

REVOLUTIONIZING HUMAN KINETIC AND HEALTH EDUCATION LEVERAGING ARTIFICIAL INTELLIGENCE, INNOVATION AND CREATIVITY

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Abstract

This study explore revolutionising human kinetic and health education leveraging artificial intelligence, innovation and creativity. It adopted descriptive survey research design using a structured questionnaire to collect data. The population of the study consisted of 143 NCE students in the Human Kinetic and Health Education Department, Kwara State College of Education, Ilorin from which a sample of 105 students were randomly selected as the sample. A structured questionnaire was used to collect data from the respondents, while descriptive statistics of mean, and standard deviation was adopted to analysis the three research questions raised. The findings revealed that AI tools enhance content delivery, improve engagement, and support personalised learning. It also showed that innovative practices make learning more practical and engaging. Creativity was also found to significantly contribute to students' understanding, motivation, and ability to apply knowledge. The study concludes that artificial intelligence, innovation, and creativity have a positive and meaningful impact on the teaching and learning of Human Kinetic and Health Education in Kwara State College of Education. Thus, the study recommends that higher institutions should invest in training programmes for lecturers to enhance their capacity to integrate artificial intelligence and innovative digital tools into the teaching of Human Kinetic and Health Education. The college should provide adequate infrastructure, including access to smart devices, internet connectivity, and AI-powered educational platforms, to facilitate the practical application of innovation and creativity in the classroom. Likewise, curriculum planners and educational policymakers should revise the HKHE curriculum to incorporate creative and student-centered teaching methods that promote critical thinking, real-life application, and sustained learner engagement.

Keywords: Revolutionising, Artificial Intelligence (AI), innovation, creativity, technology integration

Introduction

Across the globe, education systems are rapidly evolving through the integration of emerging technologies, innovative methodologies, and creative pedagogical approaches. In recent years, the use of artificial intelligence (AI) in education has grown significantly, providing intelligent tutoring systems, personalised learning platforms, real-time feedback tools, and data-driven instruction that enhance both teaching and learning outcomes (Luckin, 2020). In countries such as the United States, China, and the United Kingdom, AI is being used to transform practical-oriented disciplines, including Human Kinetic and Health Education (HKHE), by introducing wearable fitness technology, AI-powered movement

assessments, and interactive simulations that support skill acquisition, health awareness, and student engagement (Topol, 2020). Furthermore, educational innovation and creativity are now widely recognised as essential for meeting the diverse needs of 21st-century learners and fostering deeper understanding, collaboration, and critical thinking (Beghetto, 2021).

In Nigeria, however, the integration of AI, innovation, and creativity in education, particularly in HKHE, remains limited and uneven. Although national education policies increasingly acknowledge the need for digital transformation, implementation in practical subjects continues to face barriers such as poor infrastructure, limited digital competence among teachers, and the absence of tailored curriculum frameworks. Most teacher education programmes still rely heavily on traditional chalk-and-talk methods, with minimal exposure to the technological advancements shaping global pedagogical standards (Okolie *et al.*, 2021). This creates a disconnect between teacher preparation programmes and the realities of modern teaching environments, particularly in fields that require physical, interactive, and technologically enhanced learning experiences like HKHE.

In Kwara State, the situation mirrors national realities. At the Kwara State College of Education, Human Kinetic and Health Education is still taught using outdated instructional strategies, with limited access to digital tools, insufficient teacher training in AI and technology use, and minimal institutional support for innovation. This traditional approach restricts learner engagement, reduces instructional effectiveness, and fails to equip future educators with the skills needed for contemporary physical and health education. Moreover, innovative practices such as gamified fitness tasks, virtual simulations, and AI-driven motion tracking tools, which have proven effective in enhancing health education elsewhere, are largely absent or inconsistently applied (Ajayi and Fagbemi, 2022).

In addition to technological and infrastructural gaps, the lack of creative pedagogical practices presents another major challenge. Creative strategies, such as personalised fitness tasks, problem-based learning, and student-generated health projects, are essential for fostering critical thinking, adaptability, and motivation among HKHE students. Yet, these strategies are often underutilised, resulting in rigid and uninspiring instructional delivery. Research shows that creativity in teaching not only enhances knowledge retention but also contributes to the holistic development of learners (Beghetto, 2021; Yusuf and Ayeni, 2023).

Given these gaps, this study seeks to critically examine the effect of artificial intelligence, assess the impact of innovation, and investigate the role of creativity in revolutionising Human Kinetic and Health Education at Kwara State College of Education. By addressing these critical dimensions, the study aims to provide practical insights into how HKHE can be transformed to better align with global trends, improve teaching effectiveness, and prepare competent educators for the demands of a technologically advanced society.

