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Middle School Student's Leadership Skills and Their PE Class Participation

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Abstract: The research areas of physical participation (participatory discussions, sports and outdoor activities, collaborative activities) and leadership (self-confidence, communication skills, intelligence, cooperation and teamwork, decision-making skills, value formation) provide the basis for improving students' Learning efficiency and autonomy. They deepen student engagement in participatory discussions, physical and outdoor activities, and collaborative activities and increase the effectiveness of student leadership development. These areas have improved the academic standards of Nanyang middle school students, contributed to teaching input, and helped students develop classroom participation and leadership skills. This study randomly selected 568 students and analyzed the data collected using a descriptive correlational design and Statistical Package for Social Sciences (SPSS). Research results show that improving the level of participatory discussions, sports and outdoor activities, and collaborative activities can effectively promote the improvement of students' leadership levels, including self-confidence, communication skills, intelligence, cooperation and team spirit, decision-making skills, values, etc. formation, ultimately improving students' academic performance. In order to better cultivate students' sports participation ability and leadership thinking ability, teachers must take relevant measures in teaching. For example, strengthen the cultivation of leadership skills of middle school students, focus on curriculum design, improve students' participation in physical education classes, optimize physical education courses, design rich sports projects, implement intervention projects, and improve the quality of middle school students. Leadership skills and participation levels in physical education classes are critical. Students need independent learning and leadership skills to increase their level of classroom participation. Ultimately, these strategies help students develop leadership skills, broaden their horizons, and become confident, adaptable thinkers.

Keywords: Physical Education Participation; Leadership; Middle School Students; Improve Learning Ability.

1. Introduction

The physical education classroom is the primary avenue through which students acquire physical education knowledge and skills while engaging in physical activities. The enthusiasm and active participation of students will remain pivotal in determining the quality of physical education classes.

Physical education classroom instruction will continue to stand apart from other subjects due to its inherent practicality, with physical participation remaining the primary mode of engagement. This characteristic will persist, emphasizing that students learn through active sports participation rather than solely relying on teacher-led explanations as in other subjects. In alignment with forthcoming curriculum standards, the emphasis on conducting effective physical education classes, motivating students to engage in physical exercise, and fostering their voluntary participation in classroom instruction will remain essential tasks for physical education teachers. Consequently, prior to each class, PE teachers will need to prepare strategies and approaches aimed at achieving these goals. Thus, within the context of ongoing curriculum reforms, students will continue to be the central focus of teaching in physical education. Researching and understanding students' participation behavior in the future PE classroom will remain a practical and necessary approach for enhancing the effectiveness of physical education instruction. It will serve as the primary avenue for improving teaching methods and strategies employed by PE teachers, all in line with the evolving needs of physical education in middle schools.

Peter Drucker (2020) pointed out that there are no born leaders, leadership can be learned through hard work and training. On the one hand, the personal ability and quality of young people determine the speed and height of the future development of the country. On the other hand, to cultivate and develop the leadership of young people, especially the leadership of middle school students, so that students can have a comprehensive understanding of their own abilities in advance, so as to avoid entering the blind area of choosing a major. Adolescence is a critical period for leadership development. Teenagers begin to form their personalities during this period and are open to trying and accepting new things and learning new skills.

Although the preliminary study studied the leadership ability of middle school students 'participation in physical education class, the in-depth research level was not enough, and the leadership skills and degree of students' participation in physical education were not studied.

This study will investigate and study middle school students' physical education classroom participation and leadership skills, analyze middle school students' physical education classroom participation, students' leadership level and the correlation between them, and aim to provide a training program to improve the leadership skills level of middle school students' physical education classroom participation.

2. Statement of the Problem

This study aims to determine the relationship between middle school students' leadership skills and their

PECclassroom participation in order to propose a nurturance program that shall improve students' leadership.

Specifically, the study should seek answers to the following questions:

1. What is the profile of the respondents in terms of:

1.1 sex;

1.2 age and

1.3 grade?

2. What is the respondent's level of leadership skills in terms of:

2.1 Self-confidence;

2.2 Communication Ability;

2.3 Intelligence;

2.4 Cooperation and Teamwork

2.5 Decision making skills

2.6 Values formation

3. Is there a significant difference between the assessed level of leadership skills when their profile is used as a factor?

4. What is the respondents level of participation in their PE classes, in terms of:

4.1 Participative Discussion

4.2 Sports and Outdoor Activities; and

4.3 Collaborative Activities?

5. Is there a significant difference between the assessed level of PE Class participation when their profile is used as a factor?

6. Is there a significant relationship between the students' leadership skills and their PE class participation?

7. What nurturance program may be proposed based on the results of the study?

Hypotheses

3. Scope and Delimitation of the Study

The purpose of this study is to evaluate the relationship between middle school students' participation in physical education and student leadership in Nanyang City, and to construct a training program to improve middle school students' classroom participation and leadership, which can provide reference materials for middle school students, middle schools and curriculum opening centers.

This study focuses on three aspects: Discussion Activities, Sports and Outdoor Activities and Collaborative Activities. Confidence, communication, intelligence, cooperation, decision-making and values in students' leadership. This study adopts the method of stratified random sampling, and selects 1200 middle school students of 6 grades in 4 schools in Nanyang city center. Data were collected through survey tools and reviewed and analyzed using averages, percentages, Pearson R-product moment coefficients, and ANOVA. The findings are used as a basis for generating pedagogical input to propose training programs to improve students' physical education classroom participation levels and leadership levels.

4. Theoretical Framework

This study is anchored on positive adolescent development theory and participation theory, which will provide guidance and direction for this research.

