

Assessment of the Teaching Strategies in Macro Motor Learning and Skill Display of the Primary Physical Education Curriculum

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Abstract: Instructional methods in physical education (PE) tend to be conceptualized in different approaches. This paper attempted to describe the level of academic achievement of third graders in the macro skills of motor learning and skill display and assumes significant differences in variables to propose some teaching strategies for improving motor learning and skill display skills. The results of the National Motor Learning and Skill Display Test revealed that 58.90% of students scored within the 81% to 90% range. The assessment of teaching strategies showed that overall, the strategies had a mean of 3.05 and a standard deviation of 0.83. The chi-square test for association between gross motor learning and teaching strategies was significant ($X^2 = 89.22$, $p = 0.00$). The "Enhanced Motor Skills through Strategic Teaching (EMST) Program" is recommended to improve motor skills through effective teaching strategies.

Keywords: Teaching Strategies, Macro Motor Learning, Skill Display, Primary School, PE.

1. Introduction

Quality education is the goal we always want to achieve in classroom teaching. We used different techniques, strategies and approaches, but still failed. Only a few of our children have achieved this level of proficiency. One of the factors affecting the low level of student achievement is the inadequate teaching strategies used by teachers in promoting classroom teaching. It emphasizes improved teaching strategies. The reality, however, is that many teachers have trouble developing their skills among their students. It is the desire of every teacher and school administrator to acquire the necessary skills related to the academic development of students. Teachers' effective instructional strategies are a vital component in the learning process. The strategies in physical education class can be planned, assessed, and carried out by the teacher so students acquire basic motor skills. These strategies can increase motor skills through the organization of instruction and assessment of students by their physical education teacher. Effective strategies can increase fundamental motor skills and may give students a foundation for participating in lifelong physical activity, as well as increase their chances for optimal health.

Motor skills are especially important for students in elementary school, as this is where they learn the basis for all future movement skills and physical activities (National Association for Sport and Physical Education, 2018). We know that the variables of effective instruction promote motor skill development when they are used by teachers, but we know less about how teachers are actively planning and utilizing strategies in their teaching for students at all motor skill levels. Considerable evidence shows that variables in effective instruction such as time on task, appropriate practice trials, clarity, class structure, accountability, and skill progressions have a positive effect upon motor skill acquisition.

Background of the Study. The global rise in adolescent obesity, largely attributed to a lack of physical activity, is a

significant health concern, particularly in China, where less than 30% of school-aged children engage in adequate daily exercise. Despite longstanding advocacy for school-based physical activities, such as curricular physical education, concerns about academic time loss have led to a decline in these programs. However, research indicates that physical activity can improve cognitive function and academic performance by enhancing brain plasticity and connectivity. Instructional methods in physical education (PE) tend to be conceptualized as somewhere between the extremes of direct or indirect approaches. Metzler (2017) describes direct teaching as a more traditional teacher-centered method in which the "expert" teacher transmits knowledge to more passive learners through highly structured lessons, high quantities of specific and personalized feedback, and clearly presented content (mainly rules, skills, and techniques) and learning tasks designed to maximize practice trials and physical safety. Learning content also tends to precede game play. While direct teaching can be effective in certain students and settings, it has also been linked to amotivation during games in PE partly due to its lack of emphasis on engaged application, peer interactions, transferable learning, critical thinking, and problem-solving (Azzarito & Ennis, 2003). It has also been criticized as an overly rigid "one-size-fits-all" approach (Kirk, 2013) that favors competitive sport and confident, accomplished, aggressive, and competitive athletes (Ennis, 1996). Direct (instructor-centered) instruction is the predominate mode of teaching in both practicing and prospective PE teachers (Butler, 2005; Metzler, 2017; Oslin & Mitchell, 2006). Experts have called for physical educators to increase their use of indirect (more constructivist) models of instruction such as Sport Education and Teaching Games for Understanding (TGfU). (Butler, 2005; Metzler, 2017; Oslin & Mitchell, 2006). These two pedagogical models are less direct as they place more emphasis on facilitating rather than dictating content so that students actively construct and self-regulate their understanding and learning (Harvey et al., 2020; Oslin & Mitchell, 2006). As such, the instructor serves

as more of a facilitator than the sole source and transmitter of learning and elevates positive affect by purposely situating the learning relative to each student's context (Rovegno & Dolly, 2006). Applied to the teaching of games, Butler (2005) explains that: At the heart of the constructivist approach to games education is the belief that it is important for players to make correct decisions ... The child, not the teacher, becomes central. The pedagogical mindset changes from one that focuses on what is wrong with the learner's performance to one that focuses on how the teacher can help learners define and solve the problem being presented.