Statement of the Problem

Human Kinetic and Health Education (HKHE) plays a crucial role in teacher education by fostering physical fitness, health consciousness, and overall well-being among learners. However, in institutions like Kwara State College of Education, HKHE is still taught using traditional methods, offering limited hands-on experience and minimal integration of modern technologies. This restricts student engagement

and hinders the development of innovative and effective teaching practices. A key challenge is the insufficient use of artificial intelligence (AI), despite its proven global impact in enhancing education through intelligent tutoring systems, adaptive feedback, and real-time support (Luckin, 2020). The study therefore seeks to explore how AI is being utilised in HKHE and its influence on instructional effectiveness.

Moreover, the application of educational innovations such as gamified learning, interactive fitness tools, and virtual simulations, which have been shown to increase motivation and retention (Topol, 2020), remains inconsistent. This shortfall potentially affects the quality of HKHE instruction. Equally important is the role of creativity in teaching, which encourages active learning and critical thinking. The lack of creative strategies, such as personalised learning and movement-based tasks, is capable of rendering lessons monotonous and less impactful. Research underscores the importance of creativity in enhancing student engagement and learning outcomes (Beghetto, 2021).

Objectives of the Study

In response to the identified challenges, the main objective of this study is to examine how to revolutionise Human Kinetic and Health Education through Artificial Intelligence, innovation, and creativity. The specific objectives are to:

- i. examine the effect of artificial intelligence on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education;
- ii. assess the effect of innovation on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education;
- iii. investigate the effect of creativity on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education.

Research Questions

In a bid to address the set objectives, the following research questions are raised to guide the study:

- i. What is the effect of artificial intelligence on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education?
- ii. How does innovation affect teaching and learning of Human Kinetic and Health Education in Kwara State College of Education?
- iii. What is the effect of creativity on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education?

Literature Review

The education landscape in Nigeria is marked by a combination of progress and persistent challenges. Over the years, significant efforts have been made to expand access to education through various government policies and programmes such as the Universal Basic Education (UBE) scheme and the National Policy on Education. These initiatives aim to improve enrolment rates, enhance infrastructure, and promote inclusiveness across all levels of education. However, the system continues to grapple with issues of inadequate funding, outdated curricula, insufficient teacher training, infrastructural deficits, and low integration of technology in teaching and learning (Okebukola, 2021; Ololube, 2020).

Tertiary education, including universities and colleges of education, plays a critical role in human capital development but faces challenges such as strikes, under-resourced facilities, and limited innovation in pedagogical practices. Although recent reforms and digital initiatives have introduced some elements of e-learning and ICT-

based instruction, widespread adoption remains low due to poor internet connectivity, lack of digital skills among educators, and limited access to modern teaching tools (Adebayo & Ogundele, 2022).

Furthermore, the impact of global trends such as artificial intelligence and digital transformation has been slow to manifest in the Nigerian context, especially in specialised fields that require practical engagement. As the country seeks to align its education system with the demands of the 21st century, greater emphasis is needed on curriculum reform, teacher training, and technological investment to improve learning outcomes and global competitiveness (Ezeani & Ugwu, 2023).

Revolutionising Human Kinetic and Health Education (HKHE) involves rethinking and modernising how physical and health education is taught, with the goal of improving student engagement, instructional effectiveness, and health outcomes. Traditionally, HKHE has relied heavily on teacher-led demonstrations and theoretical instruction, which often fail to meet the diverse needs of today's learners. However, with advances in technology, innovation, and pedagogical creativity, there is now a growing opportunity to transform the field into a more dynamic, interactive, and learner-centered experience.

One main driver of this transformation is the integration of artificial intelligence (AI), which supports personalised learning, real-time feedback, and adaptive instruction. AI-powered tools such as motion sensors, virtual fitness trainers, and performance analytics can enhance both teaching and assessment in HKHE, allowing educators to track student progress and tailor instruction accordingly (Luckin, 2020). In addition, innovations such as gamified fitness apps, virtual simulations, and augmented reality can make learning more engaging, especially when teaching complex health concepts or physical routines (Topol, 2020).

Creativity also plays a central role in revolutionizing HKHE. Educators who employ creative teaching strategies, such as project-based learning, student-generated health campaigns, and cross-disciplinary collaborations, encourage critical thinking, collaboration, and real-world application of knowledge. These approaches not only enhance learning outcomes but also promote lifelong healthy habits among students (Beghetto, 2021). To fully realise the potential of these innovations, however, educational institutions must invest in teacher training, update curricula to include digital competencies, and provide the necessary technological infrastructure. Without these foundational supports, the impact of innovation and AI in HKHE will remain limited.

