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Research Article

HARNESSING EMERGING TECHNOLOGIES FOR VOCATIONAL SKILL DEVELOPMENT IN AKWA IBOM STATE CORRECTIONAL CENTRES

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Abstract

This study examined the integration of emerging technologies in correctional centers to enhance vocational skill acquisition among adult inmates in Akwa Ibom State, Nigeria. Three research questions, three hypotheses and descriptive survey research design was adopted to guide the study. A population of 1045 (comprising 328 convicted inmates and 616 instructors) was used for the study. A sample of 91 (comprising of 60 convicted inmates and 31 Instructors) were purposively sampled from the 4 custodial centres in the study area. A 28-item questionnaire faced validated by five experts was used to collect data for the study. Cronbach alpha statistics was used to determine the reliability coefficient of the instrument which yielded overall reliability index of .82 comprising of .79, .86 and .81 for Section B, C and D respectively indicating that the instrument was reliable. A five-point rating scale was provided for the respondents to make their responses on the research questions. The research questions were analyzed using Mean and standard deviation while independent t-test was used to test the hypothesis at .05 level of significance. The findings of the study revealed non availability and non-utilization of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State. The findings further indicated that challenges such as limited access to technology, inadequate infrastructure and resistance to change hinder the effective implementation and scalability of emerging technological solutions. From the findings of the study, it was recommended that investing in infrastructure, and providing training and support to staff and inmates, correctional authorities can harness the transformative potential of technology to empower inmates with valuable skills, improve rehabilitation outcomes, and promote successful reintegration into society.

Keywords: Technology, Correctional Centres, Adult Inmate, Vocational Skill Acquisition, Akwa Ibom State, Nigeria, Reformation, Reintegration

Introduction

Correctional facilities are institutions responsible for managing, reforming, rehabilitating, and reintegrating individuals who have been convicted of crimes. According to Ajah and Nweke (2017), Anyanwu et al. (2018), and Inusa (2021), prisons serve as correctional institutions where offenders awaiting trial are sent to undergo reformation through educational, moral, and vocational training. In the perspective of Inusa (2021), Bassey, Asangausung, and Essoh (2023), correctional institutions, as integral components of the criminal justice system worldwide, play a crucial role in facilitating rehabilitation and skill development among inmates, thereby reducing recidivism rates and providing avenues for successful societal reintegration upon release.

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Ogundipe (2010) opined that the operational structure of the Nigerian prison system inherited from the British Colonial Administration was characterized by a centralized administrative system and a predominant focus on safe custody and punitive measures. The Nigerian Correctional Service (NCS) operates under the legal framework provided by Cap. 366 Laws of the Federal Republic of Nigeria, which mandates the custody of legally detained individuals and outlines measures for their reformation, rehabilitation, and societal reintegration as law-abiding citizens (FRN, 1990; Okechukwu & Agwi, 2017). Reformation efforts involves corrective, educational, reorienting, and rehabilitative measures aimed at reducing recidivism rates and enhancing the prospects of successful community reintegration after incarceration (Mboho & Atairet, 2018; Ogbaka, Ewelum, & Anthony, 2017; Mbatha et al., 2019). Consequently, reformed inmates are no longer security threats to national stability, a vital prerequisite for socioeconomic and political advancement. In essence, the objective of reformation is to provide conducive conditions for the transformation of convicted inmates into law-abiding citizens upon their release.

For the purpose of reformation, the Nigerian Correctional Services has developed pragmatic educational programmes which include Vocational Skills Development Programmes (VSDP) and Adult Remedial Education Programmes (AREP) in such vocation as tailoring, welding, plumbing, carpentry, electrical installation, woodworking, catering, block laying, Radio and TV servicing, mechanized farming system, tailoring, agriculture, barbing, air conditioning and refrigeration, welding, metalwork, mat-making, dyeing, fashion and designing, pot making, weaving and shoe making with a focus on addressing the root causes of criminal behavior and providing inmates with opportunities for personal growth during incarceration period (Okechukwu & Agwi, 2017; Okwelle & Deebom, 2018; Bassey, Asangausung & Essoh, 2023). Notably, some inmates have successfully completed external examinations and obtained certificates through these educational initiatives (Ali, 2015; The Nation, 2017).

