

THE INCORPORATION OF TECHNOLOGY IN PHYSICAL EDUCATION AND TEACHER INSIGHTS OF THE INFLUENCE IT HAS ON INVOLVEMENT OF PRIMARY SCHOOL LEARNERS IN ZAMBEZI REGION, NAMIBIA

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Abstract:

The purpose of this study was to examine the incorporation of technology in physical education and teacher insights of the influence it has on involvement of primary school learners in Zambezi Region, Namibia. This study used a qualitative approach which was employed to collect information from respondents. The study's participants were 119 physical education teachers and 2380 learners purposively selected from 119 public and private schools in Zambezi Region of Namibia. Information was gathered using a 3 item subjective questionnaire designed by the researcher and data was analysed thematically. The study results shows that the most technological gadgets such as health monitors, heart rate monitors, smartphone applications, smart watches and videos increase learners and teachers involvement in physical education lessons. Moreover, this study results further shows that, the use of technology in physical education classes increase fitness and competition levels of learners. Lastly this study results shows that teacher's readiness and competency they have with the use of technology determines how likely they will use technology in physical education classes, for instance the more skilled the teachers are with technology, the more likely they use technology. On the other hand, the less skilled the teachers are, the less likely they will apply or use technology in physical education classes.

Keywords: Incorporation, technology, physical education, teachers, learners, primary schools

Introduction

Research has shown that receiving consistent physical activity is useful to the mental, physical and social aspects of well-being among teenagers (Abildsnes et al., 2015). Moreover, research has proved that partaking in sports activities also positively links with learners' academic performance (Dimbie et al, 2022). Learners, who are involvement in sports activities at an early age, have the higher chance to be physically active later in life as adulthood. Generally, schools play an important role in accomplishing health education among learners, and they contribute to the attainment of community health objectives in concurrence with their academic obligations (Abildsnes et al., 2015). Learners are more likely to enjoy partaking in Physical Education when they have a variety of activities, feel capable, in control and reinforced by their classmates and teachers. Partaking in Physical Education plays an important role on how the class works and the general familiarity inside the classroom (Dimbie et al., 2022).

Regrettably, it has been recounted that there is an overall decline in physical activity through Physical Education in developing countries in comparison to the western world (Centeio et al., 2021). Research has further revealed that with decreased partaking in sports physical activities, learners are not likely to obtain "the awareness, abilities, and self-confidence to appreciate an era of

healthy physical activity.” (Centeio et al., 2021). Thus, given a scope of physical activity levels deteriorating, approaches need developing to involve learners and encourage them in physical activities through Physical Education in schools (Buchan et al., 2018). One such contemporary approach is the incorporation of technology in physical education as a school subject. On the other hand, old-style physical education teachers frequently see technology to be inefficient due to the applied nature of Physical Education as an academic specialization (Almusawi et al., 2021).

Research further reveals that as technology usage has improved, technology in education has been an evolving movement. Nowadays, the usage of technology has developed more readily accessible and more innovative. Likewise, in 2018, 110 million technological gadgets were purchased by users (Steedman, 2023). Also of these gadgets, hand worn technology is a type of technology for which there is at present a growth in learner’s usage outside school and classroom environment. This outcome proposes a constructive insight, and that learners may be encouraged to use this type of technology academically. In fact, hand-worn platforms such as smartwatches, and fitness trackers are now well-thought-out as a way to solve the current health issues the world is facing, even though, it is mysterious whether an actual usage of technology could influence involvement (Steedman, 2023).

Studies have shown that technology has been positively incorporated into overall education, where learners typically get type of technology by the primary time they are in school. The initial year is commonly pre-school, and in numerous regions the foremost kind of technology learners gets are laptop computers (Almusawi et al., 2021). Using computers, learners will track along with teachings throughout class time, or finish self-instruction activities. On the other hand, in Physical Education, technology incorporation has been very slower in comparison to other school subjects such as mathematics or history. Scholastic evidence proposes that old-style teachers often see technology as ineffective for Physical Education due to the applied scope of Physical Education as a subject (Komar et al., 2022).

In 2020, the COVID-19 virus affected the entire world, and transformed the education sectors. When COVID-19 appeared, education revolved to online approaches that created teaching and learning challenges for teachers and learners, particularly in Physical Education. “School closure disturbed Physical Education precisely where virtual teaching proved to be challenging for Physical Education educators and their teaching face to face delivery mode” (Almusawi et al., 2021).

