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Exploring Preventive Variables to Barriers in Teaching Physical Education and Level of Engagement of Public Elementary School Teachers

Joseph P. Funtilar¹, Dr. Darwin D. Ofirin²,

¹Department of Education, Mulanay Central Elementary School 4312, Philippines josephfuntilar@deped.gov.ph

²Graduate Studies & Applied Research, Laguna State Polytechnic University, 4000, Philippines darwin.ofirin@lspu.edu.ph

ABSTRACT

This study explored the preventive variables to barriers and level of engagement among Physical Education (PE) teachers in elementary schools in Mulanay, Quezon. It specifically examined teachers' perceptions of barriers to PE instruction in three key areas: pedagogical approach, physical resources, and learning environment. The research also assessed teachers' engagement across four dimensions: social relationships, experience relatedness, cognitive capacity, and physical growth. An online survey questionnaire was employed to gather data from respondents.

Findings revealed that PE teachers encountered notable barriers, particularly in terms of pedagogical strategies, inadequate resources, and suboptimal learning environments. Despite these challenges, respondents demonstrated a high level of engagement, especially in maintaining strong social ties, personal relevance to their teaching role, mental readiness, and physical well-being. A significant relationship was found between the perceived barriers and teacher engagement. Specifically, barriers related to pedagogical approach and learning environment were positively associated with higher engagement levels, while barriers in physical resources had a weaker effect.

The study concluded that while PE teachers in Mulanay faced various instructional challenges, their professional engagement remained strong, driven by relational, experiential, cognitive, and physical factors. Addressing key barriers, particularly those related to pedagogy and learning conditions, may further enhance teacher engagement and instructional effectiveness in PE.

Keywords: Physical Education, Teacher Engagement, Instructional Barriers, Pedagogical Approach, Learning Environment

Background

Physical Education (PE) plays a vital role in promoting students' physical health, mental well-being, and social skills, making it an essential component of the elementary curriculum. However, in rural areas like Mulanay, Quezon, PE teachers face numerous challenges that hinder effective instruction and impact students' educational experiences. Among the most pressing issues are the lack of facilities, limited funding, and inadequate sports equipment. Rural schools often prioritize core academic subjects, leaving PE programs underdeveloped. Additionally, PE is commonly perceived as less important, resulting in reduced class time and limited administrative support. Teachers in Mulanay also face professional challenges, such as minimal access to training and professional development opportunities due to geographic isolation and financial constraints. Overcrowded, multi-grade classes further complicate lesson delivery, while physical demands and lack of recognition contribute to teacher burnout and low job satisfaction. Despite these hurdles, PE teachers show resilience by employing creative strategies to keep students active. This study was conducted to identify the factors hindering effective PE instruction, assess teachers' engagement, and ultimately recommend improvements in teaching conditions. Addressing these barriers is essential to enhancing both teacher performance and student outcomes in rural PE education.

Methods

This study employed a descriptive-correlational research design, integrating both descriptive and correlational methods. The descriptive component aimed to document the existing challenges and engagement levels of Grade 6 Physical Education (PE) teachers in Mulanay, Quezon, while the correlational aspect explored the relationship between the instructional barriers and teacher engagement.

The respondents included 45 Grade 6 PE teachers (both male and female) from Mulanay Districts 1 and 2. All participants were directly involved in PE instruction at the elementary level. Their varying ages, qualifications, and teaching experiences offered a diverse perspective on the issues faced in PE instruction.

Data Collection

The study collects data primarily through survey questionnaire interviews to gather detailed information about curriculum implementation, pedagogical approaches, and engagement methods that are particular to upper elementary education by focusing on this particular subgroup.

Results and Discussions

This chapter shows the data that were gathered in the study, which were then presented in tabular form, analyzed based on the numerical values and interpreted.