However, recent observations indicate that traditional approaches to vocational training in correctional centers encounter challenges such as resource constraints, limited access to training materials, and scalability issues (Inusa, 2021). Studies by Anyanwu et al. (2018) and Bassey, Asangausung, and Essoh (2023) have showed significant deficiencies in the training facilities available for meeting the skill acquisition needs of inmates in Nigerian correctional centers. As noted by Ajah and Nweke (2017), essential facilities such as barbing and hairdressing salons, auto repair workshops, shoe making units, fashion design studios, carpentry workshops, and libraries with teaching aids are notably absent in the Nigerian prison system. Additionally, Deebom, Kooli, and Deebom (2019) identified challenges including inadequate training facilities and insufficient funding hindering inmates' acquisition of vocational trades. The aftermath of incarceration also presents challenges, with many exconvicts in Akwa Ibom State returning to their communities without viable means of livelihood, often resorting to antisocial behaviors (Bassey, Asangausung, & Essoh, 2023). To address these issues facing correctional centers in Nigeria, the integration of emerging technology has become increasingly imperative in the teaching and learning process (Onyema, 2020).

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Ile, Udegbunam, and Odimmega (2015) define technology as the practical application of scientific knowledge, tools, techniques, and processes. It encompasses a wide array of innovations, ranging from basic tools and machines to intricate systems and processes, all aimed at solving problems, enhancing efficiency, and augmenting human capabilities. According to Jawad et al. (2014), technology have brought about significant transformative across diverse sectors, including education, healthcare, banking, aviation, law enforcement, and security. Onyema (2020) asserts that the transformative changes in global education have prompt educators to adopt teaching and learning methodologies driven by emerging technology. Additionally, Onyema (2020) highlights that emerging technologies have brought about numerous alterations to the "What," "How," "Where," and "When" of educational practices. Integrating emerging technologies into the teaching and learning process not only stimulates learners' interest but also enhances educational outcomes.

Emerging technologies deployed with teaching and learning environments assist educators in adapting to evolving educational trends, improving instructional processes, and enhancing students' academic performance to effectively compete in the future workforce (Edeh, 2019; Parry & Battista, 2019). The integration of emerging technologies such as Machine Learning, Wearable Technologies, Mobile Learning, Tablet Computing, Virtual Reality, Cloud Computing, Simulation Technology, Artificial Intelligence (AI), Robotics, Internet of Things, 5G, 3-D Printing, Big Data, Biometric and Recognition Technology into vocational training has transformed correctional education, offering immersive and interactive learning experiences (Ukpong & Uzoigwe, 2020; Mohsen, 2023). These technologies have the potential to complement traditional vocational training methods, providing inmates with handson learning opportunities and exposure to a diverse array of skill sets.

Despite the perceived advantages of emerging technologies, their seamless integration into the teaching and learning process encounters various challenges, including unreliable power supply, inadequate skills or expertise, availability and accessibility issues, financial constraints, insufficient professional development opportunities, resistance to change, poor internet connectivity, and affordability concerns (Aladejana & Oyewole, 2018; Ajayi, 2019; Onyema, 2020). Consequently, this study examined the integration of emerging technologies in correctional centers to enhance the acquisition of vocational skills among adult inmates in Akwa Ibom State.

Statement of the Problem

In Nigeria, as in many countries, correctional facilities encounter significant challenges in providing vocational training programs for adult inmates, which are crucial for their rehabilitation and successful reintegration into society. Nigerian correctional centres are grappling with overcrowding, resource constraints, inadequate infrastructure, access to training materials, and scalability issues hindering the delivery of comprehensive vocational training programmes (Anyanwu et al., 2018; Deebom, Kooli & Deebom, 2019). Consequently, many inmates are released without the necessary skills and support systems to secure gainful employment, resulting in high rates of recidivism and societal reintegration challenges (Bassey, Asangausung & Essoh, 2023). Hence, the integration of emerging technologies presents a promising avenue for enhancing vocational skill acquisition among adult inmates. However, the extent and effectiveness of technological integration in Nigerian correctional centres remain largely unexplored, with limited research on the implementation, impact, and scalability

(Aladejana, & Oyewole, 2018; Ajayi, 2019; Onyema, 2020). Therefore, this research seeks to examined the status of technological integration in correctional centers to enhance vocational skill acquisition and improve adult inmate rehabilitation outcomes, reduce recidivism rates, and promote successful reintegration in Akwa Ibom State, Nigeria.

