

Fitness Level and Academic Achievement of Senior High School Students in San Jose Integrated School: A Basis for an Intervention Plan

Jireh Lee G. Villaflor
San Jose Integrated School
jirehlee.villaflor@deped.gov.ph

Date Submitted:
March 19, 2026

Date Accepted:
April 21, 2026

Date Published:
June 01, 2026

DOI:
10.5281/zenodo.20490409

ABSTRACT

This research explores the correlation between physical fitness levels and academic achievement among senior high school students at San Jose Integrated School, Santiago City, Philippines. Using a descriptive-correlational design, it analyzes health-related and skill-related fitness components—including body composition, cardiovascular endurance, flexibility, strength, coordination, agility, power, balance, speed, and reaction time—in relation to students' general weighted average for the school year 2024–2025. Results show that most students had a “Normal” BMI and performed “Very Good” in flexibility, coordination, agility, power, and reaction time, which were moderately correlated with higher academic achievement. In contrast, components

like speed, balance, and cardiovascular endurance showed no significant relationship. Based on the findings, the study proposes Project INDAK (Improving Neurocognition and fitness level of SHS students through Dance and Kinesthetics)—an intervention promoting dance-based fitness to enhance both physical health and academic performance. The study emphasizes the role of physical education in holistic development and recommends integrating movement-based programs into the senior high curricula to foster healthier and more academically capable learners.

Keywords: *Academic Achievement, Descriptive-correlational, Health and Skill-Related Fitness, Physical Activities, Physical Education, Physical Fitness Level, Senior high school and Philippines*

INTRODUCTION

Since the COVID-19 pandemic, students' interest in physical education has declined as an effect of the blended and modular learning approach. Furthermore, rather than interacting with others and doing physical activity, they spend more time on their devices at home. Therefore, this study aims to contribute to the expanding field of research on secondary education interventions by looking at the significant correlation between fitness level and academic achievement among Senior High School Students in San Jose Integrated- Schools Division of Santiago City in Region 02. Through analyzing the findings, physical education instructors in the Philippines would be more able to create interventions that enhance students' growth in terms of both academic achievement and fitness level.

Being physically fit is essential to one's well-being. It is the human body's ability to complete physical tasks without experiencing fatigue easily. In addition, regular exercise lessens the risk of heart disease and other diseases; it also helps to improve brain function, physical body, cardiovascular health,

mood and sleep; and it helps you to feel more confident, reduce stress that leads to increased job satisfaction, effective output and a better outlook in life. For high school students, engagement in physical activities can lead to better mental health, and it can help them cope better with the stress and demands of academic life. An effective way to assess students' learning may be through their academic performance. In this situation, several variables have been identified as significant predictors of academic achievement. Based on the researcher's observation, some of these factors are the students' engagement in physical activity, acquiring both moral and financial support from the family, unhealthy nutritional habits, and lifestyle which may affect students' overall well-being.

As He et al. (2025) verified the positive impacts of school-based physical activity on academic achievement, especially in terms of strengthening math and overall academic performance. Also, Raja et al. (2025) discovered that about 50% of medical students did not engage in the required amount of physical activity. Furthermore, there was no correlation found between students' academic performance as determined by their GPA and regular physical activity during medical school. However, the authors advise encouraging regular physical activity among medical students in a way that balances their personal and academic lives, given the proven health and mental benefits of exercise.

In fact, Granada & Luzano (2022) found that academic support encompasses activities such as assisting with homework, providing educational resources like textbooks or materials, and fostering motivation and encouragement for academic success. Additionally, families are important sources of inspiration and support for the academic endeavors of their kids. This participation entails setting high standards for academic achievement, praising and awarding achievements and grades, and offering consolation during difficult stress or challenge. Mahfouz et al. (2024) found that unhealthy lifestyle factors, such as lack of physical activity, inadequate sleep, poor dietary choices, smoking, and mental health issues such as anxiety, have a negative impact on academic performance. Thus, in order to improve students' awareness and emphasize the value of leading a healthy lifestyle, appropriate details must be conveyed. Moreover, Shi et al. (2022) also found that overweight and obesity in secondary school students diminishes their inhibitory control and consequently reduces academic performance, while support from teachers, parents, and peers can ameliorate the negative effects of overweight and obesity on academic performance, and teacher and parental support can also cushion the negative effects of overweight and obesity on inhibitory control.

To take into account the significance for fitness and its effects on academic achievement, prior studies revealed the existence of intervention that could enhance academic performance. Meanwhile, Lacasan & Nagba (2023) found out that the academic performance of the students has a relation with the independent variable Reaction Time and Coordination. Students with better coordination and reaction times receive higher grades than those with poorer coordination and reaction times, according to the research findings. Thus, Tao et al. (2025) mentioned that according to a neuroscience study, school-aged children's executive functions (memory, cognitive flexibility) have been significantly enhanced by planned physical activity that focused on coordination tasks. This suggests that coordination exercises also have a good impact on cognitive abilities related to learning motor skills.

According to Cagas et al. (2022) The Philippines is an archipelagic country with more than 108 million people, about 30% of whom are percent composed of children and youth. The frequency of inadequate physical activity (PA) among young Filipinos is remarkably high, according to surveillance data. According to a 2019 study by the Philippine Food and Nutrition Research Institute (FNRI), 84.6% of Filipino teenagers between the ages of 10 and 17 do not consume the necessary quantity of physical activity for good health. The high rate of physical inactivity among young Filipinos is a public health concern that requires significant attention from stakeholders and local public health authorities. Moreover, according to Solis et al. (2021) adolescence is characterized as a critical stage in the development of health-related habits, the importance of which transcends beyond this period, since they predict health-related behaviors in adulthood. This period is characterized by a decline in physical activity levels and an increase in the amount

of time spent in sedentary activities. Among other factors., this leads to a rise in overweight and obesity in kids and teenagers. It has also been demonstrated that an increase in sedentary time has an impact on psychological well-being development in addition to physical factors.

There are two categories of physical fitness: components connected to skills and components related to health. Cardiovascular endurance, muscular endurance, muscular strength, flexibility, and body composition are all aspects of health-related fitness. Speed, power, agility, balance, coordination, and response time are all aspects of fitness that are associated to skills. Through a thorough physical fitness program and assessment, an individual's overall development—including their physical, mental, emotional, social, and health—should be given first priority. A physical fitness test is a set of activities designed to assess an individual's level of physical fitness and general health. As DepEd Order No. 34, s. 2019 or also known as “Revised Physical Fitness Test Manual” this is intended to operate as a manual for educators who teach physical education classes, providing them with guidance on appropriate and effective activities. Through this assessment it helps people identify areas that need improvement, understand their fitness levels, to set goals and improve their health. This also develops people’s critical thinking in setting SMART goals which includes specific, measurable, attainable, realistic and time-bound goals. Moreover, through physical fitness tests teachers, parents and guardians are able to understand their child’s fitness level and support their needs. Though some people fail to evaluate their fitness level, they tend to continue unhealthy lifestyle that leads to the worse circumstances in their lives.

Class disruptions brought on by the COVID-19 pandemic had a significant effect on learners’ overall development, especially their physical development. After the face-to-face pilot testing in San Jose Integrated School (SJIS) last December 2022, the Schools Division of Santiago City gradually brought back the face-to-face mode of learning which is a diligent strategy to encourage students' ongoing growth.

Moreover, the gap in students learning in Physical Education and Health subjects in senior high school lasts for only 20 hours in one semester. The lower-income students frequently lack access to recreation opportunities, sports programs, and nutritious meals, which have an adverse effect on their academic and physical health. These factors were encountered by the senior high school students in San Jose Integrated School that may result in feelings of tiredness, anxiety, discrimination and decreased engagement with physical activities and academic work. In accordance with the Department of Education's Order No. 34, series of 2019, which emphasizes how essential it is for schools to monitor students Body Mass Index (BMI) in order to determine their level of fitness. According to SJIS findings, some of senior high school students were severely wasted, wasted or obese. The study proposes Project INDAK (Improving Neurocognition and Fitness Level of SHS Students through Dance and Kinesthetics) to address these issues by enhancing the students' neurocognition and level of fitness.

