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Physical Fitness Test Activities Toward Performance of Student Dancers: Moderated by Age and Sex

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A B S T R A C T

This study investigates the role of enhanced physical fitness training (PFT) on the dance performance of student dancers at Col. Lauro D. Dizon Memorial Integrated High School (CLDDMIHS) in the Philippines. Grounded in Bandura's Self-Efficacy Theory, the research explores how both health-related (e.g., cardiovascular endurance, muscular strength, flexibility) and skill-related (e.g., agility, balance, coordination) fitness components contribute to improved dance performance outcomes. A quantitative approach, specifically a predictive correlational design, was employed, using standardized physical fitness tests and a comprehensive dance performance rubric evaluated by three dance experts. The statistical treatment used was descriptive statistics, including frequency count and percentage. Pearson Product-Moment Correlation Coefficient was used to assess the strength and direction of association between each health- and skill-related fitness component and the five aspects of dance performance. Linear Regression Analysis was used to establish if demographic profiles such as age and sex are moderating variables to assess their influence on the relationship between physical fitness and dance performance.

The study revealed that there is no significant relationship between Physical Fitness and Dance Performance of the respondents. The moderating variables, such as age and sex, have no significant relationship with the Physical Fitness and Dance Performance of the respondents. Meanwhile, sex moderated the influence of strength and agility on dance performance. This research underscores the essential role of structured physical fitness programs in dance education, highlighting their capacity to promote holistic student development through enhanced physical capabilities and artistic expression.

Keywords: physical fitness, dance performance, student dancers, health-related fitness, skill-related fitness

Keywords: Daily Undulating Periodization, muscle hypertrophy, anthropometric measurements, arm muscle area, thigh muscle area, girth, resistance training

1. Introduction

The effectiveness of physical fitness on dance performance of student dancers is a burgeoning field of interest within educational and health research. Physical fitness is paramount in enhancing the overall well-being and performance of student dancers, equipping them with the necessary stamina, flexibility, and strength to excel in their craft. Either way, dance education offers numerous benefits for students' learning and well-being. Engaging in dance activates the sensory and motor circuits of the brain, the hippocampus responsible for emotions and memory, and releases feel-good neurochemicals and endorphins. This not only improves students' physical health but also enhances their mental health and overall sense of well-being. Dance clubs provide a safe environment for students to express themselves, learn new skills, and connect with peers who share their passion. They foster a sense of community, boost students' confidence and communication abilities, and can even improve academic performance (The Princeton Review, 2022).

In the Philippines, dance holds a significant cultural heritage and is deeply embedded in the country's traditions and celebrations. Establishing dance clubs in senior high schools can help preserve and promote this cultural legacy while offering students opportunities for personal growth, creative expression, and intercultural understanding (Babaji Vidyashram, 2022). Despite these benefits, there is often a low status and lack of provision for dance as a mandated learning experience in many countries (Kipling Brown et al., 2013; Nurharini et al., 2019). Establishing dance clubs can address this gap and ensure students have access to quality dance education and experiences.

The connection between physical fitness and dance performance is deeply rooted in the physiological and psychological benefits that fitness brings to dancers. Physically fit dancers exhibit greater endurance, flexibility, and strength, all of which are essential for the demanding movements and routines in dance. Enhanced physical fitness activities, such as cardiovascular exercises, strength training, and flexibility workouts, can significantly improve a dancer's performance by enabling them to execute movements with precision, sustain longer practice sessions, and reduce the risk of injuries (Koutedakis & Jamurtas, 2004; Saenal et al., 2022).

Cardiovascular fitness is crucial for dancers as it enhances their stamina and allows them to perform vigorous routines without experiencing fatigue. Studies have shown that dancers with higher cardiovascular fitness levels can maintain their energy levels throughout performances and recover more quickly between routines (Angioi et al., 2009; Bannon & Sanderson, 2000). Strength training, on the other hand, builds muscle power and endurance, which are vital for executing jumps, lifts, and other physically demanding dance moves. Flexibility workouts improve a dancer's range of motion, enabling them to perform complex movements with grace and fluidity. Moreover, physical fitness positively impacts a dancer's mental health, which is crucial for performance. Regular physical activity has been shown to reduce stress, anxiety, and depression while enhancing mood and cognitive function (Nurharini et al., 2019). For student dancers, the mental resilience gained through physical fitness can lead to better focus, discipline, and confidence during performances, ultimately translating to improved dance outcomes.

This study aimed to explore the role of enhanced physical fitness activities in improving the dance performance of student dancers at Col. Lauro D. Dizon Memorial Integrated High School. By focusing on student dancers, this research provided insights into how physical fitness interventions can be effectively integrated into dance programs to enhance performance. Ultimately, this study will contribute to the broader discourse on the importance of physical fitness in education, supporting the development of policies and programs that promote holistic student development through dance and physical activity.

2. Methodology

2.1 Research Design

In this study, the researcher employed a predictive correlational research design to examine the extent to which enhanced Physical Fitness Training (EPFT) activities predict the dance performance outcomes of student dancers at Col. Lauro D. Dizon Memorial Integrated High School (CLDDMIHS). This design was selected to statistically assess the strength and direction of associations between physical fitness components and various dimensions of dance performance, without manipulating variables or introducing an experimental intervention. Predictive correlational designs are particularly effective for identifying significant predictors within naturally occurring data, supporting the development of informed, data-driven interventions. As Creswell (2018) notes, this approach is well-suited to studies aiming to model relationships and forecast outcomes based on measurable variables.

Data were collected from a purposely selected group of student dancers. Physical fitness variables included both health-related components (body composition, flexibility, cardiovascular endurance, and muscular strength) and skill-related components (speed, power, agility, reaction time, coordination, and balance). These were measured through standardized fitness tests. The dance performance was assessed using rubrics evaluating knowledge of choreography, stage presence, musicality, technique, and effort, scored by a panel of three expert evaluators across two performance periods.

The study aimed to determine whether physical fitness metrics could serve as reliable predictors of dance performance and whether demographic variables such as age and sex moderated these relationships. The predictive nature of the design allowed the researcher to establish statistical models estimating dance performance outcomes based on levels of physical fitness, providing valuable insight for future training program design and policymaking in dance education.

This approach contributes to the growing body of literature emphasizing the predictive value of physical fitness in performance-based disciplines, offering empirical evidence to guide holistic educational strategies in the performing arts.

2.2 Respondents of the Study

The respondents for this study were student dancers from the Junior High School level, specifically from Grades 7 up to 11, at Col. Lauro D. Dizon Memorial Integrated High School (CLDDMIHS). This broader scope enabled a thorough analysis of physical fitness and dance performance across various developmental stages within junior high school. Participation criteria included current enrollment in Grades 7 to 11 at CLDDMIHS during the study period, as well as successful completion of an audition to join the school's dance club. This ensured that all participants possessed a baseline level of dance competency.

Respondents typically ranged from 12 to 18 years old, corresponding to the typical age range for these grade levels. Additionally, parental or guardian consent and student assent were required to ensure that participants and their families were fully aware of and agreed to the study's procedures. Regular attendance, defined as attending at least 80% of school days, was another criterion to ensure reliable data collection and representation.

Furthermore, students in special education programs for severe cognitive or physical disabilities were excluded due to their differing educational and physical activity experiences. These criteria aimed to ensure a homogeneous sample that was representative of typical junior high school student dancers, thereby fostering reliable insights into the impact of Enhanced Physical Fitness Training (EPFT) activities on dance performance at CLDDMIHS. By including students from Grades 7 to 11, the study captured a range of developmental stages, providing a more comprehensive understanding of how physical fitness interventions could support dance performance across junior high school levels.

The independent variable, physical fitness, was assessed quantitatively through a comprehensive battery of standardized fitness tests administered to the student participants. These tests included measures of cardiovascular endurance (e.g., the 2-minute step test), muscular strength and endurance (e.g., push-ups, basic plank), flexibility (e.g., sit-and-reach), and agility (e.g., hexagon agility test). The dependent variable, dance performance quality, was

evaluated qualitatively using a specifically designed dance performance rubric. This rubric encompassed a range of criteria, such as knowledge of choreography, stage presence, musicality, technique, and effort.

To ensure objectivity and reliability in the evaluation process, a panel of three independent dance experts with recognized expertise in the relevant dance genre was employed. Each expert independently assessed the dance performances using the established rubric, and their scores were averaged to obtain a composite evaluation score for each participant.

2.3 Research Instruments

The researcher used an Enhanced Physical Fitness Test (EPFT), which was required by the Department of Education (DepEd), to evaluate the dancers' levels of physical fitness. The purpose of this enhanced PFT was to match the unique physical requirements of dance performance. The researcher also utilized refined and modified rubrics from a variety of web sources. The purpose of these rubrics was to precisely assess the dance performance elements that were being studied.

2.4 Research Procedures

The data gathering procedure for this study at Col. Lauro D. Dizon Memorial Integrated High School (CLDDMIHS) was executed in a structured manner to evaluate the impact of the enhanced physical fitness test on the performance of the dancers. The initial phase involved securing the necessary permissions by obtaining formal approval from the school administration and the Department of Education (DepEd) Division Office. This was achieved by submitting a comprehensive research proposal that outlined the study's objectives, methodology, and ethical considerations, ensuring compliance with all relevant guidelines and protocols.

Once approvals were in place, the preparation for data collection began. This included the implementation of the intervention period, during which a structured physical fitness program was introduced. The program was designed to enhance various aspects of physical fitness relevant to dance performance, and was guided by the Revised Physical Fitness Test (PFT) Manual as per DepEd Order No. 34, Series of 2019. The fitness program was closely monitored and adjusted as needed to ensure its effectiveness.

Data collection involved assessing dance performance at two key points: before and after the intervention. The assessments focused on various performance criteria, including knowledge of choreography, stage presence, musicality, technique, and overall effort. These criteria were evaluated through detailed observations and performance assessments conducted by trained evaluators. By comparing the performance data collected before and after the intervention, the study aimed to provide insights into how enhanced physical fitness activities impacted dance performance among student dancers at CLDDMIHS.

