Information Communication Technology (ICT) Adoption, Total Quality Management Practices, and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria

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Being a Thesis Submitted to the Department of Information Management
Faculty of Communication & Information Science
Lead City University, Ibadan, Oyo State, Nigeria

In Partial Fulfilment of the Requirements for the Award of Doctor of Philosophy Degree (PhD) in Office and Information Management

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Abstract

The dynamism of the global educational landscape demands that teaching staff remain agile, adaptive, and innovative in knowledge delivery. Observably, Office Technology and Management (OTM) teaching staff in public polytechnics in Nigeria face a dual challenge of integrating Information and Communication Technology (ICT) into instruction while upholding quality standards. These challenges could adversely affect teaching efficacy and hinder attainment of desired educational outcomes. Despite the growing body of research on ICT integration and quality management practices in higher education, there remains a paucity of studies linking these constructs directly to agility assessment within the Nigerian polytechnic context, particularly among OTM educators. Against this background, the study examined the influence of Information Communication Technology (ICT) adoption and Total Quality Management (TQM) Practices and the agility assessment of Office Technology and Management (OTM) teaching staff in public polytechnics in Southwest, Nigeria. A mixed-method research design was employed, guided by three research questions and four hypotheses. The study population comprised 218 respondents -166 OTM teaching staff across 13 accredited public Polytechnics offering OTM programme at the time of the study and selected 52 OTM students. Owing to the relatively small number of OTM teaching staff (166), a total enumeration of sampling technique was adopted while purposive sampling technique was used to select the 52 students (2 ND and 2 HND) in each polytechnic for in-depth interview. Two research instruments - a structured questionnaire and an interview guide were employed for data collection and validated by the supervisor and other subject matter experts. The instrument's reliability was confirmed using Cronbach's Alpha, which yielded coefficients of 0.78, 0.81, and 0.87, indicating acceptable internal consistency. Data collected in response to the research questions were analyzed using frequency counts, percentages, mean, and standard deviation. In addition, simple and multiple linear regression analyses were conducted at the 0.05 level of significance, while thematic analysis was applied to the interview data. The findings revealed a high level of agility (Weighted Mean = 3.64), a moderately high level of ICT adoption (Weighted Mean = 3.34), and a high level of TQM practices (Weighted Mean = 3.66) among OTM teaching staff. Hypotheses further indicated that TQM practices significantly influenced agility assessment ($p < 0.05$), while the joint effect of ICT adoption and TQM practices was also significant ($p < 0.05$). However, the moderating role of educational qualifications on the relationship between ICT adoption and agility was not supported ($p > 0.05$), indicating that agility is shaped more by practical application and integration of ICT within TQM than by academic credentials. This underscores TQM practices as the stronger driver of agility, with ICT playing a complementary role, and highlights the need for polytechnics to embed ICT adoption within a TQM framework while providing continuous, hands-on ICT training tailored to OTM teaching staff irrespective of academic qualifications.

Keywords: ICT Adoption, Total Quality Management Practices, Agility Assessment, Educational Qualifications, OTM Teaching Staff

Word Count: 464

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Certification

This is to certify that Deborah Omowumi ODUWOLE with Matriculation Number LCU/PG/002524 carried out this research work titled: "Information Communication Technology Adoption, Total Quality Management Practices and Agility Assessment of Office Technology and Management Teaching staff in Public Polytechnics, Southwest, Nigeria" in the Department of Information Management, Faculty of Communication & Information Science, Lead City University, Ibadan, Oyo State, for the award of Doctor of Philosophy (PhD) in Office Information and Management (OIM) and that this has not been previously submitted.

_____ _____

Dr. Sunday O. Tunmibi Date
(Supervisor)

_____

Dr. Sophia V. Adeyeye Date
(Head of Department)

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Dedication

This Thesis is lovingly dedicated to Almighty God for His grace and guidance, and to my dear family for their unwavering love and support.

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Acknowledgement

My appreciation goes to the management and staff of Lead City University, Ibadan for providing the needed support and conducive environment for learning during the course of my study and in conducting this research. I am also grateful to staff and management of public polytechnic, Southwest, Nigeria that provided data for this study as well as the services provided by staff of the Library in Lead City University, Ibadan, Oyo State.

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Even though the above-mentioned institutions and persons have assisted in the process of this project work, I alone stand responsible for the error(s) if any, found in this work.

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Abstract

The dynamism of the global educational landscape demands that teaching staff remain agile, adaptive, and innovative in knowledge delivery. Observably, Office Technology and Management (OTM) teaching staff in public polytechnics in Nigeria face a dual challenge of integrating Information and Communication Technology (ICT) into instruction while upholding quality standards. These challenges could adversely affect teaching efficacy and hinder attainment of desired educational outcomes. Despite the growing body of research on ICT integration and quality management practices in higher education, there remains a paucity of studies linking these constructs directly to agility assessment within the Nigerian polytechnic context, particularly among OTM educators. Against this background, the study examined the influence of Information Communication Technology (ICT) adoption and Total Quality Management (TQM) Practices and the agility assessment of Office Technology and Management (OTM) teaching staff in public polytechnics in Southwest, Nigeria. A mixed-method research design was employed, guided by three research questions and four hypotheses. The study population comprised 218 respondents -166 OTM teaching staff across 13 accredited public Polytechnics offering OTM programme at the time of the study and selected 52 OTM students. Owing to the relatively small number of OTM teaching staff (166), a total enumeration of sampling technique was adopted while purposive sampling technique was used to select the 52 students (2 ND and 2 HND) in each polytechnic for in-depth interview. Two research instruments - a structured questionnaire and an interview guide were employed for data collection and validated by the supervisor and other subject matter experts. The instrument's reliability was confirmed using Cronbach's Alpha, which yielded coefficients of 0.78, 0.81, and 0.87, indicating acceptable internal consistency. Data collected in response to the research questions were analyzed using frequency counts, percentages, mean, and standard deviation. In addition, simple and multiple linear regression analyses were conducted at the 0.05 level of significance, while thematic analysis was applied to the interview data. The findings revealed a high level of agility (Weighted Mean = 3.64), a moderately high level of ICT adoption (Weighted Mean = 3.34), and a high level of TQM practices (Weighted Mean = 3.66) among OTM teaching staff. Hypotheses further indicated that TQM practices significantly influenced agility assessment ($p < 0.05$), while the joint effect of ICT adoption and TQM practices was also significant ($p < 0.05$). However, the moderating role of educational qualifications on the relationship between ICT adoption and agility was not supported ($p > 0.05$), indicating that agility is shaped more by practical application and integration of ICT within TQM than by academic credentials. This underscores TQM practices as the stronger driver of agility, with ICT playing a complementary role, and highlights the need for polytechnics to embed ICT adoption within a TQM framework while providing continuous, hands-on ICT training tailored to OTM teaching staff irrespective of academic qualifications.

