

The Model-Lead-Test (M-L-T) Approach in Teaching Physical Education Among Grade 9 Students: Basis for A Training Design

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ABSTRACT

The study aimed to investigate the effectiveness of the Model-Lead-test (M-L-T) approach on the academic performance and attitude towards Physical Education of Grade 9 students at Jacinto D. Malimas Sr. National High School, Odiongan, Gingoog City for the school year 2023-2024. The study used a quasi-experimental research design. The experimental group ($n=36$) was exposed to the Model-Lead-Test approach, while the control group ($n=36$) under the lecture method. The research instruments used were the Pre and Post summative test, Performance tasks Rubrics and the Students' Attitude Towards Physical Education (PE) questionnaire. Frequency counts and percentage, weighted mean, Mann-Whitney U Test and Paired t-test were utilized in analyzing the data. The findings showed that the learners exposed to the M-L-T approach performed better ($m=5.52$) than those under the non-MLT ($mean=3.33$). It was also shown that more students (77.7%) achieved very good performance tasks under M-L-T approach than those under the non-MLT (8.3%). In addition, there were more students who achieved excellent performance ($f=14$, 38.89%) under M-L-T than those under the non-M-L-T approach ($f=6$; 16.67%). Such results led to a significant difference ($t=12.67$, $p=.000$) in the academic performance of the participants. The program design based on the M-L-T approach utilized models and demonstrations as learning tools, providing students with clear, visual guidance, facilitating better understanding, and skill acquisition.

KEYWORDS

assessment; Model-Lead-Test; Physical Education, students' attitudes

INTRODUCTION

Physical Education (PE) is widely seen as an important subject for developing motor skills and knowledge about healthy living. It is an essential component of a well-rounded education. By engaging in physical activity, students can improve their overall health and well-being, as well as their academic performance. However, the traditional teaching methods used in physical education often fail to adequately support and engage low-performing students, resulting in limited progress and reduced motivation (Almalki, 2022).

The study "Model-Lead-Test Approach in Teaching Physical Education: Basis for a training Design" aims to explore the effectiveness of implementing the model-lead-test approach in teaching grade 9 Physical Education during the first quarter. With a focus on addressing the performance gap among low performing students, this investigated whether the Model-Lead-Test approach can help improve the learning outcomes and performance of these learners.

During the first quarter of Grade 9 Physical Education, the Learning Competencies stated are: (1) Undertakes physical activity and physical fitness assessment tests (2) identify current fitness levels of the students and (3) involve oneself in community services through sports and physical activity. To meet these competencies, teachers handling this subject applied different teaching strategies but academic performance was apparently low. The need for effective teaching strategies that can address the specific needs of these low performing students is now the focus of this study. To bridge the gap, the Model-Lead-Test (MLT) approach has been introduced and utilized as a teaching strategy that gained popularity in the field of physical education. This approach involves breaking down a skill into smaller parts, modeling the skill for students, leading them to perform the tasks, and letting them do the tasks on their own. On the other hand, the performance task showcases the skills developed which are being measured based on the Revised Physical Fitness Test (DepEd order no. 034, s 2019). Through this study, the researcher provided valuable insights into the potential application of the Model-Lead-Test approach guided by a training design to enhance the performance of the students in physical education. This study looked into the effectiveness of the M-L-T approach in structured and gradual skill development, allowing students to observe, practice with support, and eventually apply their learning independently to achieve excellent performance in Grade 9 P.E.

Theoretical Framework of the Study

This research is based on well-established theories: (1) Jean Piaget's Constructivist Learning Theory, (2) Lev Vygotsky's Zone of Proximal Development (ZPD) Theory, along with Bruner's Scaffolding Theory and David Kolb's Experiential Learning Theory. Jean Piaget suggested that learners actively create their own knowledge by engaging with their surroundings and encountering new experiences. He highlighted the significance of assimilation and accommodation in the learning process in line with Bruner's educational theory. Bruner's educational theory asserts that when children begin to learn new ideas, they require assistance from teachers and other adults through active support. It also conveys that the initial concept of support assumed a single more knowledgeable individual, like a teacher or parent, guiding each learner by providing them with the aid necessary to progress. As children engage with their environment, they construct new knowledge on top of their existing understanding and modify their previously held concepts to incorporate new information.

Conversely, Lev Vygotsky's ZPD Theory includes the range of skills that a person can achieve with the assistance of an expert since the learner cannot yet accomplish these tasks independently. Jerome Bruner's Scaffolding Theory further corroborates this by asserting that learners rely on adult support. The objective of scaffolding is to concentrate on acquiring the skills required to complete tasks in a distance learning format, ultimately fostering independent learning in the child. Once the learner has developed the skill to learn autonomously, the adult's scaffolding can be progressively withdrawn as the learner begins to construct knowledge on their own.

In addition, the Experiential Learning Theory, by David Kolb, is a learning theory that emphasizes the importance of experiences in the learning process. According to this theory, the best way to learn is by actually having experiences. This theory undergoes four stages: (1) concrete learning, (2) reflective observation, (3) abstract conceptualization, and (4) active experimentation. The first two stages of the cycle involve grasping an experience, and the second two focus on transforming an experience by executing actual performance tasks.

