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Enhancing Physical Education in Colleges of Education in the Volta Region Through Artificial Intelligence for Holistic Student Development

*1Ekpo, G.U.A., ²Akude, S.K., ³Agyemang, S.M., ¹Azunwena, S.C., & ¹Chinda, S.O.

¹Ignatius Ajuru University of Education, Port Harcourt, Nigeria ²Department of Science / Physical Education, Peki College of Education, Peki, Ghana. ³Department of Science/Health Education, Abetifi Presbyterian College of Education, Abetifi, Kwahu. Ignatius Ajuru University of Education, Port Harcourt, Nigeria.

*Corresponding author email: geraldine.ekpo.iaue.edu.ng

Abstract

The study analyzed the use of Artificial Intelligence (AI) in improving physical education and wellbeing training at Volta Colleges of Education for student development. Two main research objectives and corresponding questions were addressed, guided by human resource theory. Data was collected from both primary and secondary sources using a self-developed instrument, the "Improving Physical and Wellbeing Education in Volta Colleges of Education through AI for Student Development Survey" (IPWEVCEAISDS). A sample size of 400 was selected through stratified and purposive sampling methods, with 80 respondents chosen from each of the five public Colleges in Volta. Findings indicated that AI-driven physical education is crucial for student development in Volta and contributes to regional growth. Recommendations included promoting AI-based physical education in public universities, enhancing curricula to accommodate emerging trends like skill identification and personalized learning, and training educators on AI usage for continuous improvement in teaching and learning.

Keywords: Artificial Intelligence, Physical Education, Student Development, Public Colleges.

Introduction

Man-made consciousness (computer-based intelligence) mindfulness in our general public is expanding day by day because of its adaptability. For example, it is by and by utilized in foundations of learning how to disperse and work with information to students which has evoked extraordinary energy. Since its importance cuts across all courses, including Actual Instruction, school heads are leaning into it to advance actual training, which turns into a support for solid living, working on students' scholastic performance and different advantages. A welcome turn of events, the utilization of simulated intelligence in such a manner, is supposed to take actual schooling students to another level. Man-made intelligence is a groundbreaking e-innovation that can further develop the instructional educational experience. Its utilization in Actual Schooling can assist with evoking a few qualities of progressive changes (Sai-Baba et al., 2019). Detecting its conspicuousness as of now and especially before long, the Ghanaian government is attempting to implement artificial intelligence and AI in schools for students to appreciate computer-based intelligence embedded highlights. Key subjects are cautiously being arranged in the educational program of Actual Training utilizing simulated intelligence, to supplement Actual Schooling experts in the country. In like manner, foundations can now train students with preeminent artificial intelligence innovation for future challenges. They can similarly collaborate with tech giant Microsoft to recognize students with chronic frailty records and limit the low-execution proportion in Actual Training. Consequently, simulated intelligence can upset Actual Instruction by enhancing teaching method, access and nature of learning (Talbot et al., 2012). These will go quite far in advancing students' turn of events.

Improvement is a multi-practical cycle that includes re-association and reorientation of social frameworks which incorporate utilitarian, conduct, institutional and primary aspects. It likewise understands expanded expertise and

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ability to procure pay, imagination, self-control, responsibility, opportunity of activity and the overall material and mental prosperity of a person; which is feasible only in a well-disposed climate like the school (Ugwu, 2015).

It is additionally viewed as an endeavour to limit poverty and world imbalances in a bid to guide the world to a degree of improvement and improvement over time. As per Brenner (2018), advancement is obtained from organic comprehension, which naturalizes it and provides it with a quality of certainty. Likewise, Borgmann (1984) portrays it as the inclination to carry on with a long and solid life, to get information and to have a respectable way of life. Thus, it assists with further developing the existing states of the worldwide populace, remembering Actual Instruction students in Volta colleges. It is fascinating to realize how school executives can apply Actual Training through computer-based intelligence in creating or further developing students, which will be found in their prosperity, scholarly performance, ethics/leadership, and so on. At the point when students are appropriately developed, it goes far in fostering the general public/country. Man-made reasoning (man-made intelligence) is gaining greater fervour in the general public because of its multi-reason capabilities, which incorporate sports education. Man-made intelligence is meaningfully altering how individuals live and work. It is picking up speed in schooling and preparing spaces as additional items and services that utilize computer-based intelligence become accessible. After recognizing that artificial intelligence has been taken on moderately leisurely in educational settings, its usefulness in Actual Training can't be denied (Broussard, 2018).