In research, ethical considerations were crucial. Data integrity and participant well-being were given priority by researchers. This entailed getting consent with full knowledge, maintaining privacy, reducing harm, and staying out of conflict of interest. It also included proper data gathering, truthful reporting of findings, and responsible distribution of study findings. Respecting ethical standards cultivated an atmosphere of honesty in the scientific community by establishing confidence between participants and researchers.

2.5 Statistical Treatment of Data

To address the research questions of this study, a variety of statistical methods were employed to analyze the data collected from student dancers at Col. Lauro D. Dizon Memorial Integrated High School (CLDDMIHS). The specific statistical treatments for each research question were as follows:

1. To determine the demographic profile of the student dancers in terms of age and sex, the researcher employed descriptive statistics using frequency counts and percentages to present the distribution of respondents across different age groups and gender categories.

2. To describe the status of the student dancers' health-related fitness before and after participating in the Enhanced Physical Fitness Training (EPFT), the researcher used descriptive statistics, particularly frequency and percentage distributions, to interpret performance levels in body composition (BMI), flexibility (Zipper Test, Sit and Reach), cardiovascular endurance (3-Minute Step Test), and muscular strength and endurance (Push-up and Plank).

3. To assess the status of the student dancers' skill-related fitness before and after participating in the Enhanced Physical Fitness Training (EPFT), the researcher utilized descriptive statistics to compute frequency and percentage across the following dimensions: agility (Hexagon Agility Test), balance (Stork Balance Test), coordination (Juggling), power (Standing Long Jump), speed (40-Meter Sprint), and reaction time (Stick Drop Test).

4. To evaluate the dance performance of student dancers before and after the intervention in terms of knowledge of choreography, stage presence, musicality, technique, and effort, the researcher used descriptive statistics in the form of frequency and percentage distributions based on performance rubrics.

5. To determine the relationship between the performance of student dancers in Enhanced Physical Fitness Training (EPFT) activities and their dance performance, the researcher applied the Pearson Product-Moment Correlation Coefficient to assess the strength and direction of association between each health- and skill-related fitness component and the five aspects of dance performance.

6. To examine whether age moderates the relationship between health-related fitness and dance performance, the researcher conducted a moderation analysis using linear regression with interaction terms, analyzing the effect of the interaction between age and health-related fitness on dance performance outcomes.

7. To determine whether age moderates the relationship between skill-related fitness and dance performance, the researcher utilized linear regression moderation analysis, computing the interaction effect between age and skill-related fitness on dance performance.

8. To investigate whether sex moderates the relationship between health-related fitness and dance performance, the researcher employed moderation analysis through regression modeling, including interaction terms for sex and health-related fitness indicators.

9. To explore whether sex moderates the relationship between skill-related fitness and dance performance, the researcher used linear regression analysis with interaction terms to test if the link between skill-related fitness and dance performance varied by sex.

3. Results and Discussion

Chapter four presents the analysis and interpretation of data gathered about the research questions posed in this study. It includes a comprehensive presentation of the results on the Enhanced Physical Fitness Test (EPFT) of the respondents, both in health-related and skill-related components, as well as their assessed dance performance. Additionally, it explored the significant relationships between physical fitness and dance performance and examined the moderating effects of age and sex.

Part I. Profile of the Student Dancers

Table 1

The Profile of Student Dancers

Demographic Profile	f	%
Age		
12-13 years old	5	16.7%
14-15 years old	17	56.7%
16-18 years old	8	26.7%
Sex		
Male	15	50.0%
Female	15	50.0%
Total	30	

profile of student dancers plays a vital role in understanding how demographic characteristics such as age and sex influence physical activity levels and dance performance. Age, in particular, has been associated with differences in physical development, emotional maturity, and stress response, all of which are crucial to performance outcomes in dance. Likewise, sex differences contribute to variations in physical capacity, susceptibility to social feedback, and the effects of gender norms and stereotypes.

Table 1 presents the demographic profile of the student dancers at Col. Lauro D. Dizon Memorial Integrated High School. Among the 30 respondents, 17 dancers (56.7%) were aged 14–15 years old, making this the most represented age group. They were followed by 8 dancers (26.7%) aged 16–18 years old, and 5 dancers (16.7%) aged 12–13 years old. In terms of sex, the group was evenly split, with 15 male and 15 female dancers, each comprising 50% of the total population.

The age distribution indicates that the majority of the dancers fall within the mid-adolescent stage, a period generally associated with increasing physical capability, coordination, and endurance. According to Cobley et al. (2019), adolescents aged 14 to 15 often benefit from the relative age effect (RAE), where more physically mature students outperform younger peers due to earlier physical development. This may explain why this age group is predominant in the dance club; it represents a peak stage for physical performance in junior high school. Hraski et al. (2021) further emphasize that these developmental advantages can contribute to selection and success in physically demanding activities like dance.

However, the presence of dancers from both younger (12–13) and older (16–18) age brackets indicates diversity in developmental stages, which may affect their experience and performance differently. Hansen et al. (2019) found that while older dancers may not exhibit significantly greater objective performance, they report improvements in balance and movement quality, skills crucial in dance. Conversely, younger dancers may face greater psychological stress during performance, as noted by Judge et al. (2024), who found higher cortisol and depressive symptoms among younger ballet dancers post-performance. This suggests that while younger dancers may be physically capable, they may require additional emotional and psychological support.

Regarding sex, the equal representation of male and female dancers allows for a balanced analysis of performance without sex-based sampling bias. However, existing literature highlights important gender-based influences. Jacobs et al. (2017) report sex-based differences in biomechanics and movement execution, while Xiao et al. (2019) and Hufschmidt et al. (2015) highlight the psychological and social dynamics influencing male and female performers differently. For instance, females may be more affected by social feedback and body image concerns, while males may experience performance anxiety due to gender stereotypes in dance, particularly in forms like ballet (Bastos et al., 2023).

Part II. Status of Enhanced Physical Fitness Test (EPFT) of the respondents on health-related

The Enhanced Physical Fitness Test (EPFT) results provide valuable insights into the health-related fitness levels of the student dancers at Col. Lauro D. Dizon Memorial Integrated High School. Understanding their performance in key health-related fitness components is essential, as these attributes significantly influence their capability to execute demanding dance routines with efficiency, control, and endurance. The EPFT focused on four major indicators of health-related fitness: body composition, which reflects the balance of fat and lean mass and influences movement and stamina; flexibility**,** which is crucial for range of motion and injury prevention during complex choreography; cardiovascular endurance, which determines how well the heart and lungs support sustained activity like dance routines; and muscular strength**,** which supports lifting, jumping, and overall physical performance. The results of these assessments not only reflect the dancers' physical readiness but also serve as a basis for tailoring fitness interventions to further enhance their dance performance.

Body Composition

Body composition, measured through Body Mass Index (BMI), is a fundamental component of health-related physical fitness and is particularly relevant in activities such as dance, where optimal weight supports agility, strength, and endurance. BMI classifications—underweight, normal, overweight, and obese—can significantly influence a dancer's capacity to perform dynamic movements, maintain stamina, and reduce injury risk. In this study, the Enhanced Physical Fitness Test (EPFT) was used to evaluate the body composition of the student dancers before and after their participation in enhanced physical fitness activities. Understanding shifts in BMI provides insight into how these interventions may have contributed to maintaining or improving overall physical fitness and dance readiness.

Table 2

Enhanced Physical Fitness Test (EPFT) of the respondents on health-related in terms of health-related body composition

BMI Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Underweight	11	36.70%	12	40.00%
Normal	16	53.30%	15	50.00%
Overweight	2	6.70%	2	6.70%
Obese	1	3.30%	1	3.30%
Total	30	100%	30	100%

As shown in Table 2, the initial assessment (Assessment 1) revealed that 53.3% of the student dancers fell within the normal BMI range, 36.7% were underweight, 6.7% were overweight, and 3.3% were classified as obese. In the post-intervention assessment (Assessment 2), slight changes were observed: the proportion of students with normal BMI decreased slightly to 50.0%, while those in the underweight category increased marginally to 40.0%. The overweight and obese categories remained unchanged at 6.7% and 3.3%, respectively. Although there were no drastic shifts in BMI classification following the intervention, these results suggest that most student dancers maintained relatively stable body composition levels, with a majority still falling under the normal BMI category.

These findings are reflective of previous literature emphasizing the role of BMI in evaluating overall physical fitness. For example, Hobold et al. (2017) highlighted that higher BMI in adolescents is generally associated with poorer performance in other fitness domains, while Ramanan and Rose (2021) noted that excess weight negatively correlates with flexibility and core strength. In the current study, the predominance of dancers within the normal BMI range may have supported their ability to perform physically demanding dance tasks with agility and control. However, the slightly high proportion of underweight students (40%) warrants attention, especially in the context of aesthetic-driven activities like dance, where body image pressures can influence weight maintenance behaviors.

Moreover, Liu et al. (2012) emphasized the long-term implications of BMI in predicting future health risks, particularly among young females. This reinforces the importance of closely monitoring BMI trends over time to ensure that dancers are not only fit for performance but are also developing healthy habits that support long-term wellness. Although Santiago (2023) found no direct correlation between BMI and specific fitness outcomes such as flexibility and cardiovascular endurance, the collective evidence suggests that maintaining a balanced BMI remains essential in supporting optimal physical function.

Flexibility

Flexibility is an essential health-related component of physical fitness, especially for student dancers whose routines require a wide range of motion, fluidity, and joint mobility. Two standard assessments used to measure flexibility in this study are the Zipper Test, which evaluates shoulder flexibility, and the Sit and Reach Test**,** which measures flexibility of the lower back and hamstrings. Both tools offer a comprehensive view of upper and lower body flexibility and are useful in identifying areas where improvement may enhance dance performance. Understanding the results from these tests helps educators and trainers assess the effectiveness of enhanced physical fitness activities and design interventions that promote musculoskeletal health and injury prevention.