The correlation coefficients among tests for measuring perceptual-motor skills are almost equally significant as compared with the correlation coefficients of these tests with cognitive skills tests (Planinsec, 2006). Other studies found connections between some perceptual-motor tasks and cognitive skills (Kovac, & Strel, 2000; Planinsec, 2002). Therefore, the unique aspect of the current research study was to investigate the relationship between perceptual-motor skills and academic performance.

Statement of the Problem. The purpose of this study is to identify pupils' difficulties in macro motor learning and skill display teaching skills, and finally to develop a plan to improve pupils' learning ability. Specifically, it answers the following questions:

- What is the profile of the student respondents based on:
 - Sex
 - Monthly Income
 - Family status
 - Entrance examination
 - Previous school
- What are the scores of the student respondents on the National Motor Learning and Skill Display Test?
- Is there a significant difference in the assessment results of the student respondents when their profile is taken as test factors?
- What is the assessment of the student respondents on the teachers' strategies in teaching macro motor learning and skill display?
 - Teaching Preparation
 - Teaching Process
 - Teaching Evaluation?
- Is there a significant difference in the assessment of the student respondents on the teachers' strategies in teaching macro motor learning and skill display when their profile is taken as test factors?
- What is the relationship between the National Motor Learning and Skill Display Test and the teachers' strategies in teaching macro motor learning and skill display?
- What output program model can be developed for teachers to improve their teaching strategies to provide pupils with improved physical development as reflected on National Motor Learning and Skill Display Test?

Significance of the Study. The development motivation of this study is to conduct a case study on the development of macro skills teaching strategies for elementary school students in motor learning and skill display. Therefore, this study is considered important because it provided benefits in the following areas:

Students, especially those in Year 6, may benefit from this research as their needs can be identified and form the basis

for enhanced motor learning and skill display materials and activities. Teaching strategies attract them to enjoy motor learning and skill display.

Teachers, because they are able to identify the basic skills students should improve before they move into the formal motor learning and skill display stages. Teachers will be able to use appropriate teaching strategies for more active motor learning and skill display activities.

Schools, the results of this study may guide them in making the decisions necessary to improve the motor learning performance of countless children. School administrators can also consider insights and baseline data that will help them plan and implement more practical skill display and motor learning programs for six graders. Therefore, this should be of Paramount concern to any school owner or administrator.

Parents, the results of this study are important and necessary because the results can enlighten them and make them aware of their role in creating a healthy home environment that is necessary to promote learning habits in their children.

Future researchers, may replicate the study, using different groups of respondents and methods to let them know how to come up with more comprehensive themes and methods in the conduct of the study.

Scope and Delimitation of the Study. This study focuses on the comparative analysis of maternal and paternal parenting styles and their respective impacts on child development. Specifically, it examines how the nurturing, emotionally supportive behaviors typically associated with maternal parenting contrast with the playfulness, risk-taking encouragement often linked to paternal parenting. The discussion explores the roles each parent plays in fostering secure attachment, emotional intelligence, resilience, problem-solving skills, and independence in children. By highlighting these differences and their complementary nature, the aim is to provide a nuanced understanding of how both parenting styles contribute to the overall well-being and development of a child. The quantitative survey features a population that consists of 4 teachers and 240 students from Primary School affiliated to Chongqing Normal University.

This study, however, does not account for variations in parenting styles due to cultural, socioeconomic, or individual differences among parents. It also does not delve into single-parent dynamics or the influences of non-traditional family structures, such as same-sex parents, extended families, or guardians. Additionally, the discussion is limited to a generalized view of maternal and paternal roles, acknowledging that these roles can be fluid and overlap significantly in many families. The focus is on the general trends and commonalities in parenting styles rather than the exceptions or unique cases.

2. Methodology

This study adopts a descriptive and exploratory approach, integrating both quantitative and qualitative methods. Quantitatively, it aims to describe the academic achievement levels of third graders in the macro skills of motor learning and skill display, assuming significant differences in these variables to propose effective teaching strategies. Qualitatively, the study explores deficiencies in primary school students' macro skills and literacy, and the factors contributing to their learning difficulties. It also evaluates teaching strategies employed by teachers and gathers their assessments of these strategies.