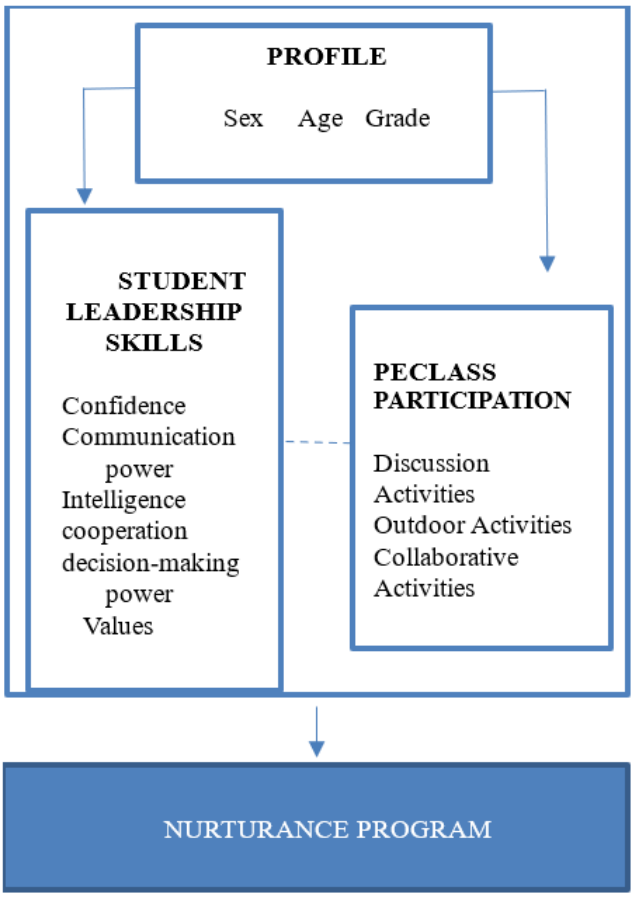
Positive adolescent development theory. Adolescence is the transition period from childhood to adulthood, and it is a more important transition period in life. During this period, teenagers begin to establish their own personality and are willing to try new things and learn new skills. However, due to the limitations of cognitive ability and knowledge level and some other conditions, when facing various dangers or temptations, they cannot correctly identify and deal with them, and some problem behaviors will occur, such as drinking alcohol and skipping school. Traditional adolescent development studies tend to treat adolescents as "imperfect" and focus on problem behaviors and unhealthy psychological states of adolescents, and focus on ways to solve these problems. At the same time, young people are regarded as vulnerable groups in society who need help and protection from adults. The Positive YoutDevelopmentPYD views all adolescents as assets to be developed. It advocates a positive view and attitude towards the development of adolescents, focusing on their strengths, abilities and potentials, and how to promote the development of these abilities and potentials. To help them better face the challenges ahead. At the same time, the positive adolescent development theory points out that adults (parents, teachers, etc.) should provide adolescents with a variety of resources and environments, create a supportive atmosphere, and encourage adolescents to develop their own abilities spontaneously

FeberPittman & Marshal1(2002) pointed out that all adolescents need to develop the following important abilities during the transition to adulthood: growth, learning, leadership, connection, and work. It can be seen that in order to comprehensively and effectively promote the development of youth, the formation and development of youth leadership is a more important content and link. At the same time, the theory of positive youth development also has far-reaching guiding significance for the development of youth leadership. Van Linden & Fertman (1998) pointed out that the development of adolescent leadership has its own characteristics of individual growth, and a full understanding of the development of adolescent leadership must be based on the theory of adolescent development. At the same time, based on the theory of positive adolescent development, they point out that there are two important sources for the formation and development of adolescent leadership: one is the cultivation of adolescents' own leadership, and the other is the resources and support provided by external adults for their leadership development. Therefore, in order to effectively promote the development of youth leadership, it is necessary for adults (parents, teachers, etc.) to provide and create various resources and environments for the development of youth leadership under the guidance of positive youth development theories.

Participation theory. Student "participation" is also called student "participation". The theory of involvement was first put forward and established by Martin, a foreign scholar. It mainly reflects the state variables of students' physiological and mental energy input in activities related to learning. "Participation" refers to physical and mental participation as an integral part of some activity or behavior. The main point of the theory is to make students become the core of certain learning activities and actively participate in learning. Teachers should always pay attention to the participation of students in the teaching process. Around this, the theory proposes five hypotheses: First, involvement is a common input of an individual's physical and mental energy. Second, the change in participation is a continuous process that varies according to an individual's learning goals and time commitment. Third, participation has both quantitative and qualitative components. To measure and evaluate the degree of participation, it is necessary to look at the quantity and quality of participation as a whole. Fourth, students' learning

development is mainly affected by the quantity and quality of their participation in the learning process, that is, students who achieve good learning results often have deep and extensive participation in the quality and quantity of learning content, and vice versa. Fifth, the teaching strategies used by teachers will directly affect the effect of students' participation. From the above five hypotheses, it can be found that the process of students' participation in learning includes implicit psychological activities and explicit behavioral activities. They interact and coordinate with each other. Under the stimulation and organizational influence of external forces such as teachers, they are interrelated and act on the quantity and quality of participation at different levels, showing constant changes. From the perspective of involvement theory, the process of college students participating in mathematical research learning is the process of participating in mathematical thinking and exploration, which is a continuous process that can be directly measured. Specifically, we can comprehensively evaluate and improve the level and quality of senior primary school students' participation in mathematics inquiry class by observing students' inquiry behavior in class, recording the time and quantity of individuals' participation in learning, describing the depth of thinking and inner experience of individuals' participation in learning, and analyzing the methods and strategies of inquiry participation.

Table 1. Conceptual framework



5. Hypotheses

Ho1 There is no significant difference between the assessed level of leadership skills when their profile is used as a factor.

Ho2 There is no significant difference between the assessed level of PE Class participation when their profile is used as a factor.

Ho3 There is no significant relationship between the students' leadership skills and their PE class participation.

6. METHODOLOGY

6.1. Research Design

The descriptive-comparative-correlational research design will be employed in this study. Descriptive research methods were used to interpret the data collected from the questionnaire and to describe the interrelationships between the variables used in the study. Descriptive research is a type of quantitative research designed to collect measurable data for statistical analysis of a population sample. The purpose of descriptive research is to describe and classify phenomena. (Nassaji,2017) This design is chosen to meet the research goal, that is, to use the correlation between students' physical education classroom participation and students' leadership skills.

Comparative research design is a research method that involves comparing two or more groups, variables, conditions, or phenomena in order to identify similarities, differences, patterns, or relationships. This type of research design is commonly used in various fields, including social sciences, economics, education, and political science. Comparative studies allow researchers to gain insight into the relationships between variables and make informed comparisons that lead to a deeper understanding of the subject.

6.2. Research Participants

The study sites were middle schools in Nanyang City. The purpose of this study was to randomly select middle school students from secondary schools in Nanyang City. In this study, 374 students from grades 7,8 and 9 were selected from Nanyang Middle School, China.

A survey of students' academic performance by dividing them into strata based on their grade level and then randomly selecting some students from each grade.

This study will be conducted in the language environment of Chinese questionnaire survey. Once the data is collected, it is collated and then translated into English.

This study will adopt the method of random sampling to select the research objects. This study used Creative Research Systems Sample Size Calculator to calculate the sample size (n). A total of 374 students from school were selected to participate.