Objective of the Study

The study investigated the effectiveness of the Model-Lead-Test (M-L-T) approach on students' academic performance and attitude towards PE in Grade 9 students of Jacinto D. Malimas Sr. National High School, Odiongan, Gingoog City.

RESEARCH METHODS

The study utilized a quasi-experimental research method to evaluate the effectiveness of using the model-lead-test approach in comparison to a traditional teaching method in the context of teaching PE 9. The participants of the study did not go through randomization but directly assigned into two groups: one experimental group and the other, control group. The experimental group was treated under the Model-Lead-Test while the control group was applied with the traditional teaching method. The study applied the Pretest-Posttest design. Both groups were given pre-test before the start of the lessons in the first quarter to measure the initial levels of participants' knowledge, skills or attitudes related to the learning outcomes of PE. After the first quarter sessions, both groups were subjected to a post-test where gain scores and attitudes were determined to establish which of the two approaches resulted to students' better performance in PE 9.

Research Locale of the Study

The study was conducted at Jacinto D. Malimas Sr. National High School, previously named Odiongan National High School, a DepEd-managed rural secondary public school, one of the popular schools in Gingoog City. The school is a large school located in Purok 2, Odiongan, Gingoog City, Misamis Oriental. It is located between Barangay Anakan and Barangay Pangasihian. It is about an hour's walk to the school from the barangay proper. The school is composed of 36 teaching staff and 2 non-teaching staff, and 806 officially enrolled students.

Population as Participants of the Study

The participants of the study were consisted of the group of 72 learners. There were two groups of Grade 9 students from Jacinto D. Malimas National High School, Odiongan, Gingoog City for the School Year 2023-2024. Each group had 36 participants. The Table below presents the distribution of the participants of the study.

Sampling Design

The participants of the study were selected through intact group based on the criteria that these students were in the sections handled by the researcher. There were two groups composed of Grade 9 students of Jacinto D. Malimas National High School, Odiongan, Gingoog City for the School Year 2023-2024. The two groups have 36 participants each. One group was exposed to the model-lead-test approach, the experimental group using model-lead-test approach while the other group was exposed to the lecture model.

Research Instrument

The research instrument consisted of two sets: (1) Summative Test (Written) and Performance Task (2) Survey Questionnaire on students' attitude towards PE.

Set one was the Summative Test. The researcher used teacher made test questionnaires (TQ) intended for grade 9 learners involved in the lesson for the 1st quarter of SY 2023-2024. The test questions were aligned with the Most Essential Learning competencies (MELCs). The questions were constructed based on the Table of Specification (TOS) and were

reviewed and checked by the three experts in the field of Physical Education (PE). On other hand, the performance task on physical fitness of the students was given and measured based in the Revised Physical Fitness Test (DepEd order no. 034, s 2019) to obtain the performance of physical fitness assessment of the students.

Set two was the adapted and modified a survey questionnaire on the students' Attitude towards PE, with 13 indicators measured by Likert scale.

Validity and Reliability of the Research Instrument.

The test questions were aligned with the Most Essential Learning Competencies (MELCs). The questions were constructed based on the Table of Specifications and were reviewed and validated by three experts in the field of Physical Education.

The teacher-made test and survey questionnaire were tried out on grade 9 students of the school who were not participants of the study resulting to a reliability index of 87%. The performance task of Physical fitness measurement was based in the Revised Physical Fitness Test (DepEd. order no. 034, s 2019).

Data Gathering Procedure

Prior to the data collection, the researcher obtained letters of approval from the school principal and the Schools Division Superintendent from the P.E teachers and from the Parents of the participants in order to conduct this study. The researcher conducted a session with all P.E. teachers to explain the objectives and procedures of the study. Students were given orientation and briefed on how questionnaires will be answered. After that, P.E. teacher distributed questionnaires to the respondents and followed the same instruction protocol as previously directed. To encourage honest and truthful responses, students were notified that their answers would be strictly confidential and the results would be used for academic purposes. Submitted survey forms were sorted and checked for complete responses. The study was conducted during the 1st quarter of the School Year 2023-2024 using the Model-Lead-Test approach in teaching Physical Education for the experimental group.

The data source for academic performance in PE was gathered from the pre-test and post-test results of the two groups. The attitudes towards PE questionnaire was given a week before implementing the MLT Approach. The posttest was then given after the last topic of the lesson with the performance tasks in physical fitness assessment, which were measured based on the Revised Physical Fitness Test to obtain the physical fitness results of the Grade 9 students (the performance tasks)

The study was undertaken in three steps using the model-lead-test approach; The "I do, We do, and You do" model of teaching used in Physical Education manifested in performance tasks of Grade 9 students.

1. "I do ". In this step, the teacher takes the lead and demonstrates the skill or activity to determine the agility, flexibility, and cardiovascular endurance of the students. The teacher explains and models the correct technique, form, and the strategy involved in the physical activity. This step provides a clear example for students to follow and understand.
2. "We do" This is the step where the teacher and students work together as a group to practice the skill or activity. The teacher provides guidance and support while allowing students to actively participate. This stage encourages collaboration and interaction among students as they learn from each other and from the teacher's feedback.