The researcher conducted this study at the Experimental Primary School affiliated with Chongqing Normal University in Chongqing Province, China. This high-standard, non-profit private school serves as an educational practice base for Chongqing Normal University and aims to innovate primary education and curriculum. The participant group includes teachers, parents, and students from the school. Specifically, teachers who have taught motor learning and skill display for at least two years, and parents with children in the sixth grade, are purposively chosen. The quantitative survey involves 4 teachers and 240 students from grades 4-6, with 38 students selected as samples. Qualitative data is gathered through open-ended questions and random interviews with teachers and parents to validate insights and strategies.

Participants are selected through purposive sampling, focusing on key stakeholders at the Experimental Primary School. The study includes 4-6 grade students and their teachers, aiming to gather comprehensive data on motor learning and skill display. Teachers with relevant experience and parents of sixth-grade students are involved to provide a broad perspective on teaching strategies and their effectiveness. The study employs the National Motor Learning and Skill Display Test results and academic performance records. Additionally, a researcher-developed instrument, validated by experts, is used to collect data. Open-ended questions are posed to parents and teachers to gather qualitative insights on teaching strategies and their impact.

Prior to data collection, consent was obtained from parents. Teachers provided necessary documents and student assessment results. Information sheets were distributed to gather demographic data and test scores. Qualitative data was collected through face-to-face interviews with selected teachers and parents, and analyzed using topic analysis to identify themes. Descriptive statistics, such as frequency, percentage, mean, and standard deviation, are used to summarize demographic profiles and test scores. Comparative statistical tests, including independent sample t-tests, one-way ANOVA, and chi-square tests, examine differences in teaching strategy effectiveness and test performance across demographic groups. These analyses determine the association between teaching strategies and student outcomes. A significance level of 0.05 is used to test hypotheses. If the calculated significance value exceeds 0.05, the null hypothesis is accepted; otherwise, it is rejected.

The study adheres to ethical standards, ensuring informed consent, privacy, and confidentiality. Measures are taken to protect vulnerable participants, minimize risks, and address potential conflicts of interest. Recruitment is conducted ethically, and the study aims to benefit participants and the broader educational community by improving physical education strategies.

3. Results

Table 1. Demographic Profile of the Respondents

Demographic Profile	Categories	Frequency	Percentage
Sex	Male	167	51.23
	Female	159	48.77
	Total	326	100.00
Family Monthly Income	Under 5000	63	19.33
	5000-10000	106	32.52
	10000-20000	85	26.07
	Up 20000	72	22.09
	Total	326	100.00
Only Child or Not	Yes	204	62.58
	No	122	37.42
	Total	326	100.00
Entrance Examination Result	Fail	21	6.44
	Pass	73	22.39
	Good	186	57.06
	Excellent	46	14.11
	Total	326	100.00
Previous School	Provincial key primary school	54	16.56
	Municipal key point	174	53.37
	Regional focus	88	26.99
	Ordinary school	10	3.07
	Total	326	100.00

Table 1 presents a demographic breakdown of the respondents in the survey. The table categorizes the respondents based on different demographic profiles including sex, family monthly income, whether they are an only child, their entrance examination results, and the type of their previous school.

Starting with sex, the respondents are almost equally

distributed between males (167 respondents, accounting for 51.23% of the total) and females (159 respondents, making up 48.77%). The total number of respondents is 326, which represents 100% of the surveyed group.

In terms of family monthly income, the respondents are categorized into four groups. A small portion, 19.33%, reported having a family monthly income of under 5,000. The

largest group, consisting of 32.52%, has an income between 5,000 to 10,000. The next income category, 10,000 to 20,000, comprises 26.07% of the respondents, while those with a family income of over 20,000 make up 22.09%. All income groups add up to the total respondent count of 326.

Regarding the status of being an only child, a significant majority, 62.58% (204 respondents), are only children, whereas 37.42% (122 respondents) are not. The cumulative percentage for this demographic is once again the complete 100% of the surveyed population.

For the entrance examination results, the majority of respondents have performed well, with 57.06% (186 respondents) receiving a 'Good' rating. A considerable number have 'Passed' with 22.39% (73 respondents), while a smaller number have achieved an 'Excellent' rating, making up 14.11% (46 respondents). Only 6.44% (21 respondents) failed the entrance examination. As expected, these percentages total up to 100% for the full cohort.

