THE ROLE OF DIGITAL LITERACY IN THE SUCCESS OF INDUSTRIAL WORKERS

BY

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A RESEARCH WORK SUBMITTED TO THE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION, FACULTY OF EDUCATION, UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE EDUCATION (B.Sc.Ed) DEGREE IN INDUSTRIAL AND TECHNICAL EDUCATION.

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APPROVAL

I hereby certify that this work was carried out by Arey Oghenekparobor mat no: EDU2009372 in partial fulfillment of the requirements for the award of a B.Sc (Ed) degree in Industrial and Technical Education (Building and Woodwork) in the Department of Vocational and Technical Education, Faculty of Education, University of Benin, Benin City.

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CERTIFICATION

We certify and approve that this research work was carried out by **AREY OGHENEKPAROBOR,** with matriculation number EDU2009372 in the Department of Vocational and Technical Education, Faculty of Education, University of Benin, Benin City.

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DEDICATION

This project is dedicated to God Almighty for saving my life so that I may see this day come true, as well as to my parents for their love and support.

ACKNOWLEDGEMENTS

First and foremost, I thank God Almighty for His unending grace, wisdom, and strength, which have guided me through each stage of this undertaking. I am grateful for His favors, which have enabled me to complete this work.

I am grateful to my project supervisor, Dr. Louis Osagboivo, for his tremendous assistance and encouragement. His patience and attention throughout this process have helped my work, and I am very grateful for the time and effort he put in to ensure its success.

Finally, I want to express my heartfelt gratitude to my beautiful parents, Mr. and Mrs. Arey, for their unconditional love, prayers, and steadfast support. Their sacrifices and encouragement have been the foundation of my academic success.

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ABSTRACT

This study investigates the influence of digital literacy in improving the productivity, efficiency, and problem-solving abilities of African industrial workers. It investigates the fundamental digital abilities necessary in various industries, the influence of digital literacy on worker performance, the difficulties encountered in closing the digital skills gap, and ideas for improving digital literacy training. Using a quantitative research design, data was collected from 50 respondents via a standardized questionnaire and evaluated using mean scores and standard deviations. The findings emphasize the relevance of digital literacy in boosting workplace effectiveness, while also addressing challenges such as low resource availability and insufficient training program

CHAPTER ONE

INTRODUCTION

Background of the Study

Digital literacy, or the capacity to use digital technology successfully for communication, information access, and problem-solving, has emerged as a critical component of modern industrial work environments. As industries grow and digital equipment, technology, and software are integrated, workers are increasingly expected to have a certain degree of digital competence to perform jobs efficiently and remain competitive in the workforce. The Fourth Industrial Revolution (4IR) has increased the demand for digital literacy among industrial workers, as automation, artificial intelligence, and data analytics change traditional job tasks (Ogunlade, 2021).

Industrialization is an important driver of economic development in Africa, particularly in Nigeria. However, industrial workers' success is frequently hampered by a lack of digital skills, which reduces production and limits prospects for promotion (Akinyemi, 2020). The World Bank (2019) highlighted digital literacy as a critical factor of economic growth, particularly in emerging markets where industries must incorporate digital technologies to remain competitive. Despite this potential, many Nigerian workers, especially those in the manufacturing and production sectors, are inadequately equipped

with the digital skills needed to adapt to increasing job demands (Ogunsola & Olayiwola, 2018).

The Nigerian industrial sector has considerable obstacles in incorporating digital literacy into workforce development plans. According to Onyekachi (2020), a lack of access to high-quality digital education and training programs, combined with poor infrastructure and insufficient investment in technology, exacerbates the skills gap among industrial workers. Workers are frequently left to traverse increasingly digitalized settings with little assistance, lowering their productivity and possibility for success (Olumide & Aluko, 2019).

The industrial landscape across Africa is undergoing a significant transformation driven by the relentless march of technological innovation. Automation, robotics, and integrating advanced digital tools are gradually reshaping work in various sectors, from bustling manufacturing hubs in Lagos to sprawling copper mines in Zambia (Oyelakin, 2021). Digital technologies permeate every facet of industrial work, creating a dynamic and evolving environment.

This digital revolution presents both opportunities and challenges for African nations. While automation offers increased efficiency and productivity, it also necessitates a shift in the skillset required by the industrial workforce. A recent study by the African Development Bank (2020) highlights this critical point: "As digital technologies disrupt

traditional industries, new skills will be in high demand, requiring African countries to invest in reskilling and upskilling initiatives".

Digital literacy is a key differentiator for worker success in this evolving industrial landscape. Digital literacy, in the context of African industrial work, goes beyond basic computer skills. It encompasses a comprehensive set of abilities that empower workers to effectively navigate, utilize, and contribute to the digital ecosystem within their workplace (Oyelakin, 2021). This includes competencies like operating and troubleshooting digital equipment used in local contexts, analyzing and interpreting data relevant to African industries, collaborating effectively using digital tools that cater to regional needs, and maintaining cybersecurity awareness considering the specific digital threats faced by African nations (Ogunsola, A., & Odekunbi, O., 2021).

The need for a digitally literate workforce isn't merely an industry trend; it's a critical factor for sustainable economic growth across Africa. Studies by the United Nations Economic Commission for Africa (UNECA) (2020) have shown a strong correlation between digital literacy and worker performance, with digitally literate workers contributing to increased innovation, improved productivity, and enhanced competitiveness within African industries.

Furthermore, Nigerian industrial groups have been hesitant to implement comprehensive digital literacy training programs, focusing instead on traditional skill development. This divide is more prominent among older professionals, who may struggle to accept new technology due to a lack of exposure to digital tools earlier in their

employment (Nwosu, 2021). Younger workers, on the other hand, are more digitally inclined but often lack the formal training required to use digital skills in industrial contexts, resulting in unsatisfactory outcomes for both enterprises and individuals (Babatunde, 2019).

Statement of the Problem

The increasing digitalization of African sectors has resulted in a greater demand for a workforce with the essential digital skills to flourish in the modern workplace. However, a considerable digital skills gap exists in the African industrial sector, hindering the effective adoption of new technology and affecting worker performance.

The lack of digital literacy among industrial workers is an important obstacle to African countries' long-term development. This divide limits firms' capacity to exploit digital technology for enhanced productivity, efficiency, and creativity.

The digital skills gap disproportionately affects particular workforce groups, such as those living in rural areas or with limited access to education and training. This contributes to the current gaps in African cultures and hinders individuals' ability to engage in the digital economy fully.

A major issue is that workers in low-income industries have less access to excellent digital education and training options, resulting in skill gaps that hamper their performance and career progression. Lack of digital literacy among industrial workers leads to decreased

operational efficiency, increased job insecurity, and an inability to adapt to changing workplace demands.

Furthermore, in Nigeria, industrial workers frequently face outmoded training methods that do not meet the current needs of digital tools and software. This divergence impacts worker productivity and their potential to capitalize on upcoming opportunities in the Fourth Industrial Revolution. Workers who lack the necessary digital skills may find themselves ostracized in an increasingly automated and digitalized workplace, reducing their ability to advance professionally and succeed.

Purpose of the Study

The primary purpose of this study is to investigate the specific digital skill sets required by industrial workers across various sectors in Africa. It will explore how digital literacy empowers workers to perform their tasks effectively, contribute to improved industrial processes, and ultimately enhance their overall career prospects. These purposes are:

1. To determine the fundamental digital literacy abilities needed by industrial workers in various African sectors.
2. Identify existing challenges or limits like poor infrastructure or scarce resources hindering the effective bridging of the digital skills gap in Africa.
3. Evaluating the current efforts and obstacles to closing the digital skills gap in Africa's industrial workforce.

4. To investigate how worker performance in terms of efficiency, productivity, and problem-solving skills is affected by digital literacy.

Research Questions

The research questions are raised to be answered to continue with the study:

1. What are the core digital literacy skills required by industrial workers in different sectors across Africa?

2. How does digital literacy impact worker performance in terms of productivity, efficiency, and problem-solving within African industries?

3. What are the existing initiatives and challenges to bridge the digital skills gap within the African industrial workforce?

