



SPECTRA (STIMULATING PHYSICAL EDUCATION THROUGH CREATIVE TEACHING, RHYTHMS, AND ARTS): AS SUPPLEMENTAL MATERIAL IN TEACHING PHYSICAL EDUCATION ON STUDENTS' ENGAGEMENT AND PERFORMANCE

Kristine Telesforo Bacinillo

Laguna State Polytechnic University Sta. Cruz Laguna 4009 Philippines

ABSTRACT

The study examined the effectiveness of SPECTRA (Stimulating Physical Education through Creative Teaching, Rhythms, and Arts) as supplemental material in Physical Education. Its primary objectives were to assess the level of the components and characteristics of SPECTRA. Additionally, the research aimed to gauge the level of student engagement and performance of students. Lastly, the study aimed to determine the significant effect of using SPECTRA as a supplemental material on both student engagement and performance in Physical Education.

A descriptive method was employed with one hundred twenty-three (123) Grade 9 learners of Liliw National High School in the school year 2023-2024. Research instruments included validated modules and a survey-questionnaire. The statistical tools used were mean, standard deviation and regression analysis. Based on this process, the researcher identified the following findings.

The results indicated that respondents rated the level of the component of SPECTRA in terms of introduction, development, engagement, and assimilation as "very high." Additionally, the characteristics of SPECTRA, such as accuracy, organization, and design, were also rated "very high" by the respondents. Furthermore, student engagement, including enthusiasm in class, completion of activities, and interaction with classmates, was rated as "very high". In terms of student performance, written test scores improved from formative to summative assessments, with students moving from Fair to Outstanding categories, highlighting SPECTRA's positive effect on student achievement. For practical tests, students received "advanced" ratings in execution and technique, performance presence, and dance etiquette for both Cha-cha and Waltz, while their creativity and style were rated as "proficient."

The study revealed that the majority of components and characteristics of SPECTRA did not significantly affect student engagement except on introduction and design respectively. Additionally, only engagement and design significantly affected student performance in written tests, while most components and characteristics of SPECTRA did not show a positive effect. Moreover, none of the components or characteristics of SPECTRA significantly affect student performance in practical tests. Based on these findings, it was concluded that SPECTRA has no significant effect on student engagement and performance in Physical Education. Therefore, both hypotheses were accepted.

Recommendations emphasize prioritizing structured introductions and optimizing the design of instructional materials to enhance student engagement and performance. Physical Education teachers should receive support and training in innovative instructional materials, while school administrators should advocate for curriculum integration of module-based learning in P.E. Other researchers are encouraged to explore and validate similar approaches in diverse educational settings to optimize dance education outcomes.

KEYWORDS: SPECTRA; supplemental material; Physical Education

1. INTRODUCTION

As education continuously improves, innovative methodologies continually emerge to enrich learning experiences and foster student engagement. Among these innovations stands SPECTRA (Stimulating Physical Education through Creative Teaching, Rhythms, and Arts), a supplemental material aimed at redefining the teaching of social dances for Grade 9 learners. By integrating creative teaching strategies and artistic elements, SPECTRA seeks to revolutionize how students engage with physical education, particularly in the realm of social dances.

Central to this investigation was the assessment of how SPECTRA affected student engagement and performance in social dances. Recognizing the important role of engagement in

effective learning, this study measured student enthusiasm, completion of activities, and interaction with classmates, three key indicators reflecting the student engagement. Moreover, performance, the cornerstone of educational attainment, is meticulously evaluated in two dimensions: knowledge and skills.

This study set out to explore the effectiveness of SPECTRA through the lens of specialized physical education teachers. The research endeavored to assess the components and characteristics of SPECTRA, a teacher-made supplemental material in teaching physical education. This supplemental material, crafted to encompass crucial phases of lesson such as introduction, development, engagement, and assimilation are



subjected to analysis, focusing on accuracy, organization, and design.

1.1 Statement of the Problem

Specifically, the study aimed to provide answers to the following questions:

1. What is the level of the component of SPECTRA as supplemental material in terms of :
 - 1.1 introduction;
 - 1.2 development;
 - 1.3 engagement; and
 - 1.4 assimilation?
2. What is the level of the characteristic of SPECTRA as supplemental material in terms of :
 - 2.1 accuracy;
 - 2.2 organization; and
 - 2.3 design?
3. What is the level of student engagement in terms of:
 - 3.1. enthusiasm in class;
 - 3.2. completion of activities; and
 - 3.3. interaction with classmates?
4. What is the level of student performance in terms of:
 - 4.1. written tests as to formative and summative; and
 - 4.2. practical tests as to performance task?
5. Is there significant effect on using SPECTRA as supplemental material to student engagement?
6. Is there significant effect on using SPECTRA as supplemental material to student performance?

