

Examining how digital tools enhance creative lesson planning in Physical Education at the University of Namibia in Katima Mulilo, Zambezi Region of Namibia.

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ABSTRACT

Digital tools or technological gadgets are vital for improving imaginative lesson planning in Physical Education (PE) for the reason that they change traditional, frequently monotonous, practises into lively, modified, and appealing experiences that accommodate to varied learning styles. The main aim of this study was to examine how digital tools enhance creative lesson planning in Physical Education at the University of Namibia in Katima Mulilo, Zambezi Region of Namibia. This research paper employed a quantitative design to gather and analyse its data, this approach was deemed appropriate for the reason that it allowed the researcher to get in-depth required information. A total n = 115 comprising of n = 71 (61.7%) male and 44 (38.2%) female sports and physical education student teachers from the university of Namibia participated in this study. Participants were purposively recruited to form part of this research based on the reasons that they were involved and had experience related to the subject. Data was collected using simple questionnaires designed by the researcher, moreover, collected quantitative data was analysed using SPSS statistical software to find percentages and frequencies. The results show core tools for physical education lesson enhancements such as AI Assistants (ChatGPT, Education Copilot) which enhanced creative lesson planning in physical education by 95%, whilst immersive Tech (AR-PEclass, VR simulations) enhanced lesson planning by 61%, moreover, video analysis applications Hudl Technique, Dartfish) enhanced lesson planning by 55% and gamification platforms (ClassDojo, Plaicise) enhanced creative lesson planning by 78%. Mobile resource libraries (PE Shake) enhanced creative physical education lesson planning by 52%, whilst visual lesson design (Padlet, Canva) enhanced planning by 66%, moreover, data-driven goal setting (heart rate monitors, pedometers) enhanced planning of physical lessons by 73%, furthermore, interactive assessment (Kahoot, Google forms) enhanced lesson planning physical education by 88%, and automated differentiation (use diffit) enhanced creative lesson planning in physical education by 40%. Strategic professional development results to which social learning for teachers (Google classroom, Canvas) enhanced the creative planning of physical education lessons by 91%, whereas collaborative planning (#pechat, PEPRN blog) enhanced the creative planning of physical education lessons by 70%, and core teaching (Whatsaap) enhanced the creative planning of physical education lessons by 58%. In conclusion the integration of digital technological devices into PE deeply changes lesson planning and preparation from a rigid, structural task into a dynamic and productive didactic system. Studies demonstrate that these technologies assist educators to create multi-modal and modified learning routines that were previously challenging to achieve in traditional settings.

Keywords: Digital tools, enhance creative, lesson planning, physical education..

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INTRODUCTION

Research has shown that from 1995 to 2024, the occurrence of overweight among young people and children, involving obesity, has arisen from 9 % to 23% by 2025 (Tsang et al, 2023). Concerning the grown person

population, 44% of people aged 17 and older were overweight, an increase of 19% since 1995 (Yahya et al, 2025). The unevenness amongst calorie consumption and spending leads to health complications that, in several instances, lead to more major problems, involving death (Zulkifli and Danis, 2022). Moreover, this is one of the

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causes why physical education (PE) has turned into a central subject in the different learning curricula in several countries (Zulkifli and Danis, 2021).

Moreover, research shows that the European Union highlighted the essential to ensure sufficient Physical Education (PE) for its citizens residing in the member nations (Aditya et al, 2022). Whereas, in the year 2007, the distinguished European Parliament approved a report on the position of sport in education by a huge majority, to which it was specified that members of the states should place bigger importance on encouraging Physical Education (PE) amongst kids and adolescents (Ahmed et al, 2021). Nonetheless, national curriculum and periods linked to Physical Education (PE) differ from nation to nation in the European Union (Banville et al, 2021). On the other hand, in the United States of America, physical sports plans are taken out over disciplines such as Physical Education (PE) and subsequently-school activities, with abstract and sports plans in some of their institutes plus in additional explicit arrangement (Belleza et al, 2021). Whereas, in European countries the norm is 2–3 periods weekly, in the United States of America, given its regionalisation, the discrepancy goes from 2 to 5 periods weekly dependent on the school and the state. In Chile, centres its Physical Education (PE) and wellbeing program on the diverse essential instructive phases and is rationalised by levels of learning aims, from fundamental facets to more focussed where the technological part is not involved (Huang, 2023). China, for instance, obligatory schooling runs up to the age of 15 years, where the task of education is controlled through the Chinese Ministry of Education and where Physical Education (PE) is mandatory at all phases. Henceforth, in South Korea, the intend to promote lasting learning, where education is mandatory up to the age of 15 years (Jian, 2023). Physical Education is also involved in the Korean learning context at all stages. Observing the United States of America, even the risen frequency of obesity is associated to youthful aged clusters and minor educational accomplishment (Hu et al, 2024).