Problem Statement

According to SHAPE America (2020) Physical Education teaches learners “the awareness, skills and self-confidence to appreciate an era of healthy physical activity through Physical Education. Additionally, technology use is increasing and in use to solve global health requirements. This notion proposes that learners have a constructive insight of technology, and it may be a beneficial tool to encourage learners to partake in Physical Education. Regrettably, old-style physical teachers habitually have a negative view of technology. Notwithstanding, the COVID-19 disease enforced all teachers to depend on heavily on the technology through e-learning. In addition, the use of technology in Physical Education has somehow increased since the year 2020. Despite the increase in technology use, it is mysterious to the extent of which technology use has influenced learners’ involvement, learners’ insight, and teachers’ view.

Research Questions

- What are the best technological gadgets to increase involvement in physical education?
- What are the insights of learners regarding technology usage in physical education?
- Has technology usage transformed the insight of physical education teachers?

Literature Review

The purpose of this research is to examine the literature on the influence of the incorporation of technology on learner involvement, and the insights of teachers and learners towards technology usage in Physical Education lessons. The drive of this part is to discover the incorporation of

technology combination in Physical Education, and the influences it has on learner involvement, and teacher insights and learner perception. Technology usage in learning and teaching environment is an evolving development that is increasing momentum as the centuries have gone on. As the use of technology is becoming quicker, easier, and more readily accessible, incorporating it into PE can influence learner gratification positively or even destructively.

Teacher insights on Incorporating Technology in physical education

The teacher's insights is tremendously significant because they teach and facilitate the classes; they would be the ones that need to be skilled, and they are impacted by their individual capability with technology usage. According to Kretschmann (2015), study examined the correlation between Physical Education educators' computer skills and their technology usage in Physical Education lessons. A review of 57 high school phase Physical Education educators (26 males and 31 females) was employed to evaluate the Physical Education educators' computer skills and instructional technology and media usage in Physical Education. Out of the educators inside the cluster, 10 (17.55%) were evaluated at beginner computer skills; 26 (45.61%) were at an intermediate computer skills, and 21 (36.84%) were at advanced of computer skills. There were no important variances in educator skills between males and female understanding, but there was a substantial association between age and computer skills. It was established that Physical Education educators do not show poorer or better computer skills than other academic subjects. On the other hand, educators may not incorporate technology for the reason that there is an old-fashioned norm between Physical Education educators that technology incorporation may lead to a decrease of movement associated with the subject. An accepted level of computer skills, a supposed concern in computer skills, and a supposed concern in instructional technology prepares not always head to a tendency in incorporating technology into Physical Education classes. Moreover, the researchers commend that the issues that impact educator's technology usage in lessons should be incorporated into a broad research intended to discover Physical Education lesson site, and that this matter has not been adequately investigated.

When the COVID disease appeared, educators in all academic lines of specialisations were compulsory required to teach online. Centeio et al., (2021) probed Physical Education educators' insights of applying Physical Education online teaching during the COVID-19 Disease, and discovered their support essentials for yet to come teaching and learning understandings. The respondents in this research comprised of 4,302 Physical Education educators: 2238 (52%) taught in junior primary school, 597 (14%) taught in senior primary School, 469 (11%) taught in secondary school and 998 (23%) at different school phases. Research further suggest that, all 50 states inside the United States participated, with 23% of educators from Northeast, 25% Midwest, 33% South, and 19% West. Moreover, sites were classified as 23% countryside, 35% out-of-town and 42% city. Wearable technologies such as smartwatches (e.g. Garmin Viviosport and Fitbit Charge) and fitness trackers offer the Physical Education educator with advanced means for teaching. Research proposes that these digital inventions have established high attention in checking a user's wellbeing and health, and can be used to increase learning and teaching and understandings. In a study by Almusawi et al (2021), the researchers discovered Physical Education educators' viewpoints on their enthusiasm for wearable technology incorporation and established an abstract prototypical for incorporating wearable technology as digital invention in Physical Education. The researchers recounted that technology endures to have four focal roles in setting of education, namely; (1) educational technology for learning and teaching, (2) score of metrics and quantities, (3) technologies for communication and interacting, and (4) as an innovative specialisations or subject part. It was determined that an understanding of a Physical Education educator viewpoints on their enthusiasm for wearable technology incorporation can offer practical and inventive answers to improve Physical Education teaching and give to wearable technology make space for one-piece incorporation in Physical Education, particularly in view of present global change towards e-learning and distance. The researchers put emphasis on technology in schools has been a significant driver of invention in learning atmospheres.