Thus, this study aims to contribute to the expanding field of research on secondary education interventions by looking at the significant correlation between fitness level and academic achievement among Senior High School Students in San Jose Integrated- Schools Division of Santiago City in Region 02. Through analyzing the results, this research will help Physical Education teachers to construct intervention that helps to improve the development of students’ both fitness level and academic performance in the Philippines.

Research Questions

1. What is the fitness level of students in Health and Skill-Related Fitness Test as to:
 - 1.1 Health-Related Fitness Test
 - 1.1.1 Body Composition
 - 1.1.2 Cardiovascular Endurance
 - 1.1.3 Strength
 - 1.1.4 Flexibility
 - 1.2 Skill-Related Fitness Test as to:

- 1.2.1 Coordination
 - 1.2.2 Agility
 - 1.2.3 Speed
 - 1.2.4 Power
 - 1.2.5 Balance
 - 1.2.6 Reaction Time
2. What is the academic achievement of the Senior High School students in terms of their general weighted average for the school year 2024-2025?
3. Is there a significant correlation between academic achievement and fitness level of senior high school students?
4. What intervention plan may propose to improve students' physical fitness level and academic achievement?

METHODS

Research Design

This study utilized a descriptive-correlational research design. The essential function of descriptive statistics is to enable researchers to effectively gather, summarize, and understand data. Complex datasets are converted into simple to comprehend information that directs research interpretation and decision-making. The mean, median, and standard deviation are examples of descriptive measures that are essential for interpreting the distribution and variability of data according to Siregar (2025). The descriptive statistics is utilized through calculating the mean of both health and skill-related fitness test result of the senior high school students under Humanities and Social Sciences in San Jose Integrated School. Moreover, computing the frequency and percentage of the students' General Weighted Average (GWA) to interpret their academic achievement.

In order to investigate the relationship between variables, a descriptive correlational research strategy collects data through surveys or observational methods. If the study's goal is to explain how variables relate to one another, this design is appropriate according to Monsale (2024). In this study, the correlational research design was used to examine the strength of the relationship between the academic achievement and fitness level of the respondents.

These research designs are suitable for the stated topic because the study requires the researcher to gather and present data on the respondents' GWA for School Year 2024–2025 and their fitness levels, specifically in terms of health-related and skill-related fitness components. After describing these variables, the researcher will analyze whether a statistically significant relationship exists between them. The findings of the study will serve as a basis for developing an appropriate intervention plan.

Study Site and Participants

The study focused on San Jose Integrated School of the Division of Santiago City Region 2. Since the senior high school program has only been established for more than five years and requires additional research and development, the researcher decided to conduct the study at this particular institution. Additionally, it will mark a significant milestone in the ongoing provision of comprehensive, high-quality education to all San Josenian learners. Moreover, the said school was selected as the research locale because it implements regular physical fitness assessments as part of its Physical Education curriculum and maintains official academic records necessary for determining students' General Weighted Average (GWA). These available data sources made the institution an appropriate site for examining the relationship between fitness level and academic achievement during the School Year 2024–2025.

The Grade 11 and 12 Senior High School students under Humanities and Social Sciences strand in the abovementioned school are the participants. The school only offers the Humanities and Social Sciences

strand since it has already been implementing senior high school for over five years. Thus, the researcher aims to strengthen the fitness level as well as the academic achievement of the senior high school learners at the stated institution.

Population, Sample Size, Sampling Method

The total respondents of this study were 72 senior high school students enrolled in the Humanities and Social Sciences (HUMSS) strand at San Jose Integrated School in school year 2024–2025. This population consisted of 36 Grade 11 students (23 males and 13 females) and 36 Grade 12 students (26 males and 10 females). Since the school exclusively offers the HUMSS strand, all senior high school students served as respondents.

In this study, the researcher utilized the total enumeration sampling. As Makwana et al. (2023) stated that a non-probability sampling method called total enumeration sampling (also known as complete enumeration/census) involves researchers examining each member of a specified group in order to remove sampling error. This technique, which is a type of purposive sampling intended to examine a certain group, is frequently employed when the population is small and guarantees great precision and comprehensive information about each individual.

Instrument

This study utilized the DepEd Order No. 8, s. 2015, or the Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program, specifically Table 10 on page 16, presents the descriptors, grading scale, and remarks used to describe the general weighted average (GWA) of the respondents based on their official school records for School Year 2024-2025, which represents their academic achievement. The data was gathered through permission from the school head and class advisers of the respondents.

Moreover, this study utilized DepEd Order No. 34, s. 2019, also known as the Revised Physical Fitness Test Manual, which provides equivalent norms or standardized scoring scales to assess the respondents' physical fitness outcomes. The manual is designed to evaluate two categories of physical fitness, commonly referred to as health-related and skill-related fitness components. The scores include corresponding interpretations that describe the students' fitness levels.

Data Gathering Procedure

The researcher obtained formal approval from the Schools Division Superintendent of Santiago City and the school head of San Jose Integrated School to conduct the study, specifically regarding the administration of data collection. Following this approval, parental consent was sought to ensure the participation of learners, with strict regard for the anonymity of their scores. Since some respondents are minors, parental consent was deemed essential. Students were also asked through a formal letter if they wished to participate in the study, with the assurance that they could withdraw at any time, even during the administration of the Physical Fitness Test (PFT).

Subsequently, the researcher requested permission from the class advisers of Grades 11 and 12 to access the students' general weighted averages for the school year 2024–2025, which served as indicators of their academic achievement. To determine each respondent's level of physical fitness, the researcher scheduled the administration of the PFT, guided by the Revised Physical Fitness Test Manual and its corresponding scoring scale.

Data Analysis

1. Mean was used to determine the fitness level of students in health and skill-related fitness test and were interpreted using the following scoring scale and equivalent interpretation

Health-Related Fitness Components	
1	Body Composition- Body Mass Index (BMI)

	Classification		
	Below 18.5		Underweight
	18.5 - 24.9		Normal
	25.0 - 29.9		Overweight
	30.0 - above		Obese
2	Flexibility		
	Zipper Test- Right and Left		
	Score	Standard	Interpretation
	5	Fingers overlapped by 6 cm. and above	Excellent
	4	Fingers overlapped by 4 - 5.9 cm.	Very Good
	3	Fingers overlapped by 2 - 3.9 cm.	Good
	2	Fingers overlapped by 0.1 - 1.9 cm.	Fair
	1	Just touched the fingers	Needs Improvement
	0	Gap of 0.1 or wider	Poor
	Sit-and-Reach		
	Score	Standard	Interpretation
	5	61 cm and above	Excellent
	4	46 - 60.9 cm.	Very Good
	3	31 - 45.9 cm.	Good
	2	16 - 30.9 cm.	Fair
1	0 - 15.9 cm.	Needs Improvement	
3	Cardiovascular Endurance		
	3 Minute Step Test		
	Score		Interpretation
	Male	Female	
	<79	<85	Excellent
	79-89	85-98	Good
	90-99	99-108	Above Average
	100-105	109-117	Average
	106-116	118-126	Below Average
	117-128	127-140	Poor
>128	>140	Very Poor	
4	Strength		
	Push-up Boys and Girls Secondary		
	Score	Standard	Interpretation
	5	33 and above	Excellent
	4	25 - 32	Very Good
	3	17 - 24	Good
	2	9 - 16	Fair
	1	1 - 8	Needs Improvement
	0	Cannot Execute	Poor
	Basic Plank		
	Score	Standard	Interpretation
	5	51 seconds and above	Excellent
	4	46 - 50 seconds	Very Good
	3	31 - 45 seconds	Good
	2	16 - 30 seconds	Fair
1	1 - 15 seconds	Needs Improvement	