3. “You do” is the last step of the model. The students are given the opportunity to independently apply the skills they have learned. They practice the activity or skill on their own. This step allows students to demonstrate their understanding and mastery of the skill while also building their confidence and independence.

On the other hand, to measure the performance of the participants using the model-lead-test approach, the researcher first defines the fitness performance matrix that needs to measure like flexibility, agility, and cardiovascular endurance. Before the actual fitness performance, the researcher conducts a pre-test assessment to establish a baseline. This assessment can include general health screenings, fitness questionnaires, and physical assessments. Post-test was then conducted after the last lesson in that quarter. Results were recorded.

Statistical Treatment

For the statistical analysis of the data, the following statistical tools were utilized:

Frequency and percentage distributions were used to determine the pre-test and participants' post-test as well as the perforarticipants in the study.

Weighted mean was used to determine the level of attitudes towards P.E manifested by students e,xposed to MLT and Non-MLT Approach.

Paired t-test was, used to determine the sig,nificant difference of students' pre-test and post -test performance, exposed to MLT and non MLT approach.

Mann Whitney U test was used to determine the significant difference between the students’ attitude towards PE when exposed to M-L-T and non- M-L-T approach

RESULTS AND DISCUSSION

Table 1. Frequency and percentage distribution of the pre-test and post-test results of the summative test of the participants who were exposed to the Model-Lead-Test approach.

Score Range	Pre-test		Post-test		Interpretation
	f	%	f	%	
21 – 25	0	0.00	2	5.55	Outstanding
16 – 20	0	0.00	13	36.11	Very satisfactory
11 – 15	6	16.67	14	38.89	Satisfactory
6 – 10	29	80.57	7	19.45	Fairly satisfactory
1 - 5	1	2.77	0	0.00	Did not meet the expectation
Total	36	100.00	36	100.00	

Mean=8.94 SD= 2.164 Mean=14.4 SD= 3.82

Table 1 shows the frequency and percentage distribution of the pre-test and post-test results of the participants under the Model -Lead Test (MLT) approach. In the pre-test, one of the participants did not meet expectations (f=1, 1-5) and a few (f=6, 11-15) obtained satisfactory results or 2.77 and 16.67 percent respectively. However, a great number (f=29, 6-10), or 80.57 percent achieved a fairly satisfactory performance.

On the other hand, it can be observed that in the post-test; none (f=0, 1-5) of the participants did not meet expectations and at least two (f=2, 21-25) obtained the outstanding level. Results also indicate that a considerable number (f=13, 16-20) have very satisfactory results, and more students (f=14, 11-15) have satisfactory performance. It can be gleaned that some of the participants (f=7, 6-10) exhibit a fairly satisfactory result which is an improvement from the pre-test performance (f=29; 6-10). It was then observed that students get low scores due to the gaps in knowledge, lack of engagement and need for individualized interventions to improve their performance.

It can also be observed that in both cases, the pretest (mean= 8.94, SD= 2.164), and the post-test (mean=14.4; SD=3.82) manifest a high standard deviation. Scores are seen to spread out from the mean leading to a large standard deviation that indicates the extent of variability in the data set. It shows a wide range of scores and are spread out away from the mean. In other words, students have varied performance.

Generally, the low pre-test result of the students exposed to the M-L-T is similar to the resulting study of Lindsey Richland et.al., entitled, “The Pre-testing Effect: Do Unsuccessful Retrieval Attempts Enhance Learning” wherein findings showed that the students got as many as 95% of the pre-test questions wrong since the pre-test scores demonstrate student knowledge about the topic given has not been discussed or executed (Richland et al, 2009).

It can also be deduced that the application of the M -L-T approach in teaching P.E. is supported by the study of Rohrbach, N.R., et.al. (2018) that focused in the effects of explicit instruction on academic outcomes and provided practical implications for instructional practices. This is further substantiated by Itikpo, G., Friday, J., & Agbo, F. (2023) the effectiveness of M-L-T in increasing achievement rate of learners in their research work.

Table 2. Frequency and percentage distribution of the pre-test and post-test results of the summative test of the participants exposed to the non-Model-Lead-Test approach.

Score Range	Pre-test		Post-test		Interpretation
	f	%	f	%	
21 – 25	0	0.00	0	0.00	Outstanding
16 – 20	0	0.00	6	16.67	Very satisfactory
11 – 15	8	22.22	17	47.22	Satisfactory
6 – 10	25	69.45	13	36.11	Fairly satisfactory
1 - 5	3	8.33	0	0.00	Did not meet the expectation
Total	36	100.00	36	100.00	
	Mean=8.86 SD=2.509		Mean=12.19 SD=3.170		

Data of Table 2 present the pre-test and post-test results under the non-Model-Lead -Test (M-L-T) approach. It can be seen that in the pre-test, three of the participants did not meet expectations (f=3, 1-5) in contrast to the post-test result which shows no more of the participants not meeting expectations. The result above also presents that a considerable number of the participants (f=25, 6-10) in the pre-test exposed to non MLT falls in the level of fairly satisfactory and few (f=8, 11-15) perform satisfactorily.

