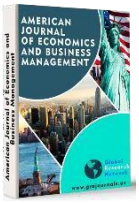

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Article

Exploring The Relationship Between AI-Powered Business Simulations and Business Skills Development in Tertiary Institutions in Rivers State

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Abstract: This research investigates the correlation between Artificial Intelligence (AI)-powered Business Simulations and the development of business skills within tertiary institutions in Rivers State. The study was guided by two research questions and two hypotheses, employing a cross-sectional research design. A purposive sampling technique was used to select 150 participants from three universities in the state. The data were gathered through a self-designed questionnaire titled Artificial Intelligence, Powered Business Simulations, and Business Skill Development. The questionnaire was validated by experts and had a reliability coefficient of 0.75 based on the test-retest method. Descriptive statistics and Pearson Product Moment Correlation were used for data analysis. The study revealed a significant relationship between AI-powered business simulations and both technical and behavioral skills. The study suggests that tertiary institutions should adopt AI-powered systems to enhance employability skills.

Keywords: AI-Powered Business Simulations, Business Skills Development, Tertiary Institutions in Rivers State

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1. Introduction

The rapid development of Artificial Intelligence (AI) has significantly impacted multiple sectors, including education. AI-Powered Business Simulations have emerged as a valuable tool for enhancing business skills within higher education institutions. These simulations create an engaging and interactive learning environment, enabling students to apply theoretical knowledge to real-life situations. Recent research suggests that AI-Powered Business Simulations improve students' decision-making, problem-solving, and critical thinking abilities [1]. Furthermore, these simulations offer personalized feedback and guidance, assisting learners in identifying areas for improvement and refining their business skills more effectively [2].

The integration of AI in education has transformed the way business skills are taught and acquired. AI-Powered Business Simulations have become an essential instrument in developing business competencies among tertiary institution students. By providing an authentic and interactive learning experience, these simulations allow students to bridge the gap between theory and practice, thus enhancing their decision-making, problem-solving, and critical thinking skills [3][4]. In today's fast-paced business environment, it is

crucial for students to cultivate practical business skills that are applicable in real-world scenarios. AI-Powered Business Simulations offer a solution by preparing students for the challenges of the modern business world [5].

In the context of tertiary institutions in Rivers State, it is crucial to examine the link between AI-Powered Business Simulations and the development of business skills. This study aims to determine whether AI-Powered Business Simulations can effectively foster business skills in students within Rivers State's tertiary institutions.

Statement of the Problem

The development of business skills among students in tertiary institutions is an urgent issue for educators, industry stakeholders, and policymakers. Despite the increasing demand for skilled business professionals, many graduates lack the practical competencies necessary to thrive in the modern business landscape. This skills gap is largely due to the limitations of traditional teaching methods, which often emphasize theoretical knowledge over practical application. In Rivers State, tertiary institutions encounter distinct challenges in preparing students for the evolving demands of the business world. The state's economy, which relies heavily on sectors such as oil and gas, manufacturing, and services, requires professionals with specialized business skills. However, many graduates from these institutions lack the skills required to meet industry expectations.

AI-Powered Business Simulations have emerged as a promising solution to bridge this gap. These simulations offer an immersive and interactive learning experience, enabling students to apply theoretical knowledge to real-world situations, while also fostering critical thinking, problem-solving abilities, and improving decision-making skills. However, there is a need for a thorough investigation into the connection between AI-Powered Business Simulations and business skills development within tertiary institutions in Rivers State.

This study aims to examine the relationship between AI-Powered Business Simulations and business skills development in Rivers State's tertiary institutions. By doing so, it seeks to inform the creation of more effective business education programs that align with the needs of the state's economy and industries. The findings of this study will offer valuable insights into the potential advantages and challenges of incorporating these simulations into the region's business education framework.

Purpose of the Study

The main purpose of this study was to investigate the topic 'Exploring the Relationship between AI-Powered Business Simulations and Business Skills Development in Tertiary Institutions in Rivers State'. Specifically, the study sought to do the following:

1. To investigate the relationship between entrepreneurial simulations and technical skills development in tertiary institutions in Rivers State.
2. To examine the relationship between virtual reality simulation and entrepreneurial simulations on technical skills development in tertiary institutions in Rivers State.

