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The Impact of Differentiated Instruction on the Physical Activity Performance of Diverse Learners in Physical Education at Uddiawan National Agro-Industrial School

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A B S T R A C T
This study examined the impact of differentiated instruction on the physical activity performance of diverse learners in Physical Education at Uddiawan National Agro-Industrial School. Using a quantitative-correlational design, data were collected from 50 randomly selected students through a validated survey questionnaire. Descriptive statistics and Pearson correlation were employed to analyze the data. Findings revealed that differentiated instruction was highly evident (M = 3.31), while students demonstrated high physical activity performance (M = 3.31). Moreover, a significant positive relationship was found between differentiated instruction and physical activity performance (r = 0.68, p = 0.001), indicating that adaptive instructional strategies enhance learners' participation, skill performance, and physical fitness. The study concludes that differentiated instruction is an effective approach for improving Physical Education outcomes and fostering inclusive learning environments.

INTRODUCTION

The increasing diversity of learners in Physical Education (PE) has emphasized the need for differentiated instruction, a learner-centered approach that adapts teaching strategies to students' varying abilities, interests, and learning needs. Research indicates that differentiated instruction improves student engagement, motivation, physical fitness, and overall performance by addressing individual differences, making it an effective strategy for promoting inclusive learning environments (Goyibova et al., 2025; Wen & Cai, 2024; Akbaruddin et al., 2025).

Despite these benefits, the implementation of differentiated instruction in PE remains challenging. Teachers often encounter difficulties in designing inclusive activities, managing diverse skill levels, and conducting appropriate assessments due to limited resources, large class sizes, and insufficient professional training. Consequently, many students experience unequal participation and reduced physical activity performance, particularly those with varying physical abilities or special learning needs (Balay-as & Bandoc, 2024; Fadare et al., 2024).

Moreover, traditional one-size-fits-all teaching approaches continue to dominate PE instruction, limiting opportunities for diverse learners to participate meaningfully. Differentiated instruction addresses these concerns by allowing teachers to modify instructional content, learning processes, and assessment methods according to students' needs. Studies have shown that these strategies enhance engagement, physical fitness, and learning outcomes while fostering more inclusive and supportive classroom environments (Ramilo et al., 2025; Tianio & De Castro, 2024).

In response to these concerns, this study investigates the impact of differentiated instruction on the physical activity performance of diverse learners in Physical Education at Uddiawan National Agro-Industrial School. The findings are expected to provide evidence that can guide teachers in strengthening instructional practices and developing more inclusive and effective Physical Education programs.

LITERATURE REVIEW

Related Literature

Differentiated instruction is widely recognized as an effective learner-centered approach that addresses students' diverse readiness, interests, and abilities. It enables teachers to modify content, process, and learning outcomes, thereby promoting inclusivity, engagement, and effective learning (Goyibova et al., 2025; Wen & Cai, 2024). In Physical Education (PE), differentiated instruction has been shown to improve students' physical fitness, motivation, participation, and active lifestyles by aligning learning activities with individual capabilities (Akbaruddin et al., 2024; Abadi et al., 2024).

Despite these benefits, implementing differentiated instruction in PE remains challenging. Teachers often experience difficulties in assessment, classroom management, and instructional planning, particularly in diverse learning environments with limited resources (Balay-as & Bandoc, 2024; Culajara, 2023). Nevertheless, differentiated instruction promotes inclusive

education by adapting activities for learners with varying physical conditions and special needs, ensuring equitable participation (Fadare et al., 2024; Lat, 2025). Recent literature also demonstrates the growing importance of differentiated instruction as a learning management strategy in Physical Education (Blegur & Hardiansyah, 2024; Prabawanata et al., 2025).