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Chapter One

Introduction

1.1 Background to the Study

In today's fast-paced and constantly changing world, agility has been seen as a crucial concept not only in business organisation but in the educational sector. Technological developments and its use in higher education, new competencies and skills demanded by the market, shifting student demographics and expectations have been posing challenges for institutions of higher education. Institutions ranging from schools to universities are increasingly recognizing the need to embrace agility to effectively navigate change and provide high-quality teaching and learning experiences. The institutions' ability to adapt to these shifting environmental dynamics with ease and flexibility would enable them to succeed in this cutthroat climate. Literarily, agility means the quality of being sensitive, having the faculty of quick motion, ready to move, activeness, alertness, and nimbleness. The ability of an organisation to quickly and easily reorganize and adjust its procedures and practices in response to extraordinary changes in surroundings is known as organisational agility[1].

Agility, in this context, refers to the ability of educators to swiftly respond to changes in technology, innovative teaching methods, and effectively engage students in diverse learning environments. Agility assessment involves evaluating an organisation's or team's ability to adapt, innovate, and deliver value in rapidly changing environments. Agility assessments are seen as essential tools for diagnosing an organisation's strengths and weaknesses, enabling leaders to make informed decisions about strategic direction, investments, and organisational changes. The assessment in educational setting involves evaluating various facets such as adaptability to new technologies, responsiveness to student needs, innovation in pedagogical

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approaches, and collaboration within interdisciplinary teams. By understanding and measuring these dimensions of agility, higher institutions, faculty or department can identify strengths, address gaps, and implement targeted professional development strategies. Ultimately, the agility assessment of teaching staff serves as a proactive approach to enhancing educational outcomes and preparing students for future challenges in a globally interconnected world.

There are major shifts in the economy and culture; however, there is also tremendous pressure on the industrial and educational systems to adjust. Higher education, in contrast to its industrial counterparts, seems less agile and is seen as complacent with its accomplishments, showing very little change over the years[1]. It is pertinent, therefore, to assess the level with which the teaching staff in the public polytechnics adapt to the technological uproar. This in effect is to prepare public polytechnic graduates for the dynamic social-economic and technological changes by impacting the relevant digital knowledge and skills that will make them relevant, competitive, and self-reliant in the global market. By fostering a culture of continuous improvement, leveraging technology, developing agile curricula, building collaborative networks, and enhancing communication mechanisms, educational stakeholders can enhance their agility. Despite challenges such as resistance to change and resource constraints, the future of education lies in the ability to adapt and innovate. Embracing agility will enable educational systems to provide high-quality, equitable, and responsive learning experiences for all.

The concept of agility originated in the manufacturing industry, where quick thinking and flexibility were essential for responding to supply chain changes. The idea became well-known to practitioners and researchers in the early 1990s when it was applied to the business world, where organisations needed to be able to change quickly and swiftly in response to changing and dynamic market conditions[2]. One of the earliest frameworks for assessing organisational agility

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is the Agile Manifesto, which originated in 2001 from a group of software developers seeking more flexible and responsive approaches to software development. While initially focused on software development, the principles of the Agile Manifesto have since been applied to various aspects of organisational management and operations[2]. The concept of agility in organisation, however, refers to the ability of businesses to be sensitive to changes in their environment, and swiftly reconfigure processes and facilities to gain competitive advantage in the market, by positioning their customers in the centre and increasing the motivation and commitment of employees. Agility in education refers to the capacity of educators, institutions, and students to adapt swiftly and effectively to changes in learning environments, technology, and societal demands. It involves proactive planning, the ability to respond to new challenges, and a commitment to continuous learning.

With fast-paced technological innovations, particularly in fields like engineering, information technology, and Office Technology and Management, an agile approach enables polytechnics to quickly integrate new tools, software, and techniques into their programmes. The Polytechnic is a technical and vocational institution offering post-secondary education programmes leading to the award of diploma certificates. In Nigeria, the polytechnic has been at the forefront of providing technical and vocational education for several years. The polytechnic operates a two-tier programme of studies in various fields of science, engineering, management, technical, and vocational; the 1st tier is the Ordinary National Diploma (OND), with one year (minimum) period of industrial experience which serves as one of the prerequisites for entry into the 2nd tier, Higher National Diploma (HND). In addition, polytechnics that meet the requirements for further education can offer post-HND programme – Post Graduate Diploma (PGD) - Full Professional Diploma. As stated in the National Policy on Education (NPE), the polytechnic

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institution is to provide courses of instruction and training in engineering and other technologies, applied sciences, business and management leading to the production of trained manpower[3]. The principal aim is to turn out skilled technical and professional manpower for the development of the national economy. Polytechnic is, therefore, the Maine of knowledge acquisition and skill technology development that equip students to perform well in the competitive global market. Agile polytechnics can efficiently forge partnerships with industries, enabling a continuous exchange of knowledge, resources, and internship opportunities. This adaptability strengthens the practical skills of students and keeps training in line with market demands.