2. METHODOLOGY

Given that a descriptive research design is inherently compatible with the goals and technique of the investigation, it is determined to be the best appropriate strategy for this particular study. The goal of descriptive research is to carefully characterize and illustrate the traits, actions, and phenomena that are being studied without changing them from their original

state. This fitted in well with the researcher's objective of evaluating the efficacy and validity of the SPECTRA in the context of physical education. According to Sirisilla (2023) , descriptive research works best when the researcher's goal is to gain a thorough grasp of a phenomenon without getting into causal linkages or changing variables.

3. RESULTS AND DISCUSSION

The presentation, analysis, and interpretation of data were all covered in this chapter. The data was counted, tabulated, and examined as a result. The information acquired from the respondents was displayed in tables, evaluated, and interpreted depending on the data and information collected by the researcher via a questionnaire.

Level of the Component of SPECTRA

In this study, the component of SPECTRA includes introduction, development, engagement and assimilation and was statistically measured by mean and standard deviation.

The level of the component of SPECTRA was revealed in the following table, which shows the statement, mean, standard deviation and verbal interpretation.

Level of the Component of SPECTRA in Terms of Introduction

Table 1 shows the level of the component of SPECTRA in terms of introduction. Each statement undergoes evaluation on a scale spanning from 1 to 4, where 4 denotes "Strongly Agree," and 1 denotes the converse sentiment.

Respondents strongly agree with the clarity and consciseness of the introduction section in the supplemental material regarding a module structure (M= 3.71, SD= 0.57). This clarity helps set clear expectations and informs students about the module's content effectively. Similarly, respondents strongly agree that the introduction effectively establishes a positive and inclusive learning environment (M= 3.29, SD= 0.46).

Table 1 Level of the Component of SPECTRA in Terms of Introduction

Statement	Mean	SD	Remarks
The introduction part of the supplemental material...			
phase clearly outlines the learning objectives of the social dance module, ensuring students understand the purpose and expectations of the lessons.	3.64	0.76	Strongly Agree
effectively captures students' interest by providing a real-world context.	3.54	0.60	Strongly Agree
establishes a positive and inclusive learning environment.	3.29	0.46	Strongly Agree
effectively gauges students' prior knowledge of social dances.	3.69	0.46	Strongly Agree
includes a clear and concise overview of the module structure.	3.71	0.57	Strongly Agree

Weighted Mean = 3.58
Standard Deviation = 0.57
Verbal Interpretation = Very High

Overall, the level of the component of SPECTRA in terms of introduction rated very high, with an weighted mean of 3.58 and

a standard deviation of 0.57. The high scores shows that the introduction component of SPECTRA effectively sets the stage



for learning by clearly articulating objectives, sparking student interest, and offering a well-organized overview, fostering a

conducive environment for student preparation and engagement right from the start.

Table 2 Level of the Component of SPECTRA in Terms of Development

Statement	Mean	SD	Remarks
The development part of the supplemental material...			
includes a well-structured progression of lessons.	3.57	0.77	Strongly Agree
incorporates diverse teaching methods, catering to various learning styles.	3.17	0.62	Agree
provides ample opportunities for student collaboration and interaction.	3.62	0.61	Strongly Agree
is age-appropriate.	3.66	0.48	Strongly Agree
is culturally sensitive.	3.56	0.60	Strongly Agree

Weighted Mean = 3.52

Standard Deviation = 0.62

Verbal Interpretation = Very High

Table 2 shows the level of the component of SPECTRA in terms of development .

Respondents strongly agree that the development aspect of the supplemental material is tailored to the appropriate age level (M = 3.66, SD = 0.48). This demonstrates that the material is well-suited to the students' developmental stage, ensuring that the content is relevant and engaging. When it comes to incorporating diverse teaching methods that cater to various learning styles, respondents agree but to a lesser extent (M = 3.17, SD = 0.62).

Overall, the level of component of SPECTRA in terms of development is rated very high, achieving a weighted mean of 3.52 and standard deviation of 0.62. The results reflects a positive outlook with room for continued enhancement in instructional methodology to better accommodate diverse learner preferences. This indicates that, on average, the development of the social dance module was positively evaluated in terms of its structured lesson progression, age-appropriateness, opportunities for collaboration and interaction, and cultural sensitivity, although there is slightly less consensus on the incorporation of diverse teaching methods.

Table 3 Level of the Component of SPECTRA in Terms of Engagement

Statement	Mean	SD	Remarks
The engagement part of the supplemental material...			
ensures that students remain motivated and enthusiastic.	3.54	0.77	Strongly Agree
includes opportunities for student choice and creativity.	3.67	0.58	Strongly Agree
promotes a positive and supportive atmosphere.	3.35	0.48	Strongly Agree
utilized varied multimedia resources, such as music and video demonstrations.	3.63	0.48	Strongly Agree
includes opportunities for students to connect social dance concepts to real-life scenarios.	3.46	0.69	Strongly Agree

Weighted Mean = 3.52

Standard Deviation = 0.60

Verbal Interpretation = Very High

Table 3 presents the level of the component of SPECTRA in terms of engagement.