Skill-Related Fitness Components					
1	Speed				
	40-Meter Sprint				
	Age	Standard	Interpretation	Age	
	15-16	<4.5	Excellent	17 and above	<4.0
		4.6 – 5.4	Very Good		4.1 – 5.4
		5.5 – 7.0	Good		5.5 – 6.5
		7.1 – 8.1	Fair		6.6 – 7.5
>8.2		Needs Improvement	>7.6		
2	Power				
	Standing Long Jump				
	Score	Standard	Interpretation		
	5	201 cm. and above	Excellent		
	4	151 cm. – 200 cm.	Very Good		
	3	126 cm. – 150 cm.	Good		
	2	101 cm. – 125 cm.	Fair		
1	55 cm. – 100 cm.	Needs Improvement			
3	Agility				
	Hexagon Agility Test				
	Score	Standard	Interpretation		
	5	5 seconds and below	Excellent		
	4	6 – 10 seconds	Very Good		
	3	11 – 15 seconds	Good		
	2	16 – 20 seconds	Fair		
1	21 – 25 seconds	Needs Improvement			
0	Over 25 seconds	Poor			
4	Reaction Time				
	Stick Drop Test				
	Score	Standard	Interpretation		
	5	0 – 2.4 cm.	Excellent		
	4	5.08 cm. – 10.16 cm.	Very Good		
	3	12.70 cm. – 17.78 cm.	Good		
	2	20.32 cm – 25.40 cm.	Fair		
1	27.94 cm. – 30.48 cm.	Needs Improvement			
0	Did not catch	Poor			
5	Coordination				
	Juggling				
	Score	Standard	Interpretation		
	5	41 and above	Excellent		
	4	31 – 40	Very Good		
	3	21 – 30	Good		
	2	11 – 20	Fair		
1	1 – 10	Needs Improvement			
6	Balance				
	Stork Balance Stand Test				
	Score/Age	15 – 16	17 and above	Interpretation	
	5	121 – 150 sec.	161 – 180 sec.	Excellent	
	4	91 – 120 sec.	121 – 160 sec.	Very Good	

3	61 – 90 sec.	81 – 120 sec.	Good
2	31 – 60 sec.	41 – 80 sec.	Fair
1	1 – 30 sec.	1 – 40 sec.	Needs Improvement

2. Frequency and percentage distribution were used to quantify the acquired data. Through DepEd Order No. 8, s. 2015 the grading scale was described and put remarks.

DESCRIPTOR	GRADING SCALE	REMARKS
Outstanding	90-100	Passed
Very Satisfactory	85-89	Passed
Satisfactory	80-84	Passed
Fairly Satisfactory	75-79	Passed
Did Not Meet Expectations	Below 75	Failed

3. Spearman’s Rank Order Correlation (Spearman’s Rho) was used to determine the correlation between academic achievement and fitness level of senior high school students.

RESULTS

Part 1. The Fitness Level of Students in Health and Skill-Related Fitness Test

Table 1. *Fitness Level of Students in Health-Related Fitness Test*

Indicators	M	Interpretation
1. Body Composition	20.13	Normal
2. Cardiovascular Endurance	82.32	Good
3. Strength		
3.1. Push-up	20.69	Good
3.2. Basic Plank	57.88	Excellent
4. Flexibility		
4.1. Zipper Test (Right)	7.039	Excellent
4.2. Zipper Test (Left)	5.469	Very Good
4.3. Sit-and-Reach	46.11	Very Good

Table 1 presents the fitness level of senior high school students in terms of health-related fitness test. In body composition through BMI, most of the Senior High School students were classified as Normal with the mean of (20.13). The cardiovascular endurance of the respondents is (82.32) which interpreted as “Good”. In terms of strength, the result of the respondents in push-up is (20.69) means “Good” while in basic plank is (57.88) “Excellent”. Regarding flexibility of the respondents in zipper test right the mean is (7.039) means “Excellent” while in left is (5.469) “Very Good”. Moreover, the sit-and-reach is (46.11) means “Very Good”. Most of the students were “Very Good” to “Excellent” in terms of flexibility and “Good” in cardiovascular endurance and push-up.

Table 2. *Fitness Level of Students in Skill-Related Fitness Test*

Indicators	M	Interpretation
1. Coordination	30.90	Very Good
2. Agility	8.44	Very Good
3. Speed	5.88	Good
4. Power	173.00	Very Good
5. Balance	104.34	Good
6. Reaction Time	12.15	Very Good

Table 2 presents the fitness level of senior high school students in terms of skill-related fitness test. The result of the following components such as coordination (30.90), agility (8.44), power (173), and reaction time (12.15) was classified as “Very Good”. However, the result of speed (5.88) and balance (104.34) are interpreted as “Good”.

Part 2. The Academic Achievement of the Senior High School Students in terms of their General Weighted Average for the School Year 2024-2025

Table 3. *Academic Achievement of the Students in terms of General Weighted Average*

Indicators	f	%
Outstanding	12	16.7
Very Satisfactory	24	33.3
Satisfactory	19	26.4
Fairly Satisfactory	17	23.6

Table 3 presents the respondents’ academic achievement in terms of their general weighted average for the school year 2024-2025. The largest portion (33.3%) obtained a grade in the range of 85-89 classified as a “Very Satisfactory” performance, followed by 80-84 or “Satisfactory” performance (26.4%), then by 75-79 or “Fairly Satisfactory” performance (23.6) and 90-100 classified as an “Outstanding performance” (16.7%). These results indicate that most respondents performed well in senior high school for the school year 2024-2025, with the majority classified under the “Very Satisfactory”.

Part 3. Test of Significant Correlation between Academic Achievement and Fitness Level of Senior high school Students

Table 4. *Significant Correlation between the Academic Achievement and Fitness Level of Senior High School Students*

Fitness	r	p-value
Body Composition	-0.005	0.968
Cardiovascular Endurance	-0.128	0.285
Strength	0.155	0.193
Flexibility	0.318	0.007
Coordination	0.334	0.001
Agility	0.374	0.001
Speed	0.120	0.315
Power	0.380	0.017
Balance	-0.150	0.208
Reaction Time	0.314	0.007

The table 4 shows the significant correlation between the academic achievement and fitness level of senior high school students. A Spearman's Rho correlation was conducted to examine the correlation between academic achievement and fitness levels among senior high school students. The results indicated a moderate positive relationship between academic achievement and various fitness levels components, including flexibility ($r = 0.318$, $p = 0.007$), coordination ($r = 0.334$, $p = 0.001$), agility ($r = 0.374$, $p = 0.001$), power ($r = 0.380$, $p = 0.017$), and reaction time ($r = 0.314$, $p = 0.007$). Therefore, the null hypothesis should be rejected at a significance level of 0.05.

Part 4. Proposed Intervention Plan to Improve Students' Physical Fitness Level and Academic Achievement

The researcher proposes an intervention program which is the Project INDAK (Improving Neurocognition and fitness level of SHS students through Dance and Kinesthetics)" which aims to develop students' fitness level as well as their cognitive skills in mastering the dance steps.