In Nigerian polytechnics, however, agility of teaching staff in higher institutions plays a pivotal role in adapting to dynamic challenges and fostering continuous improvement. This process evaluates the ability of educators to adapt, innovate, and respond to changes effectively, ensuring that they remain relevant and capable of providing high-quality education to students. Agility assessment, however, described a persistent method of measuring, weighing, and sizing, evaluating, scaling, and determining the ability of an entity to adapt to external forces or environmental changes to gain stability, sustenance, and competitive advantage. Agility assessment in the educational sector involves the ability to constantly evaluate various aspects of educational operations in responding and adapting effectively to changes in the socioeconomic and technological environment to achieve educational goals, competitive advantage, and meet the needs of learners and society. Agility assessment is borne out of the quest of reaching and sustaining high performance, staying relevant, and remaining competitive.

Assessing the level of agility of the teaching staff in the polytechnic would help to strive and thrive to respond to the changing environmental dynamic competitive world and generally achieve its set goals and objectives. Agility assessment will enable the polytechnic and the

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teaching staff to evaluate their educational status, and ensure that educational programmes remain relevant, up-to-date, and aligned with the evolving needs of the job market. It will help to regularly evaluate the curriculum, the faculty, learning facilities, teaching and learning methodologies, and learning outcomes in different programmes offered. This could also help to equip learners with the skills, knowledge, and mindset required for the rapidly changing job market. Agility assessment will enable educational institutions and their teaching staff to adapt and tailor educational experiences to meet the evolving needs and aspirations of students. By fostering critical thinking, problem-solving, adaptability, and digital literacy, students would be prepared for long learning and future careers. This is the fundamental aspect of the Polytechnic education.

Office Technology and Management programme, however, is offered as one of the business or management studies courses in vocational and technical college, college of education, polytechnic, college of technology, and some university institutions in Nigeria. It is the erstwhile Secretarial Studies revised and repackaged by the National Board for Technical Education (NBTE) in 2004 to align the curriculum structure with global trends. The programme is designed to enable students to possess independent and competent management supports in all areas of business and office administration. Trainees are to be equipped to build and grow the e-business sector and generate the maximum possible output for social and economic development. It is an efficient, effective, productive, and functional education that leads to self-employment, self-reliance, paid employment, and consequently self-actualization. It focuses on combining office information, technical skills with adequate and relevant business knowledge in solving organisation-wide problems. Trainees are to be equipped to build and grow the e-business sector and generate the maximum possible output for social and economic development.

Considering a study of agility assessment of OTM teaching staff in the public polytechnics however, is thought very important because Office Technology and Management programme is highly relevant in today's business world where administrative support and efficient office operations play a crucial role in organisational success. The skills and knowledge gained through this course are in high demand across various organisations and industries as the world experiences digital technology characterized by the big data era. With the increasing importance of sustainable development for businesses, particularly in developing countries effective management of information has emerged as a critical factor in achieving long-term success. Observably, trainees therefore, are to be well-equipped to build and grow the e-business sector and generate the maximum possible output for social and economic development. In essence, the teaching staff plays a pivotal role in contributing significantly to academic excellence, student training development, and overall impact on society.

In view of the repackaging and upgrading of the curriculum from Secretarial Studies to Office Technology and Management, it is observed that the government and planners are not sensitive to prominent areas such as developing training and re-training of the teaching staff that are the interpreters of the curriculum, and also is the failure to upgrade ICT educational facilities. This is a missing link! Making sense of what the Bible says:

Leau

> No one sews a patch of unshrunk cloth on an old garment, or else the new piece pulls away from the old, and the tear is made worse. And no one pours new wine into old wineskins; or else, the new wine bursts the wineskins, and the wine is spilled, and the wineskins are ruined. But new wine must be put into new wineskins[4].

The Nigerian Youth Employment Action Plan states that economic growth over recent years has not led to the creation of a sufficient number of decent jobs for the rapidly

growing labour force. In particular, young labour remains largely underutilized. The Technical and Vocational Education and Training (TVET) system could substantially contribute to improving youth employability and easing the labour market transition, but it is confronted to a number of challenges including technical personnel, limited access, capacity and infrastructure[5].

Organisational agility is characterized by the flexibility and ease with which an organisation restructures and modifies its practices and processes when faced with unprecedented changes in its environment[1]. Agility assessment evaluates an organisation's progress and effectiveness in transitioning to agile ways of working, including cultural shifts, process changes, and structural adaptations. It is also defined as a measure of an organisation's ability to innovate, adapt, and thrive in rapidly changing environments. Organisational agility measurement refers to the systematic evaluation of an organisation's adaptation to changes for improvement, it includes the ability to sense market changes, respond to customer needs, and innovate rapidly. Agility assessment from various understandings is seen as the ability to be sensitive to changes, evaluate and review the existing facilities, resources, and practices, and swiftly reconfigure operations to best practices to meet market demands and gain a competitive advantage.

In an educational setting, agility assessment can be defined as a continual identification of socio-economic and technological changes in the dynamic environment, quickly restructuring teaching and learning approaches to foster a culture of innovation and conconclusiontinuous improvement to meet the evolving needs of the learners and society. Agility assessment in educational institutions is becoming increasingly important due to the rapidly changing educational landscape. Educational institutions and the teaching staff must adapt to shifts in technology, pedagogy, and societal needs. Agility assessments help identifies how quickly and effectively an

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institution can respond to these changes. Agility allows for the rapid implementation of innovative teaching methods and curricula, ensuring that educational practices remain current and effective. Agility assessments also focus on creating flexible learning environments that cater to diverse student needs, promoting personalized learning experiences. Agility assessment is increasingly recognized in various industries, leading to the development of comprehensive frameworks and models. Studies have examined the relationship between agility and performance in SMEs[6], information technology capability in the banking sector[7], and workforce agility in higher education institutions[1].

Measures of success are present in nearly all aspects of life. More specifically, measures of success provide a means to quantify performance, and in turn, contribute to the development. When performance is effectively and adequately measured, it can be used to steer performance, to achieve higher level objectives, ultimately changing behaviours and practices. Various researchers have used different metrics in evaluating organisational agility in relation to different variables such as: Market Forces, Internal Practices and Processes, Human Resources using Importance Performance analysis (IPA) model[1]; Speed, Flexibility, responsiveness and competency based on Knowledge Management Performance scale[6]; Assessing, sensing, seizing, and transforming capabilities scale based on Dynamic Capability Framework (Teece's Strategic Management)[8]. All the measures portray the many characteristics of agility assessment, and the models are shaped according to the subject matters and fields of study. Considering the dependent variable of agility assessment of the OTM teaching staff in the public polytechnics, Southwest, Nigeria; the study determined to adopt the measures of sensing opportunities and threats, seizing opportunities, and transforming resources based on Dynamic Capability Theory (DCT). Dynamic Capability Theory (DCT) emphasizes an organisations ability to integrate,

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build, and reconfigure internal and external competencies to address rapidly changing environments. While it is not directly applied to the educational sector, its principles can still offer valuable insights and benefits.