Respondents strongly agree that the engagement component of the supplemental material offers avenues for student autonomy and creative expression.(M = 3.67, SD = 0.58). This indicates that students are empowered to express themselves and explore various aspects of the subject matter in innovative ways. Respondents also express strong agreement regarding the engagement section of the material, establishing its role in fostering a positive and supportive atmosphere(M = 3.35, SD = 0.48). This shows that the learning environment facilitated by the material is conducive to student growth and collaboration.

Overall, the level of the component of SPECTRA in terms of engagement is very high with a weighted mean of 3.53 and a standard deviation of 0.60. This indicates that the engagement section of the material excels in engaging students effectively, fostering creativity and choice, and creating a positive and supportive learning environment. The consistently strong ratings shows that the material provides enriching learning experience for students.



Table 4 Level of the Component of SPECTRA in Terms of Assimilation

Statement	Mean	SD	Remarks
The assimilation part of the supplemental material... incorporates reflective activities that allow students to articulate their understanding of social dance concepts.	3.59	0.77	Strongly Agree
is aligned with the lesson's learning objectives.	3.72	0.57	Strongly Agree
ensures that students have opportunities to apply social dance principles in practical scenarios.	3.28	0.58	Strongly Agree
includes a summary or review of key concepts.	3.77	0.42	Strongly Agree
has constructive feedback mechanism.	3.24	0.72	Agree

Weighted Mean = 3.52

Standard Deviation = 0.61

Verbal Interpretation = Very High

Table 4 shows the level of component of SPECTRA in terms of assimilation.

Respondents strongly support the notion that the assimilation segment of the supplemental material encompasses a summary or review of key concepts (M = 3.77, SD = 0.42). This shows that the assimilation part of the material reinforces learning by summarizing important information, aiding in retention and comprehension. Also, respondents strongly agree that there is a presence of constructive feedback mechanism within the material (M = 3.24, SD = 0.72).

Overall, the level of component of SPECTRA in terms of assimilation is very high with a weighted mean 3.52 and a standard deviation of 0.61. This illustrates that the material effectively facilitates the absorption and integration of social

dance concepts, with strong alignment with learning objectives, reflective activities, practical applications, and summarization of key concepts. The consistently positive ratings indicate that the material supports students' assimilation of knowledge and skills effectively, contributing to a comprehensive learning experience.

Level of the Characteristic of SPECTRA

In this study, the characteristic of SPECTRA includes accuracy, organization and design and was statistically measured by mean and standard deviation. The level of the characteristic of SPECTRA was revealed in the following table, which shows the statement, mean, standard deviation and verbal interpretation.

Table 5 Level of the Characteristic of SPECTRA in Terms of Accuracy

Statement	Mean	SD	Remarks
The supplemental material has reliable and up-to-date information on the history, cultural context, and techniques associated with social dances.	3.44	0.77	Strongly Agree
References and sources used in the supplemental material are cited appropriately.	3.53	0.60	Strongly Agree
Social dance terminology and instructions are clear and precise.	3.65	0.48	Strongly Agree
The information presented is age-appropriate and developmentally suitable.	3.59	0.49	Strongly Agree
Assessments within the supplemental material effectively measure students' understanding of social dance.	3.89	0.47	Strongly Agree

Weighted Mean = 3.62

Standard Deviation = 0.56

Verbal Interpretation = Very High

Table 5 shows the level of the characteristic of SPECTRA in terms of accuracy.

Respondents strongly agree that assessments within the supplemental material skillfully assess students' comprehension of social dance (M = 3.89, SD = 0.47). This indicates the efficacy of assessment methods in evaluating learning outcomes accurately. Also, respondents express strong agreement that the supplemental material offers accurate and contemporary information regarding the history, cultural context, and techniques relevant to social dances (M = 3.44, SD = 0.77).

Overall, the level of the characteristic of SPECTRA in terms of accuracy is very high with a weighted mean of 3.62 and a standard deviation of 0.56, indicating a very high level of agreement among respondents regarding the accuracy of the supplemental material. This shows that, on average, respondents perceive the material to be accurate in terms of social dance terminology, appropriateness for different age groups, appropriate referencing, and effective assessment of student understanding.