"Project INDAK (Improving Neurocognition and fitness level of SHS students through Dance and Kinesthetics)"

Learning Service Provider Profile

Learning Service Provider	San Jose Integrated School		
Complete Office Address	P4, Jacob Street, San Jose, Santiago City		
Contact Person	JIREH LEE G. VILLAFLOR (Speaker/Researcher)	Mobile No.	09655573736
Telephone No.	N/A	Email Address	<i>jirehlee.villaflor@deped.gov.ph</i>

Program Profile

Title	INTERVENTION PLAN Project INDAK (Improving Neurocognition and fitness level of SHS students through Dance and Kinesthetics
Rationale	<p>As stated in Republic Act (RA) No. 10533, also known as the Enhanced Basic Education Act of 2013, the Department of Education (DepEd) is still dedicated to carrying out its responsibility of offering appropriate, responsive, and relevant basic education. DepEd works to provide a well-designed curriculum based on empirical research and in line with the national goal of excellent education for all basic education learners in order to effectively carry out this responsibility.</p> <p>The Department of Education continuously implemented the DepEd Order No. 34, s. 2019, also known as the Revised Physical Fitness Test Manual, which provides equivalent norms or standardized scoring scales to assess the students' physical fitness outcomes. The test evaluates two main categories namely Health-related fitness including body composition, cardiovascular endurance, muscular strength and flexibility; and Skill-related fitness such as speed, agility, balance, coordination, power, and reaction time. For health and safety protocols learners aged 15 years and older (typical for SHS) must complete the PAR-Q & YOU (Physical Activity Readiness Questionnaire) before participating to ensure they are medically fit for the activities.</p> <p>The PFT is a mandatory part of the Physical Education (PE) and School Sports Program for all elementary and secondary levels, including SHS. The test must be administered twice</p>

	<p>a year. The pre-test should be conducted at the beginning of the first quarter to establish baseline fitness; and the post-test should be conducted at the beginning of the third quarter to monitor progress and improvement.</p> <p>Anent this, the SJIS will be the pilot implementer of Project INDAK (Improving Neurocognition and fitness level of SHS students through Dance and Kinesthetics)” which aims to develop students’ fitness level as well as their cognitive skills in mastering the dance steps. It is grounded in the understanding that movement is a powerful catalyst for both physical and cognitive development, especially among adolescents navigating the demands of senior high school. The research shows that fitness components such as coordination, agility, power, and reaction time have meaningful associations with academic achievement, supporting the idea that a healthier body contributes to a sharper, more efficient mind.</p> <p>The Project INDAK integrates Filipino cultural identity through dance, making physical activity more engaging, relevant, and culturally affirming for learners. Aerobic dance routines rooted in local music and folk-inspired movements not only enhance fitness but also strengthen cultural pride and belonging. The inclusion of brain-based movement tasks (NeuroGroove Modules) is designed to stimulate neural pathways responsible for memory, attention, and executive functioning. These activities help students develop quicker cognitive responses, better focus, and improved problem-solving—skills essential for academic success. Meanwhile, INDAK Buddy Beats fosters social-emotional learning by encouraging trust, cooperation, and camaraderie. Adolescents thrive in environments where they feel connected, and synchronized movement is a proven method for building social bonds. Finally, reflective practices through Sayaw Journals and progress monitoring via the INDAK Skills Tracker empower learners to take ownership of their growth. This holistic approach ensures that students not only move better but also think better, feel better, and perform better—academically and socially.</p> <p>Afterwards, through the conduct of this project, the researcher can able to check if there is an improvement on both physical fitness level and academic achievement of students.</p> <p>The main purpose of this project was to motivate and guide students in achieving a sound mind and sound body.</p>
Program/Course Description	<p>Describe briefly the proposed PD program/course highlighting its focus content and state in behavioral terms the program objectives.</p> <p>Results objective: As a result of the participants’ improved competence and performance, participants were able to enhance their holistic development by integrating dance, rhythm, and movement into wellness and educational programs. This will be demonstrated through the INDAK Pulse Sessions, NeuroGroove Modules, INDAK Buddy Beats, Sayaw Journal Reflections, INDAK Skills Tracker.</p> <p>Application objective: Back in the classroom, participants will be able to improve their academic achievement, social and psychomotor skills through application of rhythmic movement and dance routines in school or community.</p> <p>Terminal objective: By the end of the training, the participants will be able to: independently demonstrate mastery of selected dance sequences with proper rhythm, energy and cultural expression that enhanced their cognitive, social and psychomotor skills.</p> <p>Enabling objectives: Specifically, the participants (SHS students) will be able to: (state the key knowledge, skills, and attitude participants are expected to gain from the training)</p>

	<ol style="list-style-type: none"> 1. Identify individual scores in the conduct of physical fitness test in each component. 2. Revise personal fitness goals by integrating dance as a sustainable and enjoyable practice 3. Apply learned concepts and dance steps into a group aerobic dance performance using Filipino music and folk-inspired routines. 4. Discuss journal reflections in small groups to foster empathy and connection. 5. Analyze data trends to understand the impact of dance on academic achievement. 6. Create a group dance routine that enhance memory, creativity, fitness level and social skills. 7. Draft a reflection papers or journals documenting their learning, growth, and appreciation of Filipino identity through Project INDAK 		
Target Participants	All Senior High School Students	PRC Program Accreditation No.	(For Non-DepEd LSPs)
Delivery Platform	Face-to-face/Workshop	Indicative Date of Implementation	July to September, 2026

Course Design

Course Title	PROJECT INDAK <i>(Improving Neurocognition and fitness level of SHS students through Dance and Kinesthetics)</i>						
Course Description	This session will highlight the significant importance of emphasizing the integration dance, rhythm, and movement into wellness and educational programs.						
No.	Duration	Topic	Session Objectives	Methodology	Assessment Strategies	Outputs	Resource Person/ Learning Facilitator
1	July to September 2026 2 hours daily 3:00 – 5:00 pm	Implementation of the Project INDAK (Improving Neurocognition and fitness level of SHS students through Dance and Kinesthetic s)	By the end of the session, participants will be able to: Identify the individual scores in the conduct of physical fitness test in each component and revise personal fitness goals by integrating dance as a sustainable and enjoyable practice	Introduction <ul style="list-style-type: none"> • Greet and welcome the participants for the session; • Ask for consent from the learners’ parents to conduct the study, and anonymity when it comes to their scores will be highly regarded. • Asked if they want to be part of the research study and can decline anytime if they want to 	Slide deck LED Monitor HDMI Laptop Speaker Ruler Meter Stick Weighing Scale Tape Measure	Students improved their physical fitness level through dance as wells their academic performance	Jireh Lee G. Villaflor -Teacher II

			<p>Apply learned concepts and dance steps into a group aerobic dance performance using Filipino music and folk-inspired routines and discuss journal reflections in small groups to foster empathy and connection. Analyze data trends to understand the impact of dance on academic achievement and create a group dance routine that enhance memory, creativity, fitness level and social skills and draft a reflection papers or journals documenting their learning, growth, and appreciation of Filipino identity through Project INDAK</p>	<p>decline even during the conduct of the PFT.</p> <ul style="list-style-type: none"> • Make them feel comfortable and ready for the session; and • Present the objectives and context of the session. • Set the basic rules for the session (listen and ask, write important insights, and share insight) <p>Overview</p> <ul style="list-style-type: none"> • Present the key features, goals, and structure of the Project INDAK. • The process and program components in the conduct of this project will be introduced and explained. <p>Program Components</p> <ul style="list-style-type: none"> • INDAK Pulse Sessions is where students will do aerobic dance workouts using Filipino music and folk-inspired routines. Each session targets specific fitness dimensions (e.g. coordination, power) in a progressive format. This will 	<p>Bond paper</p> <p>Printer</p> <p>Timer</p> <p>Paper</p> <p>Tape</p>	
--	--	--	--	---	--	--

				<p>be done once in a week.</p> <ul style="list-style-type: none"> • NeuroGroove Modules contains brain-based movement tasks paired with dance—cross-lateral steps, memory sequences, and mirror routines designed to enhance reaction time, cognitive recall, and agility. This will be done twice in a week. • INDAK Buddy Beats is a partner dancing and synchronized choreography to nurture peer bonding, build trust, and foster social-emotional connection among students. This will be done twice in a week. • Sayaw Journal Reflections are short writings or drawing prompts post-session where learners’ express emotions, self-awareness, and highlight progress—merging expressive arts and self-assessment. This will be done bi-monthly. <p>Workshop Sessions</p>			
--	--	--	--	---	--	--	--

				<ul style="list-style-type: none"> • Participants will engage in physical fitness test through the revised DepEd Order No. 34, s. 2019, also known as the Revised Physical Fitness Test Manual before and after the conduct of Project INDAK, which provides equivalent norms or standardized scoring scales to assess the respondents' physical fitness outcomes. • Participants will revise personal fitness goals by integrating dance as a sustainable and enjoyable practice. • Participants will execute the program components such as INDAK PULSE Sessions, NeuroGroove Modules, INDAK Buddy Beats, and Sayaw Journal Reflections. <p>Group Discussions and Peer Sharing</p> <ul style="list-style-type: none"> • Small group discussions will allow participants to share their journal reflections in 			
--	--	--	--	---	--	--	--