In addition, the performance of the participants in the post-test indicates a reduced number (f=13, 6-10) of fairly satisfactory results and a favorable increase (f=17, 11-15) of performance categorized in the satisfactory level. A noticeable number of participants (f=6, 16-20) very satisfactory performance indicating that the learning process of an individual is dominantly cognitive as governed by the learning theory of Bruner. This theory indicates that learners can build new knowledge upon knowledge as teachers feed them information. But reflective of the scattered scores both in the pre-test and post-test, the range of scores distributed are spread out away from their respective means. As such, it can be deduced that the high value of the standard deviation (SDpre=2.509; SD post=3.170) seen both in the pretest and post-test of the non-M-L-T signifies that the amount of variation or dispersion of the scores is less reliable. Hence, insights gained by this condition is that the summative test result of the student is not conclusive of the wholeness of her/his academic performance, It could be that some other intervening factors interfered in the learning-process of the students.

In summary, both approaches indicate a positive result in the performance of the learners as indicated in the post test. However, the result in the gain scores indicates that the learners

exposed to the Model Lead Test (M-L-T) approach (mean=5.52) were performing better than those under the non M-L-T (mean=3.33). This is graphically illustrated in Figure 3 where M-L-T line (in red color) is located higher than the non-M-L-T line (in blue color). This implies a better performance of the learners exposed to the Model-Lead Test approach than those not exposed to it. Insights could be attributed to the newness approach of the teaching strategy and being lenient in the usual traditional method. It has been observed that modification done in the conduct of the M-L-T approach excited the students and made them more responsive than those in the teacher-centered idea. This result of a better performance of the learners exposed to the Model-Lead Test approach is in parallel with Itikpo, Friday & Agbo (2023) showing how M-L-T resulted to better performance of learners.

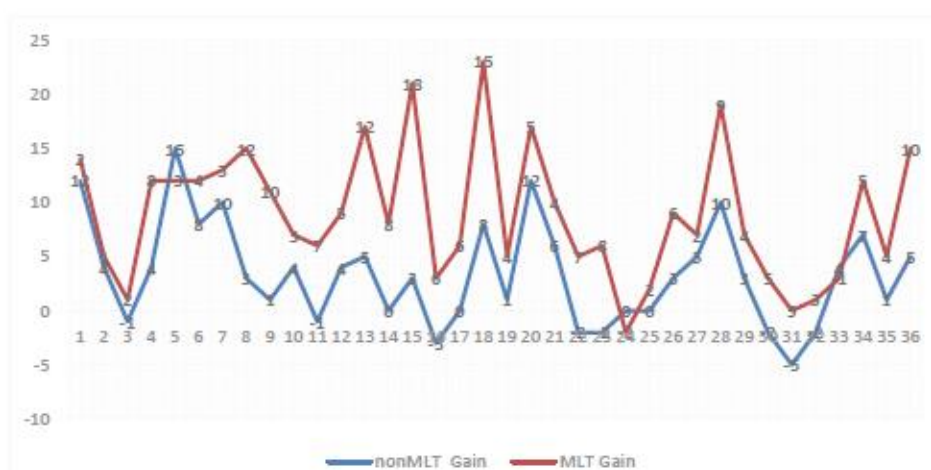


Figure 1. Graphical illustration of the gain scores of the performance of the participants exposed in the non- MLT and MLT Approaches

Indeed, the success of the M-L-T approach in improving learner’s performance undertakes the importance of utilizing instructional approach in education. By engaging activities and differentiated instruction, teacher can create a conducive learning environment that supports student’s achievement and mastery of the learning competency.

Table 3. Frequency and percentage distribution of the pre-test and post-test results of the performance tasks of the participants exposed to the Model-Lead-Test approach.

Score Range	Pre-test		Post-test		Interpretation
	f	%	f	%	
17 – 25			8	22.3	Excellent
13 – 16			28	77.7	Very good
9 – 12	16	44.5			Good
5 – 8	19	52.7			Need improvement
1 – 4	1	2.8			Poor
Total	36	100.00	36	100.00	

Mean=14.86 SD=2.23 Mean=16.39 SD=1.37

Table 3 shows the frequency and percentage distribution of the pre-test and post-test results of the performance tasks of the participants exposed to the Model- Lead Test approach. In the pre-test result most of the participants (f =19, %=52.7) need improvement and some participants (f = 16, % = 44.5) show good performance. However, after being exposed to M-L-T approach in the post-test, majority of the participants (f = 28, %=77.7) have scores between 13 to 16, interpreted as very good performance. In addition, some

participants ($f=8$, $\%=22.3$) are able to perform excellently. In terms of the spread of the scores, it can be deduced that there is a wider dispersion of the scores of the students ($SD=2.23$) in the pre-test of the performance tasks than in the post test. This could be attributed to the close engagement of the students with the teacher in the conduct of the physical fitness applying the scaffolding theory (I do, We do, You do). The transparent evidence of better performance tasks after being applied with the execution of the M-L-T approach is also evidenced in the smaller value of the standard deviation ($SD=1.37$), in the post-test than in the pre-test. This indicates that the performance tasks of the students are gradually moving towards enhanced achievements in PE 9.