Conclusively, in Australia, a standard obligatory Physical Education (PE) is envisioned in the initial years of teaching and learning, to stay with a more precise schedule as they approach the finish of their obligatory education phase at near 17 years of their age (Klaperski-van der Wal, 2023). Movement and Health are the main skills around which learning action concentrate on. Previous research, in Mexico City, establishes that obesity and physical sedentariness, between five unhealthy standard of living risk issues, are linked with an raised risk of death (Ferrero-Hernández, 2025). Alternative reason for the rise in overweight is associated to screen experience. Countless research have discovered that the lengthier the exposure to TV or other technological gadgets use in kids aged 2–15 years, the higher the correlation with obesity and overweight (Cartanya-Hueso et al, 2022). Moreover, research have revealed that Physical Education (PE) is extensive worldwide at an academic phase, but the stages of obesity and overweight have been cumulative over the past years, though the subject/s are engrossed on the ground

of well-being, as we have realised in some instances, such as in the circumstance of Australia or Chile. Even with the advancement of strategies on certain foods or exercise plans, and even the sanction of innovative medicines, there is still no indication of a reduction in obesity in China, where investigation is calling for an rise in obesity or a re-definition of education in this part (Zeng et al, 2021). In the United States of America, the an evaluation by Safaei et al (2021) hint at one of the major reasons of obesity and overweight is a absence of exercise or an insufficient diet, including others.

Research further shows that the application of technology in the mainstream classroom is not a innovation also; there are also numerous research articles with suggestions for good methods. In the year 2015, research evidence was gathered to foster the usage of cell phones (mobile phones) in Physical Education (PE) in mainstream classrooms in Romania from effective encounters in secondary schoolrooms (Stoicescu and Stanescu, 2015). Whereas, Information and communication technologies (ICT) have also revealed that their use in Physical Education (PE) classrooms substantially improves learning in this discipline (La Rosa Feijoó, 2021). An additional fundamental factor to take into account today is the constant exponential increase of Artificial Intelligence (AI) (Lampropoulos and Evangelidis, 2025). The incorporation of adaptive education technologies in teaching and learning signifies a paradigm shift, leveraging information analytics and Artificial Intelligence to individualise learning practices. Therefore, these technologies vigorously alter instructional content built on an personal student's ability, learning speed, and likings (Halkiopoulos and Gkintoni, 2024). Moreover, research further shows that by uninterruptedly examining student engagement, adaptive education techniques offer customized reinforce, targeted response, and boosted learning trails, nurturing significant engagement and enhanced learning results. Furthermore, the establishment of Artificial Intelligence (AI) into educational sector spots a transformative change on more learner-centered and vigorous teaching methods (Zajda, 2021). Though its abrupt effect on traditional teaching and learning may be ongoing, its lasting impact is presumed to essentially redesign pedagogical styles (Wallace et al, 2023). In Physical Education (PE), AI-driven systems can boost skill gaining, tailored fitness tracing, and motor learning evaluations, allowing educators to modify instruction built on actual-time information (Song, 2024). Outside its educational claims, AI-powered adaptive education plays a vital part in nurturing sustainability by guaranteeing reasonable access to personalised teaching and preparing students with the familiarity to address multifaceted global encounters, like sustainability, resource management and global climate change (Thelma et al, 2024). Also, these modern technologies foster invention and thrust economic increase, strengthening the necessity for investing in AI-boosted learning approaches that warrant both learning equity and long-term social growth (Tsang et al, 2023).