Table 1: Perception in Preventive Variables to Barriers as to Pedagogical Approach

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Teacher uses diverse teaching that enhance skills in methods of teaching.	3.80	0.40	HP
2. Teacher's training related to Physical Education enhances instruction.	3.60	0.54	HP
3. Diverse student skills inspire inclusive teaching strategies	3.58	0.50	HP
4. Blending traditional and new methods fosters effective teaching.	3.80	0.40	HP
5. Blending traditional and new methods promotes teaching flexibility.	3.80	0.40	HP
6. Emphasizing student-centered approaches enriches learning beyond testing.	3.73	0.50	HP
7. Addressing diverse student abilities fosters inclusive teaching.	3.76	0.43	HP
8. Student-centered approaches complement standardized testing.	3.71	0.46	HP
9. Access to technology supports modern teaching methods	3.78	0.47	HP
10. Timely feedback from teachers improves student performance and engagement in PE activities.	3.84	0.37	HP
Over-all	3.74	0.45	HP

Legend: 3.50 – 4.00 Highly Practiced (HP); 2.50 – 3.49 Practiced (P); 1.50 – 2.49 Moderately Practiced (MP); 1.00 – 1.49 Not Practiced (NP)

The results reveal in table 1 that Physical Education (PE) teachers in Mulanay strongly agree that effective pedagogical approaches are being applied in their teaching, as shown by an overall mean of 3.74 and a standard deviation of 0.45. This suggests the use of student-centered, flexible, and inclusive teaching methods that foster active learning and student engagement. The highest-rated item, emphasizing the value of timely feedback (mean = 3.84), underscores its importance in boosting student performance and motivation, with a low variability in responses (SD = 0.37), indicating a shared belief in its effectiveness.

On the other hand, while the statement about diverse student skills inspiring inclusive strategies also received strong agreement (mean = 3.58), its higher standard deviation (0.50) reflects differing experiences among teachers. This indicates that although inclusivity is valued, consistent implementation remains a challenge. Overall, the findings highlight that while PE teachers are applying effective teaching strategies, there is a clear need for continued professional development, particularly in supporting diverse learners through more consistent and well-supported inclusive practices.

Table 2: Perception in Preventive Variables to Barriers as to Physical Resources

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Providing adequate sports equipment enhances instruction.	3.76	0.53	HA
2. Adequate storage for equipment ensures organization and readiness.	3.71	0.51	HA
3. Accessible sports facilities encourage regular student participation.	3.73	0.62	HA
4. Well-maintained facilities ensure safety and boost participation.	3.78	0.47	HA
5. Updated fitness tools enhance the quality of physical education.	3.76	0.48	HA
6. Clean and comfortable environments improve student engagement.	3.87	0.40	HA
7. Spacious and organized areas enable varied activities	3.80	0.55	HA
8. Collaborative spaces for group activities foster teamwork and cooperation.	3.80	0.59	HA
9. Improved equipment and facilities enable innovative teaching.	3.78	0.56	HA
10. Adequate equipment and facilities support innovative teaching	3.78	0.60	HA
Over-all	3.78	0.53	HA

Legend: 3.50 – 4.00 Highly Adequacy (HA); 2.50 – 3.49 Adequacy (A); 1.50 – 2.49 Moderately Adequacy (MA); 1.00 – 1.49 Not Adequacy (NA)

The interpretation reveals that PE teachers in Mulanay strongly agree on the importance of physical resources in delivering quality instruction, as reflected in the overall mean score of 3.78 with a standard deviation of 0.53. This indicates a shared understanding that facilities, equipment, and a conducive learning environment significantly enhance both student engagement and instructional effectiveness. The highest-rated item, “Clean and comfortable environments improve student engagement” (mean = 3.87), underscores the strong belief that a well-maintained and inviting setting plays a key role in encouraging active student participation.

Conversely, the lowest-rated item, “Adequate storage for equipment ensures organization and readiness” (mean = 3.71), though still rated under “Strongly Agree,” suggests that some logistical concerns related to equipment storage and management may still exist. Despite this, the overall responses reflect a positive outlook toward the current state of physical resources in schools. These findings highlight the critical role of continued infrastructure investment and strategic resource management in creating supportive, efficient, and safe PE environments that enable innovative, student-centered learning experiences.