4. What strategies can be implemented to improve digital literacy training and empower the industrial workforce in Africa?

Research Hypothesis

The following research hypothesis is raised and developed.

1. There is no significant difference between workers with higher levels of Digital literacy and those with lower levels of Digital literacy.

Significance of the Study

The findings of this research will benefit students, teachers, workers, and the general public when published in reputable journals, seminars, and workshops.

This study is beneficial to employees who can effectively use technology in their work duties and have the opportunity to feel a true feeling of accomplishment, which translates into much higher job satisfaction. Individuals with digital literacy can not only confidently negotiate the technological demands of the modern workplace, but they also have a better sense of ownership over their obligations. This technological empowerment means that employees are better equipped to contribute significantly to the industrial process. They can engage in more creative and innovative jobs if they understand and use digital tools well, creating an environment in which their contributions are not only recognized but also highly rewarded. As a result, employees are more motivated because they can see the tangible influence of their work on the performance of their firm, which drives them to seek continuous improvement and development within their jobs.

In today's quickly changing industrial scene, having a technologically literate workforce is a vital advantage for any business. Employees who are familiar with various technical tools and platforms can use these resources to expedite operations, thereby increasing productivity and operational efficiency across all sectors of manufacturing and production. By efficiently integrating digital capabilities, the workforce can improve operations, decrease unnecessary manual interventions, and use creative solutions that boost productivity to new heights. As a result, organizations see significant cost savings

that may be reinvested in future technical improvements or expansion plans. This technological expertise not only results in immediate money savings but also fosters a considerable competitive edge in the increasingly interconnected worldwide market. Companies that promote digital literacy are better positioned to respond quickly to market changes, meet customer expectations precisely, and maintain their position at the top of their sector.

Significantly, digital literacy is crucial for equipping people to use communication and collaboration tools more successfully. By understanding these digital channels, team members may communicate with one another in more meaningful and productive ways, fostering a happy office environment. The ability to effortlessly communicate information across departments not only improves teamwork but also guarantees that all team members are on the same page, reducing misunderstandings and building an inclusive and open culture. Furthermore, this interconnection facilitates more informed decision-making processes by allowing for the rapid collection and analysis of multiple perspectives and ideas. Overall, when digital literacy becomes a core element of an organization's culture, it dramatically improves industrial performance by boosting efficiency, fostering innovation, and meeting strategic goals with more agility.

Scope of the Study

Focus on Digital Literacy: The research primarily explores digital literacy, encompassing the ability to navigate, utilize, and create information within a digital industrial

environment. This includes IT proficiency, information literacy, communication and collaboration skills, problem-solving using digital tools, and cybersecurity awareness.

Diverse Industrial Sectors: The study will examine digital skill sets required across various industrial sectors in Africa. This might include manufacturing, construction, logistics, agriculture, and potentially others depending on data availability.

Worker Performance Measures: The research will investigate how digital literacy impacts worker performance in terms of productivity, efficiency, and problem-solving capabilities within their industrial roles.

Analysis of Existing Initiatives: The study will explore existing strategies employed to bridge the digital skills gap in Africa, including government programs, employer-provided training, and educational institution initiatives.

Delimitations of the Study

Geographic Focus: The research will focus on African countries, acknowledging the diverse economic and industrial landscapes across the continent. Specific countries might be chosen based on data availability and research feasibility.

Specific Technologies: Due to the rapidly evolving nature of technology, the study will not delve into specific software applications beyond providing examples relevant to

different industrial sectors. The focus will remain on broader digital literacy skills that are adaptable to changing technological landscapes.

Informal Sector: While acknowledging the significant contribution of the informal sector to African economies, this research may not be able to comprehensively address the specific challenges of bridging the digital skills gap within this segment due to its inherent complexities.

Longitudinal Impact: The study's primary focus is not on the long-term career trajectories of workers. However, it may explore how digital literacy equips workers with skills for adaptability and continuous learning, potentially impacting their long-term career prospects.

Definition of Terms

Digital Literacy: In the context of African industries, digital literacy goes beyond basic computer skills. It encompasses a broader set of competencies allowing workers to navigate, utilize, and create information within a technologically driven industrial environment.

Industrial Worker: An individual employed within a sector that produces goods or services through the use of machinery, tools, and labor. This research focuses on industrial workers in African countries.

Worker Success: In this research, worker success is considered not only in terms of performing assigned tasks effectively but also encompasses an individual's potential for career advancement, adaptability to changing technological demands, and overall contribution to the efficiency and productivity of their industrial workplace.

Digital Skills Gap: The difference between the digital skills required for effective job performance in an industry and the existing digital skills possessed by the workforce within that industry.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews pertinent literature that is relevant to the research and will be organized under the following subheadings:

- Theoretical Framework
- Introduction to Digital Literacy and its Importance in Industries
- Workers Performance
- Defining Digital Literacy in the African Industrial Context
- *Digital Skills for Industrial Workers in Africa*
- *The Impact of Digital Literacy on Worker Performance in African Industries*
- *Bridging the Digital Skills Gap in African Industries*
- Review of Related Empirical Studies
- Summary of Literature Reviewed

Theoretical Framework

The Theoretical framework on the role of digital literacy in the success of industrial workers, Human Capital Theory created by Schultz (1961) and later refined by Becker (1964), holds that individuals and organizations should invest in education and training to increase productivity and economic outcomes. In this sense, digital literacy can be defined

as a type of human capital that improves workers' competencies, allowing them to function effectively in increasingly digitalized industrial situations. In Nigeria, Adebayo (2019) highlights that industrial workers' digital skills development boosts their labor market value, enhancing both personal economic prospects and overall industry productivity. The theory emphasizes the significance of investing in digital literacy as a strategy for individual achievement and national economic progress, especially in light of technological advancements in industrial settings.

One of the fundamental assumptions of Human Capital Theory is that acquiring skills, knowledge, and competencies through education and training boosts an individual's productivity and economic potential. According to Adebayo (2019), individuals with digital skills contribute more successfully to their companies due to enhanced efficiency, problem-solving ability, and innovative practices. This principle implies that industrial workers who are digitally literate are better suited to fulfill the needs of a developing job market and contribute to their employers' technological progress. Investing in digital literacy helps firms improve their workforce's skills, increasing productivity and competitiveness.

Another important element of the idea is that investments in human capital are critical to economic progress. According to Olayinka (2018), digital literacy is a critical component of Nigerian industrial development since it allows workers to operate efficiently in a technology-driven economy. According to Human Capital Theory, countries that prioritize skill acquisition and knowledge development are more likely to

enjoy economic growth. This is especially important for African countries, where digital literacy may close the productivity gap and minimize reliance on foreign expertise by developing an informed and skilled workforce in the region (Nnadi & Okafor, 2020).

Fitts and Posner's (1967) Skills Acquisition Theory identifies three stages of skill development: cognitive, associative, and autonomous. This idea is useful for understanding how industrial workers develop and enhance their digital literacy over time. Based on Ogunleye (2021), many Nigerian industrial workers are still in the process of developing digital literacy skills, owing to a lack of exposure and access to digital tools. This idea proposes that with targeted training and practice, workers can proceed through the stages of skill acquisition, finally gaining mastery of using digital technologies for industrial tasks.

According to Skill Acquisition Theory, correction, and encouragement are necessary to encourage learning and rectify errors. Nnadi and Okafor (2020) emphasize the relevance of feedback systems in workplace training programs, pointing out that Nigerian industrial workers who receive regular feedback during digital skills training show greater growth and faster progression through the learning stages. Feedback enables employees to find areas for development, modify their practices, and gain a better understanding of digital technologies, ultimately improving their performance and competence.

Additionally, Skill Acquisition Theory emphasizes the importance of ongoing learning and adaptability, especially when digital tools and technologies advance rapidly. Olayinka (2018) underlines the importance of continual training programs in sustaining a

digitally literate workforce in African industries, as rapid technology developments involve workers updating their abilities regularly. This is consistent with the theory's emphasis on lifelong learning as a means of ensuring that workers achieve digital literacy while also remaining current with evolving technology. Continuous learning options, such as advanced workshops and certification programs, enable employees to improve their present skills and broaden their capabilities, making them more adaptive to new digital tools and systems.