The teaching and learning of Human Kinetic and Health Education (HKHE) focus on developing students' knowledge, skills, and attitudes related to physical activity, health awareness, and overall well-being. Effective HKHE instruction combines theoretical knowledge with practical experiences that promote lifelong fitness habits, disease prevention, and personal health management. However, in many educational settings, HKHE is still delivered using traditional methods, such as lectures and teacher demonstrations, which often limit student engagement and practical skill acquisition (Ajayi & Fagbemi, 2022).

Recent research advocates for more interactive and student-centered approaches to teaching HKHE, emphasizing the integration of technology, active learning strategies, and real-world applications. These include the use of digital fitness tools, collaborative projects, and experiential learning methods that encourage student participation and critical thinking (Yusuf & Ayeni, 2023). Moreover, aligning HKHE

with current health challenges, such as sedentary lifestyles and mental health concerns, can make the subject more relevant and impactful.

To improve outcomes, teacher training institutions are encouraged to modernize their curricula and incorporate innovative teaching techniques that reflect the evolving nature of health education in a digital age.

Methodology

The study adopted descriptive survey research design. The population of the study is 143 NCE II students of Human Kinetic Department, Kwara State College of Education, Ilorin. Multi-stage sampling technique was used to select 105 students using Taro Yamane formula for sample size. Proportional sampling technique was used to selected students from NCE I, NCE II and NCE III based on the population. Then, simple random sampling technique was used to select the respondents. Structured questionnaire was used to collect data from the respondents. Data collected were analysed using descriptive statistics of mean rating to answer the three research questions.

Data Analysis

Research Question 1: What is the effect of artificial intelligence on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education?

Table 1: Mean rating on the effect of artificial intelligence on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education, Ilorin

S/N	Item	Mean	SD	Decision	Rank
1	Artificial intelligence has enhanced the way Human Kinetic and Health Education concepts are delivered in my institution.	3.45	0.65	Agreed	1 st
2	The use of AI tools has increased student interest and participation in Human Kinetic and Health Education classes.	3.30	0.70	Agreed	2 nd
3	AI-powered learning platforms help me better understand practical aspects of Human Kinetics and Health Education.	3.20	0.75	Agreed	3 rd
4	Teachers effectively incorporate AI tools to support individualized learning in Human Kinetics and Health Education.	3.10	0.80	Agreed	4 th
5	Assessment and feedback in Human Kinetics and Health Education have improved through the application of AI technologies.	3.00	0.85	Agreed	5 th

Table 1 presents the mean ratings, standard deviations, decisions, and rankings for the effect of artificial intelligence on the teaching and learning of Human Kinetic and Health Education among 105 respondents. The findings reveal that all five items received mean scores above the benchmark of 2.50, indicating general agreement

among respondents that AI has positively influenced various aspects of Human Kinetics and Health Education.

The highest-rated item, with a mean of 3.45, suggests strong agreement that artificial intelligence has enhanced the delivery of HKHE concepts. This is followed by increased student interest (mean = 3.30) and improved understanding of practical aspects through AI-powered platforms (mean = 3.20). Items related to individualized learning and assessment also received favourable responses, with means of 3.10 and 3.00 respectively. The standard deviations, ranging from 0.65 to 0.85, show moderate variability in responses, reflecting some differences in experiences or exposure levels.

Therefore, the data suggest a positive perception of AI integration in HKHE, particularly in content delivery and student engagement, though there remains room for further development in areas such as personalized learning and assessment.

Research Question 2: How does innovation affect teaching and learning of Human Kinetic and Health Education in Kwara State College of Education?

Table 2: Mean rating on the effect of innovation on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education

S/N	Item	Mean	SD	Decision	Rank
1	Innovative teaching methods such as gamified learning and interactive activities have improved my understanding of Human Kinetic and Health Education.	3.40	0.60	Agreed	1 st
2	The use of modern fitness equipment and digital tools enhances the practical experience in Human Kinetic and Health Education classes.	3.25	0.72	Agreed	3 rd
3	Innovative instructional strategies make Human Kinetic and Health Education more engaging and enjoyable.	3.35	0.65	Agreed	2 nd
4	Teachers apply new and creative approaches to explain health and fitness concepts effectively.	3.15	0.78	Agreed	4 th
5	Innovation in teaching has helped me connect classroom knowledge with real-life health and physical fitness applications.	3.05	0.80	Agreed	5 th

Table 2 presents the mean ratings, standard deviations, decisions, and rankings for the effect of innovation on the teaching and learning of Human Kinetic and Health Education in Kwara State College of Education. The results show that all five items received mean scores above the threshold of 2.50, indicating that respondents agreed innovation has a positive impact on HKHE instruction.