Purpose of the Study

The main purpose of this study was to evaluate technological integration in Correctional Centres to enhance adult inmate vocational skill acquisition in Akwa Ibom State. Specifically, the study had the following objectives:

1. Identify emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State.
2. Ascertain whether emerging technologies are utilized for vocational skills acquisition in correctional centres in Akwa Ibom State.
3. Identify the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.

Research Questions

The following research questions were formulated to guide the study:

1. What are the emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State?
2. To what extent are emerging technologies utilized for vocational skills acquisition in correctional centres in Akwa Ibom State?
3. What are the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State?

Research Hypotheses

The following hypotheses were generated and tested at 0.05 level of significance.

$H0_1$: There is no significant difference between the mean responses of instructors and convicted inmates on emerging technologies available for vocational skills acquisition in correctional centeres in Akwa Ibom State.

$H0_2$: There is no significant difference between the mean responses of instructors and convicted inmates on emerging technologies utilized for vocational skills acquisition in correctional centeres in Akwa Ibom State.

$H0_3$: There is no significant difference between the mean responses of instructors and convicted inmates on the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.

Literature Review

This section present theoretical and literature related to this study. It is important to note that although there are numerous related theories to this study, due to limited space, only the theory of skill acquisition, human capital theory and theory of rehabilitation were reviewed. Hubert and Dreyfus (1980) propounded the theory of skill acquisition, posited that skill development is a gradual process involving various stages that individuals undergo

to become experts. They delineated five stages (novice, advanced beginner, competence, proficiency, and expertise) to elucidate how individuals progress in acquiring expertise. Central to their theory is the distinction between "knowing that" (i.e., the ability to recall understanding) and "knowing how" (i.e., understanding gained through practical experience). In vocational education, these concepts are integrated into a formal system of skill acquisition. This theory underscores that skill acquisition leads to observable changes in individuals' behavior, potentially influencing their social conduct and propensity to reengage in criminal activities.

The study also drew on the human capital theory, developed by Gary Becker in 1964 (Wuttaphan, 2017). This theory posits that individuals can enhance their productivity through education, training, and skill development, thereby yielding significant economic benefits for both individuals and society. It aligns with the objectives of educational and vocational programs in correctional facilities, which aim to equip inmates with the intellect, knowledge, and skills necessary for self-reliance upon release. Efforts to reform and rehabilitate inmates typically include academic and vocational training programs, among other initiatives (Effiong & Ekpenyong, 2017). These programs serve as strategies for human capital development, with the goal of reducing recidivism rates. Therefore, the human capital theory emphasizes the role of education, training, and skill development in influencing individuals' behavior and reducing their likelihood of returning to criminal activities.

Jean Hampton (1970) propounded the theory of rehabilitation as a departure from earlier penology schools, which primarily advocated for rehabilitation through isolation and punishment. Hampton emphasized the importance of treating offenders as individuals with unique needs and problems that require tailored treatment and correctional approaches. Unlike punitive approaches that focus solely on punishment, Hampton argued that rehabilitation should be the central objective of the penal system, as it offers the best chance for offenders to reintegrate into society successfully. This theory underscores the significance of providing inmates with the necessary support and resources for rehabilitation to prevent them from returning to criminal activities upon release. Hampton emphasized that while punishment serves to maintain social order, rehabilitation is essential for addressing the root causes of criminal behavior and facilitating inmates' transition to productive members of society.

In the context of empirical review of educational reform in correctional facilities, Bassey, Asangausung, and Essoh (2023) examined academic and vocational training programs in Nigerian correctional centers, specifically in Akwa Ibom State. Guided by the Human Capital Theory developed by Gary Becker in 1964, their study employed an exploratory survey research design to assess the need for and constraints faced by inmates in accessing educational and vocational programs. Through focus group discussions and key informant interviews, they found that inmates expressed a strong desire for academic and vocational training programs but encountered challenges such as lack of facilities, equipment, and qualified personnel. The study recommended that correctional management prioritize the implementation of these programs to reduce recidivism rates effectively.

