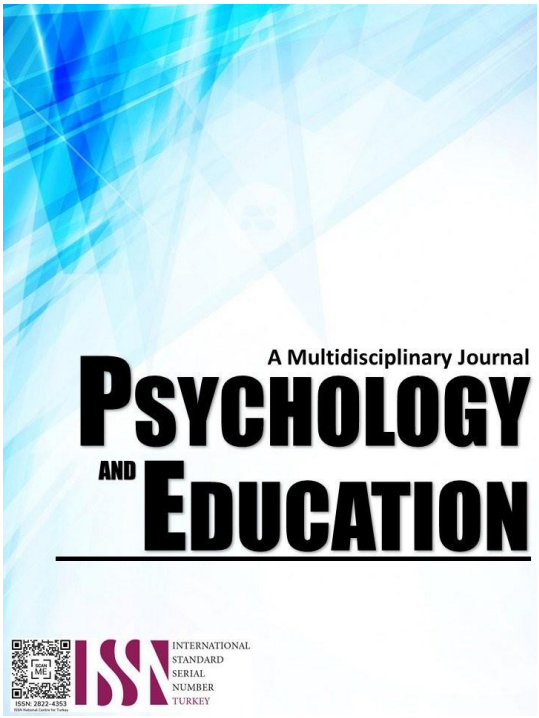
UTILIZATION OF CONTEXTUALIZED ELECTRONIC LEARNING MATERIAL IN PHYSICAL EDUCATION AND ITS RELATION TO THE PUPILS' ACADEMIC PERFORMANCE



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Research Article

Utilization of Contextualized Electronic Learning Material in Physical Education and its Relation to the Pupils' Academic Performance

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Abstract

The aim of this study is to determine the level of utilization of contextualized electronic learning material in Physical Education and its relationship to the Grade Six Physical Education learners. The study utilized the descriptive-correlational research design which aimed to describe the content, relevance, and acceptability of contextualized electronic learning resources and its significant relationship with the learners' academic performance. Total enumeration sampling technique was used. A total of 40 Grade Six learners became the respondents of this study. The study used standardized questionnaire, and data was analyzed using the frequency, mean, and the Pearson Product Moment Correlation Coefficient to analyze the significant relationship. The study revealed that the contextualized electronic learning material in Physical Education was perceived to be effective with regard to its content, relevance and acceptability. The academic performance of the learners is "satisfactory". No learners achieved the outstanding grades which suggests a need to enhance the learning materials in terms of its content, relevance and acceptability. The result of regression analysis showed that there is a significant relationship between the learning materials' content, relevance and acceptability and the learners' academic performance. The study concludes that contextualized electronic learning material in Physical Education is found to be effective and can impact the learners' academic performance; however, the teachers must take continuous improvement on enhancing the learning materials, ensuring that this is relevant and aligned to the learning preference and needs of the learners to maximize its effectiveness.

Keywords: *contextualized electronic learning materials, academic performance, grade six learners, physical education*

Introduction

Teacher is one of the essential inputs in any educational system as they are the keys to the learning success of the learners (Salendab, 2023). They employ various learning resources to scaffold learning and provide quality education among learners. They are the best developers of these supplementary learning materials. They have the best capacity to develop a set of well-fit instructional materials for the learners to attain the mastery of learning competencies Teaching and learning cannot be effective without adequate and relevant use of learning resources (Lardizabal et al, 2023). These learning resources are highly regarded as tools for the improvement of learners' academic performance and the use of appropriate learning material has a strong relationship and plays a vital role in improving the academic performance of the learners (Ahmadi & Reza, 2018).

Notably, the task of the teacher includes, among others, to provide the materials and experiences to aid learning and meet the learner's expectations. However, these problems should be addressed through the utilization of contextualization and localization of instructional materials.

Moreover, recent advancements in digital education have highlighted the potential of contextualized electronic learning materials to enhance student engagement and academic performance. In particular, the COVID-19 pandemic accelerated the adoption of digital tools in education, forcing educators to explore innovative ways to maintain effective teaching practices even in remote settings. The integration of contextualized electronic learning materials in education has become increasingly prevalent, particularly in enhancing the learning experiences of students.