Research Questions

The following research questions guided the study:

1. What is the relationship between entrepreneurial simulations and technical skills development in tertiary institutions in Rivers State?
2. What is the relationship between virtual reality simulations and entrepreneurial skills development in tertiary institutions in Rivers State?

Research Hypotheses

The following null hypotheses were tested in this study:

1. There is no significant relationship between entrepreneurial simulations and technical skills development in tertiary institutions in Rivers State.

2. There is no significant relationship between virtual reality simulations and entrepreneurial skills development in tertiary institutions in Rivers State.

Conceptual Review

The concept of AI-Powered Business Simulations and their role in developing business skills within tertiary institutions is gaining significant attention in both the education and business sectors. Business simulations are dynamic and interactive learning tools that allow students to apply theoretical knowledge to practical, real-world scenarios, thereby enhancing their practical skills and competencies. AI-Powered Business Simulations use Artificial Intelligence technology to create realistic and adaptable business environments, enabling students to experiment, innovate, and learn from their decisions. Two key types of AI-Powered Business Simulations are entrepreneurial simulations and virtual reality simulations, both of which can be instrumental in developing essential business skills among tertiary institution students.

Both technical and entrepreneurial skills are critical for business success and can be developed through AI-Powered Business Simulations. Technical skills encompass the specialized knowledge and abilities necessary to perform specific tasks and solve business-related problems. In contrast, entrepreneurial skills include the abilities required to initiate and manage a business, such as innovation, risk-taking, and leadership. The relationship between AI-Powered Business Simulations and business skills development is complex and multifaceted. These simulations provide students with valuable hands-on experience, real-world knowledge, and practical skills that can enhance their technical and entrepreneurial capabilities. Through the exploration of this relationship, researchers can gain deeper insights into the effectiveness of AI-Powered Business Simulations in fostering business skills among tertiary institution students.

In Rivers State, Nigeria, the implementation of AI-Powered Business Simulations in tertiary institutions can play a pivotal role in bridging the skills gap in the business sector. By cultivating essential business skills in students, tertiary institutions can contribute to the state's economic development and better prepare students for the demands of the contemporary business world.

Theoretical Framework

The study exploring the relationship between AI-Powered Business Simulations and business skills development in tertiary institutions in Rivers State is based on two foundational theories: the Experiential Learning Theory (ELT) and the Constructivist Theory.

Experiential Learning Theory (ELT) (1970):

1. Developed by David Kolb, ELT emphasizes the importance of experience in the learning process.
2. AI-Powered Business Simulations offer students real-world experiences where they can apply theoretical knowledge in practical settings, allowing for experiential learning.

Constructivist Theory (1964):

1. Proposed by Lev Vygotsky, this theory highlights the significance of social interaction and technology in the process of knowledge construction.
2. AI-Powered Business Simulations, including entrepreneurial simulations and virtual reality simulations, create interactive and immersive learning environments that help facilitate the construction of knowledge and development of skills.

Theoretical Model:

The theoretical framework of this study consists of two key components:

1. Independent Variable: AI-Powered Business Simulations, which include Entrepreneurial Simulations and Virtual Reality Simulations.

2. Dependent Variable: Business Skills Development, measured by Technical Skills and Entrepreneurial Skills.

Relevance of the Theories to the Study:

The Experiential Learning Theory and Constructivist Theory offer a solid framework for understanding how AI-Powered Business Simulations contribute to business skills development in tertiary institution students. These theories suggest that:

1. AI-Powered Business Simulations provide concrete, hands-on experiences that enable students to apply theoretical knowledge in practical contexts (ELT).
2. These simulations foster knowledge construction and skill development through immersive and interactive learning environments (Constructivist Theory).
3. The simulations enhance the development of both technical and entrepreneurial skills among students.

By combining these two theories, the study aims to explore the relationship between AI-Powered Business Simulations and business skills development in Rivers State's tertiary institutions, offering insights into how these simulations can effectively contribute to skill development in students.