In a study conducted by Inusa (2021), the focus was on assessing the perceived impact of vocational skills acquisition on the reformation and reduction of recidivism among exconvicts from the Gombe Central Correctional Center in Nigeria. The study used 30 exconvicts who were jailed between six months and eight years. The instrument used for data collection was structured questionnaire which was validated by specialized in

measurement and evaluation, and reliability test conducted in Faculty of Education, University of Maiduguri. Data collected were analyzed using descriptive statistics, mean and standard deviation. The findings revealed that most of the ex-convicts were male, with informal education and age range of between 21 and 40 years. The respondents engaged more in carpentry (37%) and Welding (33%). The study concluded that vocational skills acquisition had a significant and positive impact on the reformation of the ex-convicts. Consequently, the study recommended the introduction of additional vocational skills acquisition programs within the Gombe Central Correctional Center and emphasized collaborative efforts between the Nigerian Correctional Service (NCS), other agencies, and Vocational and Technical Education (VTE) centers to promote inmate rehabilitation through vocational skills acquisition.

Similarly, Deebom, Kooli, and Deebom (2019) conducted a study on the acquisition of vocational trades for inmate rehabilitation and reintegration into society. The research adopted a descriptive survey design, targeting a population of 4,723 inmates and 509 prison officers. A sample of 593 respondents (369 convicted inmates and 224 officers) was selected through purposive and simple random sampling techniques from four prisons in Rivers State. The study addressed three research questions and tested two null hypotheses at a significance level of 0.05. Data collection was facilitated using a self-constructed questionnaire, validated by two experts, and reliability tested through Kuder-Richardson formula 20 (KR20) and Pearson Product Moment Correlation (PPMC). Findings revealed that vocational trades available in Nigerian prisons in Rivers State could effectively rehabilitate inmates if acquired, despite challenges such as inadequate training facilities and funding constraints. The study recommended exposing inmates to available vocational trades within the prison environment to enhance their rehabilitation and reintegration, advocating for governmental and nongovernmental support in providing training facilities to realize the acquisition of vocational trades effectively.

Research Methodology

The study employed a descriptive survey research design. According to Nworgu (2018), Udosen and Adie (2019), a survey design aims to systematically collect and describe data concerning the characteristics, features, or facts about a given population. Johnny, Effiong and Sheik. (2020) stated that the design focuses on studying the characteristics, beliefs, opinions, attitudes, motivations, and behaviors of people. The study was conducted in the Nigerian Correctional Service (NCoS), Akwa Ibom State Command comprising of four (4) custodial centres; Medium Security Custodial Centre, Uyo, the Medium Security Custodial Centre, Ikot Ekpene, the Medium Security Custodial Centre, Eket and the Medium Security Custodial Centre, Ikot Abasi. The population of this study was 1,045 comprised of 328 convicted inmates and 616 personnel of the Nigerian Correctional Service (NCoS) in Akwa Ibom State Command as shown in Table 1.

Table 1: Population of Officers and Convicted Inmates of NCoS, Akwa Ibom State Command

S/N	Respondents	Population	Total
Medium Security Custodial Centre,	Medium Security Custodial Centre,	Medium Security Custodial Centre,	Medium Security Custodial Centre,

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		Uyo	Centre, Eket	Ikot Ekpene	Ikot Abasi	
1.	Convicted Inmates	112	43	212	62	328
2.	Instructors of NCoS	228	113	175	100	616
	Total	**340**	**156**	**387**	**162**	**1045**

Source: Human Resource Department of NCoS Akwa Ibom State Command as at 2022 (Bassey, Asangausung & Essoh, 2023)

A sample of 91 respondents consisted of 60 convicted inmates and 31 Instructors were purposively selected from the custodial centres in NCoS, Akwa Ibom State Command for the study as shown in Table 2. A sample refers to a section or subset of the study population chosen for investigation through a sampling process (Taherdoost, 2016; Bhandari, 2023). In the same vein, Nardi (2018), stated that sampling technique is essential for estimating the required data volume and comprehending the data gathering process within a population to fulfill the study objectives.

Table 2: Distribution of the respondents according to their location, population and Sample

S/N	**Location**	**Sample**				**Sample Size**
		Convicted Inmates	Controller Of Corrections	Deputy Controller of Corrections	Chief Superintendent Of Corrections	
1.	Medium Custodial Centre, Uyo	15	3	3	3	24
2.	Medium Custodial Centre, Eket	15	1	3	3	22
3.	**Medium Custodial Centre, Ikot Ekpene**	15	1	3	3	22
4.	**Medium Custodial Centre, Ikot Abasi**	15	2	3	3	23
	Total	**60**		**31**		**91**

Source: Researchers Field data (2023).