Introduction to Digital Literacy and its Importance in Industries

The transition to an increasingly digital environment such as smoke-free areas in the agenda-setting phase of public policy formation has created a need for a new set of skills to manage information, technology, and knowledge, the so-called “digital literacy skills” (Maphosa & Bhebhe, 2019). The advent of the Internet, mobile phones, tablets, laptops, and other technology has changed how people communicate and interact with each other at work, at school, at home, or in public places. Digital literacy goes beyond access to technology and considers skills, confidence, knowledge, understanding, awareness, and critical thinking in the use of technology. To ensure that everyone benefits from the Internet, a minimum level of digital literacy skills, i.e. “basic digital literacy skills”, is needed in addition to access to technology and related services. This skill has, however, often been combined with an education level or socio-economical assets, resulting in an unintentional exclusion of people who cannot reach this desired level. The rapid changes

in the environment and technology make it increasingly difficult for the "digital natives" to cope with the new environment.

Thus, the question of digital literacy became relevant, as the concepts of "digital literacy", "digital literacy skills" and "basic digital literacy skills" are vague and divergent. In conjunction with this uncertainty, the issue of a national commitment or plan to ensure digital literacy skills among the population in one of the expansions of the World Summit on the Information Society (WSIS) called the Cook Islands and the key issue of transnational e-inclusive communities, therefore, became relevant as well. After having given the background and study aims, the variables in this research project have been defined and this literature review proceeds by answering the research question of how these concepts are defined in the field of Digital Divides (Coffin Murray & Perez, 2014).**,.rd4ed**

Concept of Digital Literacy in the African Industrial Context

Digital literacy encompasses a range of skills and knowledge that enable individuals to use digital tools effectively. In the African industrial context, these skills are crucial for navigating and leveraging digital technologies to enhance productivity and innovation. Digital literacy for industrial workers typically includes competencies in using software applications, understanding and managing digital data, navigating the internet, and employing cybersecurity practices. According to Oluwafemi (2021), these skills are increasingly essential as industries across Africa adopt more advanced technologies in

their operations, such as automation, data analytics, and digital communication platforms.

The impact of digital literacy on worker performance is significant, particularly in areas of productivity, efficiency, and problem-solving. For instance, Eze and Eze (2020) note that digitally literate workers are better equipped to optimize the use of machinery and software, leading to improved operational efficiency and reduced downtime. Additionally, digital skills enhance the capacity for problem-solving, as workers can access and utilize online resources and tools to troubleshoot issues, innovate processes, and collaborate more effectively with colleagues. This shift towards a more digitally competent workforce is seen as essential for boosting overall productivity and competitiveness in African industries (Nwosu, 2019).

Despite the recognized importance of digital literacy, there are numerous challenges and initiatives aimed at bridging the digital skills gap within the African industrial workforce. One significant challenge is the disparity in access to digital education and resources, which is often influenced by socioeconomic factors and regional disparities (Adebayo, 2018). In response, several initiatives have been launched, such as government and private sector partnerships to provide digital training programs, as well as international collaborations aimed at enhancing digital infrastructure and access. For example, the African Union's Digital Transformation Strategy includes provisions for

improving digital skills training and fostering an inclusive digital economy (African Union, 2020).

To further enhance digital literacy among industrial workers in Africa, strategic interventions are necessary. These could include expanding access to affordable and relevant digital education, integrating digital skills training into existing educational and vocational programs, and fostering partnerships between industry and educational institutions (Akinyemi, 2021). Moreover, targeted policies and investments in digital infrastructure can provide the necessary foundation for widespread digital literacy. Promoting continuous learning and upskilling, as well as creating awareness about the importance of digital literacy, are also critical steps toward empowering the workforce (Olawale & Eniola, 2021).

A variety of abilities and competencies connected to the use of digital technology are included in the broad concept of digital literacy. Digital literacy, as defined by the American Library Association (ALA), is "the capacity to use information and communication technology to locate, assess, produce, and convey information, necessitating the application of both technical and cognitive abilities" (ALA, 2013). It is crucial to remember that digital literacy includes higher-order cognitive and social abilities as well, such as critical thinking, problem-solving, communication, and teamwork in digital contexts, in addition to the fundamental ability to use digital devices and software (Bawden, 2008).

According to the context, the concept of literacy has evolved into different forms including political, financial, legal, media, information, and digital literacy (Kurnia & Astuti, 2017). Potter stated that in the beginning, professionals defined media literacy as "the skill to acquire and comprehend information from all types of communication channels". The explanation was further explained as "... the capability to reach, assess, assess and generate messages in different situations (Livingstone, 2003). With the community's changing dynamics and the fast-paced advancement of information and communication technology, media literacy is no longer sufficient to address the complexity of current issues, leading to the rise of digital literacy. Paul Gilster introduced the idea of digital literacy in 1997 in his book Digital Literacy for the first time. According to Gilster, digital literacy is described as the ability to comprehend and utilize information from different digital platforms (Bowden cited in Lankshear & Knobel, 2008: 18). Digital literacy, according to Jones & Hafner (2012: 13), is described as the skills and behaviors related to using digital media for communication, relationships, and thought processes.

Digital literacy in the context of African industries goes beyond basic computer skills. It encompasses a broader set of competencies allowing workers to navigate, utilize, and create information within a technologically driven industrial environment.

It encompasses the skills and knowledge required to use digital technologies in industrial settings effectively. This includes operating software and hardware, interpreting data, and engaging in digital communications. Furthermore, it involves understanding digital security, utilizing online resources, and adapting to emerging technologies.

Information Technology (IT) Proficiency: This includes fundamental skills like operating computers, using software applications relevant to specific industrial tasks, and navigating digital platforms for information access (Ojo, 2022).

Information Literacy: Workers need the ability to evaluate information obtained through digital sources critically. This involves recognizing credible sources, identifying bias, and effectively synthesizing information to solve problems or make informed decisions within their industrial roles (Adejumo et al., 2017).

Communication and Collaboration Skills: Digital literacy fosters the use of communication and collaboration tools effectively. Workers need to be comfortable utilizing email, project management software, and online communication platforms to share information, coordinate tasks, and collaborate with colleagues (Moyo & Soko, 2011).

Problem-solving and Decision-Making: The ability to utilize digital tools for problem-solving is crucial. This might involve using data analysis software to identify trends, leveraging online resources to troubleshoot technical challenges, or collaborating digitally with colleagues to find solutions (Onyeme et al., 2020).

Cybersecurity Awareness: Understanding basic cybersecurity principles is essential for any digitally literate worker. This includes safeguarding personal and company data, recognizing and avoiding online threats, and using secure online practices (Ukpong & Ubom, 2018).

The Importance of Contextualization

It's important to recognize that the specific digital skills required for industrial workers will vary across different sectors. For instance, workers in a manufacturing plant might need proficiency in operating computer-aided design (CAD) software, At the same time, those in the agricultural industry might benefit from digital tools for monitoring weather patterns or managing irrigation systems (Akinwande et al., 2019).

Therefore, this research will consider the specific digital skill sets demanded within various African industrial sectors to provide a more nuanced understanding of digital literacy requirements.

Digital Skills for Industrial Workers in Africa

The digital landscape in Africa's industrial sector is evolving rapidly, necessitating a workforce equipped with core digital literacy skills. These skills are fundamental for operating and managing digital tools and technologies that are increasingly prevalent across various sectors. Key digital competencies for industrial workers include basic computer literacy, the ability to use productivity software, familiarity with digital communication platforms, and an understanding of data management and cybersecurity. As noted by Adewale (2019), these skills are essential for workers to efficiently engage with modern machinery and systems, enhancing overall operational effectiveness and safety in industries such as manufacturing, mining, and agriculture.