The highest-rated item, with a mean of 3.40, highlights that innovative teaching methods such as gamified learning and interactive activities significantly enhance student understanding. This is closely followed by the view that innovation makes learning more engaging (mean = 3.35), and that modern digital tools improve practical experiences (mean = 3.25). Items related to creative teaching approaches (mean = 3.15) and linking theory to real-life applications (mean = 3.05) also received favorable responses. The standard deviations, ranging from 0.60 to 0.80, suggest moderate consistency in participants' views. Thus, the findings confirm that innovation contributes meaningfully to improving student engagement, understanding, and application in Human Kinetic and Health Education.

Research Question 3: What is the effect of creativity on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education?

Table 3: Mean rating on the effect of creativity on teaching and learning of Human Kinetic and Health Education in Kwara State College of Education

S/N	Item	Mean	SD	Decision	Rank
1	Creative teaching strategies such as role-playing, projects, and storytelling make Human Kinetic and Health Education more interesting.	3.50	0.58	Agreed	1 st
2	The use of creative methods helps me better understand complex concepts in Human Kinetic and Health Education.	3.30	0.68	Agreed	3 rd
3	Teachers encourage students to express ideas through creative assignments in Human Kinetics and Health Education classes.	3.20	0.72	Agreed	4 th
4	Creativity in teaching helps me retain and apply health and fitness knowledge more effectively.	3.35	0.65	Agreed	2 nd
5	Lessons that involve creative thinking activities improve my motivation to participate in Human Kinetic and Health Education.	3.10	0.75	Agreed	5 th

Table 3 presents the mean ratings, standard deviations, decisions, and ranks for five questionnaire items assessing the effect of creativity on the teaching and learning of Human Kinetic and Health Education in Kwara State College of Education. All items received mean scores above the 2.50 benchmark, indicating general agreement among respondents that creative teaching practices positively influence HKHE instruction.

The highest-rated item (mean = 3.50) reflects strong support for the use of creative strategies like role-playing, storytelling, and projects to make lessons more engaging. This is followed by the belief that creativity aids knowledge retention and practical application (mean = 3.35), and helps in understanding complex concepts (mean = 3.30). Other items, such as the encouragement of creative student expression (mean = 3.20) and motivation through creative thinking activities (mean = 3.10), were also positively rated. The standard deviations, ranging from 0.58 to 0.75, suggest moderate consistency in respondents' views. Consequently, the findings affirm that creativity enhances student interest, understanding, and motivation in Human Kinetic and Health Education.

Discussion of Findings

The results of data analysed showed that creative teaching practices positively influence human kinetic and health education instruction. This finding is corroborated by what Beghetto (2021) and Yusuf and Ayeni (2023) reported that creativity in teaching not only enhances knowledge retention but also contributes to the holistic development of learners. Likewise, the study found, through data analysed, that innovation has a positive impact on human kinetic and health education instruction. This finding agrees to the opinion of Beghetto (2021) that educational innovation and creativity are now widely recognised as essential for meeting the diverse needs of 21st-century learners and fostering deeper understanding, collaboration, and critical thinking. Furthermore, the study found that creative teaching practices positively influence human kinetic and health education. This finding supports the agitation of Luckin (2020) who lamented that insufficient use of creative teaching practices through the use of artificial intelligence, despite its proven global impact in enhancing education through intelligent tutoring systems, adaptive feedback, and real-time support is a serious challenge in education.

Conclusion

Based on the data analysed, it is evident that artificial intelligence, innovation, and creativity have a positive and meaningful impact on the teaching and learning of Human Kinetic and Health Education in Kwara State College of Education. Respondents consistently agreed that AI tools enhance content delivery, improve engagement, and support personalised learning. Similarly, innovative practices such as digital tools and gamified methods were shown to make learning more practical and engaging. Creativity was also found to significantly contribute to students' understanding, motivation, and ability to apply knowledge. Collectively, these findings emphasise the potential of integrating modern technological and pedagogical approaches to transform Human Kinetic and Health Education for improved educational outcomes.

Recommendations

On the basis of the findings and conclusion of the study, the following recommendations are made:

Institutions such as Kwara State College of Education should invest in training programmes for lecturers to enhance their capacity to integrate artificial intelligence and innovative digital tools into the teaching of Human Kinetic and Health Education. This will ensure more effective and technology-driven instructional delivery.

Also, the college should provide adequate infrastructure, including access to smart devices, internet connectivity, and AI-powered educational platforms, to facilitate the practical application of innovation and creativity in the classroom.

Likewise, curriculum planners and educational policymakers should revise the HKHE curriculum to incorporate creative and student-centered teaching methods that promote critical thinking, real-life application, and sustained learner engagement. This will align teaching practices with global educational standards and better prepare students for modern health and fitness challenges.

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