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The researchers developed a 28-item structured questionnaire titled: Emerging Technological Integration in Correctional Centres for Adult Inmate Vocational Skill Acquisition (ETICAIVOSA) Questionnaire. Questionnaire according to Nardi (2018) is the most common instrument or technique used to acquire descriptive data from a sample group in survey research because the respondents have the advantage of supplying data and information from the source. The instrument was divided into sections. Section A, B, C and D comprised of staff demographic data, availability, utilization and challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State. The instrument was designed with a 5-point rating scale of Adequately Available (AA=4.50-5.00), Moderately Available (HA=3.50-4.49), Lowly Available (LA=2.50-3.49), Not Available (NA=1.50-2.49), Undecided (U=1.00-1.49) for research question 1, Adequately Utilized (AU=4.50-5.00), Moderately Utilized (MU=3.50-4.49), Lowly Utilized (LU=2.503.49), Not Utilized (NU=1.50-2.49), Undecided (U=1.00-1.49) for research question 2 and Strongly Agreed (SA=4.50-5.00), Moderately Agreed (MA=3.50-4.49), Lowly Agreed
(LA=2.50-3.49), Disagreed (D=1.50-2.49), Strongly Disagreed (SD=1.00-1.49) was used to answer research questions 3.

In order to establish the validity of the instrument, copies of the instrument were given to two experts in the Department of Industrial Technology Education and one expert in Department of Measurement and Evaluation, University of Uyo, Akwa Ibom State for face validation. To ensure the reliability of the instrument, it was trial-tested on 10 instructors and 14 inmates who were not part of the study. Cronbach alpha statistics was used to determine the reliability coefficient of the instrument which yielded overall reliability index of .82 comprising of .79, .86 and .81 for Section B, C and D respectively indicating that the instrument was reliable. Cronbach's alpha test according to Taber (2017) is the most commonly used method to assess the accuracy of scales with value between 0 and 1. Furthermore, Sharma (2016) stated that the Cronbach's alpha coefficient should be between 0.7 and above to demonstrate the scale's reliability.

The data for the study were gathered from both primary and secondary sources. The primary data were collected using questionnaire while the secondary data were gathered from text books, journals and online materials (Google Scholar, Research Gates, Scopus, among others). The administration of the instrument was done with the assistance of four prison officers who were briefed before administration of the instrument to the respondents. The letter of information and consent were part of the information provided to the participants. Since the questionnaire was distributed face to face, the participants read the letter of information and consent form and confirmed their voluntary participation. The 91 copies of the questionnaire administered were retrieved, indicating a 100% instrument retrieval. Mean scores and Standard Deviation were used in answering the research questions while t-test statistics was used to test the three null hypotheses at .05 level of significance. The data collected were analyzed using Statistical Package for the Social Sciences 26 (SPSS).

Analysis of Data and Results

Research Question 1: What are the emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State?

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Table 3: *Mean rating of instructors and convicted inmates on emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State*

S/N	**SECTION B:** Technologies for Vocational Skills Acquisition in Correctional Centres	**Convicted Inmates**		**Instructors of NCoS**	
			SD		**SD**
1.	CAD software for teaching drafting, modeling, and design skills	2.38	1.21	2.31	1.13
2.	Immersive VR simulators that replicate construction sites for training in safety procedures, equipment operation, and project management	2.49	1.33	2.36	2.06
3.	Advanced automotive diagnostic equipment for teaching automotive repair and maintenance skills.	2.43	1.37	2.47	1.04
4.	Welding simulators that replicate welding processes and techniques, providing a safe environment for practicing welding skills without the need for physical materials	2.36	1.14	2.39	1.19
5.	Music production and sound engineering using professional audio recording and editing software relevant to architecture, engineering and construction	2.29	0.98	2.19	0.84
6.	Electronics prototyping kits containing breadboards, and microcontrollers for learning electronics assembly, circuit design, and troubleshooting.	2.48	1.24	2.49	1.18
7.	Simulated stock trading platforms for teaching financial literacy, investment strategies, and understanding financial markets	2.46	0.93	2.44	1.06
8.	Printing presses for teaching graphic design, printing techniques, and production processes in the printing industry	2.34	1.22	2.38	0.92
9.	Solar panel installation kits containing solar panels, inverters, and mounting hardware for teaching solar panel installation and maintenance skills	2.44	1.27	2.47	1.03
	Grand Mean and Standard Deviation	**2.41**	**1.19**	**2.39**	**1.16**