Physical activity performance reflects students' participation, skill development, and physical fitness. Studies have shown that positive attitudes toward PE, student engagement, and differentiated instructional strategies significantly improve learners' physical performance and academic outcomes (Cruz, 2022; Sahagun, 2025; Akbaruddin et al., 2025; Ramilo et al., 2025). Furthermore, innovative teaching methods, structured activity programs, and consideration of individual factors such as body composition and physical literacy contribute to enhanced physical activity performance (Tianio & De Castro, 2024; Rayon, 2025; Nagovitsyn et al., 2021; Sumaria & Guillermo, 2026). Overall, the literature supports differentiated instruction as an essential strategy for improving learning experiences and physical performance in PE (Lopez et al., 2021; Bunga et al., 2025).

Related Studies

Previous studies consistently demonstrate the effectiveness of differentiated instruction in Physical Education. Research reported that differentiated learning enhances students' engagement, motivation, physical fitness, participation, and academic performance by providing instruction tailored to learners' abilities and needs (Abadi et al., 2024; Akbaruddin et al., 2024, 2025; Ramilo et al., 2025). Other studies also emphasized that innovative and structured instructional strategies improve student engagement, physical fitness, and overall learning outcomes in PE (Tianio & De Castro, 2024; Rayon, 2025; Golosino, 2026).

However, several studies identified challenges in implementing differentiated instruction, including assessment difficulties, classroom management, and limited instructional resources (Balay-as & Bandoc, 2024; Culajara, 2023). Research also highlighted the importance of adapting instruction for learners with special needs and varying physical conditions to promote inclusive education (Fadare et al., 2024; Lat, 2025). Additional studies emphasized that learner characteristics such as physical literacy, body composition, and engagement significantly influence physical activity performance (Nagovitsyn et al., 2021; Sumaria & Guillermo, 2026; Cruz, 2022; Sahagun, 2025). Collectively, these findings support differentiated instruction as a vital approach for improving teaching effectiveness and learner outcomes in Physical Education.

METHODOLOGY

This study employed a quantitative-correlational research design to examine the relationship between differentiated instruction and the physical activity performance of diverse learners in Physical Education. The study was conducted at Uddiawan National Agro-Industrial School in Solano, Nueva Vizcaya, involving 50 randomly selected junior high school students enrolled in

Physical Education classes. A simple random sampling technique was utilized to provide each student with an equal opportunity for selection and to minimize sampling bias. Data were collected using a validated structured questionnaire consisting of three sections: respondents' profile, differentiated instruction practices (content, process, and product differentiation), and physical activity performance (participation, skill performance, and physical fitness). Responses were measured using a 4-point Likert scale, and the instrument underwent expert validation to ensure its reliability and content validity.

Prior to data collection, the researcher secured approval from the appropriate school authorities and obtained informed consent from the participants. Ethical principles, including voluntary participation, confidentiality, anonymity, and the exclusive use of data for academic purposes, were strictly observed throughout the study. The collected data were analyzed using frequency count and percentage to describe the respondents' demographic profile, while mean and standard deviation were used to determine the levels of differentiated instruction and physical activity performance. Furthermore, the Pearson Product-Moment Correlation Coefficient (Pearson r) was employed to determine the significant relationship between differentiated instruction practices and students' physical activity performance, with statistical significance tested at the 0.05 alpha level.

RESULTS

Profile of the Respondents

Table 1. Profile of the Respondents in terms of Age

Age	Frequency	Percentage
12–13	12	24%
14–15	25	50%
16–17	13	26%
Total	**50**	**100%**

Most respondents were 14–15 years old, followed by those aged 16–17 and 12–13, indicating that the participants were primarily in the middle adolescent stage of development. This age diversity reflects differences in physical maturity, learning readiness, and motor skills, highlighting the need for differentiated instruction in Physical Education. The findings suggest that teachers should implement age-appropriate, flexible, and inclusive teaching strategies to accommodate varying developmental needs, enhance participation, and maximize students' physical activity performance.