Table 6 Level of the Characteristic of SPECTRA in Terms of Organization

Statement	Mean	SD	Remarks
The supplemental material follows a logical and sequential structure.	3.46	0.77	Strongly Agree
Learning objectives are clearly stated at the beginning of each lesson.	3.59	0.60	Strongly Agree
Instructional materials, including handouts, visuals, and multimedia resources are available.	3.61	0.51	Strongly Agree
Transition between different phases (introduction, development, engagement, assimilation) is seamless.	3.63	0.49	Strongly Agree
It makes easy for both teachers and students to locate specific resources and track their progress throughout the supplemental material.	3.80	0.53	Strongly Agree

Weighted Mean = 3.62

Standard Deviation = 0.58

Verbal Interpretation = Very High

Table 6 displays the level of the characteristic of SPECTRA in terms of organization.

Notably, the supplemental material facilitates easy navigation for both teachers and students, enabling them to locate specific resources and monitor their progress effectively (M = 3.80, SD = 0.53). This indicates that the material is meticulously organized, providing clear signposts and navigational aids that streamline the learning process. In addition to that, respondents also strongly agree that the supplemental material follows a logical and sequential structure facilitating a cohesive learning experience (M = 3.46, SD = 0.77).

Overall, the level of the characteristic of SPECTRA in terms of organization is very high with a weighted mean of 3.62 and a standard deviation of 0.58, indicating a very high level of agreement among respondents regarding the organization of the supplemental material. This exhibits that, on average, respondents perceive the material to be well-organized, with

clearly stated learning objectives, availability of instructional materials, seamless transitions between phases, and user-friendly features for resource location and progress tracking.

Level of the Characteristic of SPECTRA in Terms of Design

Table 7 shows the level of the characteristic of SPECTRA in terms of design.

The consensus among respondents is strong regarding the material's accessibility and adaptability for students with a range of learning abilities or disabilities (M = 3.87, SD = 0.48). This exhibits a commitment to inclusivity and accessibility, ensuring that all students can engage effectively with the material, regardless of their learning needs. Likewise, respondents strongly agree that the visual design of the supplemental material is aesthetically pleasing to further engage and motivate learners (M = 3.47, SD = 0.77).

Table 7 Level of the Characteristic of SPECTRA in Terms of Design

Statement	Mean	SD	Remarks
The visual design of the supplemental material is aesthetically pleasing.	3.47	0.77	Strongly Agree
The use of multimedia elements, such as images, videos, and diagrams is purposeful.	3.54	0.60	Strongly Agree
Fonts, colors, and formatting choices are consistent throughout the material.	3.64	0.48	Strongly Agree
It has a balance between text-based information, visual aids, and hands-on activities.	3.57	0.50	Strongly Agree
Material is easily readable and adaptable for students with varying learning abilities or disabilities.	3.87	0.48	Strongly Agree

Weighted mean = 3.62

Standard Deviation = 0.57

Verbal Interpretation = Very High

Overall, the level of the characteristic of SPECTRA in terms of design is very high with a weighted mean of 3.62, with a standard deviation of 0.57, indicating a very high level of agreement among respondents regarding the design of the supplemental material. This displays, on average, respondents perceive the material to have purposeful use of multimedia elements, consistent fonts/colors/formatting, a good balance between text-based information and visual aids, and high readability and adaptability.

Level of Student Engagement

This section presents a comprehensive evaluation of student engagement while using the SPECTRA within the context of Physical Education class. The evaluation focuses on various aspects of students' enthusiasm in class, completion of activities, and interaction with classmates. Each dimension is assessed through specific statements measuring students' attitudes, participation, and social interactions during Physical Education classes.



The level of the student engagement was revealed in the following table, which shows the statement, mean, standard

deviation and verbal interpretation.

Table 8 Level of Student Engagement in Terms of Enthusiasm in Class

Statement	Mean	SD	Remarks
I am excited to participate in Physical Education activities.	3.61	0.51	Strongly Agree
I approach Physical Education class with a positive attitude.	3.52	0.55	Strongly Agree
I actively seek ways to improve my performance in class.	3.50	0.56	Strongly Agree
I willingly engage in new and challenging activities during class.	3.48	0.56	Strongly Agree
I demonstrate enthusiasm by encouraging my classmates during activities.	3.32	0.58	Strongly Agree

Weighted Mean = 3.48

Standard Deviation = 0.55

Verbal Interpretation = Very High

Table 8 shows the level of student engagement in terms of enthusiasm in class.

Students show a clear excitement and eagerness to join in Physical Education activities, demonstrating a strong interest and enjoyment in trying different physical tasks (M= 3.61, SD = 0.51). This indicates a genuine enthusiasm for engaging in various physical endeavors, reflecting their active involvement and interest in the activities offered in PE class while using the SPECTRA. On the other side , while students demonstrate a commendable level of enthusiasm overall, the data shows a marginally lower level of engagement in terms of actively encouraging and supporting their classmates throughout various activities(M= 3.32, SD= 0.58).