***NOTE:** AA=4.50-5.00, MA=3.50-4.49, LA=2.50-3.49, NA=1.50-2.49

The analyzed data in Table 3 revealed the mean responses of instructors and convicted inmates on emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State. The respondents mean ranged from 2.19 to 2.49 and standard deviation of 0.84 to 1.37 with a grand means and standard deviation of 2.41, 2.39 and 1.19, 1.16 respectively for instructors and convicted inmates. The response to research question one implies non availability of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.

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	Virtual Reality (VR) construction simulators are used to practice	2.48	0.90	2.39 0.83
2.	Tasks in safety procedures, equipment operation, and project management.	2.37	1.22	2.43 1.29
	Inmates interested in automotive repair learn using advanced	2.26	0.67	2.36 0.86
3.	Diagnostic equipment, gaining skills in engine diagnostics, brake systems, and electrical systems troubleshooting	2.49	1.01	2.45 0.79
		2.35	1.73	2.38 0.93
4.	Welding simulators are utilized for practicing welding techniques without using physical materials.	2.42	1.36	2.34 1.21
		2.33	0.97	2.17 1.19
5.	Inmates learn electronics assembly, circuit design, and troubleshooting using electronic components, breadboards, and microcontrollers, acquiring skills applicable to various technical fields.			
6.	Inmates learn financial literacy, investment strategies, and understanding financial markets through simulated stock trading platforms, gaining valuable knowledge for personal finance management post-release			
7.	Inmates interested in music production and sound engineering learn using professional audio recording and editing software, acquiring skills relevant to the entertainment industry			
8.	Inmates learn graphic design, printing techniques, and production processes in the printing industry using printing presses,			

Research Question 2: To what extent are emerging technologies utilized for vocational skills acquisition in correctional centres in Akwa Ibom State?

Table 4: *Mean rating of instructors and convicted inmates on the extent emerging technologies are utilized for vocational skills acquisition in correctional centres in Akwa Ibom State*

S/N	**SECTION C:** Technologies Utilized for Vocational Skills Acquisition in Correctional Centres	**Convicted Inmates**		**Instructors of NCoS**	
1.	Inmates learn drafting, modeling, and design skills relevant to architecture, engineering, and construction using CAD software.	2.44	0.91	2.31	1.26
	acquiring skills applicable to print shops and graphic design studios				
9.	Inmates learn solar panel installation and maintenance skills using kits containing solar panels, inverters, and mounting hardware, preparing them for careers in the renewable energy sector	2.41	1.11	2.47	0.95
	Grand Mean and Standard Deviation	**2.39**	**1.10**	**2.37**	**1.03**

***NOTE:** AU=4.50-5.00, MU=3.50-4.49, LU=2.50-3.49, NU=1.50-2.49, U=1.00-1.49

The analyzed data in Table 4 revealed the mean responses of instructors and convicted inmates on emerging technologies utilized for vocational skills acquisition in correctional centres in Akwa Ibom State. The respondents mean ranged from 2.17 to 2.49 and standard deviation of 0.67 to 1.73 with a grand means and standard deviation of 2.39, 2.37 and 1.10, 1.03 respectively for instructors and convicted inmates. The response to research question two implies non utilization of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.

Research Question 3: What are the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State?

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Table 5: *Mean rating of instructors and convicted inmates on the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres.*