The researchers Russell and Norvig (2020) characterized man-made intelligence as the capacity of computers or other machines to show or mimic keen ways of behaviour. It is the recreation of human insight processes by machines, especially PC frameworks. These cycles incorporate learning (the securing of data and rules for utilizing it), thinking (the utilization of rules to arrive at estimated or unmistakable resolutions) and self-amendment. Man-made intelligence innovations can improve Actual Schooling results by giving customized opportunities for growth, automating regulatory undertakings and working with access to Actual Instruction assets (Gowda et al., 2024). Tomlinson (2001) expressed that man-made intelligence has been created as a conventional scholastic discipline during the twentieth 100 years. It was first mooted in 1956 at the Dartmouth Gathering that was coordinated by John McCarthy, Marvin Minsky, Nathaniel Rochester and Claude Shannon. During the occasion, the members endeavored to investigate the ability of machines to mimic parts of human knowledge, prompting a few research projects and the development of beginning computer-based intelligence programs. Following a couple of years, significant headway was made in the improvement of calculations, brain organization and representative thinking. Early simulated intelligence research focused on critical thinking, normal language understanding and game-playing. Notable accomplishments included the development of programs such as the Logic Theorist (1955) and the General Problem Solver (1957), which were designed to mimic human critical thinking abilities. Sumon et al. (2024) asserted that computer-based intelligence can advance physical and well-being training in schools by improving mindfulness among the different schooling partners in the public arena.

Going further, artificial intelligence can be ordered in numerous ways, relying upon various qualities and functionalities. These incorporate Restricted artificial intelligence (Feeble simulated intelligence) frameworks that are designed and prepared for a particular undertaking (Yigitcanlar et al., 2020). like Voice Partners (e.g., Siri, Alexa) and Proposal Frameworks (e.g., Netflix, Amazon). General simulated (Areas of strength for intelligence), which have the capacity to comprehend, learn and apply knowledge across a large number of tasks, like a person (Tomlinson, 2001). Responsive Machines simulate intelligence which essentially respond to current circumstances in light of precharacterized rules, for example IBM's Dark Blue (Tomlinson, 2001). Hyper-genius artificial intelligence refers to a form of AI that surpasses human intelligence in nearly every domain, including creativity, decision-making, problemsolving, and emotional understanding. This level of AI is largely hypothetical and is frequently discussed in terms of potential future developments and ethical considerations (Jordan, 2021). The groupings predict a comprehension of the present status of artificial intelligence innovation and the future advancements that might emerge. Each type has its application and moral contemplations. Thus, a significant man-made intelligence development is the formation of versatile learning stages that redo learning content to suit students' speed (Mahindru et al., 2023). In Volta, such stages can use native dialects and settings to advance perception and commitment. By incorporating nearby lingos into the educational program, these frameworks cater for students' phonetic foundations, subsequently encouraging a more comprehensive informative structure (Christodoulou & Angeli, 2022).

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i) Using AI to Teach Physical Education in Public Colleges in the Volta Region, Ghana

Actual Training contributes a ton to improving students' well-being, government assistance, and diversion. Albeit not another field, it keeps on getting a few definitions. For example, Mahindru et al. (2023) expressed that physical and well-being training focuses about proactive tasks, which create and keep up with the human body. The fulfilment of its targets relies extraordinarily upon the authority responsible for its course. The researcher additionally expressed that numerous nations have applied it to prepare their adolescents, showing that instruction should start early. Phan & Pham (2023) further affirmed that Actual Instruction is the course of schooling that is worried with the turn of events and application of the individual's willful and deliberate abilities, which is directly connected with one's psychological, personal, social and actual reactions. It shows that the actual training program contains a particular learning climate, portrayed by many arranged conditions and improvements explicitly planned to prompt or give open doors to physical, social, profound, scholarly and other valuable reactions through which the students might become changed, adjusted or taught in helpful ways as supported by the general public.