Observably, educational institutions are constantly facing changes in student demographics, technological advancements, pedagogical methods, and societal needs. Dynamic capability theory helps educational institutions to adapt swiftly to these changes by fostering a culture of innovation, experimentation, and learning from both successes and failures. Sensing involves scanning, and recognizing the various inputs and outputs within a system. Sensing is conceptualized as the identification, sensitivity, and assessment of technological opportunities in relationship to customer needs. It is the ability to detect feedback loops. These loops can be positive, reinforcing desired behaviours or outcomes, or negative, correcting deviations from the desired path[8]. For example, in education, if a teaching method is ineffective or graduates are unemployable in the global markets (negative feedback), the system should sense this and adapt by implementing a more suitable approach. Sensing in this context, also, involves adaptation and learning. It is also defined as the systematic process of identifying, analyzing, and responding to changes and trends that could impact educational institutions, stakeholders, and the overall learning environment. Sensing involves monitoring global trends in education, such as international student mobility, cross-border collaborations, and global education standards, to enhance institutional competitiveness and innovation[9]. Higher education institutions are dynamic environments that continually evolve to meet the needs of students, industry, and society. The polytechnics and their teaching staff, however, should sense changes in student needs, societal demands, technological advancements, and so on, and adapt teaching methods, curriculum, and policies accordingly. For teaching staff, staying attuned to emerging

opportunities is crucial for professional growth, effective teaching, and contribution to the institution's mission.

Once the environment is scanned and opportunities and threats are identified, the academic programme must be agile in seizing them. Seizing refers to an organisation's ability to capitalize on opportunities and threats in its external environment by effectively deploying its resources and capabilities[8]. In the context of educational institutions, seizing involves identifying and exploiting opportunities to enhance competitive advantage, improve educational outcomes, and adapt to changes in the educational landscape. Seizing opportunities in the educational sector, also, involves being proactive and adaptive to changes, leveraging new technologies and pedagogical innovations, fostering inclusivity, utilizing data effectively, and responding to both local and global needs to enhance educational quality and accessibility. In the context of this study, teaching staff in the OTM programme as critical stakeholders need to harness opportunities presented by advancements in technology. This could involve adopting new digital learning platforms, integrating innovative teaching methods such as online courses or virtual reality simulations, leveraging data analytics to improve student outcomes; forming strategic partnerships and collaborations with other institutions, industry partners, or community organisations. These alliances can provide access to resources, expertise, and opportunities for joint research or programme development ultimately enhancing the institution's capabilities and competitiveness; and innovative curriculum to meet the evolving needs of students and employers. This could involve introducing new programess or courses that align with emerging fields or industries[10].

Transforming resources are “continuous alignment and realignment of specific tangible and intangible assets”[9]. Transforming resources refers to the dynamic capability of a firm to

reconfigure and realign its asset base to address changes in the business environment. Transforming resources often require changes in organisational structures, processes, and cultures. Academic institutions and the teaching staff may need to adopt new teaching methods, restructure administrative functions, or create interdisciplinary research centre to effectively exploit these opportunities. Academic institutions are hubs of knowledge creation and dissemination. Transforming opportunities often involve integrating diverse knowledge domains, fostering interdisciplinary collaboration, and creating synergies across different departments and disciplines. By effectively leveraging transforming opportunities, the teaching staff in the OTM programme can develop unique capabilities and competencies that provide them with a sustainable competitive advantage. This could manifest in the form of reputation, research output, student satisfaction, or industry partnerships. Dynamic capability theory is significant in this study because its principles can be effectively applied to help polytechnic institutions, teaching staff and students navigate the complexities and challenges they face, ultimately enhancing their capacity to achieve their educational mission and goals.

Based on dynamic capabilities theory, the three identified measures of sensing, seizing, and transforming are adapted as metrics for the agility capability of the Office Technology and Management programme in the polytechnic. The study, however, suggests the independent variables of Information and Communication Technology Adoption (ICTA), and Total Quality Management Practices (TQMP) as the capabilities and enablers that can propel and sustain the agility of the OTM programme in the polytechnic system. In the same vein, the moderating role of educational qualifications in the relationship between ICT adoption, and agility assessment of the OTM programme in the polytechnic institution will be examined.

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Information and Communication Technology Adoption (ICTA) has received enormous global attention with interest spanning different systems and applications in different contexts or settings. Information and communication technology is a broader term for information technology (IT) which refers to all communication techniques, including the internet, wireless networks, cell phones, computers, software, middle-ware, video conferencing, social networks, and other media applications and services enabling users to access, retrieve, store, transmit, and manipulate information in a digital form[10]. ICT is a strategic tool that creates an integrative and collaborative community, culminating in transparency, value-added, knowledge sharing, network internalization, operation efficiency and flexibility, and improved competitiveness. ICT Adoption (ICTA) also refers to the process of incorporating ICT into an organisation or system. In the context of education, ICT adoption refers to the utilization of technological tools and resources to enhance teaching, learning, and administrative processes. This includes the use of computers, software applications, online platforms, multimedia resources, and other digital tools.