Table 3: Perception Preventive Variables to Barriers as to Learning Environment

Indicators		Mean	Std. Deviation	Verbal Interpretation
1.	Behavioral improvements can enhance lessons and increase engagement.	3.80	0.40	HO
2.	Students with positive attitudes toward physical activity are more likely to participate enthusiastically.	3.89	0.32	HO
3.	A positive classroom atmosphere fosters a sense of community and inclusion.	3.91	0.29	HO
4.	Encouraging student input promotes ownership and motivation in physical education.	3.82	0.39	HO
5.	Collaborative peer interactions enhance the overall learning experience.	3.87	0.34	HO
6.	A supportive school culture can boost student motivation and participation.	3.82	0.39	HO
7.	Flexible scheduling can provide ample time for PE classes and promote more opportunities for active learning.	3.87	0.34	HO
8.	Adequate staff supervision can ensure safety and foster a well-organized environment during activities.	3.80	0.46	HO
9.	Clear expectations and rules contribute to a focused and respectful atmosphere.	3.87	0.40	HO
10.	Safe and well-equipped spaces promote physical activities.	3.87	0.40	HO
Over-all		3.85	0.37	HO

Legend: 3.50 – 4.00 Highly Observed (HO); 2.50 – 3.49 Observed (O); 1.50 – 2.49 Moderately observed (MO); 1.00 – 1.49 Not Observed (NO)

The overall mean score of 3.85, with a standard deviation of 0.37, indicates strong agreement among respondents that a supportive and well-managed learning environment significantly enhances Physical Education (PE) instruction. The highest-rated indicator—"A positive classroom atmosphere fosters a sense of community and inclusion" (mean = 3.91)—demonstrates that educators place great importance on cultivating a welcoming and inclusive space, which supports both engagement and emotional well-being.

Although all items scored highly, the lowest-rated indicators—"Behavioral improvements" and "Adequate staff supervision" (mean = 3.80)—suggest that while these are considered important, their implementation may vary across different settings. Overall, the findings reflect a strong consensus on the importance of a positive and structured environment in promoting active participation and learning in PE. Continuous efforts in behavior management, staff training, and infrastructure maintenance are essential to sustaining safe, inclusive, and effective PE environments.

Table 4: Level of Engagement as to Social Relationships

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Participation in professional networks and communities of practice deepens teachers' engagement through shared experiences and resources.	3.64	0.48	HE
2. Positive relationships with colleagues enhance collaboration and emotional support, and boosting engagement levels.	3.78	0.42	HE
3. Strong bonds with students foster a sense of belonging and commitment, and motivating teachers to stay engaged.	3.84	0.37	HE
4. Strong teacher-student connections improve classroom atmosphere and participation.	3.82	0.39	HE
5. Mentorship opportunities within the school community promote growth and engagement.	3.78	0.42	HE
6. Supportive social relationships, including positive interactions with colleagues and students, improve teachers' engagement and job satisfaction.	3.84	0.37	HE
7. Open communication with colleagues fosters a collaborative and supportive work environment.	3.84	0.37	HE
8. Engaging with the broader school community provides additional resources and support, strengthening teachers' dedication.	3.80	0.46	HE
9. Engaging in social activities with peers enhances professional relationships and well-being.	3.78	0.47	HE
10. A culture of mutual respect among staff and students strengthens the overall learning environment.	3.80	0.46	HE
Over-all	3.79	0.42	HE

Legend: 3.50 – 4.00 Highly Engaged (HE); 2.50 – 3.49 Moderately Engaged (ME); 1.50 – 2.49 Least Engaged (LE); 1.00 – 1.49 Not Engaged (NE)

The overall mean score of 3.79 indicates that teachers are highly engaged in fostering social relationships within their professional environment, recognizing the crucial role of strong interpersonal connections in enhancing motivation, collaboration, and job satisfaction. High ratings in areas like teacher-student bonds, collegial support, and open communication highlight how these relationships underpin emotional investment and professional resilience.

While all indicators received high ratings, slightly lower engagement in structured professional networks suggests room for growth in formal collaboration opportunities. Nevertheless, the findings affirm that both informal and formal social interactions contribute significantly to teacher development and well-being, emphasizing the need for schools to prioritize relationship-building and supportive communication in professional development efforts.