Students in Schools are of various foundations, interests, requirements, experience and objectives to obtain a fouryear college educations after their program (Cabello et al., 2022). Those seeking after four-year certification might sign up for actual training to meet a prerequisite or as an elective, yet a few clinical reasons, military service, age or athletic cooperation might exclude students from required actual instruction. There are likewise broad projects for those not studying actual instruction and projects. Using computer-based intelligence in showing Actual Schooling works with the production of canny mentoring frameworks that proposition customized criticism/opportunities for growth and backing. These frameworks dissect students' presentation information to distinguish qualities and shortcomings, giving designated help likened to one-on-one addressing (Poole et al., 2023). With class measures that run high in the Volta instructional setting, such advancements will unburden teachers and ensure students get satisfactory direction on actual schooling, which goes far in working with their turn of events.

ii) Using AI to Facilitate Student Development in Public Colleges of Education in the Volta Region, Ghana

Individuals are viewed as a significant need for improvement (Amadi & Promise, 2013). Different markers, for example, the financial development indicator help in the general improvement of the prosperity of humanity. Subsequently, a file for estimating human improvement is the Human Development Index (HDI), which is a composite measurement of future, education and per capita pay markers. A nation scores higher HDI when the life expectancy is higher, the instruction level is higher, and the Gross Domestic Product per capita is higher (Ibekwe, 2015). Human improvement is a fundamental course of growing individuals' decisions. Practically speaking, these decisions can be endless and change over the long run. In any case, at all degrees of improvement, the three basics are for individuals to carry on with a long and healthy existence, to gain knowledge and to access assets for a good way of life. Where these fundamental decisions are not accessible, numerous different open doors might be unavailable. Hence, the peak of improvement is human prosperity (Okun, 2015). The degree to which Ghana's school system produces up-and-comers whose scholastic achievements can prompt the fulfilment and food of cultural improvement remains a major issue. Nonetheless, actual training in our public universities of schooling can set off activities in the right heading.

(a) Ensuring Physical Literacy for All

The principal objective of actual schooling is encouraging actual proficiency and attention to all, developing a sound body in the end, bringing about cerebrum efficiency. Large-scale setting classes might thwart the inclusion of each understudy because of assorted decisions and unique interests. Numerous students, explicitly young ladies of higher classes may not find actual instruction appealing as they may not track down exercises according to their advantage. Additionally, a few engaged with individual games could do without to partake in gathering and group games. With simulated intelligence implanted in actual schooling, students can pick curious and energizing exercises because of their advantage to guarantee their full support. In like manner, with computer-based intelligence helps educators, students can plan a need-based and intuitive group, gathering and, surprisingly, individual exercises which will assist with working with actual proficiency (Latheef & Kotta, 2022).

(b) AI-Integrated Monitoring System

The idea of an Actual Training class is consistently unique. Other than homerooms, the on-ground developments and needs of games and exercises by students are expansive. In a full-scale setting, it may not be practically workable for an educator to direct and train each kid and to take care of their exercises. With the assistance of a simulated

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intelligence coordinated monitory framework, educators can screen the class progressively and help, teach and give constant criticism to students for their exercises and developments. One such model is LUMILO expanded reality glasses which offer ongoing input and understudy movement to educators (Holstein et al., 2018)