Furthermore, Bandono (2008) explained that the advantages of localization and contextualizing the educational program are: social affectability, potential for personalization, simple accessibility of assets, direct relevance of materials to students, and responsibility for advancement process. All-encompassing learning procedure plans to assist understudies with understanding the significance of showing materials with it with regards to everyday (the setting of individual, social and social), so 21st century learners have the information and abilities which are dynamic and adaptable to effectively build their own comprehension.

The integration of technology into education has significantly transformed teaching and learning processes across various subjects, including Physical Education (PE). Physical Education, traditionally reliant on physical interaction and hands-on activities, faced unique challenges during this transition. The abrupt shift to online learning raised concerns about the efficacy of PE instruction, prompting educators to seek alternative methods that could replicate the benefits of in-person teaching. Contextualized electronic learning materials, designed to be relevant and relatable to students' real-life experiences, emerged as a promising solution. These materials not only cater to the diverse learning needs of students but also help in making PE content more accessible and engaging, even in a virtual environment.

Recent studies have shown that the use of digital technologies in PE can significantly impact student outcomes by promoting active

learning and providing opportunities for personalized instruction. For instance, research has demonstrated that well-designed digital materials can improve students' understanding and retention of PE concepts by contextualizing the learning experience (Marín-Suelves et al., 2023). Moreover, the integration of technology in PE has been linked to the development of essential skills such as digital literacy, which is increasingly important in the modern educational landscape (Jastrow, et al 2022).

As schools continue to adapt to the evolving demands of education, understanding the impact of contextualized electronic learning materials on student performance in PE is crucial. This study aims to assess the utilization of contextualized electronic learning materials and its impact on the learners' academic performance of Grade Six Physical Education learners. providing insights into how digital resources can be optimized to support student learning in this critical subject.

Research Questions

This study aimed to assess the utilization of contextualized electronic learning materials and its relation to the pupils' academic performance. Specifically, this study sought answers to the following questions:

1. What is the level of the contextualized electronic learning materials utilization evaluation in terms of:
    1.1. content;
    1.2. relevance; and
    1.3. acceptability
2. What is the academic performance of the Grade Six Physical Education learners in the fourth quarter?
3. Is there a significant relationship between the contextualized electronic learning materials utilization evaluation such as content, relevance, and acceptability and the academic performance of Grade Six Physical Education learners?

Literature Review

Due to the paradigm shift in education, contextualization began to gain its prominence. The educational change from pure learner as the receiver of knowledge to the learner as a constructor of meaning is the prime starter of the contextualized teaching and learning. From a view that change of behavior is a sole determiner of learning, the present education embraces the philosophy that using real-life experiences of students in the teaching-learning process provides the student meaningful learning experience. It is more practical, real, and values-based. The mental construct of students in learning becomes more accurate, making them multifaceted learners (Abad, 2020).

Contextualized Teaching and Learning is a way to teach content through relevant materials that keep students engaged in learning. It refers to instructional strategies designed to link the learning of basic skills and academic or occupational content by focusing on teaching and learning directly on concrete applications in a specific context that is of interest to the student (Bird et al. (2010) as cited by Abad (2020)). As such, materials should be developed holistically and must be relevant to the learners' existing needs. Teachers should be knowledgeable in designing the instructional materials to address the current status of the learner's proficiency in reading (Ranjit & UNICEF, 2015).

In addition, according to Taylor (2004) as cited by Garcia et al. (2021), to contextualize, teachers must use authentic materials and anchor teaching in the context of learners' lives. Considering this, it is a big challenge for the teacher to come up with this kind of teaching material if no enough contextualized resource materials will be provided to them (Garcia et al. 2021). Moreover, contextualization helps learners develop new skills, knowledge, abilities, and attitudes by presenting various topics in meaningful and relevant contexts. Teachers can present the lesson in a more meaningful and relevant context by contextualizing and localizing it based on the learner's previous experiences and real-life situations. Both of which adhere to making a lesson flexible, fit, creative, relevant and meaningful, and adaptive to the level of understanding and instructional needs of the students. When learners are placed in a natural and actual learning environment that allows them to manipulate, relate, and adapt to various learning opportunities and resources available in their neighborhood or community, profound learning is assured and realized. It aids teachers and students in understanding concepts by relating and presenting lessons in the context of the current local environment, culture, and society, as a result, lessons are becoming more realistic, customized, and relevant (Torres, 2015)