Student perspectives on the Integration of Technology

Correspondingly essential are learner views on the incorporation of technology, and how it may impact their involvement within a Physical Education lesson. Learner perceptions on technology comprise any types of communications gadgets such as mobile phones, software, computers, and other media gadgets that offer information to users in a digital form, well-known as ICT (Komar et al., 2022). This can suggest the usage of heart speed monitors, video response, the usage of an collaborative walls, or hand-worn technological gadgets.

In a research conducted by Nation-Grainger (2017), learner viewpoints towards applying wrist worn technology for a period six weeks into their Physical Education lesson was discovered. The purpose of this research was (1) to discover the effects of an interference using biofeedback on m persuading to be physically active in Physical Education; (2) to decide if the interference could increase physical activity stages in Physical Education; and (3) to increase an improved understand of the association between enthusiasm and physical action in Physical Education classes. Inside this research there were four study queries. (1) What is the effect of biofeedback on learner's enthusiasm? (2) What is the effect of biofeedback on workout levels in Physical Education? (3) Does change in motivation result in a change in exercise stages in Physical Education? And, (4) in what way and why does receiving biofeedback outcome in changes in workout behavior? It was established that monitors can aid and offer wide-ranging response, which can be better-off and more personalized for learners, and can generate an association by giving immediate feedback. Besides, technology applied into a class can build competition among learners or between mates inside their class, cultivating learner capability and enthusiasm through Physical Education. Learners articulated that they did feel the necessity to work tougher while wearing the hand worn gadgets.

The advantages and disadvantages concerning applying technology was examined more by Partridge et al., (2011), using heart rate monitors in Physical Education with secondary school learners. Three queries/statements were asked. (1) What were the good things about wearing a heart rate monitor in Physical Education lesson? (2) What were the bad things about wearing heart rate monitors in Physical Education lesson? (3) And, were learners more active in Physical Education lesson as they used a heart rate monitor, and why or why not substantiate your answer? Learners were requested to wear the heart-rate monitors in their lesson under assessed circumstances. To get a mark, their heart rate had to keep a precise level for an exact time. After the class, the learners had to fill out a survey about their viewpoints. Diverse perceptions concerning this technology usage were conveyed. For instance, one learner detailed, "Because you have to get like a certain amount of time [on the heart rate monitor] and if you don't get that time, then you get a bad grade" (Partridge et al., 2011). In certain, dropped levels of gratification and enthusiasm were conveyed for females in a lesson. Since the lessons were only sex lessons, there may be collaboration between gender, technology, and grading on insights. The researchers detailed that, "Integrating technology into the Physical Education syllabus is becoming a common approach in which educators can evaluate, encourage and give feedback to learners concerning their physical activity involvement during lesson" (Partridge et al., 2011).

Research Design

This study employed a qualitative approach. Qualitative research attempts to understand and clarify what is happening in a public setting. As so, it is involved with seeing and deducing certainty with the objective of construction a model that will version for the observed occurrence (Newman & Benz, 1998). Qualitative approach is ideal for this study, as it allowed the researcher to get indepth information regarding the study's phenomenon. Therefore, the purpose of this study was to examine the incorporation of technology in physical education and teacher insights of the influence it has on involvement of primary school learners in Zambezi Region, Namibia.

Population and Sample

The study's participants were 119 physical education teacher and 2380 learners purposively selected from 119 schools in Zambezi Region of Namibia. According to Shukla (2020) defines

population as the set or collection of all the units on which the outcomes of the research are to be applied. Whilst sample is refers to the small amount of something that gives the information about the thing, it is taken from (Shukla, 2020).

Data collection methods

This study gathered its data using a 3 item subjective questionnaire designed by the researcher to collect learners' original answers using their own words. The main purpose of this study was to to examine how the incorporation of technology in physical education and teacher insights of the influence it has on involvement of primary school learners in Zambezi Region, Namibia. According to Taherdoost (2021) defines data gathering as based on the methods by which you gather information yourself for your purpose of research and no one has admission to use this information until it is put out and both qualitative and quantitative methods are used for this purpose.