Table 3

Enhanced Physical Fitness Test (EPFT) of the respondents on health-related components in terms of Flexibility

Zipper Test Status	Assessment1				Assessment2			
	Right		Left		Right		Left	
	f	%	f	%	f	%	f	%
Excellent	25	83.30%	24	80.10%	24	80.00%	25	83.30%
Very Good	3	10.00%	1	3.30%	5	16.70%	1	3.30%
Good	2	6.70%	1	3.30%	1	3.30%	-	-
Poor	-	-	3	10.00%	-	-	3	10.10%
Needs Improvement	-	-	1	3.30%	-	-	1	3.30%
Total	30	100%	30	100%	30	100%	30	100%

Sit & Reach Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellent	22	73.30%	20	66.70%
Very Good	8	26.70%	9	30.00%
Good	-	-	1	3.30%
Total	30	100%	30	100%

Table 3 presents the results of the Enhanced Physical Fitness Test (EPFT) in terms of flexibility. For the Zipper Test, the majority of respondents scored in the “Excellent” category in both pre- and post-assessments. On the right side, 83.3% were rated excellent in Assessment 1, and 80.0% retained this level in Assessment 2. On the left side, scores slightly improved, with 80.0% rated excellent in the initial test, increasing to 83.3% in the post-test. A small percentage of students scored “Very Good” and “Good,” with minimal fluctuation between assessments. Notably, three students (10%) remained in the “Poor” category on the left side in both tests, and one student (3.3%) required improvement. These stable or slightly improved results suggest that most student dancers have strong shoulder flexibility, likely due to both their regular dance practice and the added fitness program.

In the Sit and Reach Test, 73.3% of students were rated “Excellent” and 26.7% “Very Good” during the first assessment. In the second assessment, 66.7% remained in the “Excellent” category, 30.0% were rated “Very Good,” and one student (3.3%) dropped to “Good.” While there was a slight decline in the percentage rated as “Excellent,” overall results still reflect strong lower body flexibility among the dancers. These findings are consistent with Eather et al. (2013), who demonstrated that school-based fitness interventions can improve or maintain flexibility over time. Additionally, Ramanan and Rose (2021) found a negative correlation between BMI and sit-and-reach performance, aligning with this study’s earlier observation that the majority of dancers had normal BMI, which may have contributed to their high flexibility scores.

Supporting these findings, Santiago (2023) reported generally high performance on the Zipper Test in non-athlete populations, and Permadi et al. (2023) similarly noted excellent flexibility among students engaged in daily physical activity. The few students who scored lower in either test may benefit from targeted stretching or yoga-based routines, as suggested by Shiraishi et al. (2017), whose intervention improved hamstring flexibility among young adults. The research by Surender and Subramaniam (2019) also adds an important dimension, linking flexibility to psychological well-being, an especially relevant factor for dancers coping with performance stress.

Cardiovascular Endurance

Cardiovascular endurance is a vital component of health-related physical fitness, especially for dancers who must sustain energy, manage fatigue, and maintain consistent performance quality throughout rehearsals and stage presentations. In this study, cardiovascular endurance was assessed using the 3-

minute step test, a standardized aerobic fitness evaluation that measures heart rate recovery following a sustained stepping activity. Monitoring the cardiovascular endurance of student dancers allows educators to evaluate their aerobic capacity and track improvements resulting from enhanced physical fitness training.

Table 4

Enhanced Physical Fitness Test (EPFT) of the respondents on health-related in terms of health-related Cardiovascular Endurance

Cardio Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellent	3	10.00%	1	3.30%
Very Good	-	-	-	-
Good	1	3.30%	2	6.70%
Above Average	3	10.00%	2	6.70%
Average	-	-	-	-
Below Average	10	33.30%	9	30.00%
Poor	2	6.70%	8	26.70%
Very Poor	11	36.70%	8	26.70%
Total	30	100%	30	100%

Table 4 presents the results of the Enhanced Physical Fitness Test (EPFT) on cardiovascular endurance for 30 student dancers. In Assessment 1, only 3 students (10.0%) achieved an “Excellent” rating, while a large portion were classified as “Very Poor” (36.7%) and “Below Average” (33.3%). A small number of students fell into “Above Average” (10.0%), “Good” (3.3%), and “Poor” (6.7%) categories. In Assessment 2, following the intervention program, there was a noticeable redistribution: “Excellent” performance declined slightly to 3.3%, while “Good” and “Above Average” scores each rose to 6.7%. Most notably, the number of students in the “Poor” and “Very Poor” categories decreased from 13 (43.4%) to 16 (53.4%), indicating some improvement but also the persistence of low fitness levels among a significant portion of the group.

These results suggest modest gains in cardiovascular endurance, though overall performance remained low for most respondents. This trend may reflect the high physical demands of dance training and the need for more targeted aerobic conditioning. According to Eather et al. (2013), significant improvement in endurance can be achieved through structured and high-intensity PE programs. While the current intervention may have introduced enhancements, the minimal improvement in “Excellent” and “Above Average” categories suggests that the duration or intensity of the program may not have been sufficient to yield substantial cardiovascular benefits.

Additionally, Santiago (2023) found that cardiorespiratory endurance does not always strongly correlate with general exercise frequency, implying that the type of physical activity plays a critical role. Dancers, despite training extensively, may focus more on choreography and movement precision than sustained aerobic exercises.

Muscular Strength and Endurance

Table 5

Enhanced Physical Fitness Test (EPFT) of the respondents on health-related in terms of health-related Muscular Strength

Push Up Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellent	5	16.70%	11	36.70%
Very Good	8	26.70%	6	20.00%
Good	12	40.00%	9	30.00%
Fair	2	6.70%	3	10.00%
Needs Improvement	3	10.00%	1	3.30%
Total	30	100%	30	100%

Planking Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellent	24	80.00%	24	80.00%
Very Good	3	10.00%	2	6.70%
Good	2	6.70%	2	6.70%
Fair	1	3.30%	1	3.30%
Needs Improvement			1	3.30%
Total	30	100%	30	100%

As shown in Table 5, results for the push-up test indicate notable improvement following the intervention. In Assessment 1, only 16.7% of student dancers achieved an "Excellent" rating, while the majority scored "Good" (40%) or "Very Good" (26.7%). A small portion scored "Fair" (6.7%) or "Needs Improvement" (10%). By Assessment 2, the number of students who scored "Excellent" more than doubled to 36.7%, and the "Needs Improvement" category dropped significantly to 3.3%. These shifts reflect a positive trend in upper body muscular strength, suggesting that the enhanced fitness activities successfully increased muscular endurance and power in the participants.

In contrast, results from the planking test remained largely consistent between assessments. A high percentage of students (80%) achieved an "Excellent" score in both Assessment 1 and 2, with minimal change in the distribution across the remaining categories. While one student (3.3%) moved into the "Needs Improvement" category in the second assessment, the overall results remained stable. This consistency suggests that students already possessed strong core muscular endurance before the intervention, and while the program maintained these levels, it did not significantly enhance core strength further.

These findings align with previous literature. Santiago (2023) reported that many students performed well in push-up tests regardless of self-reported exercise habits, suggesting that strength gains may result more from structured training than casual activity. Parekh et al. (2022) and Guo et al. (2016) further support the reliability of push-up tests, noting their sensitivity to body composition, particularly in obese or overweight individuals. The improvement in push-up performance observed in this study may be partially attributed to the relatively balanced BMI distribution of the respondents, which likely minimized excess body weight as a limiting factor. Moreover, Shashidhar and Madialagan (2015) confirmed push-up scores as reliable indicators of strength in adolescents, further validating the use of this measure among the study's population.

Regarding planking, Rowley et al. (2019) observed limited change across repeated assessments without targeted training, echoing the present study's finding of performance plateau. While the intervention may not have emphasized static core training intensively enough to produce significant gains, the consistently high performance does indicate strong baseline core strength among the student dancers. Permadi et al. (2023) and Ramanan and Rose (2021) noted that students with lower BMI generally outperformed peers in core endurance tests, aligning with the observation that most respondents in this study maintained normal or underweight BMI classifications.

Part II. Status of Enhanced Physical Fitness Test (EPFT) of the respondents on skill-related

Skill-related components of physical fitness are essential for enhancing the athletic performance of dancers, as they contribute to the precision, control, and explosiveness required in choreography. These components include agility, balance, coordination, power, speed, and reaction time, which support a dancer's ability to swiftly change direction, maintain postural stability, execute movements with rhythm, generate forceful jumps or turns, move quickly across the stage, and respond rapidly to auditory or visual cues. In the context of the Enhanced Physical Fitness Test (EPFT), these six domains were assessed to evaluate the functional movement skills and neuromuscular efficiency of the student dancers. The following results provide insight into how the participants performed in each skill-related area, as well as how the enhanced physical fitness activities may have influenced their dynamic movement abilities crucial to dance performance.

Agility

Agility is a fundamental component of skill-related fitness that reflects a dancer's ability to swiftly and efficiently change direction while maintaining control, balance, and rhythm. This quality is especially crucial in dance, where performers are often required to execute quick turns, transitions, and directional shifts with precision and fluidity. In this study, agility was assessed using the Hexagon Agility Test, which measures an individual's speed and accuracy in navigating a hexagonal pattern through repeated jumps in multiple directions. The test evaluated performance in both clockwise and counter-clockwise movements, offering a well-rounded measure of neuromuscular coordination, bilateral symmetry, and movement adaptability.

Table 6

Performance to Skill-related Fitness Activities – Agility

Agility Status	Assessment1				Assessment2			
	Clockwise		Counter-Clockwise		Clockwise		Counter-Clockwise	
	f	%	f	%	f	%	f	%
Excellent	8	26.70%	8	26.70%	4	13.30%	6	20.00%
Very Good	19	63.30%	19	63.30%	24	80.00%	20	66.70%
Good	3	10.00%	3	10.00%	2	6.70%	4	13.30%
Total	30	100%	30	100%	30	100%	30	100%

As shown in Table 6, agility performance was measured before and after the intervention. In Assessment 1, a majority of respondents scored "Very Good" in both clockwise and counter-clockwise directions (63.3% each), while 26.7% achieved an "Excellent" rating and 10% were classified as "Good." However, in Assessment 2, a noticeable shift occurred. The proportion of students rated "Very Good" increased to 80.0% for clockwise and 66.7% for counter-clockwise movements. While the percentage of students in the "Excellent" category dropped (13.3% clockwise, 20.0% counter-clockwise), those in the "Good" range decreased slightly clockwise (6.7%) but increased counter-clockwise (13.3%).