Empirical Studies

AI in Business Education in Rivers State

Ukata and Agburuga conducted a descriptive survey on the integration of AI in business education courses at tertiary institutions in Rivers State. Their findings revealed that AI tools, such as intelligent tutoring systems, chatbots, and simulation platforms, significantly improve students' acquisition of employability skills, including both technical and entrepreneurial competencies. The study suggests that incorporating AI into business education would transform the program to focus on AI skills development, enabling students to gain the necessary AI-related employability skills for the global job market [6].

Entrepreneurial Simulations and Skills Development

Koko and Ajala examined the relationship between entrepreneurial skills, such as accounting and managerial skills, and entrepreneurial intentions among business education students in Rivers State universities. Their study found a strong positive correlation, indicating that entrepreneurial simulations integrated into business education significantly enhance students' readiness for self-employment [7].

Virtual Reality Simulations in Technical Education

Ezinma et al. explored the awareness and use of virtual reality (VR) in teaching technical education to students and lecturers in Rivers State. Although the awareness was low, the study emphasized the potential of VR to improve technical skill acquisition through immersive learning environments [8].

Technical Skills for Sustainable Development

Saue et al. (n.d.) investigated the technical skills required for the sustainable development of tertiary graduates in Rivers State. Their findings support the integration of AI and simulation-based learning to bridge the gap between theoretical knowledge and practical application in technical education [9].

Internship and Entrepreneurial Skills

Okiridu and Iwherediscussed how structured internship programs, which serve as real-world simulations, enhance the development of entrepreneurial skills among business education students. They recommend mentorship and professional exposure as essential elements for building entrepreneurial confidence [10].

2. Materials and Methods

Research Design: The study adopted a Cross-sectional research design.

Population of the Study: The population of the study was made up of all business education students in three universities in Rivers State, namely, the University of Port Harcourt, Rivers State University, and Ignatius Ajuru University of Education.

Sample and Sampling Technique: A sample of 150 study participants were purposively selected from the three universities, thus, University of Port Harcourt=50, Rivers State University 50, and Ignatius Ajuru University=50. However, simple random technique was used to choose the fifty students from each university.

Instrument for Data Collection: An instrument captioned Artificial Intelligence Powered Business Simulation and Business Skills Development (AIPBSBSD) was self-designed and used for data collection. the first part of the instrument addressed the demographic variables, while part two elicited information on the questionnaire items, the responds options includes, strongly Agree, Agree, Disagree, and Strongly Disagree.

Validity of the Instrument: the instrument was dully validated by experts from the department of business education, Ignatius Ajuru University of education.

Reliability of the Instrument: The internal consistency of the research instrument was determined using test-retest method. A reliability coefficient index of 0.75 was obtained which was deemed reliable for the study.

Method of Data Analysis: Mean and standard deviation was used to analyze the research questions while Pearson Product Moment Correlation was used to test the hypotheses at 0.05 level of significance.

3. Results

Research Question One: What is the relationship between Artificial Intelligence Powered Business Simulation and technical skills development in tertiary institutions in Rivers State?

Table 1. Mean and standard deviation scores on the relationship between AI Powered Business Simulation and technical skills development.

S/N	Items	Sum	X	SD	Remark
1	Artificial Intelligence enable students acquire needed skills for global work place.	480	3.213	1.788	Agreed
2	AI enhances students acquisition of employability skills.	440	2.933	1.712	Agreed
3	AI provides students with real world knowledge which enhance their technical skills.	470	3.133	1.770	Agreed
4	It fosters continuous growth and productivity of the work force.	495	3.305	1.816	Agreed

Data analysis in table 1 revealed that items 1-4 had all the mean scores above the criterion mean of 2.5, showing that AI Powered Business Simulation relates with technical skill development by enabling students acquire needed skills for global work place, employability skills and provides students with real world knowledge which enhances their technical skills.

Research Question Two: What is the relationship between Artificial Intelligent Powered Business Simulations and entrepreneurial skills development in tertiary institutions in Rivers State?

Table 2. Mean and standard deviation scores on the relationship between AI-Powered Business Simulations and entrepreneurial skills development.