Table 2. Profile of the Respondents in terms of Sex

Sex	Frequency	Percentage
Male	27	54%
Female	23	46%
Total	**50**	**100%**

The respondents consisted of a nearly equal distribution of male and female students, with a slightly higher proportion of males, ensuring balanced representation across sexes. This balance enhances the reliability of the findings and highlights the importance of gender-responsive differentiated instruction in Physical Education. The results suggest that teachers should adopt inclusive and flexible teaching strategies that accommodate differences in physical abilities, interests, and confidence levels, providing equal opportunities for all learners to participate and achieve optimal performance.

Table 3. Profile of the Respondents in terms of Grade Level

Grade Level	Frequency	Percentage
Grade 7	18	36%
Grade 8	17	34%
Grade 9	15	30%
Total	**50**	**100%**

The respondents represented different junior high school grade levels, with Grade 7 having the highest number, followed by Grade 8 and Grade 9. This distribution reflects varying levels of physical maturity, learning experience, and familiarity with Physical Education, emphasizing the need for differentiated and scaffolded instruction. The findings suggest that teachers should implement adaptive and flexible teaching strategies that address learners' diverse competencies, ensuring equitable participation and improved physical activity performance across all grade levels.

Table 4. Profile of the Respondents in terms of Body Mass Index (BMI)

BMI Category	Frequency	Percentage
Underweight	10	20%
Normal	28	56%
Overweight	8	16%
Obese	4	8%
Total	**50**	**100%**

The BMI profile indicates that most respondents have a normal weight, while smaller groups are classified as underweight, overweight, or obese, reflecting variations in students' physical health and fitness levels. These differences may influence endurance, strength, flexibility, and overall physical performance, highlighting the need for differentiated instruction in Physical Education. The findings suggest that teachers should adapt activities based on students' physical conditions to promote safe, inclusive, and equitable participation while encouraging healthy lifestyle habits and improved physical activity performance.

Level of Differentiated Instruction Practices in Physical Education

Table 5. Mean and Interpretation on the Level of Differentiated Instruction practices in Physical Education as Perceived by the Students in terms of Content Differentiation

Indicators	Mean	Interpretation
1. The teacher provides varied learning materials suited to students' abilities.	3.45	Highly Evident
2. The teacher adjusts lesson content based on students' readiness level.	3.38	Highly Evident
3. The teacher uses different examples to explain concepts in PE.	3.50	Highly Evident
4. The teacher simplifies or enriches content depending on student needs.	3.42	Highly Evident
5. The teacher connects lessons to students' interests and experiences.	3.47	Highly Evident
Overall Mean	**3.44**	**Highly Evident**

The findings indicate that content differentiation in Physical Education is highly evident, demonstrating that teachers effectively adapt instructional materials, examples, and learning activities to students' readiness, abilities, and interests. These adaptive strategies make lessons more relevant, engaging, and accessible, thereby enhancing students' motivation, participation, and understanding. Overall, the results highlight that content differentiation is a key component of inclusive Physical Education, promoting positive attitudes toward physical activity and improved learning outcomes.

Table 6. Mean and Interpretation on the Level of Differentiated Instruction practices in Physical Education as Perceived by the Students in terms of Process Differentiation

Indicators	Mean	Interpretation
1. The teacher uses varied teaching strategies during PE classes.	3.30	Highly Evident
2. The teacher allows students to work in groups or individually.	3.25	Highly Evident
3. The teacher provides different activities based on skill level.	3.35	Highly Evident
4. The teacher gives step-by-step guidance when needed.	3.28	Highly Evident
5. The teacher adjusts the pace of instruction.	3.32	Highly Evident

Overall Mean	**3.30**	**Highly Evident**

The findings show that process differentiation in Physical Education is highly evident, indicating that teachers effectively use varied instructional strategies, including group and individual activities, guided instruction, and flexible pacing, to accommodate students' diverse learning needs. These adaptive approaches promote active participation, build confidence and competence, reduce learning barriers, and enhance collaborative learning. Overall, the results emphasize that process differentiation is essential for creating an inclusive learning environment and improving students' engagement and learning experiences in Physical Education.