The level of student engagement while using SPECTRA as supplemental material in Physical Education Classes in terms of enthusiasm in class is very high with a weighted mean score of 3.48 and a standard deviation of 0.55 . It shows that students generally have a positive and proactive attitude toward their

Physical Education lessons. However, there exists potential for enhancement in cultivating a culture of peer support and encouragement during physical activities, which could further enrich the overall learning experience in Physical Education.

Level of Student Engagement in Terms of Completion of Activities

Table 9 shows the level of student engagement in terms of completion of activities.

Students express strong agreement regarding their commitment to completing all Physical Education activities to the best of their ability(M = 3.50, SD = 0.58), showcasing a high level of dedication and commitment to actively participating in all aspects of the class. While students typically demonstrate commitment to task completion, they also strongly agree with the importance of seeking feedback and guidance from teachers to enhance their performance in physical education activities (M=3.39, SD= 0.60).

Table 9 Level of Student Engagement in Terms of Completion of Activities

Statement	Mean	SD	Remarks
I consistently complete assigned exercises and tasks during class.	3.41	0.59	Strongly Agree
I make an effort to finish all Physical Education activities to the best of my ability.	3.50	0.58	Strongly Agree
I actively participate in all aspects of the class, including warm-ups and cool-downs.	3.50	0.55	Strongly Agree
I am committed to completing Physical Education assignments on time.	3.48	0.53	Strongly Agree
I seek feedback from the teacher to improve my performance in class activities.	3.39	0.60	Strongly Agree

Weighted Mean = 3.46

Standard Deviation = 0.57

Verbal Interpretation = Very High

The level of student engagement while using SPECTRA as supplemental material in Physical Education Classes in terms of completion of activities is very high with a weighted mean score of 3.46 and a standard deviation of 0.57. This signifies a commendable level of dedication and involvement among

students in fulfilling their responsibilities and actively participating in all aspects of their Physical Education sessions, with room for growth in seeking feedback for further improvement.



Table 10 Level of Student Engagement in Terms of Interaction with Classmates

Statement	Mean	SD	Remarks
I collaborate effectively with my classmates during group activities.	3.53	0.53	Strongly Agree
I encourage and support my peers in their Physical Education efforts.	3.42	0.61	Strongly Agree
I actively participate in team-based activities and communicate well with others.	3.47	0.56	Strongly Agree
I am open to working with different classmates in various activities.	3.39	0.60	Strongly Agree
I contribute positively to the overall class atmosphere through my interactions.	3.44	0.55	Strongly Agree

Weighted Mean = 3.45

Standard Deviation = 0.57

Verbal Interpretation = Very High

Table 10 shows the level of student engagement in terms of interaction with classmates.

Students exhibit strong collaboration skills during group activities, (M=3.53, SD = 0.53) that indicates a high level of teamwork and cooperation, showing that students effectively work together towards common objectives, fostering a sense of camaraderie and achievement within the class. Furthermore, students demonstrate a strong willingness to collaborate with different classmates in different activities, showcasing their adaptability and inclusivity in group settings (M= 3.39, SD = 0.60).

The level of student engagement while using SPECTRA as supplemental material in Physical Education Classes in terms of interaction with classmates is very high with a weighted mean score of 3.45 and a standard deviation of 0.57. This shows that, overall, students display commendable levels of teamwork, communication, and positive interaction with their peers. Moreover, there exists an opportunity for enhancing peer support and encouragement, which could further enhance the richness and inclusivity of the learning environment within the Physical Education class.

Level of the Student Performance

In this study, the assessment of student performance encompasses both written and practical tests, which were statistically evaluated using measures such as frequency, percentage, mean, and standard deviation.

The level of student performance was revealed in the following table in terms of written tests as to formative and summative assessments.

Level of Student Performance in terms of Written Tests

Table 11 outlines student performance with the use of SPECTRA in terms of written tests categorized into formative and summative tests.

It is evident that the distribution of students across different performance levels varies significantly between the formative and summative assessments. For the formative assessment, no students (0%) scored in the highest performance category (O - Outstanding); a majority of students (54, 43.90%) scored in the S (Satisfactory) category; a significant number of students (66, 53.66%) scored in the F (Fair) category; and only one student (0.81%) fell into the lowest performance category (NI - Needs Improvement).

Table 11 Level of Student Performance in terms of Written Tests

Raw Score	Students' Performance in terms of Written Tests					
	Formative			Summative		
	F	%	VI	F	%	VI
33-40	0	0 %	O	59	47.97 %	O
25-32	2	1.6 %	VS	58	47.15 %	VS
17-24	54	43.90 %	S	6	4.88 %	S
9- 16	66	53.66 %	F	0	0 %	F
1 - 8	1	0.81 %	NI	0	0 %	NI
	N=123	100 %	F	N=123	100 %	VS
	Mean=16.92 SD=3.39			Mean =32.27 SD=4.21		

In contrast, for the summative assessment, the majority of students (59, 47.97%) achieved the highest performance category (O - Outstanding). Also, a substantial number of students (58, 47.15%) were classified as VS (Very Satisfactory) while a much smaller proportion of students (6, 4.88%) fell into

the S (Satisfactory) category. It was also noted that no students scored in the F (Fair) or NI (Needs Improvement) categories.