The impact of digital literacy on worker performance in African industries is profound, influencing productivity, efficiency, and problem-solving capabilities. Digitally literate workers can more effectively utilize technological resources, leading to improved production processes and reduced operational costs. For example, Eke and Okafor (2021) highlight that digital tools enable workers to analyze and interpret data, allowing for timely and informed decision-making. This capability is crucial in optimizing workflows, identifying areas for improvement, and responding swiftly to emerging challenges. Furthermore, digital literacy enhances communication and collaboration among workers, fostering a more cohesive and productive working environment (Nwankwo, 2020).

Despite the clear benefits of digital literacy, there are significant challenges and initiatives aimed at addressing the digital skills gap within the African industrial workforce. One of the primary challenges is the uneven access to digital education and training resources, which can vary greatly depending on geographical location and economic status (Chukwu, 2018). Initiatives to bridge this gap include government-led programs, such as Nigeria's National Digital Economy Policy and Strategy, which aims to integrate digital skills training into the national education curriculum (Federal Ministry of Communications and Digital Economy, 2020). Additionally, partnerships between industry players and educational institutions are being formed to provide targeted training programs that align with industry needs.

To further improve digital literacy among industrial workers in Africa, several strategies can be implemented. Expanding digital infrastructure, particularly in rural and

underserved areas, is crucial for ensuring broad access to digital tools and training. As suggested by Adebayo and Adedoyin (2021), integrating digital skills training into both formal education and vocational training programs can help build a foundation of digital competence. Furthermore, ongoing professional development opportunities should be provided to help workers stay updated with emerging technologies and practices. Employers can also play a role by fostering a culture of continuous learning and investing in digital skills development for their workforce (Olawale, 2021).

As highlighted earlier, the specific digital skills required for industrial workers in Africa vary depending on the industry. However, several core skills are becoming increasingly crucial across various sectors. Here's a breakdown of some key areas:

Data Analysis and Interpretation: The ability to collect, analyze, and interpret data is essential for informed decision-making within industries. This might involve using spreadsheets to track production data, working with data visualization tools to identify trends, or utilizing basic statistical analysis software to optimize operations (Ojo, 2022).

Industry-Specific Software Proficiency: Many industries have specialized software used for various tasks. For instance, workers in construction might benefit from skills in Building Information Modeling (BIM) software, while those in logistics might require proficiency in warehouse management systems (WMS). This research will delve into the specific software used in different African industrial sectors to understand the digital skills gap that may exist [Akinwande et al., 2019].

Digital Communication and Collaboration: Effective communication and collaboration are crucial for industrial processes. Workers need to be comfortable using digital communication tools like email, video conferencing platforms, and project management software to share information, coordinate tasks, and collaborate with colleagues across departments or even geographically dispersed locations (Moyo & Soko, 2011).

Digital Troubleshooting and Problem-Solving: The ability to identify and troubleshoot technical problems using digital tools is a valuable skill for industrial workers. This might involve utilizing online resources to find solutions, collaborating with IT support teams via digital platforms, or using digital diagnostic tools to identify equipment malfunctions (Ukpong & Ubom, 2018).

Basic Cybersecurity Awareness: As mentioned previously, cybersecurity awareness is a critical digital skill for all industrial workers. This includes understanding basic cybersecurity principles like password management, recognizing phishing attempts, and reporting suspicious online activity. By practicing safe online habits, workers can protect themselves and their companies from cyber threats (Ukpong & Ubom, 2018).

The Evolving Skill Landscape

It is important to acknowledge that the digital skills landscape within African industries is constantly evolving. As new technologies are adopted and integrated into industrial processes, the skillsets required by workers will continue to change. This research will explore how African governments, educational institutions, and training

providers can work together to ensure that industrial workers have the opportunity to develop the digital skills needed to remain competitive in the job market [Akinwande et al., 2019].

The Importance of Soft Skills

While technical digital skills are crucial, soft skills like critical thinking, problem-solving, and adaptability are equally important for industrial workers in the digital age. These skills allow workers to learn new technologies quickly, adapt to changing work environments, and collaborate effectively with colleagues (Ono & Frempong, 2018). Therefore, fostering a holistic approach incorporating technical and soft skills development is crucial for preparing African industrial workers for success in the digital future.

Employees must possess other critical personal qualities in addition to digital skills and competence to successfully implement digital transformation (Dremel et al., 2017). Particular knowledge is becoming less important, whereas flexible workers with a wide range of knowledge and abilities are becoming more valuable (Kergroach, 2017). According to the World Economic Forum (2020), the following skills are most in demand in the era of Industry 4.0: the ability to solve complex problems, think critically, be creative, manage human resources, coordinate, be emotionally intelligent, make judgments and decisions, be service-oriented, negotiate, and be cognitively flexible.

Organizations are encountering difficulties in retraining and advancing the education of their workforce, as these endeavors necessitate the possession of pre-existing

competencies including critical thinking, complex problem-solving, adaptability, and resilience (Trenerry et al. 2021). "Soft" abilities, like creativity and problem-solving, are becoming more and more crucial in this technologically advanced world (Grundke et al., 2018). Chuang and Graham (2018) have emphasized in their study that, in addition to the growing demand for specialized talents, some basic soft skills of workers—like the capacity for problem-solving and critical thought—are also being addressed. During the investigation, we looked at the following soft skills:

Complex problem solving: is an ability that enables a person to accomplish goals that cannot be met by simple, well-known routines or algorithms. It is a combination of cognitive and motivational processes applied in various situations and tasks (Dossey, et al., 2000).

Critical thinking: is a process of deliberate, self-regulatory judgment and evaluation in which an individual uses cognitive abilities and strategies to increase the likelihood of a desired outcome or decision (Facione, 1990). Critical thinking is a set of situation-dependent general cognitive skills.

Adaptability: this refers to the capacity to adjust to changing circumstances, such as changing roles and responsibilities at work, and the ability to operate well under pressure (Binkley et al., 2012).

Creativity: the aptitude or capacity for creation; it is a special combination of individual characteristics, and mental and practical abilities, and encompasses all personality traits

and temperaments that facilitate creativity. Additionally, it manifests itself in conduct and behavior (Binkley et al., 2012).

Resilience: the capacity to maintain composure and flexibility in the face of stress, assuring functional survival (Block-Block, 1980).

The Impact of Digital Literacy on Worker Performance in African Industries

In Africa, where the introduction of digital technology is altering traditional labor patterns, digital literacy has become a necessity for industrial workers across numerous industries. Proficiency in fundamental computer operations, knowledge of cybersecurity protocols, acquaintance with digital communication platforms, and usage of productivity applications are among the essential competencies of digital literacy. These abilities are essential for workers to properly interact with digital tools and systems, which are increasingly integrated into industrial processes, as Nwankwo (2020) points out. Digital literacy holds significant value in various industries, including manufacturing, mining, and logistics, as technology is employed to optimize processes, boost productivity, and reinforce safety protocols.

The growing digitalization of African industries necessitates a workforce equipped with the necessary digital literacy skills. Research suggests a strong correlation between digital literacy and improved worker performance across various aspects of industrial operations. Here's a closer look at the potential benefits:

Increased Productivity and Efficiency: Digital literacy equips workers with the tools to optimize their work processes. For instance, the ability to utilize data analysis tools to identify bottlenecks in production or effectively collaborate with colleagues through digital platforms can lead to increased efficiency and ultimately, higher output (Ojo, 2022).

Enhanced Problem-solving and Decision-Making: Digital literacy fosters the ability to leverage technology for problem-solving. Workers can access online resources for troubleshooting technical issues, utilize data visualization tools to identify trends and patterns, and collaborate with colleagues across departments to find solutions (Ukpong & Ubom, 2018). This leads to more informed decision-making within industrial settings.

Improved Quality Control and Error Reduction: Many industries utilize digital tools for quality control procedures and data collection. Workers equipped with digital literacy can effectively operate these tools, leading to improved product quality and fewer production errors (Akinwande et al., 2019).

Enhanced Communication and Collaboration: As discussed earlier, digital literacy fosters the use of communication and collaboration tools. This allows for seamless information sharing across teams, improved coordination of tasks, and ultimately, better project outcomes (Moyo & Soko, 2011).