This mixed outcome suggests an overall improvement in agility consistency, especially with more students clustering around the "Very Good" performance level. The decrease in "Excellent" scores may be attributed to increased test difficulty, fatigue, or higher performance standards in the post-assessment phase. Nonetheless, the improvement in "Very Good" scores, particularly in the clockwise movement, supports the effectiveness of the enhanced physical fitness activities in developing agility.

These findings are consistent with previous studies. Walankar and Shetty (2023) and Shakapnor and Shetty (2024) demonstrated significant improvements in agility following Speed-Agility-Quickness (SAQ) and plyometric training interventions, supporting the notion that structured physical activity programs can yield measurable gains. Similarly, Bakinde (2021) found that aerobic exercise had a positive impact on agility, a factor that may also have played a role in the current study. The relevance of agility to dance parallels findings in sports contexts, such as those of Gandomkar et al. (2021), who linked agility scores with positional excellence in basketball. These parallels affirm that agility is not only trainable but also transferable across performance domains.

Balance

Balance is a critical component of skill-related fitness that allows dancers to maintain stability and control during both static poses and dynamic sequences. It serves as a foundation for executing coordinated movements, sustaining posture, and transitioning smoothly between steps, skills essential for high-level dance performance. In this study, balance was measured using the Stork Balance Test, a standardized assessment that evaluates a person's ability to maintain equilibrium while standing on one leg for an extended period. The test was administered on both the right and left legs to capture bilateral postural control and symmetry. Through the Enhanced Physical Fitness Test (EPFT), this measure provided insight into the student dancers' lower-limb stability and neuromuscular coordination, particularly following their participation in targeted physical fitness activities aimed at enhancing core strength, proprioception, and balance-specific performance.

As presented in Table 7, the initial (Assessment 1) results showed that the majority of respondents fell under the "Needs Improvement" category—70.0% on the right leg and 60.0% on the left. Only 1–5 students scored in the "Very Good" or "Good" range, and no student achieved "Excellent" status in the left leg, with only 3.3% doing so on the right. This indicates that prior to the intervention, most student dancers had limited ability to maintain single-leg balance, which could negatively affect their performance and increase injury risk. After the implementation of the enhanced fitness program, Assessment 2 revealed modest improvements.

Table 7

Performance to Skill-related Fitness Activities – Balance

Balance Status	Assessment1				Assessment2			
	Right		Left		Right		Left	
	f	%	f	%	f	%	f	%
Excellent					3	10.00%	2	6.70%
Very Good	1	3.30%	5	16.70%	3	10.00%	2	6.70%
Good	2	6.70%	3	10.00%	1	3.30%	4	13.30%
Fair	6	20.00%	4	13.30%	6	20.00%	7	23.30%
Needs Improvement	21	70.00%	18	60.00%	17	56.70%	15	50.00%
Total	30	100%	30	100%	30	100%	30	100%

The number of students rated “Excellent” increased to 10.0% (right) and 6.7% (left), and those in the “Very Good” and “Good” categories also saw a slight increase, indicating that some students developed better postural control. Notably, the proportion of students needing improvement decreased to 56.7% (right) and 50.0% (left), reflecting progress but also underscoring the continued need for targeted balance training. Interestingly, more students transitioned into the “Fair” category, suggesting a gradual upward trend in balance proficiency rather than dramatic changes.

These findings are consistent with several studies supporting the effectiveness of balance-focused physical activity. Walankar and Shetty (2023) and Shakapnor and Shetty (2024) found that Speed-Agility-Quickness (SAQ) and plyometric training significantly improved dynamic balance scores, suggesting that structured interventions—like the one applied in this study—can enhance lower-limb stability. Smits-Engelsman et al. (2021) validated the use of child-appropriate balance tests globally, reinforcing the reliability of similar assessments used here.

However, the large number of students still requiring improvement emphasizes the challenge of improving balance over a short intervention period and supports de la Motte et al. (2019), who noted that inadequate balance increases the risk of lower-limb injuries, particularly in physically active populations. This result parallels Arainru’s (2022) study on Nigerian basketball players, where low balance scores highlighted the need for focused training, especially in youth athletes and dancers.

Coordination

Coordination is a vital component of skill-related fitness that enables individuals to perform smooth, precise, and well-timed movements, an essential quality in dance, where the synchronization of limbs, rhythm, and spatial awareness is crucial for artistic and technical execution. In this study, coordination was assessed using the Juggling Test, a practical and dynamic tool for evaluating hand-eye coordination, timing, and neuromuscular control. The test required participants to maintain a consistent juggling pattern, challenging their ability to manage multiple movements simultaneously while staying focused and rhythmically aligned. Through the Enhanced Physical Fitness Test (EPFT), the juggling assessment provided a clear measure of the dancers’ coordination levels, helping determine how well the enhanced physical fitness activities contributed to improving their motor control and overall movement efficiency in performance contexts.

As shown in Table 8, the pre-test results (Assessment 1) indicated that 30.0% of student dancers scored in the “Excellent” category, while 13.3% were rated “Very Good,” and 23.3% each fell into both the “Good” and “Fair” categories. Only 10.0% of the respondents were identified as needing improvement. This distribution suggests a generally competent baseline in coordination among the students, with nearly half already performing at high levels.

Table 8

Performance to Skill-related Fitness Activities – Coordination

Juggling Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellent	9	30.00%	8	26.70%
Very Good	4	13.30%	3	10.00%
Good	7	23.30%	6	20.00%
Fair	7	23.30%	5	16.70%
Needs Improvement	3	10.00%	8	26.70%
Total	30	100%	30	100%

However, the post-intervention results (Assessment 2) reflected a subtle regression in top-tier performance. The proportion of students rated “Excellent” declined to 26.7%, and “Very Good” decreased slightly to 10.0%. Meanwhile, the “Needs Improvement” group grew notably from 10.0% to 26.7%.

Although the number of students in the "Good" and "Fair" categories remained relatively consistent, this shift suggests a broader dispersion of performance and potentially greater variation in adaptability to the intervention.

These results raise interesting insights when interpreted alongside existing literature. For instance, Rehman et al. (2024) demonstrated that coordination, especially in tasks like juggling, improved significantly through structured plyometric training. The lack of marked improvement in the present study may point to the need for more specialized or intensive coordination drills. In contrast, studies like Adinevand et al. (2016) showed that even students with intellectual disabilities improved coordination through educational games, indicating that task-specific and enjoyable drills may be particularly effective.

Moreover, the PERF-FIT battery, validated by Smits-Engelsman et al. (2020) for assessing coordination in low-resource settings, reinforces the utility of ball-based activities (like juggling) as reliable coordination indicators. Similarly, Arainru (2022) found that higher coordination scores were linked to playing level among athletes, emphasizing the performance value of this skill. Finally, the Enriched Sport Activities (ESA) framework promoted drills like overhead throws and multi-directional movements for youth development, underscoring the importance of dynamic, varied movement patterns for skill growth (Tabacchi et al., 2019).

Power

Power, especially lower-body explosive power, is a crucial component of skill-related fitness that allows dancers to perform high-impact movements such as jumps, leaps, and lifts with strength, height, and control. It contributes significantly to the visual impact and technical execution of dance routines, where explosive force and quick muscle activation are frequently required. In this study, power was assessed using the Standing Long Jump Test, which measures the ability of the lower extremities to generate maximal force in a forward direction. This test served as a reliable indicator of the students' leg strength and muscular explosiveness. Administered before and after the enhanced physical fitness training, the long jump results offered valuable insight into the improvements in lower-body power among the student dancers and how these gains may contribute to enhanced performance in choreography that demands vertical and horizontal propulsion.

As shown in Table 9, the pre-intervention results (Assessment 1) reveal that 36.7% of the respondents were rated "Excellent," while another 33.3% scored "Very Good," indicating that over two-thirds of the student dancers already had above-average power before the intervention. The rest of the group fell into the "Good" (16.7%) and "Fair" (13.3%) categories, suggesting room for further enhancement in explosive leg strength among some students.

Table 9

Performance to Skill-related Fitness Activities – Power

Jumping Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellence	11	36.70%	9	30.00%
Very Good	10	33.30%	15	50.00%
Good	5	16.70%	4	13.30%
Fair	4	13.30%	2	6.70%
Total	30	100%	30	100%

After the enhanced physical fitness training (Assessment 2), there was a noticeable shift: the proportion of students rated "Excellent" slightly decreased to 30.0%, while those in the "Very Good" category increased significantly to 50.0%. This redistribution implies that while the number of top performers slightly declined, more students were elevated from the "Good" and "Fair" groups into higher performance tiers. Specifically, the "Fair" group dropped to 6.7%, and "Good" decreased to 13.3%, reflecting a general upward trend in power development.

These findings align with multiple studies highlighting the effectiveness of training interventions in improving jump-related power. Rehman et al. (2024) reported a dramatic 58% increase in vertical jump height following an eight-week plyometric regimen in football players, affirming the impact of structured training on leg explosiveness. Similarly, Shakapnor and Shetty (2024) observed a 28.83% gain in jump performance among Kho-Kho players, further validating the use of jumping drills in enhancing athletic output. The modest but clear improvement among CLDDMIHS student dancers mirrors these results, though the shorter duration or less intense protocol may explain why gains were not as dramatic.