Adoption of ICT in higher institutions allows knowledge sharing among or between lecturers and students; and encourages collaboration and timely reaction to issues, the creation of virtual laboratories, databases, and access to expert lectures, enhances student engagement and improves learning outcomes and technological developments in industries and research organisations. The adoption of ICT in the polytechnic has the potential to improve the agility of each programme by providing teaching staff, and students with access to online resources and digital learning materials and upgrading the institutional reputation. It can also promote self-directed learning, which is a critical component of agility in education. In the context of the OTM programme, ICT adoption can facilitate collaboration, introduce lecturers and students to emerging technologies in office operations, and produce techno-savvy graduates who can compete

favourably in the global market. Nigeria, like many other countries, has recognized the potential benefits of ICT adoption in enhancing educational outcomes, improving access to information, and preparing students for the demands of the 21st-century workforce. The adoption of ICT in teaching and learning in Nigerian polytechnics and specifically in the OTM programme, however, faces a myriad of challenges that impede its seamless integration. These include a lack of ICT in-depth knowledge and skills of teaching staff, inadequate technological infrastructure and facilities, and outdated curriculum. These deficits pose a significant barrier to the effective implementation of ICT-based teaching methods and restrict students' access to digital resources, limiting their exposure to a more interactive and technology-driven learning environment.

Several theories provide explanatory lenses to understand adoption behaviour or processes. Prominent among them are the Theories of Everett Rogers and Model of Group Interaction (Robert Bales); Technological, Organisation, and Environmental (TOE) Theory; Innovation Diffusion Theory (IDT), Technology Acceptance Theory (TAT), Model of Group Interaction, Everett roger's five characteristics constructs[11,12]. The diffusion of innovation is generally referred to as the spread or adoption of technology within a social context. Traditional diffusion of innovation research broadly focuses on understanding what drives the adoption of a resource (e.g., idea, product, or technology) and then alters a particular social structure and context. Based on The Unified Theory of Acceptance and Use of Technology (UTAUT) theory, this study proposed to adapt the measures of: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). The Unified Theory of Acceptance and Use of Technology (UTAUT) is a widely recognized model in the field of technology adoption and usage.

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Performance Expectancy refers to the extent to which an individual believes that using a particular technology will help them perform tasks more effectively, or improve their job performance. In the context of education, performance Expectancy can be understood as the extent to which students, teachers, or administrators believe that using a particular educational technology such as online learning platforms, digital textbooks, or educational apps will enhance their educational outcomes. In the context of ICT adoption in the OTM programme, teaching staff might be more inclined to integrate technology into their lessons if they believe it will make their teaching more effective. For example, the use multimedia presentations or virtual labs that can better illustrate complex concepts in office operations, and engage students more actively. They might believe that these tools can help them track student progress more easily or make lessons more engaging, thus leading to better student outcomes. When polytechnics and teaching staff adopt online learning platforms, performance expectancy (PE) is crucial for student acceptance and use. If students perceive that the platform will provide a more flexible learning environment, improve their understanding through interactive content, and help them perform better in assessments, they are more likely to embrace and use it regularly.

Effort Expectancy means the extent of ease associated with the use of a technology. If users perceive a technology as easy to use and require minimal effort to operate, they are more likely to adopt it. User-friendly interfaces and intuitive design can contribute to higher levels of effort expectancy[13]. Systems like Moodle or Blackboard that are designed with user-friendly interfaces tend to have higher Effort Expectancy, leading to greater adoption by both students and teachers. The amount of mental effort required to use the technology can influence effort expectancy. For instance, a tool that simplifies complex tasks and presents information in a clear, organised manner can reduce cognitive load and enhance ease of use. When educational technologies are

designed with high effort expectancy, they are more likely to be integrated into teaching and learning processes, ultimately enhancing educational outcomes. Effort expectancy helps institutions and teachers to better implement and utilize technological tools, ensuring that both teachers and students benefit from the advancements in educational technology.

Social influence is the degree to which an individual perceives that important others believe they should use the new system. In the context of teaching staff adopting Information and Communication Technology (ICT), social influence can be particularly significant. Social influence refers to the impact of the opinions, behaviours, and actions of others on an individual's decision to adopt a technology. In educational settings, this can include the influence of colleagues, administrators, students, and professional networks. Teaching staff are often influenced by the perceptions and behaviours of their peers and supervisors. If respected colleagues or leaders in the institution are advocating for or using ICT effectively, this can encourage others to follow suit. Teaching staff are likely to adopt ICT if they see their peers successfully integrating these tools into their teaching. Peer discussions, workshops, and collaborative projects can enhance this influence. Also, when school leaders and administrators champion the use of ICT, it legitimizes and reinforces its importance, thereby influencing teachers to adopt it. The growing digital literacy and expectations of students can also act as a form of social influence, pushing teaching staff to integrate more technology into their classrooms. Moreover, offering training sessions where early adopters share their success stories can build a supportive culture for ICT adoption. Pairing less tech-savvy teaching staff with more experienced colleagues can create a mentoring environment conducive to learning and adoption.

One of the key constructs in UTAUT is facilitating conditions which refer to the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system. In the context of teaching staff adoption of Information and Communication Technology (ICT) at polytechnic institutions in Nigeria, facilitating conditions include the provision of up-to-date computers, projectors, and relevant educational software. Effective technical support is crucial for addressing any issues that arise with the use of ICT. It appears that without reliable technical support, teaching staff may be hesitant to integrate ICT into their teaching practices. It also calls for strong leadership and clear policies regarding the use of ICT. This involves setting expectations, providing guidelines, and creating a culture that encourages and rewards the use of ICT in teaching. Institutional leaders need to advocate for and invest in ICT to demonstrate its importance[13]. By ensuring the availability of resources, providing robust technical support, establishing clear policies, offering continuous training, maintaining infrastructure, ensuring ease of use, and fostering a collaborative environment, institutions can create conducive atmosphere for OTM teaching staff to embrace ICT adoption. The UTAUT model provides a comprehensive framework for understanding and enhancing the adoption of technology among OTM teaching staff in Nigerian polytechnics. By addressing the key factors of performance expectancy, effort expectancy, social influence, and facilitating conditions, polytechnics can develop targeted strategies to overcome barriers and promote the effective use of technology. This, in turn, can lead to improved teaching methods, administrative efficiency, and professional development, ultimately enhancing the quality of education in OTM programs.