Increased Adaptability and Continuous Learning: The digital landscape within industries is constantly evolving. Digital literacy equips workers with the ability to learn new technologies quickly and adapt to changing work environments. This is crucial for

long-term employability and success in the face of rapid technological advancements (Ono & Frempong, 2018).

Motivational Factors and Workplace Satisfaction

Beyond improved performance metrics, digital literacy can also positively impact worker motivation and overall workplace satisfaction. Studies suggest that workers who feel comfortable using technology within their roles experience a greater sense of accomplishment and ownership over their tasks (Ojo, 2022). Furthermore, the ability to effectively utilize digital tools can foster a sense of empowerment and increase job satisfaction within the workforce.

The Importance of Contextual Research

While the positive impact of digital literacy on worker performance is well-documented, it's important to acknowledge the need for context-specific research within African industries. This research project will explore how digital literacy contributes to worker performance across different sectors in Africa. This will provide valuable insights into the specific skills required for various industrial roles and allow for tailored recommendations for improving digital literacy initiatives.

Bridging the Digital Skills Gap in African Industries

The emergence of digital technology has led to a change in the skill set that industrial workers in different African sectors need to possess. These workers need to possess core digital literacy skills, which include knowing how to use digital

communication tools, basic computer operation, and data analysis and cybersecurity protocols. These skills are critical for modern industrial machinery and systems to function efficiently, as well as for workers to be flexible in a rapidly changing technological environment. The importance of these skills is especially high in industries like manufacturing, mining, and logistics, where digital tools are becoming more and more integrated into daily operations.

Digital literacy affects worker performance in a variety of ways, including productivity, efficiency, and problem-solving skills. Workers with a basic understanding of technology can use digital tools to improve productivity, cut down on errors, and speed up production. According to a study by Adeyemi and Olajide (2021), employees in the industrial industry who were more digitally literate were more adept at using automated systems, which led to significant time and cost savings. Additionally, people who possess digital literacy are better able to access and comprehend data, which is essential for making informed decisions and solving problems. Because employees are more equipped to recognize and apply process changes, this competence not only increases operational efficiency but also stimulates innovation (Onyekwere, 2019).

The efforts and obstacles involved in closing the digital skills gap in the African industrial workforce are substantial, notwithstanding the obvious advantages. One of the main issues is that, especially in rural and underprivileged areas, access to digital education and training is limited. Economic issues, such as poverty and a lack of infrastructure, frequently make this inequality worse (Adebayo & Okeke, 2018). Several efforts have been

made to address these problems. To encourage digital skills training and education, member states must create and put into effect policies, as stated in the African Union's Digital Transformation Strategy. Furthermore, private-public partnerships—like those between tech firms and municipal government are attempting to offer training programs that are both relevant to and accessible to the demands of the industrial workforce (Nwosu, 2020).

Several tactics can be used to close the digital skills gap efficiently. First and foremost, increasing access to reasonably priced and pertinent digital education and training courses is critical. This entails providing flexible learning alternatives for working adults and integrating digital literacy into national curricula and occupational training programs (Okoye & Eze, 2021).

Secondly, the learning of digital skills can be widely facilitated by investing in digital infrastructure, particularly in rural areas.

Third, encouraging collaborations between business and academia helps guarantee that the training given is in line with market and labor force demands. Finally, it is imperative to foster a culture of ongoing education and skill development among employees to stay abreast of technology breakthroughs and changing business demands (Olawale, 2021).

The rapid digitalization of African industries has exposed a significant digital skills gap within the workforce. Many workers lack the necessary digital literacy to effectively utilize the technologies transforming their workplaces.

As Walton noted, there are currently many definitions of digital literacy. These definitions can be summarized and generally stated that digital competencies are any skills related to being digitally literate. The definition of digital competence itself is an important first step that leads to the demand for digital literacy to be fulfilled. Yet, workers themselves frequently lack the knowledge necessary to test digital skills. The main issue is that employers fail to name what exactly they need from their employees, or they assume the basic digital skills that employees have. The main responsibility therefore becomes preparing teachers, who will be able to impart knowledge and skills to students and learners so that the latter are well prepared for practice. This section explores existing strategies and proposes avenues for improving digital literacy among industrial workers in Africa.

The Essential Digital Skills Framework outlines several skill categories that are necessary for both adapting to and fully embracing the cyber-physical environment of now and tomorrow. There is a category dedicated to communication. The other focused on information and content work. The capacity is equally crucial to perform various transactions in addition to having problem-solving skills. At the moment, there's a lot of emphasis on internet safety and legality.

The main objective is for everyone to possess the necessary set of abilities for the social life, work, public involvement, and universal development of each individual. In addition to the talents that include science, math, literacy, and foreign languages, digital proficiency.

Skills: The term "skill" has been used to the "ability to apply knowledge and use know-how to complete tasks and solve problems". The skills required in the industry are diverse, dynamic, and far-reaching skills. Earlier research, for instance, has highlighted skill categories such as hard technical and soft interpersonal skills as relevant and critical. Connected terms are "upskilling" and "reskilling", used to describe the process of learning new skills to remain competitive in a job role or be able to move to another role.

Skills Gap: When the working environment is changing, as it often is due to technological advancements, skill gaps in the industry arise. In addition, the sustainable transition of industry leads to an increased need for green skills. Moreover, the demographics are changing, leading to a decrease in people in the working age. Therefore, companies often lack people with the skills to drive the change they expect. The term "skill gap" has been used in different ways and combination with the terms "skill shortage", "skill mismatch", and "skill surplus.

Skill gaps are not a new problem for the industry. In big industrial changes, i.e. the industrial revolutions, new general-purpose technologies were introduced, changing the work of people in the industry and raising questions about the role of humans and the value they bring. The value of accompanying intangibles, such as having the right skilled workers, in alignment with the introduction of new technologies, needs to be discussed to successfully transform the industry.

Some initiatives are underway to bridge the digital skills gap in Africa:

Government-led programs: Many African governments are recognizing the importance of digital literacy and are investing in training programs for workers. These programs may focus on basic computer skills, industry-specific software training, or broader digital literacy initiatives (Onyeme et al., 2020).

Employer-provided training: Companies are increasingly offering digital skills training to their employees. This can include on-the-job training, online courses, or partnerships with training providers (Akinwande et al., 2019).

Educational institutions: Universities and vocational training institutions are starting to incorporate digital literacy skills into their curriculums. This ensures that graduates entering the workforce possess the necessary digital skills to be successful (Ono & Frempong, 2018).

Challenges and Considerations:

While these initiatives are commendable, there are still challenges to overcome:

Limited Infrastructure and Resources: Many African countries lack the infrastructure and resources necessary to provide widespread digital literacy training. This includes access to computers, internet connectivity, and qualified trainers (Onyeme et al., 2020).

Focus on Formal Education: Current training programs may not adequately address the needs of informal sector workers who make up a significant portion of the African workforce (Adejumo et al., 2017).

Sustainability and Long-term Planning: Ensuring the sustainability and long-term impact of digital literacy initiatives requires careful planning and collaboration between stakeholders (Moyo & Soko, 2011).

Proposed Strategies for Improvement:

This research proposes exploring the following strategies for improving digital literacy in African industries:

Public-private partnerships: Collaboration between governments, businesses, and educational institutions can leverage resources and expertise to develop comprehensive digital literacy programs.

Context-specific training: Training programs should be tailored to the specific needs of different industries and worker skill levels to ensure relevance and effectiveness.

Mobile learning solutions: Utilizing mobile technologies for training delivery can increase accessibility and reach geographically dispersed or informal sector workers (Ono & Frempong, 2018).

Focus on soft skills: Incorporating soft skills development alongside technical training can foster adaptability, critical thinking, and effective communication skills, all crucial for success in the digital age.

Continuous learning initiatives: Encouraging continuous learning within the workforce is essential, as the digital landscape is constantly evolving. This can involve promoting online learning platforms or providing access to industry-specific digital resources.

By implementing these strategies, stakeholders within African industries can work towards bridging the digital skills gap and empowering workers to thrive in the digital age.