The impact of M-L-T approach shifting from needing improvement to very good performance suggests that the M-L-T approach has had a positive and transformative effect on the learning outcomes of the participant. The structured and hands-on nature of M-L-T approach likely provided the support, guidance and engagement needed for participants to enhance their skills and understanding.

Further results showed that participants were able to increase their performance scores. In the pre-test, the participants scored from poor, needs improvement to good, but after they were exposed to the Model-Lead-Test approach, the participants' 'scores increased to as high as excellent.

These findings were supported by Itikpo, Friday & Agbo (2023) showing how M-L-T resulted to better performance of learners. Smith et al. (2018) also found that students who received instruction using the M-L-T approach showed significant improvements in their physical performance compared to those who received traditional instruction. Johnson et al. (2019) showed that students who were taught using the M-L-T approach demonstrated higher level of skill acquisition, motivation, and enjoyment compared to those taught using traditional methods.

In addition, Brown et.al (2020) found that students who participated in physical education classes using M-L-T Approach showed significant improvement in their cardiovascular endurance, muscular strength, and flexibility compared to those who did not. The significant improvement in physical fitness components underscores the motivational and engaging nature of the M-L-T approach in Physical Education. By incorporating interactive teaching approach students are likely to be more motivated to participate actively, set fitness goal, and enjoy learning progress to sustain a healthy and active life style.

Overall, the study provides valuable insights into transformative impact of M-L-T approach on student's physical fitness levels and highlights the importance of innovative teaching approach in promoting lifelong health and fitness habits among students.

Table 5 shows the frequency and percentage distribution of the pre-test and post-test results of the performance tasks of the participants exposed to non-Model-Lead-Test approach.

Table 4. Frequency and percentage distribution of the pre-test and post-test results of the performance tasks of the participants exposed to the non-Model-Lead-Test approach.

Score Range	Pre-test		Post-test		Interpretation
	f	%	f	%	
17 – 25					Excellent
13 – 16			3	8.3	Very good
9 – 12	19	52.7	29	80.6	Good
5 – 8	16	44.5	4	11.1	Need improvement
1 – 4	1	2.8			Poor
Total	36	100.00	36	100.00	

Mean=14.36 SD=1.807 Mean=11.44 SD=1.52

Data of Table 5 present the pre-test result in the non M-L-T approach showing a majority of the participants (f=19, %=52.7) having scores in the range of 9 to 12, which is interpreted as good performance. On the other hand, several participants (f=16, %=44.5) had scores between 5 to 8, interpreted as needs improvement. It is noted that in the post-test, majority of the participants (f=29, %=80.6) have scores between 9 to 12, interpreted as good performance and none reaches the excellent level. It can be deduced that performance tasks need to be done in actual motion or movement that is best executed when models are seen by the students.

Additionally, the effectiveness of modelling, may be best executed when models were seen by students that emphasizes the importance of visual modeling to enhance physical performance. By observing demonstrations or examples of how task should be carried out, participants can effectively internalize the process, techniques and standards required for successful performance. The non-attainment of an excellent level in the post-test suggests that while participants have demonstrated good performance, there may be a need for more opportunities to observe demonstration and physical action to push performance to a higher level.

Manifestation of Level of Attitude of Students Towards PE Exposed to M-L-T and non M-L-T Approaches

Table 5 shows the level of attitude of students towards PE as manifested by the participants exposed to MLT approach.

Data in Table 6 indicate four positive attitudes of the participants as evidenced by their disagreement in indicators 1-4 (wtd mean=1.83, 1.52, 2.38 and 2.33) This implies that participants exert efforts to be healthy during PE classes, recognize the importance of PE activities and manifest the idea that performing well in PE is not only for strong and big individuals. This implies that performing well in PE does not only depend on physical strength but adheres to the importance of fair play and sportsmanship.

Accordingly, recognizing the significance of fair play and sportsmanship in PE emphasized the role of character development, skill enhancement, and overall wellness in promoting a positive and meaningful experience in sports and physical activity. These insights suggested that a holistic approach to PE focuses not only on skills development but also on promoting character traits that contribute to

Table 5. Level of attitude towards P.E manifested by participants exposed to MLT approach.