(c) Talent Identification

Actual Training educators assume pivotal parts in students' ability disclosure and support. Students can have a few gifts with various genotypes and whenever distinguished early, it can prompt elite exhibitions. Tragically, present models and techniques for ability recognizable proof are either blocked off or are not exact (Sai-Baba et al., 2019). The incorporation of present techniques with simulated intelligence and AI, be that as it may, can be more unequivocal. Similarly, with machine insight, new open and effectively accessible models can be created for ability ID and improvement. Machine knowledge can likewise support identifying any exceptional person in the students. For example, tactile information from fringe gadgets (sense) can be utilized as an instrument to foresee and distinguish an excellent physiological quality such as pulse, assessed vo2 max limit and a raised lactate edge esteem (Adetunji et al., 2024). Once more, the utilization of computer-based intelligence coordinated circuits in athletic gear can help track the exhibition of students. A model is "power bat" created by 'Spektacom organization to keep constant information on batsmen in cricket. These sorts of circuits can be intended for different games to distinguish ability explicit ability. Similarly, through AI information, close to estimated forecasts can be made utilizing calculations about the presence of muscle fiber types in a person. Wearables can be used to follow predominant reflexes, perceptual factors and refined thinking abilities or simplicity in showing the developments (Barlow & Sriskandarajah, 2019) while artificial intelligence sensors in shoes can illuminate any athletic standout engine capacity or step length, flight time, power age or development productivity in games. Definitely, simulated intelligence incorporated strategies and models with AI can help ability recognizable proof to a more vehement ability location among students.

(d) Individualized Learning and Personalized Training

As one size may not fit all, potentially the abilities and developments shown in Actual Training could be convoluted. Thus, for better securing of developments and blunder-free execution with instructors, man-made intelligence-based education boats can give constant input and speedy remedies, tackling questions and misguided judgments of students (Desbordes & Richelieu, 2012). It can similarly store and track individual information showing evidential improvement and examination with the goal that all students can turn out to be better variants of themselves exactly. Additionally, computer-based intelligence with individualized learning can serve educators to help each understudy better comprehension of themselves. E-stereoscopic picture-based recreation can assist students with learning under an intelligent climate. Once more, students following games practices can be helped with customized preparation custom-made for their presentation improvement given their lacunae in abilities or regions to chip away (Helal et al., 2022). Additionally, educators with simulated intelligence help can configure customized preparation plans for all students thinking about preparing inclinations and the degree of students, intrigued by any game to develop and construct execution. The human resources hypothesis was upheld by Adams Smith in 1776 and improved by Gary Becker in 1964. The hypothesis recommends that man's capacity to perform various undertakings depends on the abilities and information built in him and outer powers, for example, schooling, preparation and motivators which help to support his characteristics. The human resources hypothesis proposes a total load of abilities, information, and social and individual ascribes encapsulated in a characteristic proportion of monetary worth. It considers people as financial units that are vital.

In every society, there is an urgent need for development. According to human capital theory, there is a strong correlation between the growth of a nation's human resources and the expansion of its overall economic output (Onah et al. 2023). It is in this manner profitable that countries which need to accomplish a particular degree of financial labour assets put resources into their HR-like schools of training students. This hypothesis is based on the notion that abilities and skills obtained by individuals are an element of creation tantamount to different variables of creation like machine and land. For example, preparing learning results are subject to the informative jobs of mentors/educators among different variables. Hence, this proposition of the human resources hypothesis sees that HR are priceless resource for the general public that will generally improve its useful limit; which follows that human resources shape the devices that empower any remaining assets to make due.

In relating the hypothesis to the current review, if physical and well-being instruction students are appropriately evolved/prepared/prepared to utilize simulated intelligence, they will sparkle in their picked way and carry

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magnificence to themselves, their schools, their families and the country overall. This is conceivable because of their inward abilities/gifts and the actual stages of preparation they assimilated.

Okediji (2015) analyzed the pertinence of sports to the improvement of training. Brandishing exercises have been important for the way of life and normal living of man; they have a direct relationship with the plans, purposes and objectives of people. Sports have existed with schooling since crude times when man created abilities like hunting, treatment of weapons, a trial of solidarity, perseverance and fortitude. Sports, for example, soccer, badminton, volleyball, handball, netball, tennis, table tennis, swimming and games have authenticated educating and learning exercises at all degrees of schooling be it casual, non-formal or formal in Ghana. Authentic exploration system in schooling was utilized to complete and break down information for the paper involving recorded materials and oral meetings as essential sources while course books, diaries and web materials were utilized as auxiliary sources. The principal focal points of the paper were to look at the ideas of sports and training, the spot of sports in the instructive approach and educational program, the upsides of sports to schooling and country assembling, the difficulties of sports in schooling and give suggestions to improve sports and training in the country. The discoveries of the review uncovered that; sports were officially brought into the instructive educational program in Ghana as Actual Training around 1904 by the English organization, sports advance actual well-being and wellness, sporting exercises, unwinding esteem, monetary status, distinguish gifts, capacities, confer abilities, support socio-social relationship which improves solidarity among the general population. The gathering to profit from sports for the most part comes at grassroots, school between house sports and between university contests and affiliation discussions. Difficulties of sports incorporate deficient financing, fumble of assets, absence of honesty, lacking staff, diminishing infrastructural and wearing offices, and insufficient preparation and clinical offices. It was suggested that assuming the above challenges are appropriately tended to, donning exercises will project the country's schooling as something else for general advancement both broadly and universally.