Lastly, the previous school demographic shows a concentration of respondents coming from municipal key point schools, which account for 53.37% (174 respondents). Regional focus schools follow with 26.99% (88 respondents), and provincial key primary schools contribute to 16.56% (54 respondents). A minimal percentage, 3.07% (10 respondents), reported attending an ordinary school. This section also sums to the complete 326 respondents surveyed.

In conclusion, Table 1 provides a detailed demographic distribution of the respondents, indicating a diverse representation across sex, income levels, family composition, academic performance, and educational background, with all categories summing to a comprehensive 100% of the survey participants.

The diverse demographic profile of the students suggests that teaching strategies must be adaptable to cater to a range of individual needs and backgrounds, aligning with the findings of Fernandez-Rio et al. (2017) that a student-centered approach can lead to better motor skill development.

Table 2. Result of the National Motor Learning and Skill Display Test

Rating Range	Frequency	Percentage
91% to 100%	79	24.23
81% to 90%	192	58.90
71% to 80%	40	12.27
70% and below	15	4.60
Total	326	100.00

Table 2 provides a summary of the respondents' results from the National Motor Learning and Skill Display Test. The results are categorized into four rating ranges, and the table lists the number of respondents (frequency) and their corresponding percentage of the total 326 participants who fall into each rating range.

The highest rating range, 91% to 100%, is achieved by 79 respondents, representing 24.23% of the total. This indicates that nearly a quarter of the participants scored within the top decile of the test.

A significant majority of respondents, 192 or 58.90%, scored within the 81% to 90% range. This is the most common score range, suggesting that more than half of the students perform well, achieving scores that are above average.

The 71% to 80% range includes 40 respondents, which constitutes 12.27% of the total. This range indicates a smaller yet notable portion of the respondents who scored moderately well on the test.

The lowest scoring bracket, 70% and below, includes the fewest respondents, with 15 participants or 4.60% of the total. This suggests that a small percentage of the surveyed population scored below the 70% mark.

Thus, the table illustrates the distribution of scores among the respondents on the National Motor Learning and Skill Display Test, with a clear majority scoring above 80% and a very small proportion scoring 70% or below, summing up to the full count of participants, which is 100% of the survey respondents. The majority of students scoring between 81% and 90% could reflect an alignment of physical activities with the cognitive development needs of the children, resonating with the research of Haapala et al. (2014) and Jaakkola et al. (2015).

Table 3 displays the results of a Chi-Square test used to identify differences in gross motor learning and skill display among respondents based on their demographic profile. It is segmented by categories such as sex, family monthly income, whether they are an only child, entrance examination result, and the type of previous school. The table shows the distribution of scores across four performance ranges (91% to 100%, 81% to 90%, 71% to 80%, and 70% and below), along with the total number of respondents in each category, the Chi-Square value (X²), the p-value, and the decision on the null hypothesis (H₀).

In the sex category, both males and females show no significant difference in performance on the gross motor learning and skill display test, with a p-value of 0.998, leading to the acceptance of the null hypothesis (H₀).

In contrast, family monthly income presents a significant difference in scores, with a p-value of 0.00, which is below the standard threshold for significance, leading to the rejection of H₀. This indicates a statistically significant association between family income and motor skill performance.

Similarly, when analyzing the only child status, the p-value is 0.995, suggesting there is no significant difference in performance based on whether the respondent is an only child or not, leading to the acceptance of H₀.

The entrance examination results category shows a profound difference in motor learning and skill display outcomes, with a p-value of 0.00. This denotes a strong rejection of H₀, pointing to a significant disparity in performance based on entrance examination results.

Lastly, the type of previous school attended by the respondents also indicates significant differences in performance, with a p-value of 0.00, leading to the rejection of H₀. This suggests that the school type is a significant factor in the performance on the gross motor learning and skill display test.

The Chi-Square values for family monthly income, entrance examination results, and previous school are substantially high (175.21, 708.26, and 201.09 respectively), which further reinforces the conclusion that these demographic factors have a significant effect on the performance of the respondents in the National Motor Learning and Skill Display Test. The significant differences based on socioeconomic factors like family income and school type might be indicative of the mediating mechanism between motor and cognitive development as suggested by

the literature (Lowrie et al., 2017; Zhang et al., 2017).