Data analysis

Data gathered from a 3 item subjective questionnaire was analysed thematically, which included the following parts: Phase One: Familiarization with data, Phase Two: Generating initial codes, Phase Three: searching for themes, Phase Four: review themes, Phase Five: defining and naming themes, Phase Six: writing report. According to Dawadi (2020) defines thematic analysis as a constant-comparative method that involves reading and rereading the transcripts in a systemattic way.

Research results and discussion

The first research question examined was; what is the best technological gadget to increase involvement in physical education? The outcomes of this research shows that the majority of respondents indicated that hand worn technology, health monitors, heart rate monitors, smartphone applications, smart watches and videos are the top gadgets to increase both teacher and learner's involvement in physical education lessons. Moreover, this study found that most respondents indicated that the hand worn gadgets such as smart watch, heart monitors, smartphones applications, health monitors and videos seems to be effective and trustworthy for assessing energy outflow and physical activity in learners (Ekblom et al., (2012). Also, this study revealed that hand worn technological gadgets such as smart watches are being used to fight the recent health diseases such COVID-19 (Nation-Grainger, 2017). In addition, the use of technological gadgets can occasionally make competition with oneself or other which can re-count to inside and outside drive and a likely rise in involvement (Nation-Grainger 2017).

The second research question examined what are the insights of learners regarding technological usage in physical education? This study revealed mixed the insights from learners. There were numerous learners who had constructive insights concerning the usage of technological gadgets in physical education lessons. For instance, learners felt that if there were given an opportunity to use technological gadgets such as smart watches to learn, that they will be more physically fit. These results concurs with Ekblom et al (2012) study that found that the use of technology in physical education classes increase fitness levels in learners, as technology allows learners to monitor their performance levels while doing the physical activity.

This study further discovered that some learner felt that the use of technology in physical education classes will destruct the subject's natural physical orientation, meaning learner will not enjoy participation to the best of their abilities because of technology monitoring them. These results are supported by Partridge et al. (2011) who found that, in most cases monitoring physical activities using technology does not promote true engagement in physical education, as its not natural and create a false narrative towards true participation.

When learners learn this aspect, this insight can get accepted over into a information set that learners can put on in their everyday life to accomplish an objective of Physical Education to encourage lifelong. Learners further emphasised that having some form of technology, such as hand worn technological gadgets, can be data source for some learners in Physical Education settings. However, some learners had undesirable insights. For instance, some female learners indicated that

“using technology such as trackers, monitors will change the subject’s physical orientation and it won’t be as natural as possible for learners as they will be motivated by gadgets to perform to the best of their ability (Partridge et al., 2011).

The third research question ought to examine whether technology usage transformed the insight of physical education teachers. Once more, it was a mixed insight. The COVID pandemic, particularly obstructed Physical Education teachers in numerous ways, both undesirable and constructive. With the pandemic teachers were capable to find attainments in their capacity to learn technological skills. This study found that some teachers felt confident transitioning into a virtual e-learning space with slight readiness; while teachers were anxious about how learners participated. These results aligns with Centeio (2021) who found that some teachers who are computer skilled found it easy to use technology in physical education classes, while teachers who are not well vested in the use of technology have doubts to use technology. Lastly, this study further exposed that if a teacher had slight previous knowledge, the possibility of them applying technology was little. On the other hand, if a teacher had a constructive skill with technology, they were more likely to apply it successfully (SHAPE America, 2020).

Conclusion

This study was established to examine the incorporation of technology in physical education and teacher insights of the influence it has on involvement of primary school learners in Zambezi Region, Namibia. A broad literature review was led to found how technology can be incorporated and its impact on its users. Therefore, this study concludes that, technological gadgets such as health monitors, heart rate monitors, smartphone applications, smart watches and videos increase learners and teachers involvement in physical education lessons. Moreover, this study concludes that, the use of technology in physical education classes increase fitness and competition levels of learners. Lastly this study concludes that teacher’s readiness and competencies they have with the use of technology determines how likely they will use technology in physical education classes, for instance the more skilled the teachers are with technology, the more likely they use technology, on the other hand, the less skilled the teachers are, the less likely they apply technology in physical education classes.

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