In the same vein, quality has become one of the most important drives of today's global competitive world. Quality means those features of products or services which meet customer needs and thereby provide customer satisfaction. In this case, the meaning of quality is income-

oriented. The highest goal of quality is to provide greater customer satisfaction and increase revenues or competitiveness. Total quality management practice is a management philosophy that seeks to achieve excellence in all aspects of the business and educational sector through continuous improvement in the overall organisation practices. Total quality management practices is an integrated effort to attain and sustain high-quality services based on the maintenance of continuous improvement of process and error prevention at all levels and in all functions of an organisation; aiming to meet and even surpass customer needs and expectation[14]. In the context of the educational system, the quality assurance system includes the provision of processes at both the institutional and programme level, professional development of the staff, and the improvement of the quality of services and conditions provided.

Global changes continue to occur which are currently marked by the progress of information technology towards digital taking place increasingly rapidly and has a significant impact on various aspects of human life, starting from the economic, social, cultural, environmental, political, and also on the field of education. Education is said to be quality if internal customers including school principals, teachers, and employees, can develop well physically and psychologically because quality human resources will be able to face various changes, competition, and global challenges. External customers include primary external, namely students. This poses that education will be said to be quality if students can become lifelong learners, good communicators, possess skills in everyday life, have high integrity, problem solvers and knowledge creators, and become responsible citizens. Secondary external, namely parents, government, and companies mean that graduates can meet the expectations of parents, government, and companies in carrying out the tasks given to them. The third is tertiary external, namely the job market and wider society, indicating that education will be quality if

graduates have competence in the world of work and community development, thereby influencing economic growth, people's welfare, and social justice[15]. Thus, educating customers is an important component to pay attention to and becomes a consideration in making decisions to achieve quality education. Starting from both internal and external customers, excellent service must be provided in a balanced manner for educational customers.

Various aspects of total quality management practices have been studied using different theories, models, and measures such as Malcolm, Baldrige's Education criteria for performance excellence; Edwards Demin's educational, quality assurance system model – PDCA (plan, do, check, action) cycle; Ghobadian integrative model where the only key elements of TQMP are predetermined with measures of leadership planning, implementation, and results[16]. This study determines to adapt Joseph M. Juran's theory of Total Quality Management (TQM) with his development of the Juran Trilogy. Juran mentions the term quality as “fitness for use”. This means that a product, programme, or service should be what is needed or expected by the user. Juran offers three stages in the process of achieving quality, which is more popularly known as the Juran trilogy, including quality planning, quality control, and quality improvement[17].

Quality planning is one of the key elements in the Juran Trilogy, which is a framework for managing quality. In the theory, quality planning involves identifying who the customers are, determining their needs, and developing services that meet those needs. In education, the customers are primarily students but also include parents, employees, industries, and society at large. Effective quality planning must take these needs into account to ensure that the educational programs are relevant and effective. In the context of polytechnic institutions in Nigeria, quality planning for teaching staff involves several critical steps. These include identifying he needs of stakeholders, setting quality goals, developing processes to achieve goals,

providing resources, evaluating performance, and continuous improvement[17]. The public polytechnics and the teaching staff in Nigeria need to create curricula that incorporate academic rigor, practical skills, and critical thinking, employ diverse teaching strategies that cater to different learning styles and abilities, and establish safe, inclusive, and resource-rich environments that foster learning.

Quality Control focuses on monitoring and measuring processes and outcomes to ensure that standards are being met. It indicates that once the quality goals are set, the phase involves implementing processes to ensure that the products or services meet those goals. It involves ongoing monitoring and measurement to ensure that processes remain within acceptable limits. In education, this involves implementing various forms of assessments (exams, projects, continuous assessment). It extends to collecting feedback from students, parents, and teachers to identify areas of improvement to monitor student performance and progress. This also includes methods such as statistical processes, and utilizing standardized tests to gauge the effectiveness of the education system and to ensure consistent quality across different institutions.

Quality Improvement involves continuously seeking ways to enhance processes and outcomes. It involves identifying areas for improvement, implementing changes, and monitoring the results to ensure they meet the quality goals. Juran emphasizes the need for continuous improvement to enhance quality over time. In the educational context, this involves providing ongoing training and development for teachers to improve their teaching methods and stay updated with the latest educational practices. It includes regularly updating the curriculum to include new knowledge responding to changing societal and technological needs, and streamlining administrative and educational processes to eliminate inefficiencies and enhance the learning experience. Juran emphasized the importance of top management involvement in quality management initiatives,

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stating that quality improvement should be a strategic priority for organisations. Overall, Juran's theories and methodologies have had a significant impact on quality management practices in various industries, and educational sectors, helping to achieve higher levels of customer satisfaction and efficiency. In managing educational institutions, stakeholders must be able to develop a programme to improve the quality of education. The process is a strategy that is formulated and then implemented as a step in achieving quality education. So, processing the various activities to improve the quality of education is an important step in managing educational institutions to achieve educational quality or goals. The Juran Trilogy is a cornerstone of quality management theory, is particularly significant in the context of teaching and learning in polytechnic institutions. It provides a robust framework for enhancing the quality of OTM teaching staff in Nigerian polytechnics, ensuring that they are well-equipped to deliver high-quality education that meets the evolving demands of the industry.

This study observed a mediating role of educational qualifications about ICT adoption and agility assessment of the OTM programme in the polytechnic institution. Educational qualification in teaching and learning encompasses the academic credentials, professional development, and practical experience necessary for educators to effectively facilitate learning experiences for students. As technology continues to advance and organisational management becomes increasingly complex, the demand for skilled professionals grows exponentially. The framework of credentialism theory acknowledges the dynamic nature of credentialing practices, which evolve in response to changing societal, economic, and technological factors[18]. As societies undergo demographic shifts, economic transformations, and technological advancements, the significance and value attributed to different types of qualifications or credentials may fluctuate.

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It is observed that several institutions in Nigeria require lecturers to hold a master's or higher degrees in fields like instructional design, educational technology, or related disciplines to meet degrees and diplomas) rather than their actual skills, knowledge, or abilities[18].