Dikko (2023) researched showcasing apparatuses for sports executives and advancement in tertiary organizations. The tertiary framework is a ripe ground for the ID, the executives and the improvement of sports gifts for the sports industry. Each industry including the games business creates and offers items and administrations to society. Sports items and administrations are created by sportspersons for sports purchasers and this adds to the financial, political, infrastructural and social improvement of sports in the universities and society at large, if very much oversaw and showcased. Sports in schools can be overseen and created utilizing showcasing apparatuses like sponsorship, promoting, deals advancement, exposure and advertising, bundling, marking, marketing, naming, individual selling, direct promoting and guarantee. The importance and appropriateness of these showcasing instruments ought to be utilized by universities for their game executives and advancement endeavours and projects. Specialists in sports advertising and the executives ought to be coordinated in the running of sports in colleges. There ought to be a joint effort between experts in sports and promoting experts to perceive how best games can be showcased to customers utilizing different advertising devices. Research on advertising and special devices to find additional showcasing apparatuses to sports ought to likewise be energized.

Objectives of the Study

The objectives are to:

- (i) Discuss how AI can be used to teach Physical Education in public Colleges of Education in Volta Region, Ghana.
- Explain how AI can be used to enhance students' development in public Colleges of Education in Volta, Ghana.

Research Questions

The research questions are:

- (1) How can AI be used to teach physical and health education in public Colleges of Education in Volta Region, Ghana?
- (2) How can AI be used to facilitate student development in public Colleges of Education in Volta Region, Ghana?
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Methodology

The research design adopted for this study was the descriptive research design while the population of the study comprised all the students of the 5 public Colleges of Education in Volta Region, Ghana numbering 6,454. This study adopted Taro Yemane's method to determine the sample size at 376.66, approximately 400. The formula is stated as:

n	=	$\frac{N}{1+N(e)^2}$
When	e	
n	=	Sample size sought
Ν	=	Population size
Ι	=	Constant
e	=	Error of estimate at 0.05 significance level.

The sample size of 400 was obtained by applying stratified and purposive sampling techniques. While stratified sampling techniques were used to identify the 5 public Colleges of Education in the study area Volta, a purposive sampling technique was used to select 80 students from each of the Colleges, to arrive at a total of 400. The names of the five Colleges were Peki College of Education, St Francis College of Education, Akatsi College of Education, St Teresa's College of Education and E.P. College of Education. The instrument used for the study was a self-structured questionnaire entitled, "Improving Physical and Wellbeing Education in Volta Colleges of Education through AI for Student Development Survey" (IPWEVCEAISDS). It was divided into two sections namely sections A and B. Section A of the questionnaire was used to elicit information on demographic data while Section B contained ten (10) items which were used to elicit information from the respondents. The instrument was structured based on a 4-point Likert rating scale with response options and corresponding numerical values assigned to them as follows: Strongly Agree (SA) - 4 points, Agree (A) - 3 points, Disagree (D) - 2 points and Strongly Disagree (SD) - 1 point. To ascertain the face and content validity of the instrument, the questionnaire was given to two experts in sports management. Their corrections and approval were inserted in the final draft of the instrument.