Table 2. Participant Frequency Corresponding percentage

Grade	Population	Sample
7	1100	72
8	1500	99
9	3088	203
Total	5688	374

6.3. Data Gathering Procedure

The researchers will ask the president for permission to collect relevant data for the study. With the approval of the municipal Education Bureau, the researchers will coordinate with teachers and students of Nanyang Middle School. The questionnaires will be administered through the Questionnaire Star website (https://www.wjx.cn/) and will be available for students to participate. Frequency, percentage,

weighted average, T-test and one-way analysis of variance (ANOVA) were used to collate, analyze and interpret the responses of questionnaire participants.

7. Results and Analysis

This chapter presents the results, analysis and interpretation of the following data: profiles of respondents, such as their gender, age, grade level, and the level and leadership skills and the respondents level of participation in their PE classes.

7.1. The Profile of the Respondents

Table 3 presents the frequency and percentage distribution of participants grouped by gender. As depicted in the table, males constitute the majority, accounting for 52.8%. This indicates that the majority of participants are male. The study reveals that the majority of student participants are 14 years old, comprising 31.3%, followed by 13 years old at 28.0%. Additionally, participants aged 12 and those aged 14 and above represent 21.0% and 19.5%, respectively, while those aged below 11 account for a minimal percentage of 0.2%. Regarding grade levels, the majority of students are in the ninth grade, comprising 38.9%, followed by the seventh grade at 34.0%. Lastly, the eighth grade constitutes 27.1%.

Table 3. The profile of participants

Profile		Frequency	Percentage
Gender	Male	300	52.8
	Female	268	47.2
	Total	568	100.0
Age	Under 11 years old	1	0.2
	12 years old	119	21.0
	13 years old	159	28.0
	14 years old	178	31.3
	Over 14 years old	111	19.5
	Total	568	100.0
Grade	Grade 7	193	34.0
	Grade 8	154	27.1
	Grade 9	221	38.9
	Total	568	100.0

7.2. The Respondent's Level of Leadership Skills in Terms of:

7.2.1. Self-confidence;

Table 4. Assessment on Self-confidence

Self- Confidence	Mean	SD	Description	Interpretation	**Rank**
1. I feel good about myself	3.24	0.61	Agree	Skilled	6
2. I believe in myself	3.31	0.57	Strongly Agree	Highly Skilled	1
3. I'm sure of my abilities	3.28	0.57	Strongly Agree	Highly Skilled	4.5
4. I approve of myself	3.30	0.57	Strongly Agree	Highly Skilled	2.5
5. I believe I can make a difference	3.30	0.57	Strongly Agree	Highly Skilled	2.5
6. I have confidence in the face of pressure	3.28	0.57	Strongly Agree	Highly Skilled	4.5
7. I am calm in the face of frustration	3.22	0.63	Agree	Skilled	7
Over-all Mean	3.28		Strongly Agree	Highly Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5Disagree 1.00-1.75 Strongly Disagree

Table 4 illustrates the evaluation of participants' self-confidence in the respondent's level of leadership skills. It is noteworthy that the respondents have achieved the goal of "enhancing student self-confidence," with an overall mean of 3.28. This suggests that boosting self-confidence can help students improve their level of leadership skills. Among the seven aspects, the highest average score is for "I believe I can make an impact" (3.30), while the lowest average score is for "I stay calm in the face of setbacks" (3.22). Therefore, when facing pressure, students exhibit high confidence in their abilities and positive influence but demonstrate relatively lower calmness in the face of setbacks. This indicates that students show high self-confidence in the seven self-assessment aspects, especially in the belief in their ability to make an impact. However, there is a need to enhance their calmness when dealing with setbacks, emphasizing the cultivation of psychological adjustment and emotional management.

Burge (2015) pointed out in the study that students scored high in self-affirmation and confidence in personal abilities, influenced by positive social support and encouragement, which enhanced their self-confidence. However, the lower scores in facing setbacks were attributed to a lack of effective emotional regulation and stress management skills, highlighting the need for training and support in this area. This suggests that students' mental well-being is influenced by external circumstances, emphasizing the importance of comprehensive psychological education. In addition, Klisz (2014) also emphasized in the research that students lack sufficient calmness and emotional regulation skills when facing setbacks, leading to relatively lower performance in such situations. This underscores the importance of cultivating students' effective stress management and emotional regulation skills.

7.2.2. Communication Ability

Table 5 presents the evaluation of participants' communication ability in the respondent's level of leadership skills. It is noteworthy that the respondents have achieved the goal of "enhancing student communication ability," with an overall mean of 3.24. This indicates that boosting self-confidence can help students improve their level of leadership skills. Among the various aspects, receiving input from team members received the highest score (3.33), while representing the group in speaking received a relatively lower score (3.00). This suggests that individuals excel in listening and team collaboration but have room for improvement in representing the team in verbal communication. This implies that individuals are more adept at listening and cooperating within a team but could enhance their skills in representing the team through verbal communication, emphasizing the need to strengthen expression and communication skills.

Table 5. Assessment on Communication Ability

Communication Ability	Mean	SD	Description	Interpretation	**Rank**
1. I speak clearly	3.25	0.57	Agree	Skilled	4.5
2. I like communicating with people	3.25	0.60	Agree	Skilled	4.5
3. I can express my ideas	3.28	0.54	Strongly Agree	Highly Skilled	3
4. I can speak for the group	3.00	0.78	Agree	Skilled	7
5. I can listen to the opinions and suggestions of the group members carefully	3.33	0.54	Strongly Agree	Highly Skilled	1
6. I can ensure effective information sharing and communication to promote cooperation	3.31	0.55	Strongly Agree	Highly Skilled	2
7. I can successfully use non-verbal communication skills, such as body language and facial expressions	3.19	0.65	Agree	Skilled	6
Over-all Mean	3.23		Agree	Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5Disagree 1.00-1.75 Strongly Disagree

Jin (2011) pointed out in the study that individuals face limitations in communication and expression skills due to a lack of confidence or relevant experience in these areas, leading to lower scores. Additionally, team communication involves complex coordination and the ability to understand others' viewpoints. Lower scores reflect challenges in these areas, either because individuals have not fully developed these skills or lack positive team interaction experience. While, Haverkamp (2023) highlighted in the research that individuals perform well in listening and collaboration. Individuals exhibit a positive collaborative attitude and effective team collaboration experience. They are more willing to listen to others' opinions and can effectively share information, fostering teamwork. Therefore, these high scores reflect individuals' positive traits and experiences in team collaboration and communication.