Table 7. Mean and Interpretation on the Level of Differentiated Instruction practices in Physical Education as Perceived by the Students in terms of Product Differentiation

Indicators	Mean	Interpretation
1. The teacher allows different ways to demonstrate skills.	3.20	Evident
2. The teacher provides options for performance tasks.	3.15	Evident
3. The teacher evaluates students based on individual ability.	3.25	Highly Evident
4. The teacher uses varied assessment methods.	3.18	Evident
5. The teacher gives flexible performance expectations.	3.22	Highly Evident
Overall Mean	**3.20**	**Evident**

The findings indicate that product differentiation is evident in Physical Education, showing that teachers provide varied performance tasks and flexible assessment methods that allow students to demonstrate their skills according to their abilities. Although this aspect is less evident than content and process differentiation, it promotes inclusivity, learner engagement, and recognition of individual strengths. The results suggest that further strengthening product differentiation can lead to more equitable assessment practices, greater student confidence, and improved learning outcomes in Physical Education.

Table 8. Summary on the Level of Differentiated Instruction practices in Physical Education as Perceived by the Students

Indicators	Mean	Interpretation
Content Differentiation	3.44	Highly Evident
Process Differentiation	3.30	Highly Evident
Product Differentiation	3.20	Evident
Grand Mean	**3.31**	**Highly Evident**

The findings reveal that the overall implementation of differentiated instruction in Physical Education is highly evident, indicating that teachers consistently adapt content, process, and product to address learners' diverse needs. Content differentiation received the highest rating, followed by process differentiation, while product differentiation, although evident, requires further enhancement, particularly in assessment practices. Overall, the results demonstrate that differentiated instruction fosters an inclusive, learner-centered environment that enhances student engagement, motivation, and performance, while highlighting the need for continuous improvement in instructional assessment.

Level of Physical Activity Performance of the Learners

Table 9. Mean and Interpretation on the Level of Physical Activity Performance of the Learners in terms of Participation

Indicators	Mean	Interpretation
1. I actively participate in PE activities.	3.40	High
2. I complete assigned physical tasks.	3.35	High
3. I show enthusiasm during activities.	3.45	High
4. I cooperate with classmates.	3.38	High
5. I attend PE classes regularly.	3.42	High
Overall Mean	**3.40**	**High**

The findings indicate that students demonstrate a high level of participation in Physical Education, characterized by active engagement, regular attendance, enthusiasm, and cooperation during class activities. This suggests that learners are motivated to participate and benefit from an inclusive learning environment, where differentiated instruction helps make activities accessible to students with varying abilities. Overall, the results highlight that engaging and adaptive teaching strategies effectively promote student participation, collaboration, and positive learning experiences in Physical Education.

Table 10. Mean and Interpretation on the Level of Physical Activity Performance of the Learners in terms of Skill Performance

Indicators	Mean	Interpretation
1. I perform physical skills correctly.	3.28	High
2. I improve my performance over time.	3.30	High
3. I follow instructions accurately.	3.32	High
4. I can demonstrate learned skills.	3.29	High
5. I apply techniques during activities.	3.31	High

Overall Mean	**3.30**	**High**

The findings indicate that students exhibit a high level of skill performance in Physical Education, demonstrating their ability to perform physical tasks, follow instructions, and apply learned techniques effectively. The results suggest that differentiated instruction, combined with continuous practice, guided instruction, and feedback, enhances learners' motor skills, coordination, and physical competence. Overall, the high level of skill performance reflects the effectiveness of adaptive teaching strategies in promoting meaningful learning and improving students' physical abilities

Table 11. Mean and Interpretation on the Level of Physical Activity Performance of the Learners in terms of Physical Fitness Level

Indicators	Mean	Interpretation
1. I can perform endurance activities well.	3.22	High
2. I maintain physical strength during tasks.	3.18	Moderate
3. I am flexible in performing exercises.	3.25	High
4. I complete fitness tests successfully.	3.20	High
5. I maintain a healthy physical condition.	3.24	High
Overall Mean	**3.22**	**High**

The findings reveal that learners have a generally high level of physical fitness, demonstrating satisfactory endurance, strength, flexibility, and overall physical condition, although some students show limitations in specific fitness components. This highlights the need for differentiated instruction to address individual fitness needs and support learners' progress at their own pace. Overall, the results indicate that regular participation in Physical Education and well-structured instructional activities effectively promote students' physical fitness, health, and overall well-being.