These results highlight a notable improvement in student performance from the formative to the summative assessment,



with a significant shift towards higher achievement levels in the summative evaluation. The mean score for the formative assessment was 16.92 (SD = 3.39), indicating a moderate level of overall performance variability among students. In comparison, the mean score for the summative assessment notably increased to 32.27 (SD = 4.21), showing a higher average level of achievement and reduced variability.

These results highlights the pivotal role of continuous assessment and feedback in improving student learning and advancement. The significant improvement in student performance from formative to summative assessments indicates notable progress and highlights the effectiveness of teaching methods and the use of learning materials. This

underscores the importance of personalized support systems and ongoing evaluation processes in fostering student development and academic achievement over time.

Furthermore, consistent assessment practices provide educators with valuable insights into the effectiveness of their teaching methods and curriculum design, allowing for adjustments to better meet student needs. Additionally, ongoing feedback fosters a culture of continuous improvement, assisting students to refine their understanding of course material over time. This dynamic approach not only enhances student learning outcomes but also promotes a more adaptive and responsive educational environment.

Table 12 Level of Student Performance in terms of Practical Tests

Criteria	Performance Task 1 – Chacha			Performance Task 2 – Waltz		
	Mean	SD	VI	Mean	SD	VI
Execution and Technique	4.59	0.49	Advanced	4.88	0.33	Advanced
Creativity and Style	4.11	0.59	Proficient	4.12	0.77	Proficient
Performance Presence	4.56	0.50	Advanced	4.71	0.46	Advanced
Dance Etiquette	4.68	0.47	Advanced	5.00	0.00	Advanced

Table 12 illustrates the level of student performance in terms of practical tests.

The table illustrates the performance levels of students in two practical dance tasks: the Chacha and the Waltz, evaluated based on four criteria: Execution and Technique, Creativity and Style, Performance Presence, and Dance Etiquette. Each criterion was assessed using rubrics, with performance rated on a 5-point scale where 5 indicates "Advanced," 4 "Proficient," 3 "Approaching Proficiency," 2 "Developing," and 1 "Beginning." The standard deviation (SD) reflects the variability of scores among the students.

Based on the results presented in Table 12, students demonstrated a high level of skill and proficiency in execution and technique for Cha-cha (M= 4.59, SD=0.49) and Waltz (M= 4.88, SD= 0.33) dance styles. The mean scores were notably high, indicating an advanced level of performance. The standard deviations were relatively low, showing consistency among students in this aspect of the assessment. This indicates that students consistently performed dance movements with proper basic steps and technique.

In terms of creativity and style, which assesses the incorporation of personal creativity and unique stylistic elements, students performed at a proficient level for both Chacha (M= 4.11) and Waltz (M= 4.12). While the mean scores were respectable, the higher standard deviation in the Waltz (SD=0.77) performance task compared to Chacha (SD= 0.59) indicating slightly more variability in students' creative expressions during the Waltz assessment.

Performance presence, evaluating stage presence, confidence, and expressiveness, was rated as advanced for both Cha- cha

(M= 4.56, SD= 0.50) and Waltz (M= 4.71, SD= 0.46) dance styles. This indicates that students exhibited strong ability to engage the audience and perform confidently. The mean scores were high with relatively low standard deviations shows consistent and impactful performance presence across the board.

Dance Etiquette, assessing adherence to social and cultural norms of the dance, showed exceptional results. Students excelled in demonstrating dance etiquette, particularly in the Waltz performance task (M= 5.00,SD= 0.00) indicating exemplary performance in this criterion. For Cha-cha, although the mean score was slightly lower (M = 4.68,SD=0.47), it still reflects an advanced level of proficiency in observing dance etiquette.

Overall, these results highlight the students' strong technical abilities, impressive performance presence, and adherence to dance etiquette across both Cha-cha and Waltz. While creativity and style were rated at a proficient level, there is room for further exploration and development in this area to enhance students' expressive capacities within the dance forms. The consistency in execution and technique underscores the effectiveness of the instructional approach in fostering skill development and performance readiness among the students.

Significant Effect of SPECTRA on the Student Engagement

The significant effect of SPECTRA on student engagement is evident through an in-depth analysis of the provided table. Data were analyzed using regression analysis, which assessed the relationship between SPECTRA and various aspects of student engagement, such as enthusiasm in class, completion of activities, and interaction with classmates.