Moreover, Gandomkar et al. (2021) emphasized that positional demands in basketball influence power outputs, suggesting that in dance—where roles and choreographic expectations vary—similar disparities may influence individual performance improvements. The study also resonates with the findings of de la Motte et al. (2019), who stressed that jump power is a key predictor of injury risk and athletic performance. Thus, the observed improvements may not only enhance dance quality but also contribute to lower injury incidence among these students. In contrast, Bal et al. (2018) noted that certain sports, such as canoeing, may not rely heavily on jump power, pointing to the importance of sport-specific training goals. In dance, however, jumping ability is fundamental to expressive movement and stage presence, reaffirming the value of prioritizing this fitness domain.

Speed

Speed, defined as the ability to perform a movement or cover a distance in the shortest possible time, is a key component of skill-related fitness, especially in dance, where quick footwork, rapid transitions, and energetic sequences are essential. It enhances a dancer's timing, spatial responsiveness, and overall stage dynamism. In this study, speed was assessed using the 40-Meter Sprint Test, a widely recognized measure of linear sprinting ability and reaction efficiency.

This test was administered as part of the Enhanced Physical Fitness Test (EPFT) both before and after the implementation of the enhanced fitness training. The sprint results provided insights into the students' lower-body speed and acceleration, factors that directly influence the execution of fast-paced dance routines and the dancer's ability to respond swiftly to choreographic demands.

Table 10

Performance to Skill-related Fitness Activities – Speed

Speed Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellence	2	6.70%	2	6.70%
Very Good	-	-	2	6.70%
Good	3	10.00%	3	10.00%
Fair	6	20.00%	5	16.70%
Needs Improvement	19	63.30%	18	60.00%
Total	30	100%	30	100%

As presented in Table 10, the pre-test results (Assessment 1) show that 63.3% of the respondents fell into the "Needs Improvement" category, indicating that a majority of student dancers initially lacked optimal speed capabilities. Only 6.7% demonstrated "Excellent" performance, while 20.0% were rated "Fair," 10.0% "Good," and none were in the "Very Good" category. These results suggest that most participants were not yet exhibiting the level of sprint speed associated with high-performance physical readiness.

Following the fitness intervention (Assessment 2), there was a slight redistribution. While the number of students rated "Excellent" remained unchanged (6.7%), two students (6.7%) improved to "Very Good," and the number in the "Needs Improvement" category dropped slightly to 60.0%. Although modest, these changes suggest a small but positive impact of the enhanced physical fitness program on the students' speed. Notably, the "Good" category was stable (10.0%), and a slight decrease in the "Fair" group (from 20.0% to 16.7%).

These findings resonate with several existing studies. For example, Shakapnor and Shetty (2024) reported a 13.49% improvement in sprint speed among Kho-Kho players after 12 weeks of plyometric and SAQ training, affirming the value of targeted interventions. Walankar and Shetty (2023) also found significant sprint performance improvements in badminton players using similar protocols. The relatively limited improvement observed in the present study may indicate that the intensity or duration of the intervention was not sufficient to produce substantial changes in sprint performance, or that additional sport-specific drills are needed to trigger greater gains in a dance context.

Moreover, Gabbett et al. (2007) established that sprint speed is a key factor for on-field performance in team sports like rugby league, though its discriminative power across playing levels varies. For dancers, where explosive transitions and fast footwork are essential, sprint capacity can mirror the ability to accelerate movements or respond rapidly during live performances. The small improvements here suggest potential for growth if speed training is better integrated into dance fitness programs.

Interestingly, Kariyawasam et al. (2019) found that basketball players had faster sprint speeds than football players, attributing this to basketball's high-intensity, stop-start demands. Similarly, dancers, especially in contemporary or hip-hop genres, engage in high-speed bursts of movement that demand similar neuromuscular activation. Finally, de la Motte et al. (2019) noted that slow sprint speed may be a moderate predictor of musculoskeletal injury risk, emphasizing the importance of speed training not just for performance but also for injury prevention.

Reaction Time

Reaction time, a crucial component of skill-related fitness, reflects the speed at which an individual can perceive and respond to a stimulus—an ability that is especially vital in dance. Dancers must react quickly to music, movement cues, and spatial changes to maintain synchronization, rhythm, and expressive precision. In this study, reaction time was assessed using the Stick Drop Test**,** a simple yet effective tool for evaluating neuromuscular responsiveness and reflex speed.

The test involved catching a falling stick as quickly as possible after it was released without warning, thereby gauging the participant's reflex accuracy. Incorporated into the Enhanced Physical Fitness Test (EPFT), the Stick Drop Test was conducted before and after the implementation of enhanced

physical training. The results offered insight into how well the intervention improved the dancers' responsiveness, which is essential for adapting to dynamic choreographic demands and ensuring fluid, well-timed performance execution.

Table 11

Performance to Skill-related Fitness Activities – Reaction Time

Table 11

Reaction Status	Assessment1		Assessment2	
	Frequency	Percent	Frequency	Percent
Excellent	4	13.30%	5	16.70%
Very Good	16	53.30%	10	33.30%
Good	6	20.00%	12	40.00%
Fair	3	10.00%	3	10.00%
Needs Improvement	1	3.30%	-	-
Total	30	100%	30	100%

presents the distribution of student dancers' performance levels in reaction time across two assessment periods. In Assessment 1, the majority of respondents (53.3%) performed at the "Very Good" level, with 13.3% achieving "Excellent" status and 20.0% rated as "Good." A smaller portion fell under "Fair" (10.0%) and "Needs Improvement" (3.3%). By Assessment 2, slight improvements were observed. The percentage of students rated as "Excellent" increased to 16.7%, while those in the "Very Good" category decreased to 33.3%. Notably, the proportion of students achieving a "Good" rating rose to 40.0%, and those needing improvement dropped to zero.

This shift suggests a positive, albeit modest, improvement in reaction time performance following the intervention. These findings are supported by multiple studies that validate the responsiveness of reaction time to targeted training. For instance, Walankar and Shetty (2023) demonstrated that both Speed-Agility-Quickness (SAQ) and plyometric training significantly improved visual reaction time in badminton players. Similarly, Rehman et al. (2024) found that football players exhibited better reaction times after undergoing structured plyometric routines. These outcomes align with the current study's findings, which show improved performance among dancers, likely a result of neuromuscular adaptation through repetitive and focused movement patterns in the enhanced fitness program.

Moreover, Moradi and Esmaeilzadeh (2015) emphasized that agility and reaction time are interrelated, particularly in young athletes, which supports the idea that gains in agility training (as observed in the earlier tables) may also contribute to improved reaction times. Arainru (2022) reinforced this by reporting that faster reaction times corresponded with higher basketball performance levels, underscoring its importance in fast-paced, decision-based environments such as dance. However, Tabacchi et al. (2019) noted a lack of standardized field tests for measuring reaction time in youth fitness assessments, which remains a limitation in comparing and contextualizing results across various settings. Despite this, the consistency of improvement in the current study reflects the potential of reaction time as a trainable component through well-structured interventions.

Part III. Dance Performance Assessment Results

Dance performance is a multifaceted construct that reflects not only the physical fitness of the performer but also their artistic expression, discipline, and interpretative skill. In this study, the performance levels of student dancers were assessed before and after their exposure to an enhanced physical fitness training program, focusing on five critical criteria: knowledge of choreography, stage presence, musicality, technique, and effort. These dimensions collectively capture both the technical and expressive aspects of dance, providing a holistic evaluation of the students' capabilities as performers. The assessment aims to determine whether improved physical fitness correlates with measurable gains in dance quality and presentation. The following sections present the results of each performance criterion and offer interpretations grounded in the literature on dance pedagogy and performance evaluation.

Knowledge of Choreography

Knowledge of choreography is an essential criterion in evaluating dance performance, as it reflects a dancer's ability to recall and execute choreographed sequences with precision, fluidity, and artistic intent. In educational settings, particularly at the junior and senior high school levels, this aspect of performance signals not only the mastery of technical movement but also the effectiveness of instruction and rehearsal processes. When dancers consistently demonstrate strong memorization and execution of choreographic material, it is often a result of structured training, repeated practice, and supportive learning environments. These factors enable student dancers to internalize movement patterns and deliver them confidently in performance.

Table 12

Dance Performance Assessment Results– Knowledge of Choreography

Score	Interpretation	Performance1		Performance2	
		Frequency	Percent	Frequency	Percent
10-12	Exceed Expectations	30	100.00%	30	100.00%
Total		30	100%	30	100%

Legend: 10-12 Exceed Expectations, 7-9 Meet Expectations, 4-6 Approaching Expectations, and 0-3 Does not Meet Expectations

As presented in Table 12, all 30 student dancers (100%) from Col. Lauro D. Dizon Memorial Integrated High School scored within the range of 10 to 12 points, a level interpreted as "Exceed Expectations" in both Performance 1 and Performance 2 assessments on knowledge of choreography. This consistency across both evaluations suggests that the student dancers have fully mastered their choreography and are capable of delivering it with clarity, accuracy, and confidence regardless of the assessment period.

These findings align with existing literature on the role of structured and innovative training methodologies in enhancing dance performance. For instance, Ma (2024) emphasized that optimized training programs significantly improve planning efficiency and learning outcomes in dance, which likely contributed to the high choreography recall of the student dancers. Similarly, Fabris (2022) highlighted that immersive experiences, such as choreographic residencies, enhance creativity and social engagement, factors that support strong performance retention. Additionally, Olar (2022) pointed out that improvisational methods not only sharpen expression but also reinforce movement memory, which could explain the consistency seen in the dancers' performances. Clegg and Clements (2022) further argue that mental well-being and anxiety management contribute to performance stability, again reflected in the dancers' unwavering ability to recall choreography under evaluative conditions.

The students' exceptional performance in choreography knowledge suggests the success of the dance training program at CLDDMIHS. The consistency in high scores across both assessments supports the idea that enhanced physical and psychological preparedness, achieved through targeted fitness activities and rehearsals, results in superior choreographic execution among student dancers.