Research further suggest that adding to AI, it is also needed to bear in thoughts all the gadgets and linked tools that incorporate it. Instead of encouraging physical activity and health repeatedly, their usage regularly runs us away from physical exercise or physical activity (Li et al, 2022). Nevertheless, it is up to academic educators to promote accountable and balanced use to take advantage of their uses for the well-being and health of the people (Li and Adair, 2024). On the other hand, it is also up to the diverse organizations and academic institutions to make certain availability to the several technological tools, eschewing or decreasing as much as likely the digital division that may occur (Akram et al, 2022). Lastly, dissimilar physical activity systems are being obtained and applied simultaneously with virtual or amplified reality practices, highly precise real-time dimensions, applications with desirable and appealing intentions, in the diverse sittings of the health-connected subjects that make up the prospectus (Araújo et al, 2021).-8

Problem statement

Digital instruments or tools improve creative lesson planning in Physical Education (PE) by supporting, computerizing, and expanding the foundation of engaging, tailored, and values-based, and collaborative activities (Gufran and Lan, 2025). The world of research has established that these technologies, comprise of Apps, AI and body wearables, allow teachers to decrease administrative load such as rubric, lesson and assessment and evaluation drafting thus freeing up time to plan more advanced, student-oriented, and, for instance, gamified education practices (Modra et al, 2021). Therefore, the main aim of this research was to examining how digital tools enhance creative lesson planning in Physical Education at the University of Namibia in Katima Mulilo. Zambezi Region of Namibia.

Research questions

How does digital tools enhance creative planning of physical education at the University of Namibia in Katima Mulilo, Zambezi Region of Namibia?

Materials and methods

This research paper employed a quantitative design to gather and analyse it data, this approach was deemed appropriate for the reason that it allowed the researcher to get in-depth required information. A total n = 115 comprising of n = 71 (61.7%) male and 44 (38.2%) female sports and physical education student teachers from the university of Namibia participated in this study. Participants were purposively recruited to form part of the this research based on the reasons that they were involved and had experience related to the subject. Data was collected using simple questionnaires designed by the researcher, moreover, collected quantitative data was analysed using SPSS statistical software to find percentages and frequencies.

Results

This section of this research paper shows the results derived from the objective “Examining how digital tools enhance creative lesson planning in Physical Education at the University of Namibia in Katima Mulilo. Zambezi Region of Namibia. Figure 1 below shows demographic information of key informants to which a total n = 115 which included n = 71 (61.7%) male and 44 (38.2%) female sports and physical education student teachers from the university of Namibia.

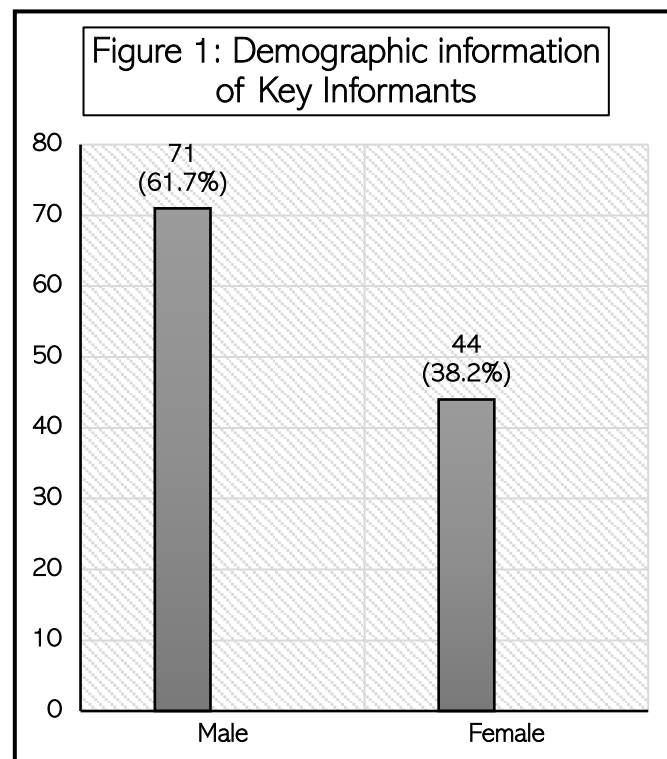


Figure 2, below shows core tools for physical education lesson enhancements such as AI Assistants (ChatGPT, Education Copilot) which enhanced creative lesson planning in physical education by 95%, whilst immersive Tech (AR-PEclass, VR simulations) enhanced lesson planning by 61%, moreover, video analysis applications Hudl Technique, Dartfish) enhanced lesson planning by 55% and gamification platforms (ClassDojo, Plaicise) enhanced creative lesson planning by 78%.