				<p>small groups to foster empathy and connection.</p> <p>Hands-on Activity</p> <p>* The final output will be a group aerobic dance performance using Filipino music and folk-inspired routines. The students will choreograph their routines. Participants will submit their journal reflections documenting their learning, growth, and appreciation of Filipino identity through Project INDAK in the entire program.</p> <p>Wrap-up and Reflection</p> <ul style="list-style-type: none"> • End the session with a general reflection activity where participants write down their main takeaways, how they plan to become continuously being physically fit and developed their academic achievement. Participants will analyze the data trends to understand the impact of dance on their academic achievement 			
--	--	--	--	--	--	--	--

Breakdown of Expenses

Funding Source	Self-funded	Budget Requirements	Bond Paper (2 reams)
-----------------------	--------------------	----------------------------	-----------------------------

EXPENSE ITEMS	DETAILS OF THE EXPENSES	AMOUNT
1. Venue	None	None
2. Itemized materials (e.g. hand book/handouts, pencil and papers, speaker/researcher, ink for printers)	500.00	500.00
3. Advertising expenses		N/A
4. Transportation a. Speaker/Researcher b. Staff		N/A
5. Accommodation (for the speaker)		N/A
6. Processing Fee (Accreditation Fee)		N/A
7. Supplies and Equipment		N/A
8. Laboratory		N/A
9. VAT (12%)		N/A
10. Entrance Fees (for museum, heritage/historical sites, cultural centers, exhibits, geographical sites, other sites, etc.)		N/A
11. Miscellaneous (Please specify)		N/A
TOTAL EXPENSES:		300.00

Monitoring and Evaluation Plan

Levels of M and E	Indicators	Methods and Tools	Data Sources	Schedule of M and E	Person/s Responsible	Resources	User of M and E Data
	What will be measured?	What methods/tools will be used to collect data?	Who and/or what documents will provide data or evidence on the indicators?	When will M and E activities be undertaken?	Who will be accountable for ensuring that M and E activities are done?	What resources are needed to implement M and E activities?	Who will use the data gathered?
Behavior	How participants react to the PD program conducted	Feedback/Program Evaluation	School QAME/Online Evaluation	At the end of the session	School QAME, School Head	Mobile data or internet connection	Program Management/SMME/HRDS
Learning	Knowledge and skills assessment	Feedback/Program Evaluation	Online Evaluation/	During the program	School QAME, School Head	Mobile data or internet connection	Program Management/SMME/HRDS

			School QAME			Google sheets	
Reaction	Content, Relevance, Facilitator's knowledge, style and delivery	Feedback/ Program Evaluation	Online Survey/ School QAME	During the delivery or after the delivery of program	School QAME, School Head	Mobile data or internet connection Google sheets of M & E Forms/Tools	Program Management/S MME/HRDS
Result	Impact of the PD Program to the organization	Action Plan/ Implementation Plan, FGD/Terminal Report	School QAME/Online Evaluation/FGD	Six months onwards after the delivery of the given activity	School QAME, School Head	Monitoring supplies/Tools	Program Management, SMME/HRDS

DISCUSSION

This study aimed to contribute to the expanding field of research on secondary education interventions by looking at the significant correlation between fitness level and academic achievement among Senior High School Students in San Jose Integrated- Schools Division of Santiago City in Region 02.

Fitness Level of Students in Health and Skill-Related Fitness Test

The fitness level of senior high school students in terms of health-related fitness test revealed that most of the senior high school students were classified as “Normal” through the result of BMI in the end of school year. Then, “Good” is the result for cardiovascular endurance and in strength specifically in push-up. However, the basic plank test to assess strength was “Excellent”. Most of the students had a “Very Good to Excellent” result in terms of flexibility.

In contrast with the findings of Palma III et al. (2024), who evaluated the health-related fitness of junior high school students at a private school in Bacolod City, Philippines, the students' results displayed average muscular endurance and flexibility in addition to high cardiovascular endurance and muscular strength. Nevertheless, the respondents' bodily composition is also "normal."

Moreover, this contradicts the findings of Dominado (2023) which revealed that the respondents' health-related fitness scores were above normal, need improvement in cardiovascular endurance, fair, and in need of improvement in muscular strength. The body mass index indicated cases of overweight and underweight. Some, on the other hand, are classified as fair and require more hamstring and left shoulder girdle flexibility.

The result is nearly in line with the result of the study of Agustin et al. (2025) where PATHFIT 1 students' cardiovascular endurance was relatively low. Nonetheless, the pupils' adaptability was good. Additionally, while the pupils' muscular endurance was outstanding, their muscular strength still needs improvement. Lacsanan et al. (2023) state that most of the sampled senior high school students' cardiovascular fitness and muscular endurance are very poor, poor, and below average. While their muscular strength is average, their flexibility is excellent.

Additionally, the result of fitness level of senior high school students in terms of the following skill-related fitness test components such as coordination, agility, power, and reaction time were categorized as “Very Good”. Therefore, respondents in terms of these components demonstrated promising results. However, the result of speed and balance are interpreted as “Good”.

The study's findings are in contradiction with Bigkog (2025) baseline skill-related fitness levels of Grade 7 students before they started participating in Philippine Traditional, which shows that coordination had the lowest mean score. This suggests that the majority of participants initially struggled with tasks requiring precise and fluid body movements. Once more, agility, speed, and power all shown poor ability in rapid direction changes, swift movement, and powerful movements—all of which are crucial in many traditional sports. Even though balance and reaction time were greater, there was still room for growth.

The result is in contrast with the findings of Dominado (2023) who said that the respondents' skill-related fitness revealed fair, average, and needs improvement agility. In addition, the balance is lower and need development, and the coordination is fair but needs improvements. However, performance speed needs to be increased and improved. Furthermore, the leg and reaction time both needs improvement.

The result is aligned with the study of Lacsanan et al. (2023), where 40 percent of the senior high school students in the sample had below-average or poor agility, while 47 out of 100 had acceptable agility. In contrast, 73 out of 100 had below-average, bad, and very poor balancing skills. Regarding reaction time, yet, 88 of the 100 students in the sample have average, above average, exceptional, and excellent scores.

The Academic Achievement of the Senior High School Students in terms of their General Weighted Average for the School Year 2024-2025

In the result of respondents' academic achievement in terms of their general weighted average for the school year 2024-2025, the largest portion obtained a grade in the range of 85-89 classified as a "Very Satisfactory" performance, followed by 80-84 or "Satisfactory" performance. These results indicate that most respondents performed well in senior high school for the school year 2024-2025, with the majority classified under the "very satisfactory" category but still there are of the total population of the respondents fall into "Fairly satisfactory" Performance and only few of them classified as 90-100 "Outstanding" performance.

In contrast with the study of Dugan et al. (2024), most respondents obtained marks in the range of 90 to 95 for in-person classroom teaching. Only a small portion of participants, meanwhile, received scores between 80 and 85. It appears that nobody had a score in the range of 75 to 79.

The findings, however, are consistent with research by Yray et al. (2024) that demonstrated the academic success of Grade 12 students and found that the majority of respondents, 27 out of 58, belonged to the group that obtained extremely satisfactory grades. Nine respondents then obtained satisfactory scores, while 21 respondents received extraordinary grades. Finally, only one respondent obtained a good grade.

Test of Significant Correlation between the Academic Achievement and Fitness Level of Senior High School Students

A Spearman's Rho correlation was conducted to examine the relationship between academic achievement and fitness levels among senior high school students. The results indicated a moderate positive relationship between academic achievement and various fitness levels components, including flexibility, coordination, agility, power, and reaction time. Therefore, the null hypothesis should be rejected according to the result. Since fitness components are moderately linked to academic success, schools should maintain or increase time allotment for Physical Education, integrate structured fitness programs, promote school-based physical activities and sports. Thus, physical fitness is not merely a health concern but also an academic support mechanism.