Review of Related Empirical Studies

Adebayo (2021) carried out a study on how digital literacy training affects workforce productivity in Nigerian industry. The study shows that improving workers' digital skills leads to considerable increases in operational efficiency and problem-solving ability. The findings show a direct relationship between digital literacy and productivity, implying that employees who receive ongoing digital skills training are better prepared to meet business demands. This study supports my research by giving empirical evidence of the favorable benefits of digital literacy on worker performance. However, it is largely concerned with productivity indicators, whereas the current study seeks to investigate a broader set of success variables, such as flexibility and creativity.

Ogunleye and Afolabi (2020) look at the problems and options for closing the digital divide in African industrial sectors. The study finds a lack of digital skills as a significant impediment to workforce participation and productivity. The authors propose comprehensive training programs that close the digital skills gap and prepare workers to succeed in technologically advanced industries. This study is relevant to my research because it stresses the importance of digital literacy for employee effectiveness in industrial settings. While it recognizes the necessity for training, it does not address the

direct effects of digital literacy on specific success outcomes such as performance and work satisfaction.

Nweke and Okafor (2022) look into how digital literacy affects career chances for industrial workers in Nigeria. According to the report, workers who have greater digital abilities are more likely to get better jobs and develop in their careers. The study emphasizes the relevance of digital literacy as a vital aspect of today's competitive labor market through surveys and interviews. This study coincides with my research by demonstrating how digital literacy adds to workers' success in obtaining employment. However, it focuses solely on job outcomes, whereas the current study entails a broader examination of how digital skills influence total industrial worker success.

Ademola (2019) assesses the efficiency of several digital skills training programs in Nigerian businesses, concentrating on employee performance and work satisfaction. The findings imply that structured training initiatives considerably improve workers' digital competencies, resulting in better job performance. This study is related to my studies because it sheds light on the relevance of focused training in increasing digital literacy among industrial workers. However, it focuses solely on training efficacy and does not investigate the broader implications of digital literacy for worker adaptability and innovation.

Olayinka (2020) did a study on how digital literacy might stimulate innovation among African industrial workers. The study discovers that people with strong digital abilities are more likely to engage in creative practices, which drive organizational growth

and competitiveness. The findings support the premise by indicating that digital literacy is not only necessary for operational efficiency but is also an important component in innovation and industrial advancement. However, the emphasis is mostly on innovative results rather than a thorough examination of digital literacy's impact on overall worker success, such as productivity and adaptability.

Summary of Literature Reviewed

The chapter summarizes and discusses all relevant literature to this study. It discusses the theoretical framework of this investigation. It also skipped over the introduction to digital literacy and its significance in industries. The work's main focus is on Human Capital Theory, which was developed by Schultz (1961) and revised by Becker (1964). To explain Human Capital Theory, emphasize how investing in education and training may boost productivity and economic consequences. It emphasizes how important digital skills are for people to prosper in industrial settings and contribute positively to their companies and the larger economy. In Nigeria, strengthening industrial workers' digital literacy is viewed as increasing their market worth and industry productivity.

There is a substantial link between digital literacy and enhanced worker performance. According to studies, people with digital skills are more productive, innovative, and capable of efficient team collaboration (Ademola & Olatunji, 2019). For example, Nweke (2020) emphasizes the favorable influence of digital literacy on productivity in Nigerian manufacturing sectors, where workers who are proficient with

digital tools may streamline processes and increase output. Furthermore, digital literacy improves job satisfaction and employee engagement since employees feel more knowledgeable and empowered in their roles (Ogunleye, 2021). Bridging the digital skills gap has emerged as a key issue for African industry. Despite the widely acknowledged necessity of digital literacy, many employees lack access to quality training and tools. According to Olayinka (2018), infrastructure limitations such as restricted internet connectivity and insufficient access to digital devices impede efforts to enhance digital literacy among industrial workers. Furthermore, many African countries' educational systems do not prioritize digital skills, resulting in a workforce unprepared for the demands of modern industry (Onwuegbuzie, 2019). Addressing these difficulties will necessitate collaborative efforts from governments, educational institutions, and corporate sector players to create effective training programs and policies that encourage digital literacy.

This study analyzed five related empirical research, the most relevant of which was conducted by Adebayo (2021), who discovered that boosting digital skills increases labor productivity and problem-solving abilities. While my research confirms the impact of digital literacy on performance, I also look at flexibility and creativity, this is the gap that this study covers.

CHAPTER THREE

RESEARCH METHODOLOGY

In this Chapter, the description of the methodology employed in the study was the main focus. It was covered in the following subsections:

- Design of the Study.
- Population of the Study.
- Sample and Sampling Technique.
- Instrumentation.
- Validity of the Instrument.
- Reliability of the Instrument.
- Method of Data Collection.
- Method of Data Analysis.

Research Designs:

This study uses a descriptive research design. According to Creswell (2014), a descriptive survey is useful for research that seeks to collect thorough information and observe events as they occur in their natural surroundings, offering a broad perspective without modifying variables.

Population of the Study

The population of this study consists of 50 industrial workers from the Danto Group, located in Okpella, Edo State, Nigeria, along the Benin-Abuja highway. They serve as a case study for investigating the importance of digital literacy in industrial worker success.

Sample and Sampling Technique

The sample for this study consists of a subgroup of 50 industrial workers from the Danto Group in Okpella, Edo State. A purposive sample strategy is used to include participants who are actively involved in digital processes and job skill applications.

Instrumentation

A structured questionnaire was developed to gather data from participants. The instrument for this study is a structured questionnaire titled *"Digital Literacy and Industrial Worker Success Questionnaire."* The questionnaire consisted of two sections. Section A carries demographic Variables about the respondent's gender, age, and level of education while Section "B" assesses participants' digital literacy levels and the perceived impact of digital skills on their work performance on a 4-point Likert scale, rating the degree of agreement or disagreement as Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, or Strongly Disagree (SD) = 1.

Validity of the Instrument

The validity of the research project was assessed by two experts and my project supervisor from Vocational Technical Education, University of Benin City on the research design. They analyzed the questionnaire to ensure that it accurately captured the targeted characteristics of digital literacy that are important for industrial worker success.

Reliability of the Instrument

The test-retest technique was used to determine the reliability of the research instrument. This procedure involves administering the instrument to a subset of the sample twice at different intervals to guarantee consistency in responses. The findings of the two administrations were then correlated, resulting in a reliability coefficient of 0.7 indicating a satisfactory level of consistency.

Method of Data Collection

Data for this study was collected from a sample of industrial workers in Africa. Written permission was obtained from the research supervisor before data collection commenced. The questionnaire was administered to a sample of industrial workers.

Method of Data Analysis

The researcher utilized descriptive statistics, mean, percentages, and standard deviation, and the data gathered from respondents was examined. An item with a mean value equal to or greater than 2.50 was considered Strongly Agreed, else it was Disagreed.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter presents the data, analyze the data, present the findings and discusses the analyzed findings.

PRESENTATION OF RESULTS

Research Question One

What are the core digital literacy skills required by industrial workers in different sectors across Edo State particularly Benin City?

Table 1: Mean and standard deviation of the core digital literacy skills required by industrial workers in different sectors across Edo State particularly Benin City.

S/N	Item	N	Mean	SD	Remarks
1	Industrial workers must understand basic computer functions (e.g., word processing, spreadsheets).	50	3.1	.85	Agree
2	Familiarity with data management systems is critical for guaranteeing smooth workflow in industrial environments.	50	3.32	.64	Strongly Agree

3	Computer literacy, including email and online research skills, is required for efficient communication in industrial settings.	50	3.02	.79	Agree
4	To improve task accuracy and productivity, industrial workers must be trained in the use of digital technologies particular to their industry.	50	3.38	.73	Strongly Agree
5	Understanding cybersecurity basics is essential for protecting firm data and infrastructure.	50	3.18	0.75	Agree
	Cluster		**3.20**	**0.75**	**Agree**

Note: SD (Standard Deviation), N (Sample Size)

Results presented in Table 1 show the analysis of respondents to key digital literacy abilities reveals a high level of agreement among respondents. The items obtained an aggregate mean score of 3.20, showing that the vast majority of industrial workers believe that basic computer literacy abilities are essential in their field. Notably, questions such as the importance of comprehending basic computer functions and familiarity with data management systems earned relatively high ratings, with standard deviations indicating moderate agreement among respondents. The overall rating for this section is Agree,

indicating that these key abilities are widely considered necessary for efficiency and productivity.

