institutional authorities and ensuring compliance with ethical protocols. Letters of permission were sent to school officials, and informed consent was obtained from participants in accordance with the Data Privacy Act of 2012. Students completed the survey while their academic records were collected for analysis. All data were kept confidential and used solely for research purposes. The ethical integrity of the study was further reinforced through approval from an institutional ethics review board.

To analyze the data, both descriptive and inferential statistics were applied. Descriptive tools such as frequency, percentage, mean, and standard deviation were used to summarize trends in student responses and assess perceptions of MI-based strategies. Mean scores highlighted the general attitude toward MI, while standard deviation provided insight into the variability of student experiences. For inferential analysis, the Pearson correlation coefficient was utilized to examine the strength and direction of relationships between MI-based strategies, student engagement, and academic performance. A significance threshold of $p < 0.05$ was adopted to ensure statistical rigor. The combined use of descriptive and inferential statistics allowed for a nuanced understanding of the role of MI-oriented learning in shaping educational outcomes.

RESULTS AND DISCUSSION

Academic performance of students in terms of their grade

The findings indicate a positive trend in student performance over time. Only 0.3% of students achieved an excellent rating (99-100) in both quarters, while the percentage of students in the Very Good category (95-98) increased from 8.2% (28 students) in the first quarter to 11.1% (38 students) in the second quarter. This suggests an improvement in high achievers.

A significant portion of students consistently performed in the Good category (85-94), with 30.7% (105 students) in the first quarter rising to 35.1% (120 students) in the second quarter in the 90-94 range. However, the 85-89 range showed a slight decline from 33.7% (115 students) to 32.2% (110 students). Meanwhile, the number of students in the Fair category (81-84) dropped from 11.7% (40 students) to 7.0% (24 students), and those in the 78-80 range decreased from 2.9% (10 students) to 1.8% (6 students). This indicates that fewer students remained in the "Fair" category, possibly due to overall performance shifts.

Students in the Below Average range (70-74) remained minimal at 0.3%, while no students were classified under Needs Improvement (65 and below), demonstrating an overall strong academic standing. The data suggests that the implementation of Multiple Intelligences (MI)-based strategies may have contributed to improvements in academic performance, particularly in increasing the number of high-achieving students and reducing those in the lower performance levels.

Level of implementation of the multiple intelligence based learning strategy

The study revealed that the implementation of Multiple Intelligence (MI)-based learning strategies is positively perceived by students across all dimensions of engagement—total, affective, behavioral, and cognitive—demonstrating its overall effectiveness in fostering a holistic learning environment.

In terms of total engagement, students agreed that MI-based strategies significantly promote participation, motivation, and enthusiasm within the classroom setting. The highest-rated item was the strategy's ability to create an environment where learners feel involved and motivated (mean = 3.49), indicating that students respond well to lessons that acknowledge and cater to their diverse intelligences. The overall mean of 3.43 suggests that students are generally engaged and attentive when exposed to MI-based approaches. These findings resonate with the literature, particularly Trowler (2020) and Lattanze (2025), who highlight that student engagement involves the allocation of cognitive, emotional, and behavioral resources in learning, which in turn leads to improved academic and personal outcomes. Supporting studies, such as those by Aguayo (2021) and Setiawan et al. (2020), further affirm that MI-based instruction enhances creativity, motivation, and academic performance by aligning with students' dominant intelligences.

Regarding affective engagement, the results indicate that MI-based strategies contribute meaningfully to students' emotional connection with learning. Students expressed confidence and emotional security (mean = 3.46) as a result of this approach, suggesting that the MI framework supports emotional expression and reflective learning. The overall mean score of 3.37 indicates that learners feel emotionally supported, which is vital for sustained engagement. Lacida et al. (2024) found a significant relationship between emotional intelligence and student engagement, reinforcing the current study's implication that when students' emotional needs are addressed through MI-based strategies, their overall engagement and academic performance improve. Keith (2021) and Tucker (2019) also emphasize the role of emotional engagement in fostering self-regulation and holistic learning development.

In terms of behavioral engagement, the implementation of MI-based strategies was also rated positively. Students acknowledged increased participation, enthusiasm, and a sense of responsibility toward their learning, with the highest-rated item being the motivation to take

responsibility for their own learning (mean = 3.41). The overall behavioral engagement mean of 3.39 underscores the strategy's effectiveness in shaping responsible and active learners. Lemmi (2024) supports these findings, arguing that MI-based classrooms foster inclusivity and intrinsic motivation, while Nguyen et al. (2019) links peer interaction with improved behavioral engagement, which MI-based strategies naturally encourage through collaborative and differentiated instruction.