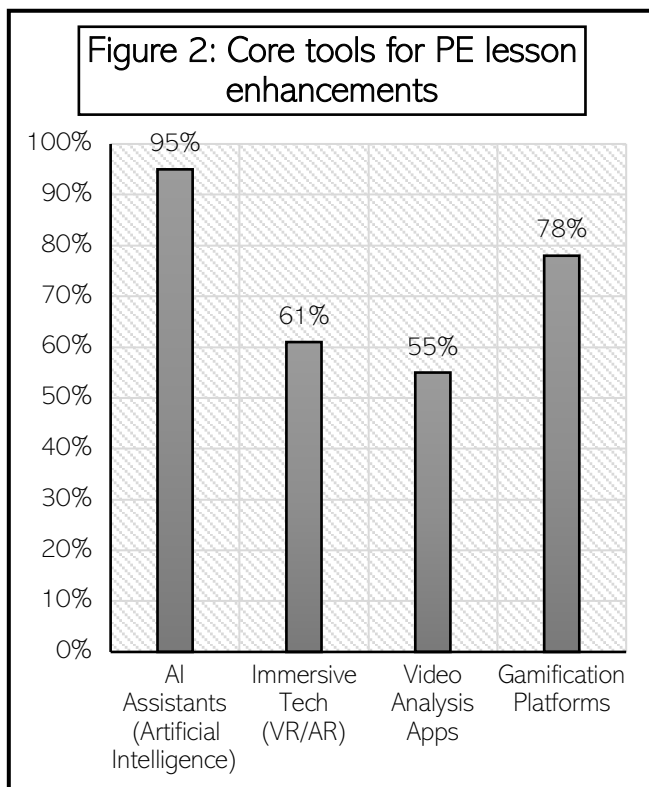


Figure 4 below shows the strategic professional development results to which social learning for teachers (Google classroom, Canvas) enhanced the creative planning of physical education lessons by 91%, whereas collaborative planning (#pechat, PEPRN blog) enhanced the creative planning of physical education lessons by 70%, and core teaching (Whatsaap) enhanced the creative planning of physical education lessons by 58%.

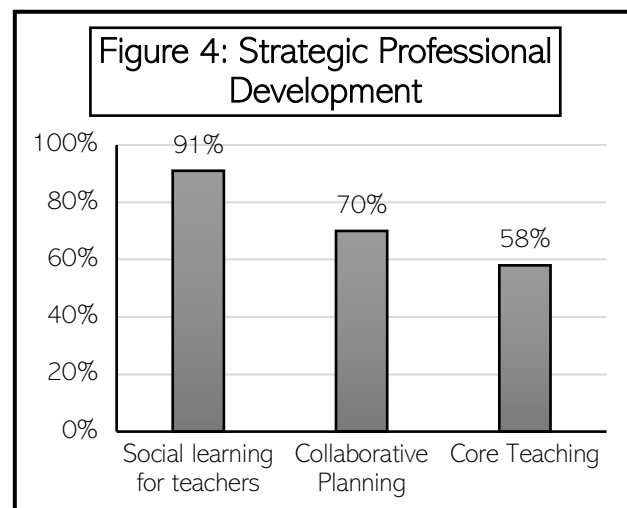
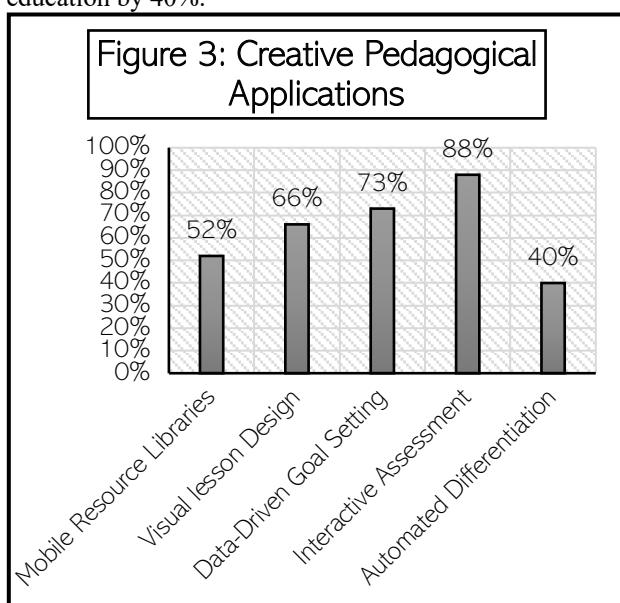


Figure 3 below shows the results of how creative pedagogical applications enhance creative lesson planning in physical education. Mobile resource libraries (PE Shake) enhanced creative physical education lesson planning by 52%, whilst visual lesson design (Padlet, Canva) enhanced planning by 66%, moreover, data-driven goal setting (heart rate monitors, pedometers) enhanced planning of physical lessons by 73%, furthermore, interactive assessment (Kahoot, Google forms) enhanced lesson planning physical education by 88%, and automated differentiation (use diffit) enhanced creative lesson planning in physical education by 40%.