Collins argues the growing emphasis on integrating technology and advanced pedagogical methods in higher education. This advanced degree often focuses on theories of teaching and learning, curriculum development, and instructional technology. Practical experience in teaching, whether in traditional or digital settings, is invaluable. Credentialism Theory, often associated with sociologist Randall Collins suggests that modern societies place excessive emphasis on educational credentials as a means of determining social status and access to opportunities. According to this theory, individuals are judged more on their formal qualifications (such as that the proliferation of educational credentials has created a system where access to opportunities and resources is largely determined by one's level of educational attainment, rather than by merit or actual capabilities. Collins suggests that credentialism has several consequences, including the devaluation of non-credentialed skills and the perpetuation of social inequality. Moreover, he contends that the focus on obtaining credentials often leads to a mismatch between the skills acquired through formal education and the actual demands of the labour market, resulting in underemployment or unemployment for many individuals. It seems there's often a disconnection between the credentials required for a job and the actual skills needed to perform it effectively. This can lead to situations where individuals with impressive educational backgrounds may lack practical skills relevant to their roles, while others with less formal education possess the necessary expertise. This construct of educational qualification, however, may play a moderating role in the relationship between information communication technology adoption and agility assessment.

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This study, however, delved into the agility assessment of Office Technology and Management teaching staff of the public polytechnics and their response to ICT adoption and total quality management practices. It focused on how teaching staff leverage their expertise, experience, and continuous learning endeavours to foster a dynamic and responsive learning environment that prepare students for the global market.

1.2 Statement of the Problem

The teaching staff plays a crucial role in facilitating the learning process, providing academic guidance, and contributing to the overall performance of students for socio-economic development. However, the world of work is increasingly characterized by rapid technological advancements, globalization, and dynamic changes in workplace expectations. These developments demand that teaching staff in the OTM programme demonstrate a high level of agility, that is, the ability to respond quickly, effectively, and innovatively to emerging educational technologies, changing curricula, and evolving industry requirements. Despite this need, observations and studies have shown growing concerns that many teaching staff in the OTM programme have not sufficiently embraced the level of agility required to align teaching and learning processes with 21st-century workplace realities[1,19,20]. Many lecturers still depend heavily on traditional teaching methods, with limited integration of modern Information and Communication Technology (ICT) tools that foster interactive and flexible learning. Inadequate institutional support, poor access to professional development opportunities, and inadequate continuous quality improvement mechanisms further constrain their ability to adapt swiftly to change. These challenges may result in poor instructional delivery, low student engagement, and a mismatch between graduates' competencies and labour market expectations.

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While ICT adoption and Total Quality Management (TQM) practices have been widely recognised as drivers of institutional innovation and effectiveness, their influence on the agility assessment of teaching staff in the polytechnic system seems largely unexplored. Existing studies have focused primarily on ICT utilization for administrative efficiency or on TQM as a framework for organisational performance. However, very limited research have examined how the adoption of ICT and the implementation of TQM practices jointly influence the agility of teaching staff, particularly within the context of the OTM programme in Nigerian polytechnics. This lack of empirical evidence represents a significant gap in the literature and hinders a holistic understanding of how polytechnic educators can be better equipped to respond to the demands of an ever-changing educational and industrial environment. Consequently, there is a pressing need to assess the agility of OTM teaching staff, identify the factors influencing their adaptability, and determine how ICT adoption and TQM practices contribute to strengthening their agility. Addressing this gap will provide valuable insights for policymakers, administrators, and educators toward improving teaching effectiveness, curriculum relevance, and graduate employability in Nigeria's polytechnic system. Thus, this study explored the adoption of ICT, implementation of TQM practices, and their combined influence on the agility of OTM teaching staff in public polytechnics in Southwest, Nigeria.

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1.3 Aim and Objectives of the Study

This aim of the study was to investigate the influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public polytechnics in Southwest, Nigeria. The specific objectives were to:

i. assess the level of agility of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

ii. identify the level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

iii. identify the level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

iv. determine the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

v. determine the influence of total quality management practices on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

vi. ascertain the combined influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

vii. determine the moderating impact of educational qualification on the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public polytechnic, Southwest Polytechnics, Nigeria.

1.4 Research Questions

The following research questions guided the study:

1. What is the level of agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria?
2. What is the level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria?

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3. What is the level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

1.5 Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance:

$H_0$1 There will be no significant influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

$H_0$2 There will be no significant influence of total quality management practices on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

$H_0$3 There will be no significant combined influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

$H_0$4 There will be no significant moderating impact of educational qualifications on the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

1.6 Significance of the Study

This study holds significant importance with unique implications to stakeholders in Nigerian polytechnics and the society at large. These include the teaching staff, students, educational institutions, government, policy makers and regulatory bodies, industry partners, alumni, professional associations, entrepreneurs, the research community, and the public.

The findings of the study provide insights into the areas where teaching staff might seek additional training or certifications specifically focused on integrating technology into teaching

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practices. This can lead to the development of new teaching materials and methodologies that better cater for the needs of the students, and industries. It would also, punch students' complacency to get prepared for the modern workplace, making them more attractive to potential employers.

The outcome of this study would be of immense help to educational institutions in updating and enhancing the curriculum of the Office Technology Management course to align with the current trends and demands of the industry. This ensures that students are equipped with relevant skills and knowledge. Findings from the study can contribute towards accreditation processes and improve the ranking of the institution by showcasing its commitment to staying updated with modern practices. Implementing recommendations from the study can enhance the reputation of the institution as forward-thinking and responsive to market needs.

Policymakers can use the results of this study to justify increased investment in educational infrastructure, faculty development programmes, and technology integration initiatives aimed at modernizing polytechnic education and improving its relevance to industry needs. Also, insights from the study can inform policy formulation related to education, workforce development, and industry-academia collaboration. By producing graduates with skills relevant to the current market demands, polytechnics contribute to the overall economic development of Nigeria by fostering innovation and productivity. Industry partners can collaborate with polytechnics to provide resources, guest lectures, internships, and job placements, fostering a mutually beneficial relationship. A curriculum that reflects industry needs ensures that graduates possess the skills and knowledge required by employers, reducing the gap between academia and industry.