Online education, including online teaching and learning, has been studied for decades. Numerous research studies, theories, models, standards, and evaluation criteria focus on quality online learning, online teaching, and online course design. What we know from research is that effective online learning results from careful instructional design and planning, using a systematic model for design and development. The design process and the careful consideration of different design decisions have an impact on the quality of the instruction. And it is this careful design process that will be absent in most cases in these emergency shifts (Hodges, et al 2020)

E-Learning is the utilization of Information and Communication Technology (ICT) which aims to convey data for schooling where teachers and students are isolated by distance, time, or both to improve the student's learning experience and execution. E learning was characterized as a bunch of directions conveyed by means of all electronic media, for example, the web, intranets, and extranets. Accordingly, by dispensing with the hindrances of time and distance, people would now be able to assume responsibility for their own deep learning (Almajali et al., 2016; Obeidat et al., 2016). Because of this, e-learning conditions diminish the expense of arrangement and accordingly increment incomes for scholarly establishments (Masa'deh et al., 2016)

The study of Petrova (2020) also showed that e-learning localization materials are important because learners easily understand and absorb the information faster and the retention of the lesson is enhanced, thus, localizing materials will be valued by the learners.

Contextualized Teaching and Learning (CTL) encourages students in active learning while also supporting them in making sense of what they are learning. By focusing teaching and learning on real applications in a specific setting that is of interest to the student, contextualized instruction connects the learning of foundational skills with academic or occupational information. When concepts are given in context, many people learn better and faster and retain information longer (Agbunag, 2022).

Methodology

A descriptive-correlational research design was utilized in this study since it is used to describe the characteristics and utilization of contextualized electronic learning material and describe the academic performance of Grade Six learners in Physical Education. It is also appropriate since it aims to analyze the relationship between the contextualized electronic learning material and the academic performance of the learners. Descriptive correlational research design describes the variables and measures the extent of the relationships that occur between and among the variables Canonizado (2020). A total enumeration was used as sampling technique of the study, involving all 40 Grade Six learners. Total enumeration sampling is a type of purposive sampling technique where the researcher chooses to examine the entire population that have a particular set of characteristics. This approach, often used in research where the population is manageable and possesses specific characteristics pertinent to the study, allowed the researcher to include every eligible learner within the designated cohort, ensuring comprehensive data collection without the biases that might arise from selecting a smaller sample subset.

This method was particularly suitable given the study's intent to understand the direct impact of these materials on academic performance across all learners in this grade. Additionally, total enumeration sampling allowed the researcher to capture diverse responses and experiences within the same educational context, enhancing the robustness of the correlation analysis between learning material attributes—such as content, relevance, and acceptability—and academic performance.

This study used the standardized questionnaire as the primary instrument. This instrument was adopted from Mr. Raffy Herrera, which was modified to align with the specific objectives of the study. Pilot testing was also conducted to ensure the validity and reliability of the instrument. A Cronbach's alpha of 0.94, suggesting that the instrument is valid and reliable, making it more relevant to the target population.

Data was analyzed using the frequency, mean, and the Pearson Product Moment Correlation Coefficient to analyze the significant relationship.

Throughout the process of this study, the researcher carefully observed the ethical consideration of this study. The researcher went to the parents and students to ask for their consent to conduct the study. This was made to ensure that they are fully aware as to the nature and objectives of the study. The anonymity of the students is protected, with all data being with utmost confidentiality. The researcher also considered the regular school activities of the respondents to ensure that they are not disrupted.