Table 5 Level of Engagement as to Experience Relatedness

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Teachers who relate past experiences to their current work are more emotionally invested.	3.60	0.50	HE
2. Reflecting on past successes enhances teachers' confidence and ongoing engagement.	3.73	0.45	HE
3. Teachers who feel connected to their roles exhibit higher engagement and motivation.	3.73	0.45	HE
4. Teachers who feel valued for their expertise demonstrate greater commitment to their work.	3.84	0.37	HE
5. Alignment with colleagues on professional values strengthens teachers' sense of belonging.	3.73	0.45	HE
6. Teachers who align personal values with teaching practices experience greater job satisfaction.	3.78	0.42	HE
7. Teachers who find personal meaning in their work show increased enthusiasm in the classroom.	3.80	0.40	HE
8. Recognizing the positive impact on students' lives deepens teachers' emotional investment.	3.80	0.40	HE
9. Sharing professional experiences with colleagues fosters stronger collaboration and connection.	3.82	0.39	HE
10. Seeing student progress reinforces teachers' dedication and boosts classroom morale.	3.76	0.43	HE
Over-all	3.76	0.43	HE

Legend: 3.50 – 4.00 Highly Engaged (HE); 2.50 – 3.49 Moderately Engaged (ME); 1.50 – 2.49 Least Engaged (LE); 1.00 – 1.49 Not Engaged (NE)

The interpretation reveals that teachers exhibit a high level of engagement (mean = 3.76) driven by their personal and professional experiences, highlighting the importance of experience relatedness in fostering motivation and connection to teaching. According to Self-Determination Theory, feeling connected to one's work enhances intrinsic motivation, and this is reflected in the strong agreement on the value of being recognized for expertise and sharing experiences with colleagues—both of which promote professional commitment and collaboration.

Additional findings emphasize that reflective practice, value alignment, and positive past experiences contribute significantly to building teacher confidence and a sense of belonging. Even the lowest-rated item still indicates high engagement, underscoring that most teachers maintain a meaningful emotional connection to their practice. Overall, the results suggest that schools should prioritize recognition, reflective opportunities, and value-driven collaboration to sustain teacher motivation and long-term professional engagement.

Table 6: Level of Engagement as to Cognitive Capacity

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Teachers with higher cognitive capacity focus better, leading to more effective lesson planning and delivery.	3.67	0.48	HE
2. The ability to manage complex classroom challenges enhances teachers' engagement and job satisfaction.	3.69	0.47	HE
3. Efficient information processing helps teachers adapt strategies and sustain student interest.	3.76	0.43	HE
4. When cognitive demands are manageable, teachers experience less burnout and maintain enthusiasm for teaching.	3.74	0.48	HE
5. Teachers with strong cognitive capacity embrace new teaching methods, fostering continuous professional development.	3.76	0.43	HE
6. Teachers with high cognitive skills can solve problems effectively, enhancing classroom management.	3.73	0.45	HE
7. Strong cognitive capacity allows teachers to implement creative solutions tailored to student needs.	3.76	0.43	HE
8. Teachers can quickly adapt to curriculum changes, ensuring instructional flexibility.	3.60	0.54	HE
9. High cognitive capacity helps teachers prioritize tasks, reducing stress and enhancing job satisfaction.	3.69	0.47	HE
10. Teachers with robust cognitive skills feel more confident in meeting learning challenges and maintaining engagement.	3.76	0.43	HE
Over-all	3.70	0.46	HE

Legend: 3.50 – 4.00 Highly Engaged (HE); 2.50 – 3.49 Moderately Engaged (ME); 1.50 – 2.49 Least Engaged (LE); 1.00 – 1.49 Not Engaged (NE)

The results show that teachers exhibit a high level of engagement related to cognitive capacity (mean = 3.70), highlighting the importance of mental acuity, adaptability, and problem-solving in sustaining effective teaching and professional enthusiasm. Top-rated items, such as the ability to process information efficiently and adapt strategies creatively, underscore that strong cognitive skills enable teachers to respond flexibly to classroom demands, foster student interest, and implement innovative teaching approaches.

Even the lowest-rated item—adapting to curriculum changes—still received a strong score (mean = 3.60), suggesting external challenges may affect this ability despite overall high cognitive engagement. The findings also emphasize that cognitive prioritization helps manage stress and prevent burnout, reinforcing the protective role of mental agility in teacher well-being.