Research Question Two

How does digital literacy impact worker performance in terms of productivity, efficiency, and problem-solving within Edo State particularly Benin City industries?

Table 2: Mean and standard deviation on how digital literacy impacts workers' performance in terms of productivity, efficiency, and problem-solving within African Industries.

S/N	Item	N	Mean	SD	Remarks
1	Workers with higher levels of digital literacy are more likely to accomplish jobs efficiently and accurately.	50	3.34	.69	Strongly Agree
2	Workers with digital literacy can address problems rapidly using digital resources, which increases productivity.	50	3.34	.78	Agree
3	High levels of digital literacy are associated with an employee's capacity to adapt to new technology and processes.	50	3.1	.83	Agree

4	Digital skills reduce production downtime by allowing employees to troubleshoot small digital difficulties on their own	50	3.3	.70	Strongly Agree
5	Workers with good digital abilities can work more successfully with their colleagues, increasing total team productivity.	50	3.06	.79	Agree
	Cluster		**3.23**	**0.76**	**Strongly Agree**

Note: SD (Standard Deviation), N (Sample Size)

Results presented in Table 2 show the impact of digital literacy on worker productivity, efficiency, and problem-solving. The table produced an overall mean score of 3.23, including a Strongly Agree remark. High levels of digital literacy were linked to better task accuracy, efficiency, and problem-solving skills. The standard deviation of 0.76 indicates rather consistent agreement among respondents, reflecting the consensus that digital literacy improves workers' adaptability to new technologies and processes. This shows that digital literacy is crucial for increasing overall productivity in Edo State industries.

Research Question Three

What are the existing initiatives and challenges to bridge the digital skills gap within the Edo State industrial workforce?

Table 3: Mean and standard deviation of the existing initiatives and challenges to bridge the digital skills gap within the African industrial Workforce.

S/N	Item	N	Mean	SD	Remarks
1	Many African companies are investing in digital skills training to boost workforce competitiveness.		3.2	.76	Agree
2	Limited access to digital resources and training programs impedes digital literacy development in the industrial workforce.		3.06	.82	Agree
3	Some industrial workers are resistant to digital training programs due to a lack of exposure or a fear of technology.		3.04	.76	Agree

4	Inadequate funds are a significant challenge to implementing digital literacy efforts in the African industry.	3.24	.73	Strongly Agree
5	Partnerships with educational institutions and government programs can help to close the industrial sector's digital skills gap.	3.16	.79	Agree
	Cluster	**3.14**	**0.77**	**Agree**

Note: SD (Standard Deviation), N (Sample Size)

Results presented in Table 3 demonstrate an understanding of both the initiatives to improve digital skills and the obstacles to advancement. The overall mean score of 3.14 indicates an Agree remark. Respondents highlighted African companies' commitment to improving digital capabilities, as well as challenges such as restricted access to digital resources and training programs, resistance to digital training, and insufficient money. With a standard deviation of 0.77, responses exhibit important variation, showing diverse perspectives on specific efforts and difficulties. Overall, this evidence indicates widespread agreement on the need for ongoing support and resources to close the digital skills gap.

Research Question Four

What strategies can be implemented to improve digital literacy training and empower the industrial workforce in Africa?

Table 4: Mean and standard deviation of strategies implemented to improve digital literacy training and empower the industrial workforce in Africa.

S/N	Item	N	Mean	SD	Remarks
1	Establishing ongoing digital literacy programs can help industrial workers keep up with technological advances.	50	3.28	.72	Strongly Agree
2	Collaboration between industry leaders and educational institutions is critical for developing appropriate digital literacy curricula.	50	3.26	.74	Strongly Agree
3	Offering incentives for completing digital training can encourage employees to participate more in digital literacy initiatives.	50	3.14	.77	Agree
4	Integrating digital literacy into the normal training program will	50	3.3	.73	Strongly Agree

	encourage professionals to improve their digital skills on a consistent basis.				
5	Creating mobile-friendly digital training tools can help overcome accessibility issues and increase digital literacy involvement among workers.	50	3.06	.79	Agree
	Cluster		**3.21**	**0.75**	**Strongly Agree**

Note: SD (Standard Deviation), N (Sample Size)

Results presented in Table 4 show that measures to increase digital literacy training achieved a high overall mean score of 3.21, with a Strongly Agree remark. Responses show considerable support for implementing continuous training programs, collaborating with educational institutions, and providing incentives for training completion. The low standard deviation of 0.75 demonstrates consistent replies, indicating a widespread conviction in the efficacy of these techniques for workforce empowerment. This connection shows that ongoing, well-structured digital literacy initiatives could greatly improve industrial workers' skills across Africa.

DISCUSSION OF FINDINGS

The findings from this study show that there is widespread agreement on the need for digital literacy skills for African industrial workers in a variety of sectors. According to the research, core digital skills such as knowledge of basic computer functions, data management, and cybersecurity fundamentals are commonly viewed as vital for efficient performance in the industrial sector. Workers in these situations understand that these abilities boost their productivity and efficiency by facilitating seamless workflows and allowing them to accomplish jobs with better accuracy. The broad consensus among respondents emphasizes the importance of digital proficiency as a vital skill for today's industrial workforce.

The study also emphasizes digital literacy's direct impact on worker performance, notably in terms of productivity, efficiency, and problem-solving. Respondents reported that workers with greater levels of digital literacy are better at performing jobs effectively and adjusting to new technological breakthroughs, resulting in fewer interruptions and improved team collaboration. This research implies that digital literacy enables workers to better engage with industry-specific technologies, allowing them to troubleshoot minor errors and collaborate more successfully within teams. The frequently favorable replies demonstrate an understanding of digital literacy as a tool for improving both individual performance and team efficiency.

Despite a positive perspective on digital skills, the analysis reveals significant barriers to the widespread adoption of digital literacy in African industries. Significant barriers appeared, including restricted access to digital resources, insufficient training programs, hostility to digital learning, and financing limits. These limitations highlight a disparity between the acknowledged value of digital skills and the resources available to obtain them. While businesses are making progress by investing in digital training programs, the issues highlight the need for more comprehensive measures to overcome these limits and make digital literacy available to a larger proportion of the workforce.

Finally, the findings indicate the significance of strategic actions for increasing digital literacy among industrial workers. Respondents overwhelmingly endorsed continuous training programs, partnerships with educational institutions, and incentives for completing digital training as viable strategies to close the digital skills gap. These initiatives, if broadly adopted, might give workers continual chances to improve their abilities and remain competitive in an increasingly digitized industrial context. Overall, the findings show that with ongoing support, industrial workers in Africa can considerably benefit from digital literacy training, allowing them to meet the needs of contemporary industry and contribute to economic growth.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter discusses the summary, conclusion, and recommendations.

Summary

This study investigates the importance of digital literacy in industrial worker success, specifically how digital skills affect productivity, efficiency, and problem-solving abilities throughout Africa's many industries. With the increasing digital transformation of sectors around the world, digital literacy has emerged as a critical skill set that may help workers be more adaptable and effective. This study investigates not just the fundamental digital abilities required by industrial workers, but also the current barriers to digital literacy adoption and prospective initiatives for improving digital literacy training in African industries.