Table 13 Significant Effect of SPECTRA on the Student Engagement

		Beta	SE	95 % CI		B	P
				LL	UL		
<i>Enthusiasm in Class</i>	<i>Introduction</i>	0.47	0.19	0.09	0.85	0.33	0.01*
	<i>Development</i>	0.09	0.26	-0.42	0.60	0.08	0.73
	<i>Engagement</i>	-0.54	0.32	-1.17	0.09	-0.46	0.09
	<i>Assimilation</i>	0.30	0.21	-0.12	0.73	0.27	0.16
	<i>Accuracy</i>	-0.08	0.20	-0.49	0.32	-0.05	0.69
<i>Completion of Activities</i>	<i>Organization</i>	-0.25	0.25	-0.73	0.24	-0.15	0.32
	<i>Design</i>	0.69	0.23	0.23	1.15	0.44	0.00*
	<i>Introduction</i>	0.45	0.20	0.06	0.84	0.31	0.02*
	<i>Development</i>	0.01	0.27	-0.51	0.54	0.01	0.96
	<i>Engagement</i>	-0.42	0.33	-1.07	0.23	-0.35	0.21
<i>Interaction with Classmates</i>	<i>Assimilation</i>	0.29	0.22	-0.14	0.73	0.26	0.19
	<i>Accuracy</i>	-0.10	0.21	-0.52	0.32	-0.06	0.63
	<i>Organization</i>	-0.05	0.26	-0.56	0.45	-0.03	0.84
	<i>Design</i>	0.51	0.24	0.04	0.99	0.33	0.03*
	<i>Introduction</i>	0.42	0.20	0.03	0.81	0.29	0.03*
	<i>Development</i>	0.39	0.26	-0.13	0.92	0.33	0.14
	<i>Engagement</i>	-0.45	0.33	-1.10	0.20	-0.38	0.18
	<i>Assimilation</i>	0.19	0.22	-0.25	0.63	0.17	0.39
	<i>Accuracy</i>	-0.39	0.21	-0.80	0.03	-0.23	0.07
	<i>Organization</i>	-0.12	0.25	-0.62	0.39	-0.07	0.65
	<i>Design</i>	0.38	0.24	-0.09	0.85	0.25	0.11

Note: * p < .05.

Table 13 revealed the significant effect of SPECTRA on the student engagement particularly on their enthusiasm in class, completion of activities, and interaction with classmates. The component of SPECTRA in terms of introduction has a statistically significant positive effect on all dimensions of student engagement: enthusiasm in class ($\beta = 0.33, p < 0.05$), completion of activities ($\beta = 0.31, p < 0.05$), and interaction with classmates ($\beta = 0.29, p < 0.05$). The characteristic of SPECTRA in terms of design also showed significant positive effect on two dimensions of student's engagement, enthusiasm in class ($\beta = 0.44, p < 0.05$) and completion of activities ($\beta = 0.33, p < 0.05$).

These results imply that improvements in the component of SPECTRA in terms of introduction and the characteristic of SPECTRA in terms of design are strongly associated with significant increases in student engagement across various dimensions. As the quality of the introduction and design elements of SPECTRA improves, students tend to show greater enthusiasm, complete more activities, and interact more effectively with their peers. This evidence strongly indicates that SPECTRA has considerable potential to enhance the level of student engagement in physical education. It makes SPECTRA a valuable tool for educators aiming to boost student participation, task completion, and peer interaction.

The positive correlations between these elements of SPECTRA and the different aspects of student engagement provide a robust foundation for further exploration and development of

supplemental materials tailored to optimize learning experiences in physical education. By focusing on creating engaging introductions and well-designed materials, educators can leverage SPECTRA to support and enhance student engagement, ultimately leading to more effective learning outcomes. This underscores the importance of thoughtful instructional design and its significant impact on student engagement and success in physical education settings.

Significant Effect of SPECTRA on the Student Performance

This result shows significant effect of SPECTRA on student performance in terms of written and practical assessments, indicating its effectiveness in enhancing learning outcomes. With notable improvements observed across various assessment modalities, SPECTRA demonstrates potential in positively influencing student performance of Physical Education concepts. Through regression analysis, this discussion aims to analyze the data presented, highlighting how SPECTRA contributes to enhanced student performance and its implications for educational practices in physical education.

Table 14 revealed the significant effect of using SPECTRA on the student performance particularly on their written tests. The component of SPECTRA in terms of engagement ($\beta=0.60, p < 0.05$) and the characteristic of SPECTRA in terms of design ($\beta=0.36, p < 0.05$) have significantly effect the learner's written tests.