S/N	**SECTION D:** Challenges Facing Integration of Emerging Technologies	**Convicted Inmates**		**Instructors of NCoS**	
		$\bar{x}$	**SD**	$\bar{x}$	**SD**
1.	Limited infrastructure such as reliable internet connectivity and adequate computing facilities	4.67	1.16	4.56	1.03
2.	Budget constraints hinder the procurement of necessary hardware, software, and training resources	4.54	1.14	3.91	0.86
3.	Resistance to change among staff and inmates impede the adoption and acceptance of new technologies	4.50	2.08	4.49	1.09
4.	Security concerns related to unauthorized access to sensitive information or misuse of technology by inmates.	4.58	0.57	4.34	1.29
5.	Socioeconomic disparities and limited digital literacy among inmates create a digital divide, hindering equal access to technological resources and training opportunities	3.99	1.13	4.37	0.91
6.	Inadequate maintenance and technical support for technological infrastructure in correctional centers, leading to downtime and disruptions in vocational training programs.	4.77	1.05	4.23	2.07
7.	Dependence on external vendors for technological solutions and support pose challenges in terms of reliability, responsiveness, and alignment with correctional objectives.	3.84	0.79	4.89	0.81
8.	Integrating new technological systems with existing infrastructure and processes is complex and time-consuming, requiring careful planning and coordination.	4.63	1.26	4.75	0.88
9.	Inadequate mechanisms for evaluating the effectiveness of technological integration in vocational training programs hinder continuous improvement and optimization efforts.	4.69	1.14	3.85	1.31

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10.	Correctional staff resist training on new technologies due to lack of interest or relevance to their roles.	4.51	1.21	4.97	0.94
Grand Mean and Standard Deviation		**4.47**	**1.15**	**4.44**	**1.12**

***NOTE:** SA = 4.50-5.00, MA = 3.50-4.49, LA = 2.50-3.49, D = 1.50-2.49

The analyzed data in Table 5 revealed the mean responses of instructors and convicted inmates on challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State. The respondents mean ranged from 3.84 to 4.97 and standard deviation of 0.57 to 2.08 with a grand means and standard deviation of 4.47, 4.44 and 1.15, 1.12 respectively for instructors and convicted inmates. The response to research question three implies that all the items are challenges facing the integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.

Hypotheses 1: There is no significant difference between the mean responses of instructors and convicted inmates on emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State.

Table 6: *t-test analysis of the mean scores of instructors and convicted inmates on emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State.*

Variable	N		SD	α	df	t-cal.	t-crit.	Decision
Convicted Inmates	60	2.41	1.19					
				.05	89	0.08	1.99	NS
Instructors of NCoS	31	2.39	1.16					

Note NS = Not Significant.

From Table 6, the calculated t-value is 0.08 (t_{cal}=0.08) and the critical t-value is 1.99 (t_{crit}.=1.99) at 298 degree of freedom and 0.05 level of significance. Since the t_{crit} =1.99 is greater than t_{cal}.=0.08, the null hypothesis is upheld, indicating that there is no significant difference in the mean ratings of instructors and convicted inmates on availability of emerging technologies for vocational skills acquisition in Akwa Ibom State.

Hypotheses 2: There is no significant difference between the mean responses of instructors and convicted inmates on emerging technologies utilized for vocational skills acquisition in correctional centres in Akwa Ibom State.

Table 7: *t-test analysis of the mean scores of instructors and convicted inmates on emerging technologies utilized for vocational skills acquisition in correctional centres in Akwa Ibom State.*

Variable	N		SD	α	df	t-cal.	t- crit.	Decision
Convicted Inmates	60	2.39	1.10				1.99	
				.05	89	0.09		NS
Instructors of NCoS	31	2.37	1.03					

Note NS = Not Significant.

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From Table 7, the calculated t-value. is 0.09 ($t_{cal.}$=0.09) and the critical t-value is 1.99 ($t_{crit.}$=1.99) at 298 degree of freedom and 0.05 level of significance. Since the $t_{crit.}$ =1.99 is greater than $t_{cal.}$ =0.09, the null hypothesis is upheld, indicating that there is no significant difference in the mean ratings of instructors and convicted inmates on utilization of emerging technologies for vocational skills acquisition in Akwa Ibom State.

Hypotheses 3: There is no significant difference between the mean responses of instructors and convicted inmates on the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.

Table 8: *t-test analysis of the mean scores of instructors and convicted inmates on the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.*

Variable	N		SD	α	df	t-cal.	t- crit.	Decision
Convicted Inmates	60	4.47	1.15					
				.05	89	0.13	1.99	NS
Instructors of NCoS	31	4.44	1.12					

Note NS = Not Significant.

From Table 7, the calculated t-value is 0.13 ($t_{cal.}$=0.13) and the critical t-value is 1.99 ($t_{crit.}$=1.99) at 298 degree of freedom and 0.05 level of significance. Since the $t_{crit.}$=1.99 is greater than $t_{cal.}$=0.13, the null hypothesis is upheld, indicating that there is no significant difference in the mean ratings of instructors and convicted inmates on the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State.