Indicator	Wt. Mean	SD	Verbal Description	Interpretation
1. Sometimes I pretend to be ill so that I do not have to do PE.	1.83	.645	Disagree	Positive Attitude
2. I wish they did not make us do PE because it is not important.	1.52	.649	Disagree	Positive Attitude
3. PE is not for me because I am not strong and big enough.	2.38	.710	Disagree	Positive Attitude
4. I do not like PE because it is only about winning and beating your opponent.	2.33	.909	Disagree	Positive Attitude
5. I like physical exercise which are strenuous and painful.	3.27	.741	Neutral	Normal Attitude
6. I do not like playing games because they are too rough.	2.52	.871	Neutral	Normal Attitude
7. I would prefer it if PE was not as important as other school subjects.	3.58	1.008	Agree	Negative Attitude
8. I wish we could choose what we do in PE.	3.25	.950	Neutral	Normal Attitude
9. I would prefer to play less games and have more fitness activities in PE.	3.83	.732	Agree	Negative Attitude

10. When we learn new skills in PE my PE teacher only helps the good students.	3.27	1.028	Neutral	Normal Attitude
11. My PE teacher does not pay more attention to the students who are good at PE than to the ones who are less good.	2.63	1.120	Neutral	Normal Attitude
12. PE would be much more fun if the PE teacher did not praise	2.94	.832	Neutral	Normal Attitude
13. Sometimes I feel I have no control over my body in PE activities and I trip over my own feet.	3.25	.832	Neutral	Normal Attitude
	2.92	.848	Neutral	Normal Attitude

Legend: 4.5-5.00 = strongly agree/highly negative 3.50-4.49 = agree/negative 2.50-3.49=neutral/normal
 1.50-2.49 = disagree/positive 1.0-1.49 = strongly disagree/highly positive

Individuals' well-being and the overall positive experience of engaging physical activities. Such positive attitudes are substantiated in the study of Garcia et al (2019) and by Yarrimkaya et al., (2019) showing results that participants under MLT Approach had a significantly more positive attitude towards' physical education than the non-MLT Approach. It has been observed that when students were given their choice of engaging the PE activities, they tend to be more participative, active and motivated to execute and perform aggressively. It can also be viewed that most of the indicators present values of standard deviation close to one and lower. This suggests that the data points indicate low variance. Data tend to be closer to the mean which could be interpreted that values are relatively consistent. Such results provide students with a more engaging and in a relatively consistent interactive learning experience, which can lead to a more positive attitude towards physical education.

On the other hand, negative attitudes are manifested in their agreement for PE not to be as important as other school subjects (wtd. mean=3.58) and to have more fitness activities and play less games (wtd. mean=3.83). This result is similar to the study of Subramanian, P.R., & Giges, B. (2019). This examined the impact of Physical Education lessons on student's motivation and enjoyment in the context of Singapore Schools. It states that teacher-students' relationships, lesson content and perceived competence, influence student's attitudes in PE. Students may develop negative attitudes towards Physical Education subjects due to various reasons, one of which is lack of interest. Some students may simply have a disinterest in P.E. activities or sports, a non-sporty type of personality leading to manifest negative attitude towards PE. They may not enjoy the activities being offered or feel that they are not suited to their preferences or abilities.

All other indicators are rated neutral indicating normal views of the participants 'attitude towards P.E. This is in line with the study of Pereira, Santos and Marinho (2022) entitled: "Students' Attitudes towards Physical Education: A Narrative Review" that shows that students between 7 to 11 years old have moderate attitudes towards PE. In totality, the participants under the exposure of M-L-T have indicated their attitudes towards PE to be normal (average wtd.mean=2.92). Indeed, it is important to consider that every student is unique, and their experiences and perceptions can influence their attitudes. It is important for educators and school to address these factors by creating inclusive and supportive environments. By addressing student's individual needs, providing a variety of activities and teaching approach, promote likeness to embrace as an enjoyable subject.

Table 6 Indicates the result of the level of attitude towards PE manifested by participants exposed to non-MLT Approach. It can be seen that they have similar positive attitudes towards PE (indicator 1-4 with those exposes to MLT Approach). However, in this group of participants, they prefer to play less game and have more fitness activities in PE (wtd.mean 3.64, VD=agree) this implies a negative attitude. It was observed that participants exposed to non-MLT approach exhibit similar positive attitudes towards PE. Consistent positive

attitude indicate that participants are likely motivated and actively involved in PE activities, regardless of the instructional approach.

Table 6. The Level of attitude towards P.E manifested by participants exposed to non-MLT approach

Indicators	Wtd mean	SD	Verbal Description	Interpretation
1. Sometimes I pretend to be ill so that I do not have to do PE.	2.39	.697	Disagree	Positive Attitude
2. I wish they did not make us do PE because it is not important.	1.92	.506	Disagree	Positive Attitude
3. PE is not for me because I am not strong and big enough.	2.19	.894	Disagree	Positive Attitude
4. I do not like PE because it is only about winning and beating your opponent.	2.44	1.162	Disagree	Positive Attitude
5. I like physical exercise which are strenuous and painful.	3.28	.841	Neutral	Normal Attitude
6. I do not like playing games because they are too rough.	2.61	.941	Neutral	Normal Attitude
7. I would prefer it if PE was not as important as other school subjects.	2.92	.874	Neutral	Normal Attitude
8. I wish we could choose what we do in PE.	3.11	.937	Neutral	Normal Attitude
9. I would prefer to play less games and have more fitness activities in PE.	3.64	.845	Agree	Negative Attitude
10. When we learn new skills in PE my PE teacher only helps the good students.	2.97	1.473	Neutral	Normal Attitude
11. My PE teacher does not pay more attention to the students who are good at PE than to the ones who are less good.	3.11	1.17	Neutral	Normal Attitude
12. PE would be much more fun if the PE teacher did not praise.	3.78	1.042	Neutral	Normal Attitude
13. Sometimes I feel I have no control over my body in PE activities and I trip over my own feet.	3.17	.841	Neutral	Normal Attitude
Average wtd. Mean	2.91	.940	Neutral	Normal Attitude