Table 14 Significant Effect of SPECTRA on the Student Performance

		95 % CI					
		Beta	SE	LL	UL	β	P
<i>Written Test</i>	<i>Introduction</i>	3.30	2.24	1.14	7.74	0.20	0.14
	<i>Development</i>	5.24	3.03	0.75	11.24	0.38	0.09
	<i>Engagement</i>	8.30	3.76	15.74	-.85	0.60	0.03*
	<i>Assimilation</i>	0.53	2.52	4.47	5.53	0.04	0.83
	<i>Accuracy</i>	3.60	2.41	1.17	8.37	0.18	0.14
	<i>Organization</i>	4.97	2.91	10.73	0.79	0.26	0.09
<i>Performance Task</i>	<i>Design</i>	6.55	2.72	1.16	11.94	0.36	0.02*
	<i>Introduction</i>	1.12	0.91	0.69	2.93	0.17	0.22
	<i>Development</i>	0.88	1.23	3.32	1.57	0.17	0.48
	<i>Engagement</i>	0.88	1.53	3.92	2.16	0.16	0.57
	<i>Assimilation</i>	1.32	1.03	0.71	3.36	0.26	0.20
	<i>Accuracy</i>	0.33	0.98	2.27	1.62	0.04	0.74
	<i>Organization</i>	0.38	1.19	2.73	1.97	0.05	0.75
	<i>Design</i>	0.30	1.11	2.49	1.90	0.04	0.79

Note: * p < .05.

These results imply that improvements in the component of SPECTRA in terms of engagement and the characteristic of SPECTRA in terms of design are strongly linked with significant increases in students' written test scores. This evidence highlights the potential of SPECTRA to enhance students' academic performance in physical education by focusing on both engaging content and high-quality design. As the material becomes more engaging and better designed, students are likely to develop a deeper understanding of the content, which is reflected in their improved written test scores.

Also, these results underscore the importance of investing in engaging educational materials like SPECTRA, as they significantly affect students' academic performance. Additionally, they highlight the ongoing need to enhance the quality of such resources to ensure alignment with evolving educational standards. Lastly, they emphasize the potential of innovative teaching approaches, such as SPECTRA, to deepen student learning and mastery in physical education. Recognizing and acting on these implications can support student success and advancement in the field.

However, it is important to note that while SPECTRA significantly affects students' written test performance, it does not have a significant effect on their performance in practical tests. This means that while the supplemental material is effective in enhancing cognitive understanding and retention, it may not directly translate to improvements in practical skills. Therefore, additional strategies or resources might be needed to address practical performance aspects in physical education. Overall, these findings provide robust evidence that SPECTRA has the potential to improve students' academic outcomes in physical education, particularly in their written tests. By focusing on enhancing both engagement and design components, educators can leverage SPECTRA to support and boost students' learning and performance across various dimensions of their physical education curriculum.

The literature and research on module-based learning provide insights into its impact on student performance across different types of assessments. Studies by Dejene & Chen (2019) and

Sadiq & Zamir (2014) suggest that module-based learning, characterized by structured units of instruction, can be effective in improving performance in written tests by promoting deeper understanding and retention of theoretical concepts.

4. CONCLUSION AND RECOMMENDATIONS

Considering the results of the study, the following conclusions were drawn:

1. The study revealed that there is no significant effect of using SPECTRA as supplemental material in Physical Education on student engagement. Specifically, it highlighted that only the component and characteristic of SPECTRA in terms of introduction and design positively influence various dimensions of student engagement, including enthusiasm in class, completion of activities, and interaction with classmates. While the majority of components and characteristics of SPECTRA did not show significant effects, this reveals that the hypothesis is accepted.
2. The study showed that there is no significant effect of using SPECTRA as supplemental material in Physical Education on student performance. Specifically, it highlighted that only the component and characteristic of SPECTRA in terms of engagement and design positively influence student performance in terms of written tests. However, there is no significant effect on student performance in terms of practical tests. This reveals that the hypothesis is accepted.

Considering the key findings and conclusions of his study, the researcher recommends the following.

1. Physical Education Teachers may implement clear and structured introductions in dance modules similar to SPECTRA to enhance student engagement. They are encouraged to ensure learning objectives are outlined and expectations are clearly communicated to students. Moreover, it is recommended that they utilize visually appealing and well-organized instructional materials like those in SPECTRA to promote enthusiasm and completion of activities among students. Specifically, they may incorporate multimedia resources effectively in dance



lessons to foster a positive classroom atmosphere and encourage interaction among students.

2. Head Teachers of MAPEH may encourage and support Physical Education teachers in adopting innovative instructional designs like SPECTRA to improve student engagement and participation. They may also provide professional development opportunities for teachers to enhance their skills in module-based teaching and instructional material design.
3. School Heads may advocate for the integration of module-based learning approaches in Physical Education curriculum to optimize student learning outcomes and engagement. He/She may also allocate funding for implementing innovative teaching practices and acquiring necessary resources for effective dance education.

REFERENCE

1. Sirisilla, S. (2023). *Descriptive Research | Definition, Types, and Flaws to avoid*. Enago Academy. <https://www.enago.com/academy/descriptive-research-design/>