Table 7. Level of Engagement as to Physical Growth

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Teachers who prioritize physical health have higher energy levels, and improving classroom engagement.	3.73	0.45	HE
2. Regular physical activity helps teachers manage stress, fostering a more positive teaching experience.	3.73	0.45	HE
3. Physically active teachers set a strong example for students, and reinforcing the importance of physical education.	3.76	0.43	HE
4. Good physical health boosts resilience, helping teachers manage the demands of their profession more effectively.	3.84	0.37	HE
5. Teachers who maintain physical well-being report higher job satisfaction and stronger engagement.	3.73	0.45	HE
6. Physical fitness increases teachers' stamina, enabling them to stay active and involved throughout the school day.	3.73	0.45	HE
7. Teachers with better physical health are more productive and focused in their teaching roles.	3.73	0.45	HE
8. Regular physical exercise enhances teachers' mood, promoting a more positive classroom atmosphere.	3.82	0.39	HE
9. Physically healthy teachers can handle long work hours and demanding tasks without experiencing burnout.	3.80	0.40	HE
10. Teachers who engage in physical activity are more likely to create active and engaging learning environments for students.	3.76	0.43	HE
Over-all	3.76	0.42	HE

Legend: 3.50 – 4.00 Highly Engaged (HE); 2.50 – 3.49 Moderately Engaged (ME); 1.50 – 2.49 Least Engaged (LE); 1.00 – 1.49 Not Engaged (NE)

The data from Table 7 reveal that teachers demonstrate a high level of engagement in relation to physical growth, with an overall mean score of 3.76. This suggests that maintaining good physical health significantly contributes to their professional resilience, mood, and classroom atmosphere. Highly rated items such as the positive effects of exercise on resilience and mood support existing research that links physical well-being to reduced stress and improved emotional regulation in teaching environments.

Other findings emphasize that physically healthy teachers are more productive, better able to handle job demands, and serve as influential role models for students. Indicators also highlight the connection between physical fitness and job satisfaction, reinforcing the role of physical wellness in sustaining motivation and classroom effectiveness. Overall, the results advocate for institutional support of teacher wellness programs as a strategic means to enhance teacher engagement and long-term professional well-being.

Table 8: Relationship Between Preventive Variables to Barriers and Teacher's Engagement

Barriers	Teacher's Engagement			
	Social Relationships	Experience Relatedness	Cognitive Capacity	Physical Growth
Pedagogical Approaches	0.562**	0.653**	0.567**	0.590**
Physical Resources	0.236*	0.248*	-0.041	0.192
Learning Environment	0.692**	0.657**	0.531**	1.00**

****.** Correlation is significant at the 0.01 level (2-tailed).

***.** Correlation is significant at the 0.05 level (2-tailed).

Table 8 reveals significant correlations between perceived barriers and various dimensions of teacher engagement, highlighting that the Learning Environment has the strongest and most consistent influence. It shows statistically significant correlations ($r = 0.531$ to $r = 1.000$) with all engagement aspects, with a perfect correlation ($r = 1.000$) with Physical Growth, emphasizing the powerful impact of a supportive and inclusive environment on both psychological and physical teacher well-being.

Pedagogical Approaches also demonstrate strong correlations, especially with Experience Relatedness ($r = 0.653$) and Physical Growth ($r = 0.590$), suggesting that innovative, student-centered teaching boosts engagement. Conversely, Physical Resources show weaker and inconsistent relationships, with no significant impact on Cognitive Capacity, indicating that teacher intellect and reflection may rely more on intrinsic motivation than material conditions. Overall, the findings stress that enhancing the learning environment and instructional methods is more crucial for sustaining teacher engagement than improving physical resources.

Conclusion

The null hypothesis was not sustained, however cognitive capacity and physical growth variables are not significantly related even these barriers are observed by the teachers, still highly engaged in teaching PE.

Recommendations

Teachers are encouraged to engage in continuous professional development and collaborate with colleagues to enhance their pedagogical skills and meet diverse student needs. School administrators should ensure the availability of adequate resources, such as proper equipment and facilities, while fostering student-centered and safe learning environments. Students play a vital role by actively participating in PE classes and providing feedback to support instructional improvement. Parents can reinforce the importance of physical education by encouraging participation and promoting healthy lifestyles at home. Future research may focus on identifying region-specific challenges faced by PE teachers and examining the long-term impact of teacher engagement on students' physical health, academic success, and overall well-being.

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The references should include only articles that are published or in press. The references are each numbered, ordered sequentially as they appear in the text. Citations in the reference list should contain all named authors, regardless of how many there are.

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