As Roig-Hierro et al. (2025) underscore the essential role that moderate physical activity (PA) plays in fostering adolescents' general well-being and academic success. Particularly, PA two to five times a week was linked to better language, science, and math performance, which can be linked to psychological, cognitive, and physiological advantages. However, it was discovered that excessive PA has a negative impact on academic results, underscoring the need for a balanced strategy that optimizes the advantages of exercise without compromising educational priorities.

However, Lacasan & Lacasan-Nagba (2023) proclaimed that there is no significant relationship between the dependent academic achievement as well as the independent variables of speed, power, agility, and balance. Yet there is a relationship between the students' academic achievement and the independent variables of coordination and reaction time. Moreover, Palma III et. al (2024) Regular aerobic workouts for cardiovascular endurance, resistance training for muscle strength, circuit training for muscle endurance, flexibility exercises, and dietary guidance to maintain a healthy body composition are all part of the suggested comprehensive fitness program. The study supports regional and international research that highlights the benefits of structured physical activity programs for improving the health and wellbeing of adolescents. These findings emphasize the necessity of inclusive and effective physical education programs in order to help junior high school children develop fitness habits that will last a lifetime.

Proposed Intervention Plan to Improve Students' Physical Fitness Level and Academic Achievement

Project INDAK is anchored on the principle that movement enhances cognition. Aerobic and rhythmic exercises are believed boost neural networks linked to memory, attention, and executive functioning, according to studies in educational neuroscience. By embedding dance routines into the Physical Fitness Test (DepEd Order No. 34, s. 2019), the program not only addresses health-related fitness (cardiovascular endurance, muscular strength, flexibility) but also skill-related fitness (coordination, agility, balance, reaction time). Dance is set as a cognitive and physical intervention due to this dual focus.

As per Novak et al. (2025), variations in physical fitness among schools are probably caused by a complex interaction of factors, such as the quality of physical education programs, the accessibility of resources, socioeconomic settings, and broader aspects of school culture and learning environments. Comprehensive, multi-level methods that seek to give all students, regardless of socioeconomic background or school resources, fair access to high-quality physical education and physical exercise opportunities may be necessary to address such disparities. Interventions that take into account community, school, and individual variables may assist create inclusive settings that promote children's and adolescents' physical well-being.

According to Orprecio (2024) High-impact aerobics and Zumba are two examples of physical activities that have become increasingly popular with audiences, particularly among female adolescents and adults. High-impact aerobics combines strength and flexibility exercises with lively music to enhance general fitness. Zumba, which combines dance and exercise, improves cardiovascular fitness while decreasing body mass and skinfold thickness.

Also, by promoting positive social connections and a supportive peer group, we as parents and educators can contribute to the development of an environment that supports academic success according to Mulaudzi (2023). Additionally, Liu et al. (2024) While earlier research has shown that children with high fundamental movement skills (FMS) are more active throughout the day, limited is known about how children's FMS and PA vary throughout the school day (e.g., physical education, lunch break, and recess).

Therefore, Project INDAK incorporates Filipino cultural identity through folk-inspired dance routines, in contrast to generic exercise routines. By making physical activity meaningful and validating while also promoting pride and belonging, this cultural grounding raises learner engagement. According to research on culturally responsive pedagogy, students' motivation and perseverance greatly increase when they perceive that learning activities reflect who they are. Additionally, the NeuroGroove Modules use mirror routines, memory sequences, and cross-lateral movements to improve brain function. There is proof that these exercises enhance reaction times and problem-solving abilities. Project INDAK thus positions dance as a tool for whole student development, going beyond physical fitness to focus on intellectual accomplishment. Moreover, The INDAK Buddy Beats component places a strong emphasis on peer cooperation and synchronized motion. Shared physical activities foster trust, empathy, and camaraderie—all of which are essential for teenage psychosocial adjustment, according to research on cooperative learning. This ensures that students flourish not just intellectually but also socially and emotionally, in line

with DepEd's holistic education aims under RA 10533. Furthermore, through Sayaw Journals and the INDAK Skills Tracker, students engage in metacognitive reflection, documenting their progress and insights. Reflection fosters self-regulation and accountability, enabling learners to connect physical activity with academic growth. By ensuring that students understand the importance of fitness and cognitive development, this approach makes the intervention long-lasting.

As Li & Xu (2022) concluded that sustained aerobic exercise can treat patients with a variety of illnesses and enhance people's physical quality. Hence, Project INDAK shows that dancing is an educational intervention as well as a form of recreation. The program provides a comprehensive approach to senior high school education by integrating neurocognitive stimulation, cultural identity, physical fitness, and reflective practice. Its pilot implementation at San Jose Integrated School can serve as a blueprint for other institutions seeking to integrate movement-based learning into their curriculum.

CONCLUSIONS

The following conclusions are based on the analysis of data and findings:

1. This study concludes that senior high school students generally displayed a “Normal” body composition by the end of the school year. The result of flexibility was “very good to excellent” while their cardiovascular endurance and strength specifically in push-ups was categorized as “good”. Senior high school students demonstrated “Very Good” performance in skill-related fitness components such as coordination, agility, power, and reaction time, indicating promising abilities in these areas.

2. Moreover, for the school year 2024–2025, the academic performance of senior high school students from San Jose Integrated School was predominantly “very satisfactory,” indicating that most students performed well. However, there are number of students fell into the “fairly satisfactory” category, and only a few achieved “outstanding” grades. These results underscore the need for targeted intervention programs to further enhance student achievement.

3. Therefore, the result emphasized that there is a moderate positive relationship between academic achievement and various fitness levels components, including flexibility, coordination, agility, power and reaction time. In addition to being a health concern, physical fitness serves as a means of academic support. As a result, students not only enhanced their academic performance but also these specific physical components. Therefore, the null hypothesis should be rejected.

4. Lastly, the researcher proposed an intervention program which is the Project INDAK (Improving Neurocognition and fitness level of SHS students through **D**ance and **K**inesthetics)” that aims to enhance students’ fitness level specifically flexibility, coordination, agility, power, reaction time as well as their academic performance.

References

- Acar, E., & Yigit, M. F. (2023). Beyond the classroom: Exploring the relationship between extracurriculars, social capital, and academic achievement. *Journal of Education and Practice*, 14(15), 101–105. <https://doi.org/10.7176/JEP/14-15-10>
- Andoy, A. A. (2025). Implementation of physical education teaching in public schools of Claver District, Surigao Del Norte. *International Journal of Advanced Research in Science, Communication and Technology*, 5(2), 824–825. <https://doi.org/10.48175/IJARSCT-29294>
- Bagay, M. C., Eugenio, W. A., Soriano, M. V. C., & Bautista, R. G. (2021). Project MC2: Raising students’ procedural fluency along concepts of forces and motion. *Journal of Innovations in Teaching and Learning*, 1(2), 127–130. <https://doi.org/10.12691/jitl-1-2-10>