7.2.3. Intelligence

Table 6. Assessment on Intelligence

Intelligence	Mean	SD	Description	Interpretation	**Rank**
1. I'm open-minded	3.21	0.61	Agree	Skilled	3.5
2. I can use all kinds of information to solve problems	3.20	0.60	Agree	Skilled	5
3. I use information to make decisions	3.16	0.62	Agree	Skilled	6
4. I can think critically and analyze problems	3.21	0.59	Agree	Skilled	3.5
5. I can make accurate decisions quickly	3.12	0.66	Agree	Skilled	7
6. I can continue to learn and improve my knowledge and skills	3.32	0.52	Strongly Agree	Highly Skilled	1
7. I can use information technology and tools to enhance your intelligence and learning ability	3.22	0.58	Agree	Skilled	2
Over-all Mean	3.21		Agree	Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5 Disagree 1.00-1.75 Strongly Disagree

Table 6 displays the evaluation of participants' intelligence in the respondent's level of leadership skills. It is noteworthy that the respondents have achieved the goal of "enhancing student intelligence," with an overall average of 3.21. This indicates that improving intelligence can help students enhance their level of leadership skills. Among the various aspects, "I can continue to learn and improve my knowledge and skills" received the highest score (3.32), demonstrating that individuals excel in continuous learning and skill enhancement. In contrast, "I can make accurate decisions quickly" received the lowest score (3.12), indicating that individuals face certain challenges in making quick and accurate decisions. This reflects individuals' relatively strong abilities in critical thinking and problem analysis but highlights the need for improvement in making rapid decisions.

Nelson (2014) pointed out in the study that individuals' positive attitudes towards learning and motivation for continuous improvement are influenced by their educational background, learning environment, and self-development awareness. And Dean (2014) highlighted in the research that "I can make accurate decisions quickly" is influenced by factors such as the complexity of decision-making, time pressure, or the individual being in a learning stage rather than an actual work environment. Additionally, psychological factors such as tension about decision-making or a lack of confidence also play a role. Overall, these two factors are influenced by a combination of education, environment, and individual psychological factors, leading to strong performance in learning and knowledge enhancement but posing certain challenges in making quick and accurate decisions.

7.2.4. Cooperation and Teamwork

Table 7. Assessment on Cooperation and Teamwork

Cooperationa and Teamwork	Mean	SD	Description	Interpretation	**Rank**
1. I like to work as a team	3.26	0.57	Strongly Agree	Highly Skilled	6
2. I can cooperate with others to complete tasks in a group	3.30	0.54	Strongly Agree	Highly Skilled	3
3. I respect and trust others	3.35	0.51	Strongly Agree	Highly Skilled	2
4. I recognize the dedication and contribution of the group members	3.37	0.53	Strongly Agree	Highly Skilled	1
5. I practice what I preach and do well	3.21	0.57	Agree	Skilled	7
6. I can promote inclusiveness and collaboration in a team	3.28	0.53	Strongly Agree	Highly Skilled	5
7. I can communicate effectively in a team	3.29	0.53	Strongly Agree	Highly Skilled	4
Over-all Mean	3.29		Strongly Agree	Highly Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5 Disagree 1.00-1.75 Strongly Disagree

Table 7 illustrates the evaluation of participants' cooperation and teamwork in the respondent's level of leadership skills. It is noteworthy that the respondents have achieved the goal of "enhancing student cooperation and teamwork," with an overall average of 3.29. This indicates that improving cooperation and teamwork can help students enhance their level of leadership skills. Among the various aspects, the highest score is for "4. I recognize the dedication and contribution of the group members" (3.37), indicating that individuals highly acknowledge the contributions and dedication of team members. The lowest score is for "5. I practice what I preach and do well" (3.21), suggesting that individuals demonstrate relatively lower consistency between their words and actions. This is influenced by factors such as behavioral norms, self-awareness, or specific experiences in team collaboration.

Deng & Zhong (2022) pointed out in the study that higher scores, such as "3.35. I respect and trust others" and "3.37. I recognize the dedication and contribution of the group members," indicate that individuals exhibit a high level of respect and recognition for others in team collaboration.

Jian (2022) highlighted in the research that lower scores, such as "3.21. I practice what I preach and do well," indicate that individuals fail to fully practice what they preach, influenced by factors such as consistency in words and actions, role perception, or other factors. The reasons for these differences involve individuals' behavioral guidelines, self-awareness, and experiences in different team situations. In team collaboration, respect, trust, and recognition of the contributions of team members are crucial for building a positive team atmosphere.

7.2.5. Decision Making Skills

Table 8. Assessment on Decision making skills

Decision Making Skills	Mean	SD	Description	Interpretation	**Rank**
1. I can follow orders	3.31	0.52	Strongly Agree	Highly Skilled	1.5
2. I am able to consider multiple alternatives before making a decision	3.31	0.54	Strongly Agree	Highly Skilled	1.5
3. I was faced with multiple alternatives and was able to make the right choice	3.25	0.56	Agree	Skilled	4
4. I make decisions based on priorities	3.18	0.60	Agree	Skilled	6
5. I am able to make decisions based on previous experience and experience	3.27	0.53	Strongly Agree	Highly Skilled	3
6. I make decisions easily	3.04	0.71	Agree	Skilled	7
7. I can assess the risks and consequences of decisions and take steps to reduce uncertainty	3.23	0.57	Strongly Agree	Highly Skilled	5
Over-all Mean	3.23		Agree	Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5 Disagree 1.00-1.75 Strongly Disagree

Table 8 presents the evaluation of participants' decision-making skills in the respondent's level of leadership skills. It is noteworthy that the respondents have achieved the goal of "enhancing student decision-making skills," with an overall average of 3.29. This indicates that improving decision-making skills can help students enhance their level of leadership skills. Among the provided data, the highest scores are for "3.31. I can follow orders" and "3.31. I am able to consider multiple alternatives before making a decision," indicating that individuals excel in following instructions and considering multiple choices before making a decision. In contrast, the lowest score is for "3.04. I make decisions easily," suggesting that individuals have a relatively weaker ability to make decisions effortlessly. This implies that such differences are influenced by individual decision-making styles, stress management capabilities, or attitudes toward the complexity of decision-making. In both work and life, the ability to effectively follow instructions and consider multiple factors before making a decision is crucial.