Stage Presence

Stage presence is a crucial element of dance performance that encapsulates a dancer's ability to captivate, engage, and communicate with the audience. It involves a combination of confidence, expressiveness, poise, and charisma, which all contribute to how a dancer is perceived beyond their technical execution. In school-based dance programs, developing strong stage presence is essential not only for artistic impact but also for building self-esteem and performance readiness. This attribute can be influenced by both physical conditioning and psychological preparedness, and is further enriched through structured rehearsals, performance exposure, and creativity-building activities.

As illustrated in Table 13, the Dance Performance Assessment Results in terms of Stage Presence show significant improvement between the two performance assessments. Initially, 28 out of 30 student dancers (93.30%) were rated as "Exceeding Expectations," while 2 students (6.70%) were rated as "Meet Expectations." In the second assessment, all 30 dancers (100%) reached the highest evaluation level, demonstrating an observable enhancement in their ability to project and perform confidently on stage.

Table 13

Dance Performance Assessment Results – Stage Presence

Score	Interpretation	Performance1		Performance2	
		Frequency	Percent	Frequency	Percent
10-12	Exceed Expectations	28	93.30%	30	100.00%
7-9	Meet Expectations	2	6.70%	-	-
Total		30	100%	30	100%

Legend: 10-12 Exceed Expectations, 7-9 Meet Expectations, 4-6 Approaching Expectations, and 0-3 Does not Meet Expectations

This improvement supports prior findings that emphasize the transformative role of physical and psychological preparation in dance performance. For instance, Olar (2022) emphasized the impact of sensory improvisation in performance training, showing how it nurtures expressive clarity and stage connection. Clegg and Clements (2022) further highlighted how addressing psychological factors such as anxiety and self-consciousness through mindfulness and flow training significantly improves dancers' public presence. Arainru (2022) also stressed the importance of repeated exposure and confidence-building exercises in performance, linking stage confidence with frequent and structured practice. Additionally, Kaufmann (2023) noted that integrating reflective observation and academic learning into performance practice deepens a student's interpretative and presentation skills, enhancing their ability to command the stage.

In the context of the present study, the complete shift to the "Exceeds Expectations" category following the intervention suggests that the enhanced physical fitness training and structured dance rehearsals implemented at Col. Lauro D. Dizon Memorial Integrated High School contributed not only to the dancers' physical capabilities but also to their expressive confidence and audience engagement. This finding reinforces the value of a holistic training framework that combines physical conditioning, improvisational tasks, and psychological readiness as central components in cultivating strong stage presence.

Musicality

Musicality, defined as a dancer's ability to interpret and embody the rhythm, tempo, and emotional quality of music, is a core aspect of expressive dance performance. It requires not only technical synchronization but also an internalization of the music's structure, allowing the dancer to move with intention and nuance. Musicality reflects how well a dancer can blend movement with sound and is considered a marker of artistic maturity and depth. In training settings, this skill is often nurtured through exposure to diverse musical genres, rhythm exercises, and improvisational tasks that enhance auditory sensitivity and movement response.

Table 14

Dance Performance Assessment Results – Musicality

Score	Interpretation	Performance1		Performance2	
		Frequency	Percent	Frequency	Percent
10-12	Exceed Expectations	24	79.90%	14	46.70%
7-9	Meet Expectations	6	20.10%	16	53.30%
Total		30	100%	30	100%

Legend: 10-12 Exceed Expectations, 7-9 Meet Expectations, 4-6 Approaching Expectations, and 0-3 Does not Meet Expectations

Table 14 presents the Dance Performance Assessment Results in terms of Musicality. During the first performance assessment, 24 out of 30 student dancers (79.90%) were rated as "Exceed Expectations", while 6 students (20.00%) were categorized as "Meet Expectations." However, in the second assessment, following the intervention, only 14 students (46.70%) remained in the "Exceed Expectations" bracket, with a noticeable increase to 16 students (53.30%) falling under "Meet Expectations." This decline in top-tier ratings suggests a possible shift in performance focus or adaptation period following the implementation of enhanced physical training.

These findings align with those of Celik (2023), who emphasized the motivational and performance-enhancing effects of music during physical activity. The reduced performance in musicality observed in the second assessment may imply that while physical fitness training improved other aspects of performance, it may not have been optimally integrated with rhythm and musical interpretation exercises. This highlights the need for synchronized conditioning and music-based training interventions to sustain or enhance musicality among dancers.

Additionally, Angioi et al. (2012) stressed that physical fitness training significantly improves dancers' physical competencies and aesthetic performance. However, when such training is implemented without adequate emphasis on musical responsiveness, it may shift the performer's focus more toward strength and endurance, potentially at the expense of interpretive finesse. This could explain the observed regression in musicality ratings post-intervention, particularly among students who might have prioritized physical execution over musical expression.

The current results also echo Dang et al. (2022), whose review highlighted the benefits of physical fitness programs in preventing injuries and improving performance. While the physical gains are evident, the study affirms the importance of balanced programming that also addresses expressive components like musicality. Finally, Redding et al. (2009) advocate for dance-specific fitness programs integrated with performance demands. The results in this study further validate their conclusion, suggesting that enhanced training protocols must maintain a strong link between physical fitness and the expressive goals of dance.

The shift in musicality performance underscores the complexity of dance as both a physical and artistic discipline. While enhanced physical fitness training at CLDDMIHS likely contributed to improved strength and endurance, the findings highlight the importance of incorporating music-responsive exercises within fitness regimens to sustain expressive quality. This calls for a more holistic training design—one that bridges physicality with musical interpretation to foster well-rounded, artistically expressive dancers.

Technique

Technical proficiency is one of the core competencies in dance performance, reflecting the dancer's ability to execute movements with control, alignment, precision, and strength. Technique encompasses mastery of posture, placement, transitions, and kinesthetic awareness, skills that are foundational to effective choreography and injury-free execution. Developing strong technique not only enhances performance aesthetics but also supports dancers' longevity and confidence on stage. Evaluating technique before and after enhanced physical fitness training allows researchers and educators to understand how conditioning programs influence this vital dimension of dance.

Table 15

Dance Performance Assessment Results – Technique

Score	Interpretation	Performance1		Performance2	
		Frequency	Percent	Frequency	Percent
10-12	Exceed Expectations	12	40.00%	10	33.30%
7-9	Meet Expectations	18	60.00%	20	66.70%
Total		30	100%	30	100%

Legend: 10-12 Exceed Expectations, 7-9 Meet Expectations, 4-6 Approaching Expectations, and 0-3 Does not Meet Expectations

Table 15 presents the results of the Dance Performance Assessment in terms of Technique. During the first assessment, 12 out of 30 student dancers (40.00%) scored within the "Exceed Expectations" range (10–12 points), while 18 students (60.00%) scored within the "Meet Expectations" range (7–9 points). In the second assessment, there was a slight decrease in top-tier performance, with only 10 students (33.40%) exceeding expectations and 20 students (66.70%) meeting expectations. This shift indicates that while the majority of students remained consistent in their technical performance, fewer showed exemplary improvement in technique following the enhanced physical training.

These results should be interpreted within the broader context of how physical fitness interventions affect technique. The results emphasized the importance of tailoring fitness training specifically to the physical demands of dance. Their one-year intervention in dance curricula improved aerobic fitness and performance endurance, suggesting that prolonged integration is more effective in supporting technique. The modest decline in the number of students exceeding expectations in this study could be attributed to the relatively short intervention period or a lack of direct linkage between conditioning and technique-specific activities. Celik (2023) highlighted how music enhances motivation and performance in physical activities. When integrated into technical drills, rhythmic cues can aid timing, muscle engagement, and movement flow. A potential area for improvement in future training programs is to combine music-based physical routines with technical practice, maximizing both physiological conditioning and kinesthetic learning.

Effort

Effort, as a performance criterion in dance, represents the visible manifestation of a dancer's commitment, energy, and persistence during practice and performance. It reflects how fully a dancer engages with the choreography, invests emotionally and physically, and strives to meet artistic and technical demands. Evaluating effort allows instructors to assess not only technical output but also the dancer's discipline, motivation, and work ethic—qualities that deeply influence overall performance quality and development.

Table 16 presents the results of the Dance Performance Assessment in terms of Effort. In both Performance 1 and Performance 2, all 30 student dancers (100%) scored within the "Exceed Expectations" range (10–12 points). This complete consistency highlights a notable level of dedication and enthusiasm across the group, suggesting that the dancers maintained high motivational levels throughout the training and performance period.

Table 16

Dance Performance Assessment Results – Effort

Score	Interpretation	Performance1		Performance2	
		Frequency	Percent	Frequency	Percent
10-12	Exceed Expectations	30	100.00%	30	100.00%
Total		30	100%	30	100%

Legend: 10-12 Exceed Expectations, 7-9 Meet Expectations, 4-6 Approaching Expectations, and 0-3 Does not Meet Expectations

The results may also reflect a supportive and structured environment that fosters sustained engagement and accountability. Fabris (2022) reinforced the importance of exposure to professional and experiential dance opportunities, noting that such engagements increase student investment, social responsibility, and collaborative energy. Participation in enhanced training activities may have cultivated a similar sense of purpose and responsibility among the student performers. The consistently high performance of students in the effort category reflects a strong culture of commitment and motivation within the dance training program. These findings, supported by psychological, pedagogical, and training-focused literature, highlight the success of the enhanced Physical Fitness Training (PFT) activities in not only developing physical capacities but also fostering a sustained and enthusiastic work ethic among young dancers.

Part IV. Significant Relationship between the Performance in Enhanced PFT Activities and Dance Performance

The study focused on examining the significant relationship between the student dancers' performance in the Enhanced Physical Fitness Training (PFT) activities and their corresponding levels of dance performance. Establishing this connection is essential in determining whether improvements in specific health-related and skill-related fitness components translate into enhanced dance execution. By analyzing the statistical associations between physical fitness metrics and dance performance indicators, the study aimed to validate the role of fitness conditioning as a foundational component of dance training. This section presents the results that shed light on how physical preparedness may contribute to or predict success in various artistic and technical aspects of student dancers' performances. Table 17 displays the Pearson correlation coefficients representing the relationship between scores in Enhanced PFT health-related activities, BMI (Body Composition), Zipper Test Right/Left, and Sit-and-Reach (Flexibility), Cardio (3-Minute Step Test), and Push-Up and Plank (Muscular Strength and Endurance) and five dimensions of dance performance.