- Bigkog, D. K. (2025). Assessing skill-related fitness improvements in grade 7 students through Philippine traditional games. *International Journal of Innovative Science and Research Technology*, 10(5), 4726–4734. <https://doi.org/10.38124/ijisrt/25may2252>
- Birni, G. (2023). Exploring the effects of academic achievement, class engagement, and its motivations on university students' mental well-being. *European Journal of Psychology and Educational Research*, 6(4), 205–212. <https://doi.org/10.12973/ejper.6.4.205>
- Cagas, J., Mallari, M. F., Torre, B., Kang, M., Palad, Y., Guisihan, R., Aurellado, M. A., Sanchez-Pituk, C., Realin, J. G., Sabado, M. L., Ulanday, M. E., Baltasar, J., Maghanoy, M. L., Ramos, R. A., Santos, A., & Capio, C. (2022). Results from the Philippines' 2022 report card on physical activity for children and adolescents. *Journal of Exercise Science and Fitness*, 20(4), 382–390. <https://doi.org/10.1016/j.jesf.2022.10.001>
- Campoamor-Olegario, L., Camitan, D. S., IV, & Guinto, M. L. M. (2025). Beyond the pandemic: Physical activity and health behaviors as predictors of well-being among Filipino tertiary students. *Frontiers in Psychology*, 16, Article 1490437. <https://doi.org/10.3389/fpsyg.2025.1490437>
- Cano, J. S. (2022). Comparative analysis of senior high school learners' academic performance in traditional face-to-face and online distance learning modalities. *International Journal on Social and Education Sciences*, 4(4), 541–561. <https://doi.org/10.46328/ijonses.369>
- Carroza-Pacheco, A. M., del Barco, B. L., & Molleda, C. B. (2025). Academic performance and resilience in secondary education students. *Journal of Intelligence*, 13(5), 1–13. <https://doi.org/10.3390/jintelligence13050056>
- Castillo, J., Allag, M., Bartolome, K., Pascual, R., Villarta, J., & Tus, J. (2023). The impact of study habits on the academic performance of senior high school students amidst blended learning. *Psychology and Education: A Multidisciplinary Journal*, 10, 483–488. <https://doi.org/10.5281/zenodo.8122328>
- Castro, R. L., Manalansan, L. M., & Sibug, V. B. (2023). Physical activity engagement across human life cycles: A scoping review. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(8), 2786–2800. <http://dx.doi.org/10.11594/ijmaber.04.08.18>
- Che, L., Liu, D., & Tie, C. (2025). Physical activity and academic performance in adolescents: Chain mediation through self-regulation and self-efficacy with gender and urban–rural differences. *Frontiers in Education*, 10, Article 1686270. <https://doi.org/10.3389/feduc.2025.1686270>
- Coelho, C., & Menon, S. (2020). Commencing on the right foot towards (on)line of dance—An empirical study in India. *Research in Dance Education*, 25(1), 49–60. <https://doi.org/10.1080/14647893.2022.2033715>
- Dato, B. G. (2025). Teacher's practices, students' motivation and performance in physical education among senior high school students in the division of Northern Samar. *Journal of Interdisciplinary Perspectives*, 3(8), 212–221. <https://doi.org/10.69569/jip.2025.381>
- Dominado, N. L. (2023). An assessment of the physical fitness of senior high school learners: Basis for the development of a home-based physical fitness plan. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(9), 3223–3235. <https://doi.org/10.11594/ijmaber.04.09.14>
- Dugan, M. D., Lofamia, R. A., & Villanueva, C. (2024). Academic performance of senior high school students during online and face to face modality: Basis in creating an improved modality-based strategic lesson plan in English. *International Journal of Advanced Multidisciplinary Studies*, 6(1), 1–10. <https://www.ijams-bbp.net/wp-content/uploads/2024/03/1-IJAMS-JANUARY-2024-1-10.pdf>
- Florez, L., Campo, D., & Suarez, V. (2022). Relationship between physical fitness and academic performance in university students. *International Journal of Environmental Research and Public Health*, 19(22), Article 14750. <https://doi.org/10.3390/ijerph192214750>
- Guo, Q., Samsudin, S., Yang, X., Gao, J., Ramlam, M. A., Abdullah, B., & Farizan, N. H. (2023). Relationship between perceived teacher support and student engagement in physical education: A systematic review. *Sustainability*, 15(7), Article 6039. <https://doi.org/10.3390/su15076039>
- He, H., Yang, Y., Sun, J., Wang, F., Zhang, W., & Zhu, F. (2025). Effects of school-based physical activity on academic achievement in children and adolescents: A systematic review and meta-analysis. *Frontiers in Public Health*, 13Trace, Article 1651883. <https://doi.org/10.3389/fpubh.2025.1651883>
- James, J., Pringle, A., Mourton, S., & Roscoe, C. M. (2023). The effects of physical activity on academic performance in school-aged children: A systematic review. *Children*, 10(6), Article 1019. <https://doi.org/10.3390/children10061019>

- Kapoor, G., Chauhan, P., Singh, G., Malhotra, N., & Chahal, A. (2022). Physical activity for health and fitness: Past, present and future. *Journal of Lifestyle Medicine*, 12(1), 9–14. <https://doi.org/10.15280/jlm.2022.12.1.9>
- Kljajevic, V., Stankovic, M., Dordevic, D., Trkulja-Petkovic, D., Jovanovic, R., Plazibat, K., Orsolich, M., Curic, M., & Sporis, G. (2021). Physical activity and physical fitness among university students—A systematic review. *International Journal of Environmental Research and Public Health*, 19(1), Article 158. <https://doi.org/10.3390/ijerph19010158>
- Lacasan, J., & Lacasan-Nagba, J. (2023). Senior high school students: Their fitness level and their academic performance. *ACPES Journal of Physical Education, Sports and Health*, 3(2), 99–109. <https://doi.org/10.15294/ajpesh.v3i2.73112>
- Li, H., & Xu, L. (2022). Analysis of cardiopulmonary resistance under different loads in aerobic exercises. *Revista Brasileira de Medicina do Esporte*, 28(6), 624–627. https://doi.org/10.1590/1517-8692202228062022_0078
- Lima, R. A., Soares, F. C., Bezerra, J., & de Barros, M. V. G. (2020). Effects of a physical education intervention on academic performance: A cluster randomised controlled trial. *International Journal of Environmental Research and Public Health*, 17(12), Article 4287. <https://doi.org/10.3390/ijerph17124287>
- Liu, D., Huang, Z., Liu, Y., & Zhou, Y. (2024). The role of fundamental movement skills on children’s physical activity during different segments of the school day. *BMC Public Health*, 24, Article 18769. <https://doi.org/10.1186/s12889-024-18769-3>
- Mahfouz, H., Alhazmi, N., Almatrafi, M. K., Almehmadi, S., Alharbi, J., Qadi, L., & Tawakul, A. (2024). The influence of lifestyle on academic performance among health profession students at Umm Al-Qura University. *Cureus*, 16(3), Article e56759. <https://doi.org/10.7759/cureus.56759>
- Makwana, D., Engineer, P., Dabhi, A. L., & Chudasama, H. (2023). Sampling methods in research: A review. *International Journal of Trend in Scientific Research and Development*, 7(3), 762–768. <https://www.ijtsrd.com/papers/ijtsrd57470.pdf>
- Monsale, R. M. (2024). Observance of code of conduct for public officials and employees (Republic Act 6713) and personnel’s performance. *International Journal of Science and Management Studies*, 7(5), 8–30. <https://doi.org/10.51386/25815946/ijms-v7i5p102>
- Mulaudzi, I. C. (2023). Factors affecting students’ academic performance: A case study of the university context. *Journal of Social Science for Policy Implications*, 11(1), 18–26. <https://doi.org/10.15640/jsspi.v11n1a3>
- Novak, D., Emeljanovas, A., Kim, R., Ko, S., & Subramanian, S. V. (2025). School-level variation in physical fitness outcomes among children and adolescents. *Scientific Reports*, 16, Article 79. <https://doi.org/10.1038/s41598-025-29086-z>
- Orpricio, H. (2024). Project HOPE (Health Optimizing Physical activities & Exercises) towards improving fitness and wellness program among senior high school learners. *International Journal of Research and Innovation in Social Science*, 9(3), 3221–3242. <https://dx.doi.org/10.47772/IJRISS.2025.903SEDU0242>
- Ortega, F., Leskosek, B., Blagus, R., Gil-Cosano, J., Maestu, J., Tomkinson, G., Ruiz, J., Maestu, E., Starc, G., Milanovic, I., Tammelin, T., Soric, M., Scheuer, C., Carraro, A., Kaj, M., Csanyi, T., Sardinha, L., Lenoir, M., Emeljanovas, A., ... Jurak, G. (2023). European fitness landscape for children and adolescents: Updated reference values, fitness maps and country rankings based on nearly 8 million test results from 34 countries gathered by the FitBack network. *British Journal of Sports Medicine*, 57(5), 299–310. <https://doi.org/10.1136/bjsports-2022-106176>
- Palma, F., III, Rivera, R. A., Ellesorio, J. L., Oh, P. M., Doruelo, M. E., Lopez, A., Alegarbes, R., & Solidarios, J. (2024). Assessing health-related physical fitness among Filipino junior high school students: Implications for tailored fitness programs. *Psychology and Education: A Multidisciplinary Journal*, 23(9), 1198–1206. <https://doi.org/10.17605/OSF.IO/ZD7Y5>
- Parilla, E. S. (2024). Measuring the effectiveness of online and face-to-face classes using the Community of Inquiry framework. *Education Policy and Development*, 2(1), 45–59. <https://doi.org/10.31098/epd.v2i1.1869>
- Perez, R. D., Doruelo, M. E. Y., & Madrigal, D. V. (2022). Development of the physical activity plan for physical education instruction in public senior high schools: An exploratory sequential mixed method inquiry. *Education Quarterly Reviews*, 5(3), 270–288. <https://doi.org/10.31014/aior.1993.05.03.544>
- Posadzki, P., Pieper, D., Bajpai, R., Makaruk, H., Konsgen, N., Neuhaus, A. L., & Semwal, M. (2020). Exercise/physical activity and health outcomes: An overview of Cochrane systematic reviews. *BMC Public Health*, 20Trace, Article 1724. <https://doi.org/10.1186/s12889-020-09855-3>