The instrument was thus administered to 20 public college students in Oti who were not part of the sample to ascertain the internal consistency of the test items. The Cronbach alpha statistical tool was used to analyze the data collected from the respondents, to get a reliability index of 0.86. Thus, the researcher administered the instrument personally to the respondents and collected it within a week to avoid a high rate of attrition. Furthermore, the researcher made use of mean and standard deviation to answer the two research questions. The criterion mean of 2.50 was achieved thus: 4+3+2+1/4. Mean scores of 2.50 and above were accepted as showing strong agreement while mean scores below 2.5 showed strong disagreement. Out of the 400 copies of the questionnaire distributed, 380 copies of them were duly completed and returned representing 95%. They were thus used to analyze the data.

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Results

S/N	Items	Male Students (200)		Female Students (180)		Mean Set	Decision
		Mean	Std	Mea	n Std.	_	
1	AI can be applied in physical education to teach students about hygiene.	3.2	0.9	3.0	1.0	3.1	Agree
2	Through AI in physical education, students learn about sports activities.	3.2	0.9	3.4	0.9	3.3	Agree
3	Through AI in physical education, students learn about recreational activities.	3.2	0.8	3.4	0.9	3.3	Agree
4	Through AI in physical education, students know more about classes of food.	3.3	0.9	3.3	0.9	3.3	Agree
5	Through AI in physical education, students understand that physical exercise is good for the body.	3.1	0.8	3.3	0.8	3.2	Agree
	Aggregate mean scores & St.D	3.2	0.9	3.3	0.8	3.3	Agree

 Table 1: Mean scores and standard deviation of respondents on how AI can be used to teach Physical Education in public Colleges of Education in Volta, Ghana.

Source: Author's Computation 2025

Data in Table 1 present the mean and standard deviation scores of male and female students with regard to how AI can be used to teach Physical Education in public Colleges of Education, Volta Region, Ghana. Their mean scores revealed that all the respondents agreed to items 1-5 with mean scores of 3,1, 3,3. 3,3, 3,3, and 3,2, resulting in a cumulative mean score of 3,3. This means that the aggregate mean score of 3,3 is greater than the criterion mean of 2.5 while the mean score of 3,2 for male students and 3,3 for female students implies that the respondents accept the items on the table. Therefore, AI can be used to teach physical education in Colleges of Education in Volta Region, Ghana.

Table 2: Mean scores and standard deviation of respondents on how AI can be used to enhance stude	ents'
development in public Colleges of Education in Volta Region, Ghana.	

S/N	Items	Male Students (200)		Female Students (180)		Mean Set	Decision
		Mean	Std	Mean	Std.		
6	AI offers students the opportunity of embracing physical literacy	3.2	0.8	3.3	0.9	3.3	Agree
7	Through AI, students are assisted with integrated monitoring systems.	3.4	0.8	3.3	0.7	3.3	Agree
8	AI helps school administrators with the opportunity of students' talent identification.	3.3	0.8	3.0	0.9	3.3	Agree
9	AI offers students the opportunity for individualized learning.	3.2	0.9	3.3	0.7	3.3	Agree
10	AI offers students the opportunity for personalized training.	3.3	0.8	3.3	0.9	3.3	Agree
	Aggregate mean scores & St.D	3.3	0.8	3.3	0.8	3.3	Agree

Source: Author's Computation 2025

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Data in Table 4.2 present male and female students' mean and standard deviation scores concerning how AI can enhance students' development in public Colleges of Education in the Volta Region, Ghana. Their mean scores revealed that all the respondents agreed to items 6-10 with mean scores of 3.3, 3.3, 3.3, 3.3, and 3.3, resulting in a cumulative mean score of 3.3. This means that the aggregate mean score of 3.3 is greater than the criterion mean of 2.5 while the mean score of 3.3 for male students and 3.3 for female students implies that the respondents accept the items on the table. Therefore, AI can enhance students' development in public colleges of education in the Volta Region of Ghana.

Discussion

Using AI to Teach Physical Education

Inference from the mean and standard deviation statistics on utilizing AI for Physical Education suggests that the male and female students agreed that AI can be used to teach physical education in public Colleges of Education in Volta Region, Ghana. The positive agreement among the respondents is statistically significant. This shows that using AI to teach physical education in public colleges helps the students greatly in their hygiene, diet and body exercise among others. This result agrees with earlier studies by Adisa (2010) and Mokhtar et al. (2021) who affirmed that using AI to teach Physical Education helps greatly in boosting their health and physical awareness.