Discussion of Findings

The findings of the study for research question one revealed that emerging technologies are not available for vocational skills acquisition in correctional centres in Akwa Ibom State. The instructors and convicted inmates maintained that CAD software immersive VR simulators, automotive diagnostic equipment, welding simulators, music recording and editing software, simulated stock trading platforms, solar panel installation kits, electronics prototyping kits containing breadboards, and microcontrollers, are not available in the correctional centres. The corresponding hypothesis one revealed that there is no significant difference between the mean responses of instructors and convicted inmates on emerging technologies available for vocational skills acquisition in correctional centres in Akwa Ibom State. This finding is in line with the findings of Anyanwu et al (2018), Ajayi (2019), Onyema (2020) Bassey, Asangausung and Essoh (2023) which revealed that emerging technologies are not available for the seamless integration into the teaching and learning process in Nigerian institutions.

The findings of the study for research question two revealed that emerging technologies are not utilized for vocational skills acquisition in correctional centres in Akwa Ibom State. The instructors and convicted inmates maintained that CAD software immersive VR simulators, automotive diagnostic equipment, welding simulators, music recording and editing software, simulated stock trading platforms, solar panel installation kits, electronics prototyping kits containing breadboards, and microcontrollers, are not utilized in the correctional centres. The corresponding hypothesis two revealed that there is no significant difference between the mean responses of

instructors and convicted inmates on emerging technologies utilization for vocational skills acquisition in correctional centres in Akwa Ibom State. This finding is in line with the findings of Wagbara and Wosu (2023) which revealed that emerging technologies are not available for the seamless integration into the teaching and learning process in Nigerian institutions.

The findings of the study for research question three revealed the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State. The instructors and convicted inmates maintained that limited infrastructure such as reliable internet connectivity and adequate computing facilities, budget constraints, security concerns related to unauthorized access to sensitive information or misuse of technology, resistance to change among staff and inmates impede the adoption and acceptance of new technologies. The corresponding hypothesis one revealed that there is no significant difference between the mean responses of instructors and convicted inmates on the challenges facing integration of emerging technologies for vocational skills acquisition in correctional centres in Akwa Ibom State. This finding is in line with the findings of Anyanwu et al (2018), Deebom, Kooli and Deebom (2019) which revealed that Nigerian correctional centres are grappling with overcrowding, resource constraints, inadequate infrastructure, access to training materials, and scalability issues hindering the delivery of comprehensive vocational training programmes.

Conclusion

The assessment of emerging technological integration in Nigerian correctional centres presents a significant step towards understanding and optimizing vocational training programs for adult inmates. Through a thorough examination of the extent, impact, and challenges of technological integration, this study sheds light on the potential of technology to enhance vocational skill acquisition and contribute to inmate rehabilitation and successful reintegration into society. The findings underscore the importance of investing in infrastructure, staff training, and tailored technological solutions to facilitate effective vocational training programs in Nigerian correctional centres. Furthermore, the study highlights the need for collaboration, monitoring, and evaluation to ensure the sustainability and scalability of technological initiatives aimed at enhancing inmate skill acquisition. Importantly, the assessment revealed the transformative potential of emerging technologies, such as virtual reality, augmented reality, and online learning platforms, in providing immersive and interactive learning experiences for adult inmates. By leveraging these technologies, correctional authorities can enrich vocational training opportunities, promote inmate engagement, and equip individuals with the skills necessary for post-release employment and entrepreneurship.

Recommendations

In view of the findings of this study, the following recommendations were made:

1. Government should provide reliable internet connectivity, computer labs, and access to necessary hardware and software in Nigerian correctional centres for vocational training programs.
2. Nigerian correctional centres should collaborate with technology providers and educational experts to develop tailored technological solutions that meet the specific needs and constraints of the inmates, including user-friendly interfaces.

3. Nigerian correctional centres should expand access to educational content and resources through online learning platforms, virtual libraries, and partnerships with educational institutions and organizations to enrich vocational training opportunities for the inmates.
4. Nigerian correctional centres should establish mechanisms for monitoring and evaluation of inmate participation, skill acquisition, rehabilitation outcomes, and post-release employment success for evidence-based decision-making.

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