DISCUSSIONS

This section of this research article discusses the results in association with similar literature previously done by scholars in relationship to the phenomenon. The main aim of this study was to examine how digital tools enhance creative lesson planning in Physical Education at the University of Namibia in Katima Mulilo, Zambezi Region of Namibia. The results of this study shows that creative pedagogical applications enhance creative lesson planning in physical education. Mobile resource libraries (PE Shake) enhanced creative physical education lesson planning by 52%. These results concurs with Vega-Ramírez et al (2020) whose findings reveals that mobile source libraries encompassing digital, on-mandate, or moveable collections of apparatus and technological tools improve physical education (PE) lesson preparation and planning by offering instant, elastic, and varied resources that rationalize preparation and rise student engagement and participation. Moreover, these libraries let educators to clearly combine modern research, mixed instructional methods, and technology, moving from experience-motivated to signal-based planning. Whilst the results of this study further shows that visual lesson design (Padlet, Canva) enhanced planning by 66%. These results aligns with Sargent and Casey (2020) which revealed that visual lesson plan improves physical education (PE) lesson preparation by converting intangible movement ideas into tangible, effortlessly palatable, and appealing visual, audio, and kinesthetic practices. It make better instruction by substitution long spoken instructions with graphic cues, boosting student engagement, retention holding of skills, and permitting for quicker, more efficient teaching. Results further show that, data-driven goal setting (heart rate

monitors, pedometers) enhanced planning of physical lessons by 73%. These results correspond with Li et al (2025) which exposed data-powered objective setting boosts physical education (PE) lesson preparation by allowing modified instruction, objective valuations, and targeted ability growth, moving past one-size fits all approaches. Therefore, using technological gadgets such as fitness apps and wearables and, educators can examine actual-time information to alter activities, monitor improvement, and rise student engagement.

Furthermore, results shows that interactive assessment (Kahoot, Google forms) enhanced lesson planning physical education by 88%. These results agree with Fletcher et al (2025) which revealed that collaborative assessment improves physical education (PE) lesson preparation and planning by allowing actual-time, data-motivated results that foster individualised learning, rise student engagement, and rationalize teaching. Results shows that automated differentiation (use diffit)enhanced creative lesson planning in physical education by 40%. These results are supported by Clark and Kessel (2020) which exposed that automated differentiation in physical education (PE) improves lesson preparation and planning by leveraging knowledge, information analytics, and artificial intelligence to modify instructional gratified, activities, and valuations to specific student requirements, meaningfully dropping the administrative job for educators.

Results in figure 4 shows the strategic professional development results to which social learning for teachers (Google classroom, Canvas) enhanced the creative planning of physical education lessons by 91%. These results are supported by Jones (2025) who discovered that strategic professional development also known as (PD) boosts physical education (PE) lesson preparation and planning by altering it from a monotonous task into a information-driven, comprehensive, and engaging progression. High-grade, in progress professional development like in-serve training, mentorship, and collective, action-grounded research arms educators with the recent academic procedures, efficient health guidelines, and plans to promote physical mastery. Whereas collaborative planning (#pechat, PEPRN blog) enhanced the creative planning of physical education lessons by 70%. These results correspond with Fletcher and Beckey (2023) study which alluded that collaborative planning improves physical education (PE) lesson plans and preparation by nurturing greater, more deep, and operative instruction through collective proficiency, organised team contribution, and better-quality pedagogical plans. This method increases student commitment by allowing for beneficial task demonstration, addressing various student demands, and helping the incorporation of actual-world, interdisciplinary abilities. The results lastly shows that core teaching (Whatsaap) enhanced the creative planning of physical education lessons by 58%. Zach (2020) found that co-teaching develops physical education (PE) lesson preparation and planning by raising shared, modern, and wide-ranging approaches, acknowledging for more broad, distinguished, and well-effective instruction. It brings

collected diverse views to create safer, more connecting activities, like as using locations, while supporting better organization of student basics and increased learning speed

CONCLUSIONS

In conclusion, the incorporation of digital technological gadgets into Physical Education (PE) profoundly alters lesson preparation and planning from a fixed, organizational task into a vigorous and creative didactic method. Research shows that these technologies enable educators to construct multi-modal and customized learning practices that were formerly challenging to accomplish in traditional surroundings.

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