Gao (2023) pointed out in the study that individuals' positive performance in team collaboration and handling decision complexity is attributed to their good execution capabilities and the ability to comprehensively consider various alternatives. Conversely, lower scores in items like

"3.04. I make decisions easily" indicate that individuals face difficulties in making decisions effortlessly, influenced by the pressure or uncertainty associated with decision-making.

Chen (2022) emphasized in the research that individuals' decision-making styles and abilities are influenced by various factors, including personal experience, educational background, and personality traits. In work and life, some tasks require quick decision-making, while others demand thoughtful consideration. Therefore, the results from this table provide insights into how individuals cope with and handle tasks in different situations. To enhance overall work efficiency, individuals need to find a balance between the ease and complexity of decision-making, continuously developing their decision-making skills to adapt to diverse job requirements. Such assessments help individuals better understand their strengths and areas for improvement, while also providing information to teams and organizations about members' capabilities and potential challenges, promoting more effective collaboration and management.

7.2.6. Values Formation

Table 9. Assessment on Values formation

Values Formation	Mean	SD	Description	Interpretation	**Rank**
1. I am kind and friendly	3.37	0.51	Strongly Agree	Highly Skilled	2.5
2. I'm honest and fair	3.35	0.51	Strongly Agree	Highly Skilled	5
3. I believe team members have a sense of responsibility	3.36	0.53	Strongly Agree	Highly Skilled	4
4. I am loyal and trustworthy	3.37	0.53	Strongly Agree	Highly Skilled	2.5
5. When the group needs dedication, I will not hesitate	3.33	0.55	Strongly Agree	Highly Skilled	6
6. I can follow personal values and ethical principles	3.38	0.53	Strongly Agree	Highly Skilled	1
7. I can remain true to your values in the face of moral dilemmas	3.30	0.59	Strongly Agree	Highly Skilled	7
Over-all Mean	3.35		Strongly Agree	Highly Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5 Disagree 1.00-1.75 Strongly Disagree

Table 9 presents the evaluation of participants' values formation in the respondent's level of leadership skills. It is noteworthy that the respondents have achieved the goal of "enhancing student values formation," with an overall mean of 3.29. This indicates that improving values formation can help students enhance their level of leadership skills. Among the provided data, the highest-scoring item is "3.38. I can follow personal values and ethical principles," demonstrating individuals' excellent performance in adhering to personal values and ethical principles. In contrast, the lowest-scoring item is "3.30. I can remain true to your values in the face of moral dilemmas," indicating some challenges in maintaining steadfast values in the face of moral dilemmas. This reflects the difficulties individuals face when dealing with ethical issues.

Han, L. (2023) highlighted in the study that individuals' positive qualities in handling team relationships and personal principles are crucial for establishing effective teamwork.

Wang (2012) pointed out in the research that individuals need to carefully consider their actions when facing moral dilemmas to ensure the consistency of their values. Overall, this data provides insights into how individuals demonstrate qualities such as kindness, honesty, and loyalty in a team environment, offering valuable information for team building and leadership development.

Table 10. Summary of Assessed the Respondent's Level of Leadership Skills

	Mean	SD	Description	Interpretation	**Rank**
Self Confidence	3.28	0.53	Strongly Agree	Highly Skilled	3
Communication Ability	3.23	0.53	Agree	Skilled	4.5
Intelligence	3.21	0.53	Agree	Skilled	6
Cooperation and Teamwork	3.29	0.49	Strongly Agree	Highly Skilled	2
Decision making skills	3.23	0.50	Agree	Skilled	4.5
Values formation	3.35	0.48	Strongly Agree	Highly Skilled	1
Overall	3.26	0.45	Strongly Agree	Highly Skilled	

Table 10 presents the mean levels of various dimensions in the respondent's level of leadership skills. It is noteworthy that the overall average is 3.27. Among these, the highest score is in the "Values formation" dimension, with a score of 3.35, indicating that individuals have relatively high confidence in the formation of their values and ethical principles. In contrast, the lowest score is in the "Intelligence" dimension, with a score of 3.21, suggesting that individuals are relatively conservative in their self-assessment of intelligence. This implies that individuals have higher confidence in their personal values and ethical principles, while being more cautious in evaluating their intelligence.

Han (2023) pointed out in the study that individuals tend to believe in their strong moral qualities but are more cautious in assessing their intelligence. This difference in self-assessment is influenced by various factors, including individual experiences, educational backgrounds, and cultural values.

Niu (2019) emphasized in the research that individuals, influenced by societal and cultural expectations, tend to highlight their strengths and skills. Additionally, individual self-assessment is influenced by educational and family environments that reinforce confidence in one's abilities. However, it is essential to consider the subjectivity of the evaluation and the impact of individual awareness on the results. Therefore, this outcome needs to be interpreted based on a comprehensive consideration of actual individual performance and the evaluation environment.

8. The Significant Difference between the Assessed Level of Leadership Skills When Their Profile is Used as a Factor?

8.1. Gender

Table 11. Test of Significant Different Between the Assessed Level of Leadership Skills When the Respondents Are Grouped According to Gender

	Gender	N	Mean	SD	t	Sig	**Descriptive**	**Decision**
Self-confidence	Male	300	3.3195	.53619	2.020	.044	Significant	Accepted H_0
	Female	268	3.2297	.52046				
Communication Ability	Male	300	3.2629	.51899	1.506	.133	Not Significant	Rejected H_0
	Female	268	3.1956	.54433				
Intelligence	Male	300	3.2510	.52011	2.153	.032	Significant	Rejected H_0
	Female	268	3.1557	.53380				
Cooperation and Teamwork	Male	300	3.3300	.48766	1.893	.059	Not Significant	Rejected H_0
	Female	268	3.2527	.48439				
Decision making skills	Male	300	3.2729	.49944	2.241	.025	Significant	Rejected H_0
	Female	268	3.1786	.50164				
Values formation	Male	300	3.3771	.47309	1.268	.205	Not Significant	Rejected H_0
	Female	268	3.3257	.49348				

a = 0.05

Table 11 presents the results of t-test analysis, determining the significant differences in the assessed levels of leadership skills among various dimensions when respondents are grouped by gender. As mentioned earlier, the Level of Leadership Skills includes Self-Confidence, Communication Ability, Intelligence, Cooperation and Teamwork, Decision-making skills, and Values formation. The analysis indicates no significant gender differences. However, males scored significantly higher than females in Self-Confidence, Intelligence, and Decision-making skills. Specifically, males had average scores of 3.32, 3.25, and 3.27 in these dimensions, while females had scores of 3.23, 3.16, and 3.18, respectively. This reflects that, in self-confidence, intelligence, and decision-making ability, males exhibit more positive and confident self-evaluations. Nevertheless, in Communication Ability and Cooperation and Teamwork, the score differences between males and females are relatively small, with scores of 3.26 vs. 3.20 and 3.33 vs. 3.25, respectively. This suggests that in communication and teamwork, the evaluations between genders are closer, with no significant differences. In Values formation, the scores between males and females are also relatively close, at 3.38 and 3.33, respectively. This indicates a similar trend in self-awareness and evaluation regarding values formation between genders. It's important to note that the score differences in some dimensions are not statistically significant, such as communication ability and teamwork. Therefore, when interpreting these differences, actual variations and statistical significance levels should be considered together.