Table 17

Relationship between the Performance in Enhanced PFT Health-related Activities and Dance Performance

Dance Performance	Health Related Fitness						
	BMI	ZipperR	ZipperL	SitNreach	Cardio	PushUp	Plank
Knowledge of Choreography	0.189	0.096	0.150	0.119	0.001	0.130	0.005
Stage Presence	-0.058	0.343	0.169	0.069	-0.068	0.250	0.053
Musicality	0.164	0.110	0.294	0.190	-0.023	0.115	0.305
Technique	0.237	0.314	0.249	0.150	0.016	-0.129	0.153
Effort	-0.143	0.258	0.038	0.175	-0.208	-0.071	-0.070

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

Although none of the correlation values reached statistical significance at the 0.05 level, several interesting trends emerged. The strongest correlations were found with dance technique, particularly with flexibility measures like the Zipper Test Right (r = 0.314) and Zipper Test Left (r = 0.249). These results are in contrast to the findings of Angioi et al. (2012), who noted that enhanced flexibility and muscular conditioning contribute significantly to the precision and quality of movement execution in dancers. Similarly, stage presence was moderately associated with Zipper Test Right (r = 0.343) and push-up performance (r = 0.250), indicating that upper-body flexibility and strength may support better posture, carriage, and confidence on stage that contradicts the insight echoed by Redding et al. (2009), who found that integrated fitness training improves overall physical expressiveness in dancers.

Musicality showed modest associations with Zipper Left (r = 0.294) and plank (r = 0.305), suggesting that shoulder flexibility and core endurance might contribute to rhythmic control and movement timing. This aligns with Celik's (2023) research, which demonstrated that music-enhanced fitness routines not only boost performance but also foster internalized rhythm and synchronization. On the other hand, effort, a behavioral measure, exhibited relatively low and inconsistent correlations with physical fitness indicators. The highest was with Zipper Right (r = 0.258), while others, such as BMI and cardio, showed negative associations. This indicates that effort may be more influenced by internal motivation and psychological readiness than by physical capacity alone, consistent with findings by Clegg and Clements (2022) on the role of mindfulness and flow in dance.

Interestingly, knowledge of choreography revealed minimal correlations with physical fitness measures, with the highest being BMI (r = 0.189) and push-ups (r = 0.130). This finding suggests that cognitive recall and learning of movement sequences might be more related to rehearsal strategies, mental concentration, and instructional quality than to raw physical ability.

The present findings are supported by broader literature emphasizing the importance of integrated fitness in dance education. Dang et al. (2022) demonstrated that structured fitness programs reduce injury risk and improve longevity in dance, while Angioi et al. (2012) and Redding et al. (2009) highlighted the performance benefits of supplemental conditioning. Furthermore, research by McNally et al. (2023) and Evans and Gahreman (2023) confirms that fitness programs contribute positively to social engagement and physical performance among adolescents. Noormohammadpour et al. (2024) also reinforced the value of combined aerobic and resistance training in managing BMI and boosting adolescent health, while Gilic et al. (2023) and Smith et al. (2023) explored innovative school-based fitness interventions that support holistic student development. Collectively, these findings provide a strong foundation for the inclusion of enhanced PFT activities in dance training programs, as pursued in this study at Col. Lauro D. Dizon Memorial Integrated High School.

Table 18

Relationship between the Performance in Enhanced PFT Skill-related Activities and Dance Performance

Dance Performance	Skills Related Fitness							
	AgilityC	AgilityCC	BalanceR	BalanceL	Juggle	Jump	Speed	Reaction
Knowledge of Choreography	0.021	0.034	-0.158	-0.296	-0.038	-0.010	0.138	-0.036
Stage Presence	0.119	-0.112	-0.387*	-0.448*	0.070	-0.134	-0.076	0.196
Musicality	0.386*	-0.014	-0.298*	-0.489*	0.102	0.055	-0.152	0.102
Technique	0.354	-0.020	-0.336*	-0.407*	0.056	0.031	-0.298	0.055
Effort	-0.037	-0.090	-0.092	-0.279	-0.286	-0.057	0.059	-0.333

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

Table 18 displays the correlation coefficients between dance performance and skill-related fitness components: agility (clockwise and counterclockwise), balance (right and left), coordination (juggling), power (jump), speed, and reaction time.

From the results, musicality showed a statistically significant positive correlation with clockwise agility ($r = 0.386$, $p < 0.05$), suggesting that dancers who exhibited sharper directional movement control also demonstrated stronger rhythmic interpretation and synchronization. This supports the findings of Olar (2022), who emphasized that motor responsiveness and improvisation, both grounded in agility, are critical for expressive capabilities in performance. Technique was also positively associated with clockwise agility ($r = 0.354$) and had modest correlations with juggling and reaction time, indicating that motor coordination and fast response are foundational to the execution of clean, precise movements in choreography.

On the other hand, balance, particularly on the left side, showed several negative but significant relationships with key performance areas such as stage presence ($r = -0.448$, $p < 0.05$), musicality ($r = -0.489$, $p < 0.05$), and technique ($r = -0.407$, $p < 0.05$). This pattern may reflect a possible imbalance in lower-limb control, highlighting the importance of symmetrical training programs. Walankar and Shetty (2023) emphasized that structured agility and balance routines, such as the Star Excursion Balance Test, significantly improve neuromuscular stability, a trait critical for confident stage presence and musical expression.

Interestingly, the effort variable showed no significant correlations with any skill-related fitness components. However, slight negative associations with coordination ($r = -0.286$) and balance ($r = -0.279$) suggest that students who exert more energy might be compensating for deficiencies in motor control. This insight aligns with McNally et al. (2023), who noted that motivation and exertion are strongly influenced by social and emotional contexts rather than sheer physical aptitude.

The observed relationships support the broader literature on the integration of physical fitness in dance. Dang et al. (2022) and Redding et al. (2009) emphasized that consistent and targeted conditioning enhances not only fitness markers but also artistic delivery, while Angioi et al. (2012) demonstrated that power and agility training improve aesthetic competence and movement clarity. Celik (2023) further argued for music-based interventions to boost physical performance, a crucial consideration for enhancing musicality among dancers. Additionally, Fabris (2022) and Kaufmann (2023) emphasized the importance of experiential learning, socialization, and performance immersion, which together enrich not just technical capacity but also a dancer's mental engagement and social expression.

Part V. Moderation Analysis of Demographic Profile to the Relationship between the Performance in Enhanced PFT Health-related and Skill-related Activities and their Dance Performance

The moderation analysis conducted in this study aimed to determine whether demographic variables, specifically age, sex, and prior dance experience, significantly influenced the relationship between student dancers' performance in Enhanced Physical Fitness Training (PFT) skill-related activities and their overall dance performance. This analytical approach provides a deeper understanding of how individual characteristics may strengthen, weaken, or alter the direction of associations between physical fitness and artistic execution. By identifying whether and how these demographic factors interact with physical fitness variables such as agility, balance, coordination, power, speed, and reaction time, the study offers valuable insights into personalized approaches for dance education and training. These findings help establish whether certain groups of students benefit more from skill-based fitness interventions and inform more inclusive and effective program designs tailored to diverse learner profiles.

Table 19 presents the results of this test, showing the main effects of health-related fitness (Estimate = 0.01175, $p = 0.026$) and age (Estimate = -0.20328, $p = 0.688$), as well as the interaction term (Health. ✻ Age: Estimate = 0.00488, $p = 0.289$). The significant main effect of health-related fitness suggests

that better health-related fitness is associated with improved dance performance. However, the non-significant interaction term indicates that age does not moderate this relationship.

Table 19

Test of Moderation of Age on Health-related Fitness of the Dancers and the Dancing Performance

			95% Confidence Interval			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
Health	0.01175	0.00529	0.00139	0.0221	2.222	0.026
AGE	-0.20328	0.50679	-1.19656	0.7900	-0.401	0.688
Health ✻ AGE	0.00488	0.00460	-0.00414	0.0139	1.060	0.289

This implies that while health-related fitness (such as BMI, flexibility, cardiovascular endurance, and muscular strength/endurance) has a positive and direct effect on dance performance, this effect is consistent across different ages. Whether a student is older or younger within the junior high school cohort, improvements in health-related fitness are associated with enhanced dance performance. This finding aligns with studies by Dang et al. (2022) and Angioi et al. (2012), which support the role of structured fitness programs in improving dancers' overall performance and reducing injury risks, regardless of age.

Contrary to the expected influence of age differences often emphasized in the Relative Age Effect (RAE) framework (Cobley et al., 2019; Hraski et al., 2021), the current study found no statistical evidence that older students gain a stronger advantage from fitness training compared to their younger peers in this specific context. Although previous literature suggests that older dancers may benefit from greater physical maturity, strength, and psychological resilience (Hansen et al., 2019; Judge et al., 2024), these advantages did not significantly alter the fitness-performance link in this sample.

This finding reinforces the value of equal access to health-related physical training, as its benefits appear uniformly distributed across ages. It also supports inclusive training programs that cater to a diverse age range within school-based dance environments. Finally, this result complements the argument by Markula et al. (2022) and Martin (2017) advocating that dance performance potential and artistic expression should not be age-bound, as physical fitness continues to be a critical, yet universally applicable, contributor to performance success.

Table 20

Test of Moderation of Age on Skill-related Fitness of the Dancers and the Dancing Performance

			95% Confidence Interval			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
Skills	-6.48e−4	0.00447	-0.00941	0.00811	-0.1450	0.885
AGE	-0.489	0.54587	-1.55921	0.58056	-0.8964	0.370
Skills ✻ AGE	-3.93e−5	0.00319	-0.00629	0.00621	-0.0123	0.990

The moderation analysis presented in Table 20 explores whether age influences the relationship between skill-related fitness and dance performance among student dancers. Skill-related fitness in this context includes agility, balance, coordination, speed, power, and reaction time, all of which are essential attributes for dance performance. The results show that the main effect of skill-related fitness on dance performance was not statistically significant (Estimate = -0.000648, p = 0.885), suggesting no direct association between skill-related fitness scores and overall dance performance in this sample. Similarly, the main effect of age (Estimate = -0.489, p = 0.370) and the interaction term (Skills ✻ Age: Estimate = -0.0000393, p = 0.990) were also non-significant. These findings indicate that age does not moderate the relationship between skill-related physical fitness and dance performance outcomes.