Results and Discussion

Table 1. *Level of Contextualized Electronic Learning Materials Utilization in Terms of Content*

Indicators	*Mean*	*Description*
1. The learning objectives are clearly defined and stated.	4.60	Strongly Agree
2. The sequence of activities is appropriate.	4.25	Agree
3. The directions are specific and understandable.	4.33	Strongly Agree
4. The exercises are sufficient for practice sessions.	4.35	Strongly Agree
5. The content is related to my learning.	4.48	Strongly Agree
Grand Mean	4.40	Strongly Agree

The table 1 presents the contextualized electronic learning materials utilization relative to content. As presented, the item 1 indicates that learners strongly agree that learning objectives within contextualized electronic learning materials are clearly defined and articulated. This is manifested by the highest mean score of 4.60, described as "strongly agree". This further presents that clear and well defined objectives helps learners understand what is expected from them and how they can achieve their learning objectives, contributing significantly to their overall learning performance.

Item 2 which is described as "strongly agree", implies that the content of learning materials is very relevant to their learning needs. This relevance ensures that students can see the direct application and benefits of the materials to their learning experience. With this, learners can enhance their social engagement and motivational success. The result is manifested by the mean score of 4.48.

Item 3, indicating strong agreement suggests that the activities provided are adequate for practice. This is manifested by the mean score of 4.35, described as "strongly agree". The figure further suggests that sufficient activities are essential to reinforce teaching and learning which allows learners to apply concepts in a real-world context to develop their understanding and skills.

Item 4, with a mean score of 4.33, described as "strongly agree" implies that direction within the learning materials are clear and easy to follow. Clear and specific direction were presented so that learners can easily follow the tasks for the day. The specific objectives can help learners navigate through the materials and complete the tasks as intended.

The lowest mean score within this table though still high at 4.25, described as "agree" reflects agreement that the sequence of activities is appropriate. The data suggests that while the majority of learners find the progression of activities logical and beneficial, there may be a small scope for improving the flow to enhance the learning experience further.

Generally, the 4.40 grand mean, described as "strongly agree" indicates that the contextualized electronic learning materials are perceived to be effective. The high scores across all indicators highlight that the materials are well-structured, relevant, and conducive to learning. The strongest aspect is the clarity of learning objectives, while the sequence of activities, though positively received, presents a slight area for improvement. This positive feedback underscores the effectiveness of the materials in supporting Grade Six Physical Education learners in achieving their academic goals.

This result affirms the study of Hodges et.al (2020), who pointed out that the importance of well structured and relevant digital learning materials significantly enhance the academic performance of the learners. Also, Martin & Bolliger (2018) stressed out that when electronic learning materials are perceived as effective or relevant, they can significantly contribute to student engagement and motivation.

Table 2. *Level of Contextualized Electronic Learning Materials Utilization in Terms of Relevance*

Indicators	*Mean*	*Description*
1. The activities were appropriate and relevant to our needs.	4.13	Agree
2. The instructional materials were suitable for individual use.	4.30	Strongly Agree
3. The learning materials gave an opportunity for the desired skills.	4.10	Agree
4. The topics were attuned to our interest and urgent needs.	4.35	Strongly Agree
5. The learning materials had developed critical thinking skills and mastery of the concepts.	4.25	Agree
Grand Mean	4.23	Agree

Table 2 illustrates the level of utilization of contextualized electronic learning materials in terms of relevance. As illustrated, indicator 4 scored the highest mean which implies that learners perceived the learning materials as highly relevant and aligned based on their learning needs. This further implies that the learners enhance their engagement and motivation as they invested in content that resonates with their personal interests and urgent educational needs. This is manifested by the mean score of 4.35, described as "strongly agree".

Indicator 2 with a mean score of 4.30, described as "strongly agree" suggests that the learning materials were well-designed for self-paced learning, allowing the learners to study according to their pace with the content. This figure also suggests the effectiveness of learning materials in facilitating independent study.

Indicator 5 received the mean score of 4.25, described as "agree" which reflects the materials' effectiveness in promoting the higher order thinking skills (HOTS) of the learners. Developing the critical thinking in physical education allows learners to think critically about health, fitness and physical activity concepts which leads to a more practical understanding of the subject.

Indicator 1 states that the activities were appropriate and relevant to the learners' needs with a mean score of 4.13, described as "agree". This suggests that while the activities were generally seen as suitable and relevant, there might be room for improvement in tailoring these activities more closely to student needs.