Liu (2020) pointed out in the study that societal cultural expectations and influences on gender roles make males more socially accepted and supported in self-confidence, intelligence, and decision-making skills. This is also influenced by factors like education and family, emphasizing gender differences in individual qualities. It's crucial to note that this doesn't imply that females lack proficiency in these areas but reflects a general cognitive and evaluative bias in societal perceptions of gender characteristics.

Wang (2012) stated in the research that in self-confidence, intelligence, and decision-making skills, males scored significantly higher than females, with statistical significance. This is influenced by societal culture, education, and gender roles, resulting in males emphasizing self-confidence, intelligence, and decision-making skills. However, in communication ability and teamwork, where differences between males and females are smaller, it reflects the contemporary emphasis on gender equality, resulting in a more balanced distribution of communication and teamwork abilities. The existence of such gender differences is influenced by various factors, including culture, educational systems, and societal expectations.

8.2. Age

Table 12 presents the results of t-test analysis, determining the significant differences in the assessed levels of leadership skills among various dimensions when respondents are grouped by age. As mentioned earlier, the Level of Leadership Skills includes Self-Confidence, Communication Ability, Intelligence, Cooperation and Teamwork, Decision-making skills, and Values formation. There are distinctions in differences among different age groups. A highly significant difference is observed in the Values formation dimension among students of different ages, with a p-value less than 0.05. However, no significant differences exist in Self Confidence,

Communication Ability, Intelligence, Cooperation and Teamwork, and Decision-making skills.

Table 12. Test of Significant Different Between The Assessed Level Of Leadership Skills When The Respondents Are Grouped According To Age

		N	Mean	SD	F	Sig	Descriptive	Decision
Self Confidence	11 years old and below	1	3.0000	.	2.086	.081	Not Significant	Rejected H_0
	12 years old	119	3.3433	.48617				
	13 years old	159	3.3387	.49866				
	14 years old	178	3.2303	.59012				
	14 years old and above	111	3.1956	.50707				
	Total	568	3.2772	.53026				
Communication Ability	11 years old and below	1	3.0000	.	2.312	.057	Not Significant	Rejected H_0
	12 years old	119	3.3049	.50693				
	13 years old	159	3.2884	.49630				
	14 years old	178	3.1950	.56220				
	14 years old and above	111	3.1300	.54366				
	Total	568	3.2311	.53169				
Intelligence	11 years old and below	1	3.0000	.	1.572	.180	Not Significant	Rejected H_0
	12 years old	119	3.2761	.46374				
	13 years old	159	3.2498	.51757				
	14 years old	178	3.1613	.56022				
	14 years old and above	111	3.1416	.54975				
	Total	568	3.2060	.52829				
Cooperation and Teamwork	11 years old and below	1	3.0000	.	1.740	.140	Not Significant	RejectedH_0
	12 years old	119	3.3469	.46924				
	13 years old	159	3.3351	.45346				
	14 years old	178	3.2785	.51053				
	14 years old and above	111	3.2033	.50766				
	Total	568	3.2935	.48722				
Decision making skills	11 years old and below	1	3.0000	.	1.541	.189	Not Significant	Rejected H_0
	12 years old	119	3.3049	.48389				
	13 years old	159	3.2516	.47908				
	14 years old	178	3.2039	.51380				
	14 years old and above	111	3.1544	.52969				
	Total	568	3.2284	.50225				
Values formation	11 years old and below	1	3.0000	.	2.593	.036	Significant	Accepted H_0
	12 years old	119	3.4214	.46639				
	13 years old	159	3.3917	.46227				
	14 years old	178	3.3459	.48681				
	14 years old and above	111	3.2381	.50940				
	Total	568	3.3529	.48308				

a = 0.05

Wang (2011) indicated in the study that there are some differences among different age groups in dimensions such as self-confidence, communication ability, intelligence, teamwork, decision-making skills, and values formation. As individuals age, scores in self-confidence and intelligence gradually increase, while the age group under 11 years old scores significantly higher in values formation. Communication ability and teamwork exhibit relatively stable performance across different age groups, while decision-making skills are slightly lower in the age groups under 11 and above 14. This reflects specific trajectories in personality and capability development across different age groups, providing valuable insights for formulating relevant educational and training programs.

Wang (2020) pointed out in the research that individuals in different age groups exhibit developmental stages and characteristics in self-confidence, communication ability, intelligence, teamwork, decision-making skills, and values formation. For instance, individuals under 11 years old score significantly higher in values formation because children in this age range begin to form and recognize their values. Additionally, individuals at the age of 12 score higher in multiple dimensions because they are in the peak period of learning and development, possessing strong self-confidence and communication skills. These differences are influenced by individual developmental stages and life experiences.

8.3. Grade

Table 13 presents the results of t-test analysis, confirming significant differences in leadership skill assessments among participants when grouped by level. As previously mentioned, the levels of leadership skills include self-confidence, communication ability, intelligence, cooperation and teamwork, decision-making skills, and values formation. Variations were observed among students of different grades, with significant differences noted in dimensions such as self-confidence, communication ability, and values formation, all with p-values below 0.05. However, no significant differences

were found in the dimensions of intelligence and decision-making ability, with p-values exceeding 0.05.