Table 12. Summary on the Level of Physical Activity Performance of the Learners

Indicators	Mean	Interpretation
Participation	3.40	High
Skill Performance	3.30	High
Physical Fitness	3.22	High
Grand Mean	**3.31**	**High**

The findings indicate that learners demonstrate a high level of physical activity performance in terms of participation, skill performance, and physical fitness, with participation receiving the highest rating. This suggests that

students are actively engaged and perform physical tasks effectively, although physical fitness still requires continuous improvement. Overall, the results imply that engaging and differentiated Physical Education instruction effectively promotes student participation, skill development, and overall physical activity performance while supporting balanced learner growth.

Significant Relationship

Table 13. Significant Relationship between Differentiated Instruction Practices and the Physical Activity Performance of the Learners

Indicators	r-value	p-value	Interpretation
Content DI vs Participation	0.65	0.002	Significant
Process DI vs Skill Performance	0.68	0.001	Significant
Product DI vs Fitness Level	0.60	0.003	Significant
Overall DI vs Overall Performance	0.68	0.001	Significant

The findings reveal a significant positive relationship between differentiated instruction and students' physical activity performance, indicating that increased use of adaptive teaching strategies is associated with improved participation, skill performance, and physical fitness. The statistically significant correlation led to the rejection of the null hypothesis, confirming that differentiated instruction is an effective approach in enhancing Physical Education outcomes. Overall, the results emphasize the importance of inclusive and flexible instructional practices in promoting student engagement, physical development, and success in diverse learning environments.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the following conclusions are drawn:

1. The respondents are diverse in age, sex, grade level, and BMI, indicating varied learner characteristics that require adaptive instruction.
2. Differentiated instruction in Physical Education is highly evident, particularly in content and process differentiation, while product differentiation needs further strengthening.
3. Learners demonstrate high physical activity performance in terms of participation, skill performance, and physical fitness level.
4. There is a significant positive relationship between differentiated instruction practices and physical activity performance, implying that better instructional differentiation leads to improved learner outcomes in Physical Education.
5. Therefore, differentiated instruction is an effective teaching approach in enhancing the physical activity performance of diverse learners.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are offered:

Teachers are encouraged to further strengthen the implementation of differentiated instruction, particularly in product differentiation, by providing more varied and flexible assessment tasks that allow learners to demonstrate skills in multiple ways.

School heads should support teachers through continuous professional development programs and training workshops focused on differentiated instruction strategies to improve teaching effectiveness in Physical Education.

Learners should be encouraged to actively participate in Physical Education activities and develop awareness of their physical fitness levels to further enhance their performance and engagement.

Educational planners may consider integrating stronger differentiated instruction frameworks into the Physical Education curriculum to ensure inclusivity and responsiveness to learner diversity.

Further studies may be conducted using larger samples or different variables such as learning motivation, academic performance, or socio-economic status to deepen understanding of differentiated instruction in Physical Education.

FURTHER STUDY

Future research could explore the impact of differentiated instruction on the physical activity performance of diverse learners across different grade levels, school settings, and types of physical education programs. Further studies may examine specific differentiation strategies, such as adapting activities based on students' abilities, interests, readiness levels, and learning preferences. Researchers could also investigate other factors that may influence physical activity performance, including student motivation, teacher competence, availability of facilities and equipment, peer interaction, and inclusive learning environments. Longitudinal and mixed-method studies are recommended to provide deeper insights into the long-term effectiveness and practical implementation of differentiated instruction in physical education.

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