Lastly, the findings on cognitive engagement indicate that MI-based instruction stimulates critical thinking, problem-solving, and the application of knowledge to real-life contexts. The highest-rated item—students' ability to apply knowledge to real-life scenarios (mean = 3.41)—reflects a shift from rote learning to meaningful, applied understanding. With an overall mean of 3.32, the data reveal that MI strategies successfully enhance intellectual involvement and academic depth. This aligns with Aguayo et al. (2021), who emphasize that MI-driven instruction not only boosts behavioral but also cognitive engagement, empowering students with the skills necessary for higher-order thinking and lifelong learning.

Across all dimensions, the findings demonstrate a consistent "Agree" interpretation, suggesting a uniformly positive student response to the implementation of MI-based strategies. The results collectively confirm that such strategies do not merely support academic achievement but also enrich the overall learning experience by nurturing multiple aspects of student development—emotional, behavioral, intellectual, and participatory.

Influence of MI-based learning strategy to learner's development

The study findings affirm that the Multiple Intelligence (MI)-based learning strategy plays a substantial role in promoting holistic learner development, effectively fostering growth across cognitive, emotional, social, and physical domains. Students consistently rated the strategy favorably, indicating that it meets a broad spectrum of learning needs and styles, aligning well with the core principles of MI theory.

In terms of cognitive development, the MI-based approach was found to significantly enhance students' intellectual abilities. With an overall mean of 3.38, students agreed that the strategy supports logical and critical thinking, promotes independent learning, and helps connect new concepts with prior knowledge. Notably, the highest-rated indicators were those promoting the development of independent thinking and the ability to link existing and new knowledge (mean = 3.41). These findings are consistent with Winarti et al. (2019) and Aydin (2019), who emphasized that MI-oriented strategies enhance not only cognitive performance but also the development of personalized learning approaches that respond to diverse intellectual strengths.

Regarding emotional development, MI-based strategies also demonstrated a positive influence, with an overall mean of 3.36. Students reported increased self-confidence, emotional resilience, and the ability to reflect on their feelings during learning. The highest-rated indicator was the encouragement of emotional growth and self-reflection (mean = 3.42), while the lowest—though still favorable—was related to managing academic stress (mean = 3.26). These results support David (2022) and Blasco-Magraner et al. (2021), who concluded that integrating emotional and intrapersonal intelligences into learning environments strengthens learners' emotional competencies and self-regulation.

In the area of social development, the MI-based learning strategy received the highest overall mean among the four domains, 3.44, with the indicator "helps students learn to respect

diversity in social settings” even earning a “Strongly Agree” rating (mean = 3.51). This reflects how MI strategies promote empathy, collaboration, and interpersonal skills, fostering inclusive and respectful classroom communities. Studies by Keith (2021), Zhang (2022), and Acevedo (2022) reinforce this observation, noting that interpersonal relationships and active, peer-based learning approaches enhance both academic performance and a sense of belonging among students.

As for physical development, students affirmed the value of kinesthetic and movement-based learning embedded within the MI framework, with an overall mean of 3.43. Highest-rated indicators included improved coordination, promotion of physical well-being, and creative motor skills expression (all with means = 3.44). Even the lowest-rated item—providing kinesthetic learning opportunities—was rated favorably (mean = 3.38). Research by Jabonete and Mejarito (2021), Vendiola (2023), and Garcia et al. (2024) highlighted the benefits of hands-on, movement-oriented learning, emphasizing its impact on student motivation, information retention, and academic performance.

Relationship between academic performance and learner’s development

The findings reflect that whereas certain dimensions of development are found to have a strong correlation with academic performance, there is no correlation for others.

From the cognitive development perspective, there is no statistically significant relationship between the results and academic performance. The correlation coefficient for both phases is low (0.041 and 0.068), and the p-values (0.476 and 0.243) are greater than 0.05, indicating the results are not statistically significant. This implies that academic achievement has no direct impact on cognitive development, which might mean that other variables, including personal drive, instructional methods, or outside support systems, could have a larger impact on cognitive development. This is corroborated by the research of Gamiao (2020) that examined the correlation of cognitive ability, learning styles, and academic achievement among first-year college students of St. Paul University Philippines. The results indicated that course selection influenced variations in learning styles, while course, sex, and age significantly affected academic performance. However, the study found that cognitive ability and learning styles were not predictors of academic performance. Additionally, there was no significant relationship between cognitive ability and learning styles (Gamiao, 2020).