- Prabowo, T. A., Indarto, A. V., Zakaria, A., Cahyo, F. D., & Afifah, M. (2025). The effect of physical fitness on academic achievement through self-confidence in adolescents aged 16–18 years: A scoping review. *Physical Culture, Recreation and Rehabilitation*, 4(1), 50–55. <https://doi.org/10.15561/physcult.2025.0105>
- Raja, S. M., Elfaki, M. A., Ibrahim, A., Maroof, H., & Abdelrahim, A. (2025). The relationship between physical activity and academic achievement in medical students: A single-institution cross-sectional study in Sudan. *BMC Medical Education*, 25, Article 1415. <https://doi.org/10.1186/s12909-025-07985-z>
- Roig-Hierro, E., Rios-Siso, X., Busca, F., Guillem, M., & Batalla, A. (2025). The positive impact of physical activity on academic performance among Catalan adolescents. *Cogent Education*, 12(1), Article 2497139. <https://doi.org/10.1080/2331186X.2025.2497139>
- Sarpong, E. O. (2022). Assessing the physical fitness level of students in senior high schools. *International Journal for Innovation Education and Research*, 10(8), 159–169. <https://doi.org/10.31686/ijer.vol10.iss8.3865>
- Shi, Y., Yu, H., Di, S., & Ma, C. (2022). Body mass index and academic achievement among Chinese secondary school students: The mediating effect of inhibitory control and the moderating effect of social support. *Frontiers in Psychology*, 13, Article 835171. <https://doi.org/10.3389/fpsyg.2022.835171>
- Singh, B., Olds, T., Curtis, R., Dumuid, D., Virgara, R., Watson, A., Szeto, K., O'Connor, E., Ferguson, T., Eglitis, E., Miatke, A., Simpson, C. E., & Maher, C. (2022). Effectiveness of physical activity interventions for improving depression, anxiety and distress: An overview of systematic reviews. *British Journal of Sports Medicine*, 57(18), 1203–1019. <https://doi.org/10.1136/bjsports-2022-106195>
- Siregar, T. (2025). Descriptive statistics: Concepts, data collection methods, and sampling techniques in quantitative research. *Jurnal Aplikasi Matematika dan Statistik*. https://www.researchgate.net/publication/396983535_Descriptive_Statistics_Concepts_Data_Collection_Methods_and_Sampling_Techniques_in_Quantitative_Research
- Su, W., & Liu, Q. (2025). The impact of physical education teacher support on sport participation among college students: The chain mediating effects of physical education learning motivation and self-efficacy. *Frontiers in Psychology*, 16, Article 1592753. <https://doi.org/10.3389/fpsyg.2025.1592753>
- Suleiman, I. B., Okunade, O. A., Dada, E. G., & Ezeanya, U. C. (2024). Key Factors influencing students' academic performance. *Journal of Electrical Systems and Information Technology*, 11, Article 41. <https://doi.org/10.1186/s43067-024-00166-w>
- Taborno, H., & Mongas, C. J. (2026). Teachers' challenges and readiness on the implementation of physical education instruction. *International Journal of Multidisciplinary Research and Analysis*, 9(3), 1159–1171. <https://doi.org/10.47191/ijmra/v9-i3-33>
- Tao, Y., Zhang, Y., Qian, H., & Cao, Z. (2025). Long term effects of physical activity types on executive functions in school aged children. *Scientific Reports*, 15Trace, Article 30303. <https://doi.org/10.1038/s41598-025-09674-9>
- Teuber, M., Leyhr, D., & Sudeck, G. (2024). Physical activity improves stress load, recovery, and academic performance-related parameters among university students: A longitudinal study on daily level. *BMC Public Health*, 24, Article 598. <https://doi.org/10.1186/s12889-024-18082-z>
- Umpar, N., Sinfuego, A., Condez, D. N., Abuton, D., & Punzalan, J. E. (2025). The academic performance of SHS students in a private school in Cavite using online learning and face-to-face learning modalities: A comparative study. *Psychology and Education: A Multidisciplinary Journal*, 38(6), 646–658. <https://doi.org/10.70838/pemj.380607>
- Villaganas, E. V., Jr., Ignacio, C. D., Gandola, L. N., Deocadez, J. A., Agustin, C. J., Arandallo, J. C., & Gabriel, F. M. (2025). Health-related fitness level of PATHFIT 1 students of Notre Dame of Marbel University: Basis for health-related exercise programs. *Psychology and Education: A Multidisciplinary Journal*, 33(1), 105–106. <https://doi.org/10.70838/pemj.330109>
- Voss, M. W., Carr, L. J., & Weng, T. (2021). Revenge of the “sit” II: Does lifestyle impact neuronal and cognitive health through distinct mechanisms associated with sedentary behavior and physical activity? *Mental Health and Physical Activity*, 7(1), 9–24. <https://doi.org/10.1016/j.mhpa.2014.01.001>
- Wang, Q., Abidin, N. E. Z., Aman, M. S., Wang, N., Ma, L., & Liu, P. (2024). Cultural moderation in sports impact: Exploring sports-induced effects on educational progress, cognitive focus, and social development in Chinese higher education. *BMC Psychology*, 12, Article 1–15. <https://doi.org/10.1186/s40359-024-01584-1>
- Xiong, X., Cui, Y., Zhang, W., Zhao, C., Wu, J., Li, H., Zhen, Z., & Sun, J. (2022). Association between sleep duration and physical fitness in children aged 3–6 years: A cross-sectional study from China. *International*

-
- Journal of Environmental Research and Public Health*, 19(11), Article 6902.
<https://doi.org/10.3390/ijerph19116902>
- Yang, Q., Wang, J., & Bai, J. (2025). 24-hour movement behavior and health-related physical fitness in college students: A compositional data analysis. *International Journal of Behavioral Medicine*.
<https://doi.org/10.1007/s12529-025-10360-3>
- Yray, G. M., Bueno, J. J., Alcantara, E. M., Omilgo, R., Traverro, S. M., Onipa, J., Lapinid, J. R., Garces, C., & Cabreros, D. (2024). Study habits and academic performance of HUMSS 12 students during modular learning modality. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence*, 1(5), 262–266. <https://doi.org/105281/zenodo.11189292>
- Zhang, M., Garnier, H., Qian, G., & Li, S. (2023). Effect of 11 weeks of physical exercise on physical fitness and executive functions in children. *Children*, 10(3), Article 1–12. <https://doi.org/10.3390/children10030485>