Legend: 4.5-5.00 = strongly agree/highly negative 3.50-4.49 = agree/negative 2.50-3.49 = neutral/normal
 50-2.49 = disagree/positive 1.0-1.49 = strongly disagree/highly positive

It was observed that participants exposed to non-MLT approach exhibit similar positive attitudes towards PE. In the same matter with M-L-T exposure, result of the indicators of the level of attitude of the students toward PE present values of standard deviation close to one and lower. This suggests that the data points also indicate low variance. Data tend to be closer to the mean which could be interpreted that attitude of learners exposed in different approaches tend to be relatively consistent. Thus, in terms of attitude towards PE, students have similar attitude when faced with P.E learning competencies. Consistent positive attitude indicate that participants are likely motivated and actively involved in PE activities, regardless of the instructional approach. All other indicators manifest neutral descriptions implying normal attitude. Generally, the two groups manifest more or less similar attitude towards PE. This implies that teaching approaches do not limit the attitudes of the learners.

It was supported by the qualitative study of Garcia et.al (2019) entitled “Exploring Middle Schools Students Attitudes Towards Physical Education”, investigated middle school students' attitudes toward physical education through interviews and focus group discussions. The findings suggest that students' attitudes are influenced by their perceived competence, enjoyment of activities, and the teachers' instructional strategies. The study emphasizes the importance of creating a positive and inclusive learning environment to enhance students' attitudes toward physical education.

The Significant Difference Between the Pre-Test and the Post –Test Result (written) of the Participants exposed to MLT approach and non- MLT approach

Table 7. presents the significant difference between the pre-test and the post-test results of the participants when exposed to the Model-Lead-Test and non-MLT approach at 0 .05 level of significance (p-value).

Table 7. Significant Difference between the Pre-Test and the Post –Test Result (written) of the Participants exposed to MLT approach and non-MLT approach

		Mean	SD	n	t	df	p value	Decision	Interpretation
Pair 1	Pre-test	-5.528	4.404	36	-7.53	35	.000	Reject	Significant
	Post-test							Null hypothesis	
Pair 2	MLT	-3.333	4.697	36	-4.258	35	.000	Reject	Significant
	Non-MLT							Null hypothesis	

n=36 p=0.05

It shows that under the MLT approach (pair 1), there is a significant difference between the pre-test and post-test (mean=-5.538, SD = 4.404). The paired t-test result $t(35) = -7.53$, $p = .000$. suggest the condition where the p-value is less than 0.05 signifies that the statement, “there is no significant difference in the student’s pre-test and post-test when exposed to the MLT approach” is rejected at 0.05 level of significance set for statistical analysis. On the other hand, the high standard deviation (more than 1) signifies a high variability as indicated by a wider spread of data points. This may be still good when a high degree of dispersion in the data set is being considered.

The significant difference in the paired t-test results suggested that the MLT approach had a measurable impact on student performance or skill development. The rejection of null hypothesis indicates that the approach has influenced the outcomes of the participants, leading to improvements or changes that can be attributed to the intervention or approach in teaching.

In the same manner, it shows that under the non-MLT approach (pair 2), there is a significant difference between the pre-test and post-test (mean=-3.33, SD=4.697) result. The paired t-test result $t(35) = -4.258$, $p = .000$. suggest the condition where the p-value is less than 0.05 that the statement, “there is no significant difference in the student’s pre-test and post-test when exposed to the non- MLT approach “is rejected at 0.05 level of significance set for statistical analysis. This implies that the difference is statistically significant.

The significant difference suggested that the implementation of the model-lead-test approach had a positive impact on student’s knowledge, skills and attitudes related to test creation and administration. The approach likely provided students with hands-on experiences, opportunities for practical application of knowledge, which contributed to their improved performance in the post-test. This finding suggested that the model-lead-test approach is a promising approach for enhancing student’s understanding in meeting the learning competencies.

Table 8. Significant Difference between the Pre-Test and the Post –Test Result of the performance tasks of the participants exposed to MLT approach and non- MLT approachh.

		Mean	SD	n	t	df	p value	Decision	Interpretation
Pair 1	Pre-test	-1.882	.519	36	-21.747	35	.000	Reject	Significant
	Post-test							Null hypothesis	
Pair 2	MLT	-.465	.323	36	-8.652	35	.000	Reject	Significant
	Non-MLT							Null hypothesis	

n=36 p=0.05

The data in Table 8 presents the significant difference between the pre-test and the post-test results of the performance tasks of the participants when exposed to the Model-Lead Test and non-MLT approach at a .05 level of significance (p-value).