S/N	Items	Sum	X	SD	Remarks
5	Artificial Intelligence (AI) Powered Business Simulations enhance entrepreneurship skills by offering realistic risk-free environment.	465	3.102	1.816	Agreed
6	AI driven simulations provides immersive learning experience that stimulates creativity.	430	2.866	1.692	Agreed
7	AI improves entrepreneuncial skills by stimulating competitors and providing targeted business model.	463	3.086	1.756	Agreed
8	Entrepreneurial simulations embedded in business education enhances student readiness for self-employment	460	3.066	1.750	Agreed
9	Ai Powered Business Simulation fosters innovation, enhancing decision making and supporting business model development.	475	3.166	1.779	Agreed

Data analysis in table two indicated that items 5-9 had all the mean scores above the criterion mean of 2.5, meaning that Artificial Intelligence Powered Business Simulation relates with entrepreneur skill development by offering realistic free environment, providing immersive learning experience that stimulate competitors by providing targeted business model.

Hypothesis 1: There is no significant relationship between Artificial Intelligence (Ai) Powered Business Simulation and technical skill development of students in tertiary Institutions in Rivers State.

Table 3. test of relationship between Artificial Intelligence (Ai) powered.

Variables	N	X	SD	r	P	Remarks
Ai Powered Business Simulation	75	3.012	1.721	0.734	0.291	Not sig
Technical skills Development	75	3.010	1.719			

Data analysis as presented in table 3 revealed that r calculated value of 0.734 is greater than the P critical value of 0.291 at 0.05 alpha level. Hence the null hypothesis was rejected meaning that Artificial Intelligence Powered Business Simulation significantly relates with technical skills development of students in tertiary institutions in Rivers State.

Hypothesis 2: There is no significant relationship between Artificial Intelligence (Ai) Powered Business Simulations and Entrepreneur Skills Development of Students in Tertiary Institutions in Rivers State.

Table 4. Test of relationship between AI Powered Business Simulation and Entrepreneurial Skills Development.

Variables	N	X	SD	r	P	Remarks
Ai Powered Business Simulation	75	3.012	1.725	0.695	0.361	Not sig
Entrepreneurial skills Development	75	2.986	1.679			

Table 4 data analysis indicated that r calculated value of 0.695 is greater than the P critical value of 0.361 at 0.05 alpha level. Hence, the null hypothesis was rejected showing

that Artificial Intelligence (Ai) Powered Business Simulation significantly relates with entrepreneurial skill development of students in tertiary institution in Rivers State.

4. Discussion

The findings related to the first research question and hypothesis revealed a significant relationship between AI-Powered Business Simulations and the development of technical skills among students in tertiary institutions in Rivers State[11],[12],[13]. This suggests that AI-Powered Business Simulations enable students to acquire employability skills, thereby enhancing their technical knowledge. This result aligns with Ukata and Agburug, who discovered that AI-Powered Business Simulations help students gain the skills necessary for the global workplace and self-employment.

Similarly, the findings related to the second research question and hypothesis indicate a strong and significant relationship between AI-Powered Business Simulations and the development of entrepreneurial skills in students. The implication of this finding is that AI-Powered Business Simulations foster entrepreneurial skill development by providing a realistic, risk-free environment. This supports the work of Koko and Ajala, who found that entrepreneurial simulations embedded in business education significantly improve students' readiness for self-employment[14],[15].

5. Conclusion

In this 21st century, Artificial Intelligence (AI) is revolutionizing how business development; both technical and entrepreneurial can successfully harness these tools to develop their work force toward fostering growth and productivity. The study concludes that Artificial Intelligence (AI) Powered Business Simulation significantly relates with technical and entrepreneurial skills of students through the acquisition of employability skills: As Artificial Intelligence continues to revolutionize industries globally, its application in entrepreneurship education holds promise for enhancing training, efficiency and learning experience in schools.

Recommendations

Based on the findings, it was recommended thus:

1) Tertiary institutions should adopt Artificial Intelligence (AI) powered systems to enable students acquire needed skills.
2) Student should be equipped with relevant entrepreneurial skills to enhance their self-reliance and employability skills.
3) Efforts should be made to organize regular seminars and workshops for students to update their entrepreneurial skills.

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