Table 3. Difference in Gross Motor Learning and Skill Display Based on Demographic Profile (Chi-Square Test)

Demographic Profile	Categories	91% to 100%	81% to 90%	71% to 80%	70% and below	Total	X ²	p-value	Decision
Sex	Male	18	44	9	3	167	0.06	0.998	Accept H ₀
	Female	17	41	8	3	159			
Family Monthly Income	Under 5000	15	37	8	4	64	175.21	0.00	Reject H ₀
	5000-10000	26	62	13	5	106			
	10000-20000	21	50	10	4	85			
	Up 20000	17	42	9	3	71			
Only Child or Not	Yes	49	120	25	9	203	0.09	0.995	Accept H ₀
	No	30	72	15	6	123			
Entrance Examination Result	Fail	5	12	3	1	21	708.26	0.00	Reject H ₀
	Pass	18	43	9	3	73			
	Good	45	110	23	9	187			
	Excellent	11	26	6	2	45			
Previous School	Provincial key primary school	13	32	7	2	54	201.09	0.00	Reject H ₀
	Municipal key point	42	102	21	8	173			
	Regional focus	21	52	11	4	88			
	Ordinary school	2	6	3	0	11			

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which further reinforces the conclusion that these demographic factors have a significant effect on the performance of the respondents in the National Motor Learning and Skill Display Test. The significant differences based on socioeconomic factors like family income and school type might be indicative of the mediating mechanism between motor and cognitive development as suggested by the literature (Lowrie et al., 2017; Zhang et al., 2017).

Table 4. Level of Teaching Strategies

Indicators	Mean	SD	Rank	Verbal Description/ Interpretation
Teaching Preparations	3.47	0.77	3	Agree/Manifested
Teaching Process	2.76	0.85	5	Agree/Manifested
Teaching Evaluation	2.93	0.87	6	Agree/Manifested
Teaching Strategies (Overall)	3.05	0.83	-	Agree/Manifested

Scale: 1-1.50: Strongly Disagree/Not Manifested; 1.51-2.50: Disagree/Slightly Manifested; 2.51-3.50: Agree/Manifested; 3.51-4.00: Strongly Agree/Highly Manifested.

Table 4 compiles an overall assessment of teaching strategies across three categories: Teaching Preparations, Teaching Process, and Teaching Evaluation. The table lists each category with a corresponding mean score, standard deviation (SD), and rank, followed by a verbal description or interpretation.

"Teaching Preparations" receives the highest mean score of 3.47 with an SD of 0.77, ranked 3rd, interpreted as "Agree/Manifested." This indicates a consensus that respondents agree that teachers are well-prepared, which is manifested in their teaching.

In contrast, "Teaching Process" has a lower mean score of 2.76 and an SD of 0.85, ranked 5th. Although it still falls within the "Agree/Manifested" range, the lower mean suggests that the respondents see more variability and perhaps less consistent application in teaching processes.

"Teaching Evaluation" has a mean score of 2.93 with an SD of 0.87, which places it at rank 6. Like the other categories, it is described as "Agree/Manifested," yet the ranking and mean score reflect that it is perceived as less effectively implemented compared to Teaching Preparations.

Lastly, the overall category "Teaching Strategies" has a

mean of 3.05 and an SD of 0.83, without a specified rank. The interpretation is "Agree/Manifested," indicating a general agreement among respondents that teaching strategies are applied, but not as strongly as the preparation aspect of teaching.

The variations in levels of agreement for different aspects of teaching strategies suggest a need for more individualized teaching approaches as highlighted by the literature on movement learning differences (Gallahue & Ozmun, 2015) and the impact of teaching strategies on motor learning (McKenzie et al., 2016).

Table 5. Difference in Teaching Strategies Based on Demographic Profile

Demographic Profile	Categories	Mean	SD	Stat. Value	p-Value	Decision
Sex	Male	3.02	0.82	t= -1.16	0.34	Accept H ₀
	Female	3.05	0.77			
Family Monthly Income	Under 5000	3.02	0.77	F= 1.01	0.76	Accept H ₀
	5000-10000	3.05	0.80			
	10000-20000	3.03	0.83			
	Up 20000	3.04	0.77			
Only Child or Not	Yes	3.02	0.78	t= -0.02	0.95	Accept H ₀
	No	3.03	0.86			
Entrance Examination Result	Fail	3.03	0.86	F= 0.76	0.84	Accept H ₀
	Pass	3.02	0.81			
	Good	3.03	0.84			
	Excellent	3.05	0.84			
Previous School	Provincial key primary school	3.02	0.78	F= 0.98	0.56	Accept H ₀
	Municipal key point	3.03	0.82			
	Regional focus	3.04	0.81			
	Ordinary school	3.04	0.78			

Table 5 provides an analysis of the differences in teaching strategies based on various demographic profiles of the respondents. Each demographic category includes the mean score, standard deviation (SD), statistical value (t or F), p-value, and the decision on whether to accept the null hypothesis (H₀).