The paired t-test results show that under the MLT approach (pair 1), there is a significant difference between the pre-test. and post-test $t(35) = -21.747$; $p = .000$). The condition where the p-value is less than 0.05 signifies that the statement, “there is no significant difference in the

student’s pre-test and post-test performance when exposed to the MLT approach “is rejected at 0.05 level of significance set for statistical analysis.

Similarly, when non-MLT approach was subjected to paired t-test, findings show significant difference between pre-test and post-test $t(35) = -8.652, p = 0.000$. This condition of p value lesser than 0.05 level of significance set for statistical analysis implies that there is a difference in the pre-test and the post result hence, the null hypothesis which states that. “There is no significant difference in the student’s pre-test and post-test when exposed to the non-MLT approach “is rejected at 0.05 level of significance.

It has been noted that in a classroom environment, students exhibit excitement during activities when a teacher is present. However, in the absence of a knowledgeable individual, students tend to engage in unrelated activities concerning their assigned tasks. Therefore, the teacher's presence alongside interactive activities fosters a positive influence on the execution of these activities. The research conducted by Smith et al. (2018), titled “The impact of the Model-Lead-Test Approach on Physical Education Performance in Grade 9 Students,” explored the effects of implementing the MLT method in Physical Education classes for Grade 9, revealing positive performance outcomes. In the study by Johnson et al. (2019), titled “Comparing the effectiveness of the Model-Lead-Test approach and Traditional Teaching Methods in Grade 9 Physical Education,” findings indicated that students instructed through the MLT method exhibited a greater degree of skill acquisition, motivation, and enjoyment than those taught via traditional approaches.

Additionally, this significant difference suggested that the instructional method had a notable impact on student outcomes and learning progress. The researcher gains valuable insights into the efficacy of instructional approach and the potential for enhancing learning experience in physical education.

The Mann-Whitney U test on the Significant Difference of Students’ Attitudes Toward P.E.

The significant difference in the attitude of students toward P.E under the M-L-T approach and non-M-L-T approach is shown in Table 9

Table 9. Mann Whitney U Test of Significant difference between the level of students’ attitudes exposed to M-L-T and non-M-L-T approach

Ranks (var)	Groups	Mean rank	U test	Z	Asym Sig (2 tailed)	Conclusion	Interpretation
Attitude	Non MLT	33.89	554	-1.068	.285	Fails to reject null hypothesis	There is no significant difference in the students’ attitude towards PE.
	MLT	39.11					
N= 72		0.05 level of significance					

Table 9 presents the Mann Whitney U test of significant difference between the level of students’ attitudes exposed to M-L-T and non-M-L-T approach; it can be seen that the mean rank of the students’ level of attitude exposed under the M-L-T (mean=39.11) is higher than the level of students’ attitudes (mean=33.89) exposed under the non-M-L-T approach. However, U test of significant difference indicates that there is no significant difference (asym sig=.285), (U=554) between the students’ attitude exposed to M-L-T and non-M-L-T approach. This is consistent with the results of students' level of attitude towards PE in both approaches which are similarly normal (T4, T5).

It was supported by the study of Yarrimkaya et al., (2019) entitled, “The Effect of a Model Lead Test Approach on Students' Attitude Towards Physical Education” showed results that the experimental group had a significantly more positive attitude towards physical education than the control group. It was concluded that the approach can provide students with a more engaging and interactive learning experience, which can lead to a more positive attitude towards physical education. In the study of Pereira, Santos and Marinho (2022) entitled: “Students' Attitudes toward Physical Education: A Narrative Review” the result indicated that students between 7 to 11 years old have moderate attitudes towards PE. This increase in attitude towards PE is very important, as Calunsag and San Diego (2023) research entitled: “Students’ Attitudes and Academic Performance in Physical Education” where the great effect of student attitudes and academic performance in PE class shown.

This implies that students' attitudes could be nurtured and positively developed. By fostering a sense of belonging, empowerment, and intrinsic motivation, teachers can nurture students’ attitudes and foster a growth mind set conducive to continuous learning and personal development.

Proposed training design has been developed specifically for grade 9 students, taking into consideration their unique needs and abilities. The findings of this study contributed to the development of evidence-based strategies for teaching physical education and ultimately enhance the overall educational experience for grade 9 students

CONCLUSION

Based on the findings, the following conclusions have been drawn:

1. The use of MLT and non-MLT considerably increased the performance of the written and performance task of the participants in PE.
2. Students exposed to the MLT Approach in the performance tasks typically show significant improvement in their scores compared to students in non-MLT Approach.
3. The attitudes manifested by the participants were exclusive of their personality traits which could be developed and nurtured.
4. M-L-T approach is an effective teaching strategy.
5. Students’ attitudes did not depend on approaches utilized in teaching PE

Recommendations

Based on the conclusions drawn, the following recommendations are forwarded:

1. The teachers may use MLT as alternative to non-MLT teaching strategy to increase the PE performance of students.
2. The administration may implement character building through guidance personnel by conducting seminar sessions on personality development or personhood.
3. The procedures in implementing MLT teaching strategies maybe enhanced to improve the effectiveness of the MLT procedures followed in this study.
4. Future researchers may undertake a study to verify the validity of the results.

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