Using AI to Enhance Students' Development

Inference from the mean and standard deviation statistics on students' development connotes that the male and female students agreed that AI can be used to enhance students' development in public universities in areas such as physical literacy, integrated monitoring systems and talent identification among others. These views have been corroborated by eminent scholars such as Ashley (2023) and Desbordes and Richelieu (2012) who claimed that students' development is a major reason for using AI in public colleges.

Conclusion

Working on Actual Schooling in open Universities of Training in the Volta Locale, through artificial intelligence can make new and good sentiments when appropriately taken care of. Its advantages are huge; including keeping both the students and educators fit, working on students' physical, mental and moral capacities, planning understudy competitors for contests both locally and universally; and learning better approaches for solid living in a wildly serious world. The endeavours presently put in by the public college managers in Volta, Ghana through simulated intelligence is lacking contrasted with other public universities in created nations like England, Germany, France and Russia. It is basic thusly that the public authority and school executives ought to accomplish to advance actual training in our public universities involving simulated intelligence which will go far in working on the students and fostering the country.

Recommendations

From the previous, the accompanying suggestions have been reached:

- i. Teaching actual schooling through computer-based intelligence ought to be advanced in open universities in Volta to upgrade students' information on cleanliness and actual well-being.
- ii. The educational plan for actual training ought to be improved to oblige the latest things like ability recognizable proof, individualized learning, and so on.
- iii. The federal government in a joint effort with schooling partners ought to prepare the actual training educators on the utilization of man-made intelligence in their discipline occasionally for their ceaseless turn of events, which will be convenient during instructing-learning meetings.
- iv. AI PCs and ICT offices ought to be made accessible in open universities which will be valuable during education.
- v. AI machines that are planned with various academic strategies ought to be utilized in open schools during actual training educating learning results.

References

Adetunji, C. O., Fatumo, S., & Ukwaja, K. N. (Eds.). (2024). *Health Technologies and Informatics: Research and Developments*. CRC Press.

Adisa, O. (2010). Underdevelopment of sports in Nigeria: A need for physical education curriculum. www.info.org

50 *Cite this article as*:

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- Amadi, E. C., & Promise, A. (2013). Professional development on teacher's academic performance in Secondary schools in ETCHE Local Government Area. *International Journal of Education Learning and Development*, 1(2), 19-23.
- Ashley, J. (2023). Top 10 esports sponsorships that will redefine the industry. *https://www.esports.net/news/top-10-es-ports-sponsorships/*

Barlow, A., & Sriskandarajah, S. (2019). Artificial intelligence: Application to the sports industry. PwC Report: EPUB