The study was guided by the following research questions; What fundamental digital literacy skills are required of industrial workers in various sectors across Africa, What impact does digital literacy have on worker productivity, efficiency, and problem-solving in African industries, what measures and obstacles are in place to overcome the digital skills gap in Africa's industrial workforce, What initiatives may be implemented to strengthen digital literacy training and empower Africa's industrial workforce. The data analysis presents an overview of digital literacy among industrial workers in Edo state:

1. Basic digital skills, such as computer operations, data management, and cybersecurity awareness, are required for industrial personnel. These abilities were identified as essential for ensuring efficient processes, increasing task accuracy, and safeguarding firm data.
2. Digital literacy has been demonstrated to improve worker performance, with high mean scores suggesting that respondents believe digital abilities are crucial for increasing productivity, efficiency, and problem-solving. Workers with strong digital literacy can more easily adapt to new technology and troubleshoot problems, reducing downtime and fostering stronger teamwork.
3. Several challenges to digital literacy exist, including restricted access to resources, insufficient training programs, worker reluctance due to a lack of exposure, and financial constraints. These findings highlight a disparity between the need for digital skills and the availability of resources to create them, affecting the digital transformation process inside industries.
4. Respondents favored the adoption of ongoing digital literacy training, collaboration between industry and educational institutions, and incentive-based training programs. These techniques received good marks, showing the notion that continual training, appropriate curriculum, and easily accessible training resources may improve digital literacy and provide workers with the skills required for modern industry demands.

The study's findings show that digital literacy is widely recognized as valuable in industrial settings. Digital skills are regarded as critical for employment efficiency, productivity, and cooperation, allowing employees to comfortably interact with emerging technology. However, the report also reveals substantial obstacles such as resource constraints and financial issues, that prevent widespread use. The good reaction to proposed techniques demonstrates that the workforce is prepared to embrace digital literacy if enough tools and support are offered. Finally, the findings highlight the significance of targeted, easily accessible digital literacy programs that may empower African industrial workers and prepare them for the demands of a digitally driven industrial sector.

Conclusion

The findings of this study confirm that digital literacy plays an important role in current industrial success. Digital literacy not only helps workers learn the fundamental technologies and systems utilized in industrial settings, but it also allows them to perform more effectively, increasing productivity and promoting easier cooperation. The strong consensus among respondents about the importance of key digital skills such as basic computer operations, data management, and cybersecurity awareness reflects an understanding that these talents are no longer optional but rather critical for functional productivity in the workplace. These findings highlight a rising recognition across industries that digital skills are critical to operational effectiveness, with industrial workers

understanding the importance of these competencies in boosting accuracy, efficiency, and data security.

The study emphasizes the beneficial relationship between digital literacy and worker performance, stating that digital skills improve productivity, adaptability, and problem-solving. Workers with digital competence are better able to use technology to execute work efficiently, troubleshoot issues autonomously, and collaborate with colleagues, all of which lead to increased team productivity. This correlation highlights digital literacy as a driver of workforce empowerment, providing workers with the abilities necessary to use industry-specific technologies and adapt to rapid technological changes in their area. The study's findings indicate that as industries progressively integrate digital tools, workers who lack digital literacy risk falling behind, potentially leading to lower productivity and higher operational issues.

However, the findings show substantial difficulties in closing the digital literacy gap among African industrial workers. Limited access to digital resources, insufficient training programs, worker opposition to digital learning, and insufficient finance all pose significant challenges to digital skill development. These problems highlight an imbalance between the acknowledged need for digital proficiency and the tools available to industrial workers to develop these abilities. While some organizations have begun digital skills training, a significant gap remains, impeding the ability of a digitally skilled workforce to emerge fully. This disparity implies that establishing digital literacy in the industrial

workforce is more than just an individual or company effort; it requires institutional assistance to ensure the availability and accessibility of digital training across all industries.

Furthermore, the study reveals a widespread acceptance of initiatives for improving digital literacy instruction. Respondents' significant support for ongoing digital literacy initiatives, industry-educational collaboration, and training participation incentives demonstrates the workforce's readiness to embrace continuous learning. These tactics are consistent with the requirement for a changing and adaptable approach to digital literacy, enabling workers to keep up with technological changes in their industry. The favorable reaction to these strategies demonstrates that, given the right access and motivation, industrial workers are willing to invest in their digital abilities, increasing their ability to contribute meaningfully to their industry.

Recommendations

Based on the findings, the following recommendations are offered to improve digital literacy among industrial workers and address the difficulties found in this study:

1. Industries should create systematic, continual digital literacy training programs that are suited to their sector's specific technological needs.

2. Businesses and industry stakeholders should invest in providing easily accessible digital infrastructure such as computers, software, and internet connectivity in the workplace.
3. Educational institutions can incorporate digital literacy into vocational and technical training programs, giving students actual digital skills before they reach the job.
4. To encourage employees to participate in digital literacy training actively, businesses could consider offering incentives.
5. Companies should include digital literacy modules in their normal training programs, making digital skills development a primary component of employee training rather than a separate activity.
6. To alleviate reluctance to digital literacy training, businesses could launch awareness campaigns emphasizing the importance of digital skills in increasing job performance and career opportunities.

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APPENDIX

DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION

UNIVERSITY OF BENIN

BENIN CITY

Dear Sir/Ma

REQUEST FOR YOUR COOPERATION IN COMPLETING THIS QUESTIONNAIRE

This research is being carried out as part of the requirements for a Bachelor's degree award. I am researching "The Role of Digital Literacy in the Success of Industrial Workers" at the University of Benin, Benin City, Edo State. In this regard, you were duly selected as a sample member.

I'd like you to complete this questionnaire. You are not supposed to reveal your identity. I would also like to assure you that your response will be kept strictly confidential and utilized exclusively for the indicated academic purpose.

Thank you in anticipation of your participation.

INSTRUCTION;

Please indicate your response to the following questions by ticking the corresponding column.

Section A: DEMOGRAPHIC INFORMATION

Sex: (a) Male [ ], (b) Female [ ]

Age : (a) 18-20yrs [ ] (b) 21-25yrs [ ] (c) 26 and above [ ]

Section B

Kindly note the following: Strongly Agree (AD) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1

S/N	ITEM SELECTION				
	The core digital literacy skills required by industrial workers in different sectors across Africa	**SA 4**	**A 3**	**D 2**	**SD 1**
1	Industrial workers must understand basic computer functions (e.g., word processing, spreadsheets).				

2	Familiarity with data management systems is critical for guaranteeing smooth workflow in industrial environments.				
3	Computer literacy, including email and online research skills, is required for efficient communication in industrial settings.				
4	To improve task accuracy and productivity, industrial workers must be trained in the use of digital technologies particular to their industry.				
5	Understanding cybersecurity basics is essential for protecting firm data and infrastructure.				
	How does digital literacy impact worker performance in terms of productivity, efficiency, and problem-solving within African industries?	**SA 4**	**A 3**	**D 2**	**SD 1**
6	Workers with higher levels of digital literacy are more likely to accomplish jobs efficiently and accurately.				

7	Workers with digital literacy can address problems rapidly using digital resources, which increases productivity.				
8	High levels of digital literacy are associated with an employee's capacity to adapt to new technology and processes.				
9	Digital skills reduce production downtime by allowing employees to troubleshoot small digital difficulties on their own				
10	Workers with good digital abilities can work more successfully with their colleagues, increasing total team productivity.				
	The existing initiatives and challenges are in place to bridge the digital skills gap within the African industrial workforce.	**SA 4**	**A 3**	**D 2**	**SD 1**
11	Many African companies are investing in digital skills training to boost workforce competitiveness.				

12	Limited access to digital resources and training programs impedes digital literacy development in the industrial workforce.				
13	Some industrial workers resist digital training programs due to a lack of exposure or a fear of technology.				
14	Inadequate funds are a significant challenge to implementing digital literacy efforts in the African industry.				
15	Partnerships with educational institutions and government programs can help to close the industrial sector's digital skills gap.				
	Strategies can be implemented to improve digital literacy training and empower the industrial workforce in Africa.	**SA 4**	**A 3**	**D 2**	**SD 1**
16	Establishing ongoing digital literacy programs can help industrial workers keep up with technological advances.				

17	Collaboration between industry leaders and educational institutions is critical for developing appropriate digital literacy curricula.				
18	Offering incentives for completing digital training can encourage employees to participate more in digital literacy initiatives.				
19	Integrating digital literacy into the normal training program will encourage professionals to improve their digital skills consistently.				
20	Creating mobile-friendly digital training tools can help overcome accessibility issues and increase digital literacy involvement among workers.				