Table 13. Test of Significant Different Between The Assessed Level Of Leadership Skills When The Respondents Are Grouped According To Grade

		N	Mean	SD	F	Sig	Descriptive	Decision
Self Confidence	grade 7	193	3.3072	.47856	5.469	.004	Significant	Accepted H_0
	grade 8	154	3.3646	.54491				
	grade9	221	3.1900	.55185				
	Total	568	3.2772	.53026				
Communication Ability	grade 7	193	3.2746	.49785	6.543	.002	Significant	Accepted H_0
	grade 8	154	3.3173	.52654				
	grade9	221	3.1332	.55042				
	Total	568	3.2311	.53169				
Intelligence	grade 7	193	3.2450	.47842	2.337	.098	Not Significant	Rejected H_0
	grade 8	154	3.2430	.54665				
	grade9	221	3.1461	.55302				
	Total	568	3.2060	.52829				
Cooperation and Teamwork	grade 7	193	3.3101	.45496	3.611	.028	Significant	Accepted H_0
	grade 8	154	3.3636	.50106				
	grade9	221	3.2301	.49884				
	Total	568	3.2935	.48722				
Decision making skills	grade 7	193	3.2665	.47341	2.349	.096	Not Significant	Rejected H_0
	grade 8	154	3.2625	.52431				
	grade9	221	3.1713	.50794				
	Total	568	3.2284	.50225				
Values formation	grade 7	193	3.3805	.46166	3.666	.026	Significant	Accepted H_0
	grade 8	154	3.4137	.50558				
	grade9	221	3.2864	.47954				
	Total	568	3.3529	.48308				

a =0 .05

Zhuang (2016) pointed out in the study that these differences are related to the developmental stages of students in self-confidence, communication ability, and values formation. Students in different grades undergo significant changes in these aspects, leading to significant differences in assessment results. These differences arise from the physical and psychological development during adolescence, increased social pressures, and individual reassessment of self-awareness and values, causing variations in leadership skills levels across different grades. However, the lack of significant differences in other dimensions is attributed to the relatively consistent development of students in intelligence, teamwork, and decision-making skills, with minimal differences across different grades. Overall, these disparities result from individual student development and the characteristics of academic stages.

9. The Respondents Level of Participation in Their Pe Classes

9.1. Participative Discussion

Table 14. Assessment on Participative Discussion

Participative Discussion	Mean	SD	Description	Inter.	**Rank**
1. I was able to pay close attention when the teacher explained new motor skills.	3.37	0.55	Strongly Agree	Highly Skilled	3.5
2.I always speak up actively when teachers raise questions.	3.17	0.69	Agree	Skilled	6
3.When faced with problems, I will actively discuss and seek solutions.	3.38	0.56	Strongly Agree	Highly Skilled	2
4. I will ask my classmates after class what I have not learned in class.	2.87	0.91	Agree	Skilled	7
5.For the more difficult motor skills, I will study hard until I master them.	3.40	0.55	Strongly Agree	Highly Skilled	1
6.When you have a problem, you will ask your teacher for help.	3.33	0.59	Strongly Agree	Highly Skilled	5
7.During practice, you will discuss with your classmates in order to improve your technical movements.	3.37	0.57	Strongly Agree	Highly Skilled	3.5
Over-all Mean	3.27		Strongly Agree	Highly Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5 Disagree 1.00-1.75 Strongly Disagree

Table 14 displays the evaluation of participants' Participative Discussion in The Respondents' Level Of Participation In Their PE Classes. It is noteworthy that the participants' level of Discussion Activities reached "Highly Skilled," with an overall average score of 3.29. The highest-scoring items include actively discussing and seeking solutions when faced with problems (3.38) and studying hard until mastering more difficult motor skills (3.40). This indicates that students demonstrate active engagement and a positive learning attitude in the classroom, especially when it comes to problem-solving and mastering challenging motor skills, showing a high level of proficiency. However, the lowest-scoring item is asking classmates after class what they have not learned in class (2.87), suggesting a relatively lower level of participation in seeking help from peers after class. This result implies that some students need improvement in teamwork and peer assistance.

Wang (2016) pointed out in the study that the highest-scoring items encompass actively discussing problem-solving and making an effort to master more challenging motor skills. This suggests that students exhibit strong learning motivation and enthusiasm when faced with problems and learning challenging skills. However, the lowest-scoring item, asking classmates for help with unlearned knowledge after class, reflects limitations in some students' teamwork and peer assistance.

Wang (2012) noted in the study that this result is influenced by various factors, including shyness, communication barriers, or unfamiliarity with seeking help from classmates. To enhance student engagement, it may be beneficial to adopt more interactive teaching methods, encourage collaborative learning among students, and promote comprehensive individual development.

9.2. Sports and Outdoor Activities;

Table 15. Assessment on Sports and Outdoor Activities

Sports and Outdoor Activities	Mean	SD	Description	Interpretation	**Rank**
1.I insist on attending class even though it is cold.	3.35	0.60	Strongly Agree	Highly Skilled	2.5
2.For mistakes or imperfect actions, I always carefully correct and pursue perfection.	3.30	0.59	Strongly Agree	Highly Skilled	4
3. For movements I have mastered, I always try to create my own technical moves that I think are better.	3.20	0.68	Agree	Skilled	7
4.I think mechanical repetition is the best way to learn sports.	3.23	0.63	Agree	Skilled	6
5.In order to exercise, I think it is worthwhile even if the study is hard.	3.36	0.55	Strongly Agree	Highly Skilled	1
6.I insist on attending class even though it is cold.	3.35	0.56	Strongly Agree	Highly Skilled	2.5
7.For mistakes or imperfect actions, I always carefully correct and pursue perfection.	3.29	0.59	Strongly Agree	Highly Skilled	5
Over-all Mean	3.30	0.51	Strongly Agree	Highly Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5 Disagree 1.00-1.75 Strongly Disagree

Table 15 presents the evaluation of participants' Sports and Outdoor Activities in The Respondents' Level of Participation In Their PE Classes. It is noteworthy that the participants' level of Sports and Outdoor Activities reached "Highly Skilled," with an overall average score of 3.30. The highest-scoring items include persisting in attending classes in cold weather (3.36) and carefully correcting and pursuing perfection for errors or imperfect movements (3.30). This indicates that students exhibit a high level of self-discipline and perseverance in maintaining attendance and striving for excellence. However, the lowest-scoring item is attempting to create their own perceived better technical movements for mastered actions (3.20), reflecting a relatively lower enthusiasm among some students for innovation and personalized sports skills. This result points to potential development areas for creativity and autonomy among students, and teaching methods could consider incorporating elements that inspire creative thinking and autonomous learning.

Li (2011) pointed out in the study that attempting to create their own perceived better technical movements for mastered actions implies that some students show relatively lower enthusiasm for innovation and personalized sports skills. The reasons for this result may stem from the emphasis on standardized movement performance in physical education classes, leading students to prefer executing movements in prescribed ways and being less inclined to experiment with innovation.