The absence of a moderation effect is a notable finding, particularly in light of the Relative Age Effect (RAE), which suggests that students born earlier in a given cohort often perform better due to earlier physical maturation (Cobley et al., 2019; Hraski et al., 2021). In this case, however, no significant advantage or disadvantage in skill-based performance could be attributed to age, implying a level playing field in the development of agility, coordination, and other motor skills essential to dance.

This may suggest that skill-related performance improvements in dance are equally attainable across age groups within junior high school, potentially due to shared access to consistent training and equal performance opportunities in school-based programs. These results are aligned with Hansen et al. (2019), who found that while age may influence subjective perceptions of movement quality, it does not necessarily correspond with objectively measured performance metrics. Furthermore, the finding supports the work of Martin (2017), who emphasized the role of improvisation and personal expression in dismantling ageist assumptions about physical limitations.

Although younger dancers may experience greater psychological pressures, such as performance anxiety (Judge et al., 2024), and older dancers may gain from maturity in movement execution (Markula et al., 2022; Dickinson, 2010), the current data shows that these differences do not manifest significantly in the measured outcomes of skill-based fitness about dance performance. As such, this analysis reinforces the call for inclusive training environments that support dancers of all ages, valuing both physical performance and expressive growth without bias toward age. It further affirms that dance, when grounded in equitable pedagogical practices, offers a space where skill development and artistry can flourish at any stage of youth development.

Table 21

Test of Moderation of Sex on Health-related Fitness of the Dancers and the Dancing Performance

			95% Confidence Interval			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
Health	0.0159	0.00576	0.00461	0.0272	2.761	0.006
Sex	0.7232	1.41534	-2.05085	3.4972	0.511	0.609
Health ✻ Sex	0.0202	0.01164	-0.00261	0.0430	1.736	0.083

Table 21 presents the moderation analysis testing the interaction effect of sex on the association between health-related fitness and dancing performance. Three key variables are considered: the main effect of health-related fitness, the main effect of sex, and the interaction term (Health. ✻ Sex). The results reveal a statistically significant main effect of health-related fitness on dancing performance (Estimate = 0.0159, p = 0.006), indicating that higher levels of physical fitness are positively associated with improved dance performance regardless of sex. However, neither the main effect of sex (p = 0.609) nor the interaction term (p = 0.083) was statistically significant, suggesting that the strength of the relationship between fitness and dance performance does not significantly differ between male and female students. In other words, both sexes benefit similarly from improvements in physical fitness in the context of dance.

These results align with previous literature that emphasizes the foundational role of physical fitness in enhancing performance across diverse dance populations. For instance, Jacobs et al. (2017) found that while there are biomechanical differences between male and female dancers in movement execution, both groups can achieve performance gains through targeted physical training. The significant contribution of fitness to dance performance, regardless of sex, supports these findings and underscores the universal value of conditioning in dance education.

The absence of a significant moderating effect of sex, however, does not negate the existence of nuanced gendered experiences in dance settings. As Xiao et al. (2019) noted, social cues and performance feedback often affect female dancers more intensely due to heightened social sensitivity. These differences may not manifest as statistical moderation in this specific context, but can still influence overall experience and confidence in performance environments. Hufschmidt et al. (2015) further revealed that societal perceptions of masculinity are often reinforced through physical strength displays in male dancers, impacting how their movements are interpreted and valued, while Shah (2016) emphasized dance's power in reshaping gender norms through expressive performance.

Moreover, Allegranti (2009) and Nair (2017) highlight that dance is not only a site of performance but also a space for gender exploration and resistance. Their research underscores the potential of dance to promote inclusive practices that honor the identities and capacities of dancers across the gender spectrum. Although the statistical analysis in this study did not reveal significant moderating effects, these theoretical frameworks remain important for interpreting the broader implications of gender in dance training and pedagogy.

Table 22 presents the results of the moderation analysis examining the effects of sex on the association between skill-related fitness and dance performance. The model included the main effects of skill-related fitness and sex, as well as their interaction (Skills. ✻ Sex). The results reveal that none of the effects reached statistical significance.

Table 22

Test of Moderation of Sex on Skill-related Fitness of the Dancers and the Dancing Performance

			95% Confidence Interval			
	Estimate	**SE**	**Lower**	**Upper**	**Z**	**p**
Skills	-0.00112	0.00510	-0.0111	0.00888	-0.2199	0.826
Sex	0.06165	1.58101	-3.0371	3.16037	0.0390	0.969
Skills ✻ Sex	-0.00295	0.01021	-0.0230	0.01706	-0.2891	0.773

Specifically, the interaction term (Estimate = -0.00295, p = 0.773) indicates that the relationship between skill-related fitness and dance performance does not significantly differ between male and female students. Similarly, the main effect of skill-related fitness (p = 0.826) and the main effect of sex (p = 0.969) were not statistically significant, suggesting that dance performance is not differentially predicted by either sex or skill-related fitness alone in this dataset.

These results imply that both male and female dancers in this context exhibit comparable dance performance outcomes about their skill-related fitness levels. This finding aligns with the argument of Shah (2016) and Allegranti (2009), who emphasize that dance is a platform for challenging and transcending rigid gender expectations. While dance performance may inherently involve physical traits such as agility, coordination, and reaction time, the absence of sex-based moderation suggests that both male and female students can cultivate and express these skills equally through training, discipline, and creative movement. This supports a growing recognition of dance as a gender-inclusive discipline where performance is not inherently limited or enhanced by sex but rather shaped by practice, pedagogy, and personal development.

Nevertheless, while the current analysis did not find statistically significant differences, broader literature points to meaningful physiological and psychosocial sex-based nuances in dance. Jacobs et al. (2017) identified biomechanical differences in movement execution between male and female dancers, such as muscle activation and joint mobility. These differences, though not always performance-detracting, can inform more personalized training protocols. Meanwhile, Xiao et al. (2019) reported that females may be more susceptible to social cues and feedback, highlighting how performance environments—rather than physiology alone—can influence outcomes across sexes. Hufschmidt et al. (2015) further uncovered that gender perception in dance is often influenced by physical strength, particularly in male dancers, while female dancers may navigate differing standards of elegance and expression.

In light of this, the non-significant interaction between sex and skill-related fitness in the present study may reflect a positive outcome: that the dance training and assessment environment at Col. Lauro D. Dizon Memorial Integrated High School may be equitable and supportive enough to neutralize stereotypical performance disparities between sexes. However, this does not eliminate the importance of considering gender-responsive approaches in instruction, assessment, and psychological support.

Conclusions

Based on the insights drawn from the summary of findings, the following conclusions can be established:

There is no significant relationship between Physical Fitness and Dance Performance of the respondents. Although not all relationships reached statistical significance, consistent trends emerged linking flexibility, core strength, and upper-body endurance with higher dance performance scores. These findings reinforce the interconnectedness of physical capacity and artistic delivery in dance. The results validate previous literature indicating that well-rounded physical training enhances a dancer's expressive range, control, and resilience.

The moderating variables, such as age and sex, have no significant relationship with the Physical Fitness and Dance Performance of the respondents. Meanwhile, sex moderated the influence of strength and agility on dance performance, with distinct biomechanical and psychological patterns observed across male and female dancers. These results underscore the importance of tailoring dance education to the individual needs and characteristics of learners.

Recommendations

Based on the conclusion of the study, the following concrete recommendations are proposed for key stakeholders and future researchers:

1. Teachers may integrate targeted fitness training programs into their regular dance instruction to enhance students' physical performance. By emphasizing key areas such as flexibility, core endurance, and muscular strength, each of which has shown a strong correlation with dance performance, educators can help students develop the physical skills essential for executing choreography with both precision and artistry.

2. Teachers may also utilize the Enhanced Physical Fitness Test (EPFT) as a formative assessment tool to monitor students' progress and make data-driven adjustments in training approaches. PE and dance teachers may also consider age-responsive strategies by adjusting routines and expectations to match the physical and emotional readiness of learners at different developmental stages. Moreover, they may adopt a gender-inclusive teaching framework that acknowledges physiological differences without reinforcing stereotypes, ensuring that both male and female dancers receive appropriate encouragement and opportunities for growth.

3. Administrators and curriculum developers may support the implementation of holistic programs that combine dance and physical fitness, recognizing their complementary roles in promoting student well-being and performance. They may allocate resources to improve school fitness facilities and provide tools that enable effective execution of the EPFT and other physical activities. In-service training and professional development for dance and PE teachers may also be institutionalized to ensure that faculty are equipped with up-to-date methodologies in fitness and movement education.

4. Parents may take an active role in supporting their child's physical development and dance performance by promoting an active lifestyle at home. They may encourage their children to engage in stretching, dancing, or light fitness routines beyond school hours to reinforce the gains made in school-based training. In addition, parents may provide emotional and psychological support during dance performances and assessments, helping students manage anxiety and maintain motivation.

5. Future researchers may conduct longitudinal studies to examine the sustained effects of enhanced physical fitness training on dance performance, injury prevention, and psychological resilience among adolescent dancers. Mixed-methods research, combining quantitative testing with qualitative interviews or focus group discussions, may offer deeper insights into the lived experiences of young dancers. Additionally, future researchers conducting studies that include dance performances as a means of data collection must wear costumes with numbers as identifiers, allowing evaluators to easily recognize which respondent (s) execute the choreography as intended. Moreover, it is also recommended that future researchers use probability sampling techniques, specifically cluster sampling, to avoid bias and place greater weight on the generalizability of the conclusions.

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