Indicator 5 – The learning materials gave an opportunity for the desired skills having a mean score of 4.10, described as "agree". It indicates that the learners felt the relevance of the learning materials but there might be another ways to enhance the learning experiences of the learners. This may involve intensive skill-building activities that cater various learning styles and skills of the learners.

The grand mean of 4.23, described as "agree" indicates that students found the contextualized electronic learning materials to be relevant and effective. The high scores across most indicators highlight the materials' strengths in aligning with student interests, suitability for individual use, and promoting critical thinking and skill development. The relevance of learning materials is essential for student engagement. EDGE Education (2023) stressed out that the personalized and contextualized relevant learning materials can enhance learners' motivation and engagement.

Table 3. *Level of Contextualized Electronic Learning Materials Utilization in Terms of Acceptability*

Indicators	*Mean*	*Description*
1. The learning materials can be used to motivate the learning concepts.	4.25	Agree
2. The learning materials are applicable to real –life situations.	4.28	Agree
3. The learning materials provide activities.	4.30	Strongly Agree
4. The learning materials cater our needs.	4.18	Agree
5. The learning material is valuable and could be promoted to others.	4.40	Strongly Agree
Grand Mean	4.28	Agree

Table 3 shows the level of contextualized electronic learning materials utilization relevant to acceptability. As shown in this table, indicator 5 received the highest mean score of 4.40, described as "strongly agree". This description means that learners see the electronic learning materials as valuable. This means that learners found this electronic materials as useful to their learning needs and can be recommended to others. The next indicator that receives the highest mean score is 3 – the learning materials provide activities. The mean score of 4.30, described as "strongly agree" suggests that the learning materials include interactive features that increases learners' understanding skills.

Applicability to real life situation is the next indicator that receives that mean score of 4.28, described as "agree". This relevance to real-world contexts is essential for maintaining student interest and demonstrating the practical value of the knowledge gained. The 4.25 mean score, described as "agree" for indicator 1 indicates that the materials are effective in inspiring students to engage with and understand the learning concepts presented.

Indicator 4 – the learning materials cater learners' needs, implies that the materials are generally well-aligned with student requirements, although there may be room for slight improvements to better meet diverse needs. This is manifested by the mean score of 4.18, described as "agree".

Overall, the mean score of 4.28, described as "agree", reflects a high level of acceptability of the contextualized electronic learning materials among the students. All indicators received positive feedback, with two indicators ("The learning material is valuable and could be promoted to others" and "The learning materials provide activities") receiving particularly high scores.

The relevance of learning materials is essential for student engagement. EDGE Education (2023) stressed out that the personalized and contextualized relevant learning materials can enhance learners' motivation and engagement.

Table 4. *Distribution of the Academic Performance of the Respondents*

Grades	*Frequency*	*Description*
90-100	0	Outstanding
85-89	11	Very Satisfactory
80-84	19	Satisfactory
75-79	10	Fairly Satisfactory
74 below	0	Did not Meet Expectation
Mean:	84.55	Satisfactory

Table 4 presents the distribution of academic performance of the respondents. As presented, no learners achieved the "outstanding" grade. 11 out of 40 learners achieved the "very satisfactory" remarks (85-89) while 19 out of 40 received a "satisfactory" academic performance (80-84). 10 out of 40 learners achieved the "fairly satisfactory" performance (75-79).

The absence of students in the "Outstanding" category may indicate areas where improvements could be made, either in the teaching methods, the learning materials, or the students' engagement with the content.

The mean grade of 84.55, described as "satisfactory" suggests that the performance is acceptable but there is always a room for improvement. The fact that no students achieved "outstanding" performance could imply that the learning materials, instructional methods, or student engagement levels might need enhancement to help students reach higher performance levels.

Hodges et.al (2020) emphasized that that well-structured and relevant digital learning materials can significantly enhance student performance. The absence of "Outstanding" grades may indicate that while the materials are effective to a degree, further refinement could elevate student outcomes to the next level.