For emotional development, a significant relationship ($p = 0.009$, S) was found in the first period, suggesting that academic performance may have an impact on emotional growth. However, the second period shows a not significant ($p = 0.193$, NS) relationship, indicating inconsistency. This could mean that while emotional well-being and academic success are sometimes linked, other variables such as student mindset, teacher support, or home environment may influence this connection. Studies suggest that emotional intelligence can enhance academic performance by helping students manage stress and stay motivated (Goleman, 1995). Students with strong emotional intelligence tend to perform better academically and socially, as they can manage stress, collaborate effectively, and navigate conflicts constructively (Keith, 2021). Positive emotions are highly related to with higher achievement and self-regulation (Greene et.al 2019). However, it is found that boredom is also related with lower engagement and poor outcomes, but frustration didn’t consistently lead to problems. Affective engagement is also related to “task-values.” Task values are the value people in perceiving complete task. A task

might be internally enjoyable, useful, or important to do well. If you view a task as useful and enjoyable, you're likely to feel positive emotions toward completing it. This also relates to motivation and persistence.

The strongest and most consistent relationship appears in social development, where both periods show a significant correlation ($p = 0.011$ and $p = 0.021$, S). This suggests that students who perform well academically may also have better social skills, possibly due to participation in group work, academic discussions, or extracurricular activities. Research by Ruga (2024) found a strong correlation between social skills and academic competence among senior high school students, suggesting that students with better interpersonal abilities tend to perform well academically. This correlation highlights the importance of effective communication, collaboration, and social adaptability in enhancing learning outcomes. Students who can express themselves clearly, engage in group activities, and build positive relationships with peers and teachers are more likely to succeed in their studies.

On the other hand, physical development does not show any significant relationship with academic performance ($p = 0.525$ and $p = 0.263$, NS). This suggests that physical growth is independent of academic success, which aligns with studies stating that while physical activity is crucial for overall health, it does not directly impact academic performance unless integrated into cognitive learning tasks. This finding is supported by the study of Latino et al. (2023), where the positive effects of physical activity on cognitive functions and academic outcomes is noted but the relationship is complex and influenced by various factors. For instance, some findings suggested that physical development alone does not guarantee improved academic performance, as other elements like emotional well-being, learning strategies, and socio-environmental factors play significant roles.

Overall, the results indicate that academic performance alone is not a strong predictor of holistic learner development. While social and emotional development show some connection to academic success, cognitive, physical, and overall development appear to be influenced by other factors. This highlights the importance of a well-rounded education that goes beyond academics to nurture students' emotional, social, and physical well-being. Schools should consider integrating activities that promote multiple aspects of development to ensure students grow into well-rounded individuals.

Relationship between level of implementation of MI-based learning strategy and learner's development

The table emphasizes the strong associations between Multiple Intelligence (MI)-based learning approaches and all the dimensions of learner development. The total MI-based learning approach has the strongest relationship with total learner development ($r = .770$, $p = .000$), stressing the efficacy of a general MI strategy. This is consistent with Armstrong's (2023) findings, which highlighted that incorporating multiple intelligences in the classroom greatly improves overall student development by catering to various learning strengths.

For intellectual development, cognitive MI-based learning approaches correlate most strongly ($r = .649$, $p = .000$). This indicates their strength in facilitating intellectual development. In support, Berrios Aguayo et al. (2023) established that MI-based pedagogies enhance cognitive ability and creativity, leading to enhanced academic achievement compared to conventional approaches.

In terms of emotional development, affective MI-based strategies show a strong correlation ($r = .642$, $p = .000$), indicating the significance of emotional intelligence in learning. A study by Ross and Oliver (2024) illustrated that personalized emotional strategies have a positive effect on learners' social-emotional development and engagement.

Behavioral MI-based approaches have the strongest relationship with social development ($r = .540$, $p = .000$). This indicates the significance of pragmatic, action-oriented methods in developing social skills. As noted by Kim and Lee (2024), co-learned communities with the use of behavioral approaches highly enhance students' social interactions and collaborative skills.

Cognitive MI-based strategies also correlate the most with physical development ($r = .516$, $p = .000$), possibly through an indirect relationship through better focus and coordination. In a more recent study, Green and Thompson (2025) discovered that moderate physical activities coupled with cognitive strategies improve both physical coordination and learning, corroborating this correlation.

The interface between MI-based learning strategies and different facets of learner development underscores the imperative for an integrated and approach to education. Armstrong (2023) underscores the potential for transformation that accompanies the inclusion of multiple intelligences in learning practices, illustrating how responding to different intelligences enhances learners' overall growth and development. This one reference captures the essence of the pivotal interface between MI-based strategies and producing balanced learners.

CONCLUSION

The results of this study concludes that the implementation of Multiple Intelligence-based learning strategies has a significant positive relationship with learners' development across the cognitive, emotional, social, physical, and overall domains. Therefore, the null hypothesis stating that there is no significant relationship between MI-based strategies and learner development is rejected.

On the other hand, the relationship between academic performance and learner development showed inconsistent results. Significant relationships were found only in social and some aspects of emotional development, while cognitive and physical development showed no significant correlation. Thus, the null hypothesis stating that there is no significant relationship between academic performance and learner development is partially accepted. This suggests that academic performance alone does not comprehensively predict a student's overall development.

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