- Borgmann, A. (1984). *Technology and the character of contemporary life: A philosophical inquiry*. University of Chicago Press.
- Brenner, H., & Chen, C. (2018). The colorectal cancer epidemic: challenges and opportunities for primary, secondary and tertiary prevention. *British journal of cancer*, *119*(7), 785-792.
- Broussard, M. (2018). Artificial unintelligence: How computers misunderstand the world. mit Press.
- Cabello, C., Talaub, N. R., & Vilan, A. J. (2022). Non-SPED Graduate teachers and their understudies in an inclusive Classroom: A Qualitative Inquiry. *Psychology and Education: A Multidisciplinary Journal*, 6(4), 1-1.Weimer, M. (2013). *Learner-centered teaching: Five key changes to practice* (2nd ed.). Jossey-Bass.
- Christodoulou, A., & Angeli, C. (2022). Adaptive learning techniques for a personalized educational software in developing teachers' technological pedagogical content knowledge. In *Frontiers in Education* (Vol. 7, p. 789397). Frontiers Media SA.
- Desbordes, M., & Richelieu, A. (2012). *Global sports marketing: Contemporary issues and practice*. Taylor & Francis Group.
- Dikko, A. D. (2023). Administrative styles as determinants of competitive sports success among selected tertiary Institutions in Kwara State, Nigeria. *Master's thesis, Kwara State University, Nigeria*.
- Gowda, S. D., Gurukiran, K. L., Hemanth, Y. D., & Manoj, V. (2024). Educational Evolution: Assessing the Role of Artificial Intelligence. *Grenze International Journal of Engineering & Technology (GIJET)*, 10.
- Helal, A. A., Saad, B. T., Saad, M. T., Mosaad, G. S., & Aboshanab, K. M. (2022). Evaluation of the available variant calling tools for oxford nanopore sequencing in breast cancer. *Genes*, *13*(9), 1583
- Holstein, K., McLaren, B. M., & Aleven, V. (2018). Student learning benefits of a mixed-reality teacher awareness tool in AI-enhanced classrooms. In *Artificial Intelligence in Education: 19th International Conference, AIED* 2018, London, UK, June 27–30, 2018, Proceedings, Part I 19 (pp. 154-168). Springer International Publishing.
- Ibekwe, C. N. (2015). Values Education: the greatest national need. *Celebrating our teacher and mentor*, 70.
- Jordan, J. (2021). The future of unmanned combat aerial vehicles: An analysis using the Three Horizons framework. *Futures*, 134, 102848. https://doi.org/10.1016/j.futures.2021.102848
- Latheef, A., & Kotta, Z. A. (2022). From content-based to skill-oriented testing: resistance, prospects and possibilities (Doctoral dissertation, PG Department of English, Govt. Arts & Science College, Kondotty).
- Mahindru, A., Patil, P., & Agrawal, V. (2023). Role of Physical Activity on Mental Health and Well-Being: A Review. *Cureus*, 15(1), e33475. https://doi.org/10.7759/cureus.33475
- Mokhtar, M. A., Twahir, M. & Omodara, T. (2021). Language diversity and indigenous education in Nigeria: Harnessing AI for inclusivity. *African Journal of Education and Development*, 1(1), 4 – 15.
- Okediji, H. (2015). The relevance of sports to the development of education in Nigeria, 1904 till date. *History Research*, 5(3), 188–196. https://doi.org/10.17265/2159-550X/2015.03.005
- Okun, A. M. (2015). Equality and Efficiency REV: The Big Tradeoff. Brookings Institution Press.
- Onah, C. C., Ikechukwu, A., Aloysius, A., & Benjamin, A. (2023). Exploring the imperative of human capital development as a pathway for the achievement of sustainable development: A theoretical discourse. *Journal of Xi'an Shiyou University, Natural Science Edition*, 19(6), 138–158.
- Phan, L. N. H., & Pham, T. P. D. (2023). The Intersection of Sport and Business: Sponsorship and Branding. EPUB.
- Poole, J. L., Murphy, S. L., Foster, E. R., Sleight, A. G., Van Denend, T., Asher, A., ... & Whibley, D. (2023). Fatigue as an understudied barrier to participation in life roles. *OTJR: Occupational Therapy Journal of Research*, 43(4), 583-591.
- Russell, S. J., & Norvig, P. (2020). Artificial intelligence: A modern approach (4th ed.). Pearson.
- Sai Baba, M., Binoy, V. V., Vasan, T., & Subash, H. J. (2019). Artificial Intelligence (AI) and India: Promise, Perception and Preparedness. India: Aditi Enterprises
- Sumon, R. I., Uddin, S. M. I., Akter, S., Mozumder, M. A. I., Khan, M. O., & Kim, H. C. (2024). Natural language processing influence on digital socialization and linguistic interactions in the integration of the metaverse in regular social life. *Electronics*, 13(7), 1331.

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Talbot, T. B., Sagae, K., John, B., & Rizzo, A. A. (2012). Sorting out the virtual patient: how to exploit artificial intelligence, game technology and sound educational practices to create engaging role-playing simulations. *International Journal of Gaming and Computer-Mediated Simulations (IJGCMS)*, 4(3), 1-19. Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms*. Ascd.

Ugwu, S. C. (2015). Education and national development: Nigerian experience. *Knowledge Review*, 32(1), 5.

Yigitcanlar, T., Kankanamge, N., Regona, M., Ruiz Maldonado, A., Rowan, B., Ryu, A., ... & Li, R. Y. M. (2020). Artificial intelligence technologies and related urban planning and development concepts: How are they perceived and utilized in Australia?. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 187.

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