Liu (2015) indicated in the study that students perceive standardized mechanical repetition as the best way to learn physical education. Therefore, their efforts in personalization and innovation are relatively limited. This indirectly suggests that physical education teaching can further encourage students to innovate and personalize their movements based on mastered skills to promote their overall development in sports and outdoor activities. This can be achieved by introducing more flexible teaching methods and emphasizing evaluation methods that recognize personalized performances.

9.3. Collaborative Activities

Table 16. Assessment on Collaborative Activities

Collaborative Activities	Mean	SD	Description	Interpretation	**Rank**
1.It makes me happy to work together to finish the task.	3.35	0.53	Strongly Agree	Highly Skilled	2
2 The contribution of the members of the collaborative group can be appropriately assessed as encouraging.	3.33	0.54	Strongly Agree	Highly Skilled	3
3. Be able to initiate topics and organize discussions according to specific tasks.	3.29	0.56	Strongly Agree	Highly Skilled	5
4. In the process of collaboration, students with low participation can be encouraged to participate in the discussion and achieve better results.	3.32	0.53	Strongly Agree	Highly Skilled	4
5. Be able to evaluate the learning outcomes of other collaborative members with evidence.	3.16	0.63	Agree	Skilled	7
6.Good at seeking cooperation to solve problems.	3.27	0.58	Strongly Agree	Highly Skilled	6
7.When collaborating on activities, always keep team goals in mind.	3.39	0.53	Strongly Agree	Highly Skilled	1
Over-all Mean	3.30	0.49	Strongly Agree	Highly Skilled	

Legend:
3.26-4.00 Strongly Agree 2.51-3.25 Agree
1.76-2.5 Disagree 1.00-1.75 Strongly Disagree

Table 16 presents the evaluation of participants' Collaborative Activities in The Respondents' Level of Participation In Their PE Classes. It is noteworthy that the participants' level of Collaborative Activities reached "Highly Skilled," with an overall mean score of 3.29. The highest-scoring item is "When collaborating on activities, always keep team goals in mind" (3.39), indicating that students can consistently keep team goals in mind during collaboration. This reflects students' ability to maintain a cooperative orientation, focusing on common goals, demonstrating a high level of collaboration awareness, and responsibility. However, the lowest-scoring item is "Be able to evaluate the learning outcomes of other collaborative members with evidence" (3.16), indicating that students have relatively lower abilities to objectively evaluate the learning outcomes of their collaborative members using evidence. This suggests that students face challenges when objectively assessing the academic performance of their peers, possibly due to a lack of effective evaluation criteria or unfamiliarity with providing evidence support. It indicates that students excel in maintaining a team-oriented focus but may require more guidance and training in evaluating the learning outcomes of collaborative members to enhance objectivity and accuracy in assessments.

Liu (2015) noted in the study that high-level collaborative skills are influenced by instructional design. If physical education courses emphasize teamwork, collaborative learning, and collective activities, students are more likely to cultivate collaborative skills. Teachers incorporating collaborative tasks and projects in the classroom that stimulate students' awareness of teamwork can contribute to the development of high-level collaborative skills.

Xie (2013) pointed out in the study that individual differences among students and team dynamics also affect collaborative levels. If there is good communication and mutual support among students, the development of collaborative skills becomes more feasible. Each member of the team being able to leverage their strengths to create a synergistic effect can enhance overall collaborative levels.

Gu (2014) emphasized in the study that school culture and atmosphere also positively influence collaborative levels. If a school emphasizes cooperation, sharing, and team spirit, students are more likely to demonstrate high levels of collaborative ability in physical education classes. Encouraging students to share success experiences and collaboratively solve problems contributes to the establishment of a positive collaborative culture.

High-level collaborative ability is the result of the combined influence of instructional design, individual differences among students and team dynamics, and school culture. This comprehensive impact contributes to cultivating students who demonstrate highly developed collaborative skills in physical education, providing robust support for their overall development.

10. Conclusion

Based on the indicating findings, the following conclusions were drawn from the results of the study:

1.The respondents exhibit a high level of leadership skills, marked by strengths in self-confidence, communication ability, intelligence, cooperation, teamwork, decision-making skills, and values formation. Their overall leadership skills are highly skilled, showcasing a well-rounded proficiency across these dimensions, which suggests a positive correlation between their leadership skills and active engagement in physical education, emphasizing the holistic development of both leadership and physical abilities.

2.The assessed level of leadership skills and PE class participation reveals significant differences based on gender, age, and grade. These findings underscore the importance of considering demographic factors in understanding students'

leadership skills and engagement in physical education, providing insights for targeted interventions and support.

3.The significant relationship between students' leadership skills and PE class participation highlights a crucial connection, signifying that students with higher leadership skills tend to actively engage in physical education. This suggests a positive and reinforcing effect, where strong leadership skills contribute to enhanced participation in PE classes. The findings imply that fostering leadership abilities may positively impact students' involvement and performance in physical education activities, emphasizing the intertwined nature of leadership and active participation in this context.

11. Recommendations

Based on the results, the researcher provides the following suggestion:

1. Design personalized leadership skills development programs tailored to students of different genders, ages, and grades. Emphasize addressing specific weaknesses, such as fostering self-confidence in female students and shaping values in younger students.

2. Develop diverse physical education programs integrated with leadership development. Through sports activities, cultivate students' leadership skills, including teamwork and decision-making, to achieve holistic physical and mental development.

3. Implement regular assessments of students' leadership skills and physical participation levels, providing targeted feedback. This helps students understand their areas of growth and improvement.

4. Encourage peer support among students, especially during physical activities. Foster collaboration and teamwork skills through group cooperation and interaction.

5. Provide training for physical education teachers to better guide students' leadership skill development and create positive experiences in the classroom to enhance student engagement.

6.Future researchers could design personalized leadership skills development programs, taking into account students' gender, age, and grade, and addressing specific weaknesses, such as fostering confidence in female students and instilling values in younger students. Integrating leadership development, they could formulate diverse physical education curricula to cultivate teamwork and decision-making skills through sports activities, fostering holistic physical and mental development. Regular assessments of students' leadership skills and physical engagement levels, coupled with targeted feedback, would guide growth and improvement. Encouraging mutual support among students, especially during sports activities, would nurture collaboration and teamwork skills. Providing training for physical education teachers to guide students' leadership skill development and create positive classroom experiences would enhance student engagement.

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