Table 5. *Regression Analysis between Contextualized Electronic Learning Material Content and the Academic Performance*

Variables	*Mean*	*N*	*R*	*P-Value*	*Interpretation*
Content	4.40	40	0.438	0.005*	Significant
Academic Performance	84.55				

**at 0.05 level of significance*

Table 5 presents the results of the regression analysis between the content of electronic contextualized learning materials and the academic performance of the learners. As presented the content of learning materials received the mean score of 4.40 while the academic performance of the learners achieved 84.45, described as "satisfactory".

The analysis shows correlation coefficient (R) OF 0.438. This figure suggests that the content of electronic conceptualized learning materials is significant to the learners' academic performance which further means that content has something to do with the academic performance. This also means that the content plays a crucial role in enhancing the academic performance of Grade Six Physical Education learner. The P-value is 0.005 with the 0.05 level of significance. This result affirms the idea of Martin & Bolliger (2018) who pointed out that effective learning materials content can enhance the motivation and the academic success of the learners.

Table 6. *Regression Analysis between Contextualized Electronic Learning Materials Relevance and the Academic Performance*

Variables	*Mean*	*N*	*R*	*P-Value*	*Interpretation*
Relevance	4.23	40	0.499	0.001*	Significant
Academic Performance	84.55				

**at 0.05 level of significance*

Table 6 shows the regression analysis between the relevance of electronic contextualized learning materials and the learners' academic performance. As shown in this table, the (R) value is 0.499 indicating a moderate to strong positive correlation. This means that there is a significant relationship between the relevance of electronic contextualized learning materials and the learners' academic performance. This further means that when learners see the relevance of the learning materials according to their learning styles and needs, their learner engagement and motivation to learn increase, resulting to enhanced academic performance. This finding is supported by Hodges et al. (2020) who said that relevant learning materials enhance engagement and motivation, which are crucial factors of academic success.

Table 7. *Regression Analysis between Contextualized Electronic Learning Materials Acceptability and the Academic Performance*

Variables	*Mean*	*N*	*R*	*P-Value*	*Interpretation*
Acceptability	4.23	40	0.436	0.005*	Significant
Academic Performance	84.55				

**at 0.05 level of significance*

Table 7 highlights the results of regression analysis between the acceptability of electronic contextualized learning materials and the academic performance of the learners. As highlighted, the correlation coefficient value of 0.436 indicates moderate positive relationship between the acceptability of learning materials and the learners' academic performance. This is manifested with a P-value of 0.005, described as significant. 0.05 is the level of significance. This further indicates that the acceptability of learning materials creates a meaningful impact on learners' performance. The findings highlight the importance of creating learning materials that are not only content-rich but also well-received by students. When materials are deemed acceptable—meaning they are easy to use, engaging, and perceived as valuable. Studies have shown that when students find learning materials to be acceptable, they are more likely to use them effectively, leading to improved educational outcomes (Hodges et al., 2020; Martin & Bolliger, 2018).

Conclusions

Based on the general findings of this study, it can be concluded that the contextualized electronic learning materials relative to content, relevance, and acceptability, significantly influence the academic performance of Grade Six Physical Education Learners. As revealed, the three sub-variables of learning materials like content, relevance, and acceptability are essential to improve the academic performance or grades of the learners in Physical Education subject. The grades or academic performance of the Grade Six learners are perceived to be "Satisfactory". This description emphasized that conceptualized electronic learning materials can enhance learners' academic success. A room for improvement on the content, relevance and acceptability of the learning materials must be taken into consideration since there is an absence of "Outstanding" grades. In improving the learning materials, teachers must consider the learning styles and needs of the learners to improve the academic performance of Grade Six learners in Physical Education subject.

Based on the study's conclusion, the following recommendations were drawn: The learning material in Physical Education may be enhanced to align its contents based on the students' learning styles and interest. This may help enhancing the learning material identified in the sequencing of activities. The activities embedded in the learning material may increase its student-centered activities that allow students to connect the PE subject with their personal lives and experiences. Regular review and update of materials in PE may be considered to ensure that the materials remain relevant and effective. Adding new digital features or interactive content based on emerging educational technologies can also improve student engagement. Teachers of PE subject may undergo training and workshop sessions to help them utilize the contextualized learning material more effectively. This will help the teachers enhance their skills in material creation and digital teaching strategies, subsequently optimize the students outcomes in Physical Education.

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