For the demographic category of sex, males have a mean score of 3.02 with an SD of 0.82, and females have a mean of 3.05 with an SD of 0.77. The statistical t-value is -1.16 with a p-value of 0.34, leading to the acceptance of H₀, indicating no significant difference in teaching strategies based on sex.

In terms of family monthly income, the means range slightly, from 3.02 to 3.04, with SDs close to 0.77-0.83 across the different income categories. The F-value for this demographic is 1.01 with a p-value of 0.76, which also leads to the acceptance of H₀, suggesting there is no significant difference in perceived teaching strategies across different income levels.

When examining the variable of being an only child or not, both categories have very similar mean scores (3.02 for 'Yes' and 3.03 for 'No') and comparable SDs (0.78 and 0.86, respectively). The t-value is -0.02 with a high p-value of 0.95, resulting in the acceptance of H₀, indicating no significant difference based on whether the respondent is an only child.

For entrance examination results, there is a very narrow variation in mean scores from 3.02 to 3.05 across the different outcome categories, with SDs also being very close. The F-

value is 0.76 with a p-value of 0.84, leading to the acceptance of H₀, suggesting that the entrance examination results do not significantly impact perceptions of teaching strategies.

Lastly, looking at the previous school attended, the mean scores are almost uniform, ranging from 3.02 to 3.04, and the SDs are between 0.78 and 0.82. The F-value is 0.98 with a p-value of 0.56, which leads to the acceptance of H₀, indicating no significant difference based on the type of previous school attended.

Overall, Table 8 indicates that there are no significant differences in the perception of teaching strategies when comparing across the demographic categories of sex, family monthly income, only child status, entrance examination results, and the type of previous school attended. This suggests a uniformity in the perception of teaching strategies regardless of the demographic background of the respondents.

The lack of significant differences across demographics indicates that while strategies are being applied uniformly, they may need to be further tailored to the individual needs of students, supporting the findings of Fernandez-Rio et al. (2017).

Table 6. Relationship Between Gross Motor Learning and Teaching Strategies

X ² Test for Association	P-Value	Decision/ Interpretation
89.22	0.00	Significant/Reject H ₀

Table 9 presents the results of a Chi-Square (X^2) test for association between gross motor learning and teaching strategies. The Chi-Square value reported is 89.22 with a p-value of 0.00. Based on the p-value, the decision or interpretation is that the association between the two variables is statistically significant, leading to the rejection of the null hypothesis (H_0).

This significant Chi-Square value indicates that there is a statistically significant relationship between the teaching strategies employed and the gross motor learning outcomes. In other words, the way teachers prepare, conduct, and evaluate their teaching has a measurable impact on students' gross motor learning achievements.

The significant association found underscores the importance of tailored and effective teaching strategies, echoing the research that suggests physical activity combined with cognitive tasks can enhance both motor and cognitive development (Tomprowski & Pesce, 2019).

Social Learning Theory, as proposed by Bandura, posits that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement. In the context of physical education, this theory underscores the importance of observational learning, imitation, and modeling in the acquisition of new behaviors and skills.

The strong association highlighted in Table 9 might also suggest that when teachers model positive behaviors and high-skill proficiency, students observe and learn from these displays. This observational learning can contribute significantly to their own motor skill development. Furthermore, the reinforcement that occurs through positive feedback or success in performing a skill can strengthen the learned behaviors.

In this respect, the table could reflect that strategies which leverage Social Learning Theory—such as providing opportunities for students to observe skilled performances, offering forums for peer interaction, and promoting collaborative tasks that encourage observation and imitation—correlate with better gross motor outcomes in students.

The key takeaway is that motor skills are not developed in isolation; they are influenced by the social environment of the classroom, including the behavior and actions of both teachers and classmates. Therefore, the teaching strategies that encourage observation, social interaction, and modeling are integral to fostering effective motor learning in primary education settings.

4. Discussion

The results of the study have provided a comprehensive overview of the impact of teaching strategies on gross motor learning and skill display in primary physical education. It is clear from the findings that teaching strategies are not one-size-fits-all and are perceived differently across various demographic backgrounds. However, certain factors like family income, entrance examination results, and the type of previous school attended play a significant role in motor skill outcomes, indicating that socioeconomic factors and educational history may influence the effectiveness of teaching strategies.

Despite demographic variations, certain teaching practices—particularly those involving teacher preparation and student well-being—are consistently viewed as strongly manifested and agreeable across the board. These practices underscore

the importance of teacher-student interaction before the learning process and highlight the need for a supportive learning environment.

Interestingly, while there are variations in the perception of teaching processes and evaluations, the overall strategy remains in the agreeable range. This suggests that while there is room for improvement, the strategies employed are generally on track with educational goals.

The significant relationship between teaching strategies and gross motor learning outcomes, as indicated by the Chi-Square test for association, provides a compelling case for the critical evaluation and continuous improvement of teaching methodologies. With a significant Chi-Square value of 89.22 and a p-value of 0.00, the data points to a clear link between the teaching approaches employed by educators and the motor skill proficiency of students.

The findings advocate for a targeted and student-centered approach to teaching strategies in primary physical education. It emphasizes the need for professional development and strategy refinement that take into account individual learner differences and the broader educational context. Moreover, the implications of these findings should encourage educational stakeholders to invest in training and resources that support the identified effective teaching practices, fostering an environment where every student has the opportunity to succeed in developing essential motor skills.

Based on the analysis and interpretation of the survey data across various tables and through the lens of theoretical frameworks, the following general recommendations can be made to enhance the efficacy of teaching strategies in promoting motor learning and skill display in primary school physical education (PE) classes:

- Implement Student-Centered Approaches:
- Adapt teaching strategies to meet the individual needs and abilities of students, as motor learning is most effective when tailored to personal capabilities and interests.
- Incorporate more active, experiential learning activities that allow students to engage at their skill level and advance at their own pace.
- Enhance Teacher Training:
- Provide ongoing professional development for PE teachers that focuses on the integration of educational theories such as Social Learning Theory and Constructivism.
- Train teachers on the implementation of differentiated instruction to cater to diverse learning needs and socio-economic backgrounds.
- Foster Observational Learning Opportunities:
- Increase opportunities for students to observe peers and teachers demonstrating motor skills correctly. This could be facilitated through demonstration sessions, peer teaching activities, and the use of video demonstrations.
- Encourage collaborative learning where students can work together, observe one another, and provide feedback, fostering a supportive social environment.
- Incorporate Technology and Innovative Practices:
- Utilize technology to enhance learning experiences, such as interactive apps for demonstrating motor skills, virtual reality environments, or video analysis tools that provide immediate feedback.
- Explore the integration of physically active lessons in

the classroom that connect physical activities with academic content to enhance both physical and cognitive development.

- Regularly Evaluate and Adapt Teaching Strategies:
- Implement a robust system of evaluation for teaching strategies to assess their effectiveness in improving motor skills. Use both qualitative and quantitative methods to gather data on student performance and satisfaction.
- Based on evaluation outcomes, adapt and refine teaching strategies continuously to meet evolving educational goals and student needs.

In light of the insights gathered from the results of the study, it is imperative to address the identified areas that significantly impact student learning outcomes. The findings suggest that a focused approach on enhancing teaching methods and strategies can greatly improve the macro motor learning experiences of primary school students. Therefore, it is with great consideration and understanding of the study's implications to propose the "Enhanced Motor Skills through Strategic Teaching (EMST) Program" with the following objectives:

- To enhance teacher preparation strategies that prioritize student well-being and readiness for physical education.
- To diversify and improve teaching processes with a particular focus on technology integration and varied teaching methods.
- To refine evaluation methods, moving towards a more comprehensive and differentiated approach.
- To mitigate the impact of socioeconomic factors on motor skill learning by providing equitable access to quality teaching strategies.

The EMST Program is designed to respond to the significant association between teaching strategies and motor skill learning outcomes as indicated by the survey. By focusing on areas with the highest impact-teacher preparation, process, and evaluation-the program aims to strengthen teachers' abilities to support motor learning and adapt their strategies to meet diverse student needs.

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