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Alumni can also benefit from continuing education programmes based on the study's findings, allowing them to stay updated with emerging trends and advancements in their field. Professional associations can use the study as a basis for organising networking events, workshops, and conferences. The study can encourage entrepreneurship among students by incorporating modules on innovation, creativity, and entrepreneurship within the OTM curriculum. This equips graduates with the skills and mindset to start their ventures or contribute to existing ones. Polytechnics can establish incubation centres or innovation hubs where students can further develop their ideas and receive support in turning them into viable businesses. This fosters a culture of innovation and economic growth within the region. The study contributes to the body of knowledge in the fields of ICT adoption, total quality management, and agility assessment, serving as a reference point for future research endeavours. Findings from the study can be disseminated through academic publications, conferences, and seminars, enriching scholarly discourse and fostering collaboration among researchers.

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1.7 Scope of the Study

This study focused on examining influence of information communication technology adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in the public polytechnics, Southwest, Nigeria. The dependent variable is agility assessment, and the independent variables are information communication technology adoption and total quality management practices. The measures of agility assessment are sensing opportunities and threats, seizing opportunities, and transforming resources. The measures of information communication and technology adoption are performance expectancy, effort expectancy, social influence, facilitating conditions. Also, the measures of total quality management practices are quality planning, quality control, and quality management.

Geographically, the study is limited to public polytechnic institutions located in Southwest Nigeria, which include states such as Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti, representing a key segment of the region's tertiary education sector, offering insights into the adoption of information communication technology and total quality management practices within a public framework. The target population includes teaching staff (lecturers, instructors, technologists) and a selected National Diploma (ND) and Higher National Diploma (HND) students in Office Technology and Management programme across thirteen accredited public polytechnic offering OTM programme.

The study, however, did not cover other tertiary institutions, such as universities, colleges of education, or private polytechnics, nor did it delve into non-teaching staff factors influencing the OTM programme. Instead, the research focused on influence of information communication technology adoption and total quality management practices and their influence on agility assessment of the teaching staff.

1.8 Limitation of the Study

To conduct a research in public polytechnics in the six states of Southwest region of Nigeria during the hike in the cost of fuel could be very expensive and it requires a lot of money. Also, application for financial educational assistance from Tertiary Education Trust Fund (TETFUND) was the priority but unfortunately, the grant was not successful. Furthermore, it was difficult to determine the academic session of the Polytechnics because the public Polytechnics had different academic calendars. While some were on semester breaks others were writing examinations, and also some teaching staff went for conferences. This affected the scope of data collection and may have impacted the comprehensiveness of the findings. The researcher also observed that reliance

on self-reported data from participants might introduce response bias, as respondents could have provided answers they felt were socially desirable rather than their true perspectives. This might have impact on the results of the study. In addition, insufficient technological infrastructure, such as unstable internet connectivity and epileptic power supply hindered effective data collection and analysis, affecting the study's depth.

1.9 Operational Definition of Terms

Agility Assessment (AA*):* Agility assessment refers to the process of investigating the ability of OTM teaching staff in the public polytechnics in Nigeria to quickly and effectively respond to changes such as new technologies, pedagogical methods, and evolving industry and student needs.

Sensing Opportunities and Threats: Sensing opportunities and threats involves level of sensitivity of OTM teaching staff in the public polytechnics to identify changes in technological advancement, shifts in industry and students needs and preferences that can positively or negatively impact effectiveness and the overall educational quality.

Seizing Opportunities: Seizing opportunities refer to the ability of the OTM teaching staff in public polytechnics to mobilize, increase resources, invest, develop, and integrate the latest technology into academics and raise the educational standards.

Transforming Resources: This connotes the ability of the OTM teaching staff to readily and rapidly renew the teaching and learning instructional resources in line with the dynamic changes in teaching paradigm, to deliver value and gain competitive advantage.

Information Communication Technology Adoption (ICTA): Information Communication Technology Adoption refers to utilization of emerging technological tools and resources (such as computers, software applications, online platforms, multimedia resources, and other digital tools) by OTM teaching staff in public polytechnics in Nigeria to enhance teaching, learning, and administrative processes.

Performance Expectancy (PE)*:* Performance Expectancy is a predictor of the degree of believe of individual OTM teaching staff in public polytechnic, Nigeria that using a particular technology will benefit and improve academic and teaching performance and productivity which could prompt him or her to adopt and continue using the technology.

Effort Expectancy (EE): Effort Expectancy refers to the flexibility and friendly features of a particular technology which can create willingness of OTM teaching staff in public polytechnics as regards the use.

Social Influence (SI): This is the extent to which an individual teaching staff of the public polytechnics in Nigeria believes that important others (like colleagues, friends, or supervisors) opinion, attitudes or beliefs can influence him or her in the use of technology.

Facilitating Conditions *(FC*): This assesses the suitability of ICT infrastructure, resources, conducive environment, and government incentives for OTM teaching staff in Nigeria's public polytechnics for efficient ICT utilization.

Total Quality Management Practices (TQMP) - Total quality management practices is a process by which the corporate effort of individual teaching staff of OTM programme of the public polytechnics in Nigeria attain and sustain high value services.

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Quality Planning: Quality planning is the ability of the OTM teaching staff of public polytechnic in Nigeria to set strategic objectives and implementation plans; structure, and modify them as circumstances require to better accomplish overall educational goals, and measure progress.

Quality Control: Quality control is the process of monitoring and measuring processes to ensure that the educational goals are met and quality is maintained in the teaching and learning in OTM programme in the public polytechnics of Nigeria.

Quality Improvement: Quality control is the potential of the OTM teaching staff of public polytechnics in Nigeria to continuously improve processes and systems to enhance performance and achieve higher quality levels

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Chapter Two

Literature Review

This chapter provides a review of the existing literature related to information communication technology (ICT) adoption, total quality management practices and agility assessment of Office Technology and Management teaching staff in public polytechnics in Southwest, Nigeria. It establishes the theoretical frameworks that underpin the study, synthesizes relevant scholarly works, highlights significant gaps, and trends in the research. The reviews were done under the following sub-headings:

2.1 Conceptual Review

2.1.1 Agility Assessment

2.1.2 Information Communication Technology (ICT) Adoption

2.1.3 Total Quality Management Practices

2.2 Theoretical Framework

2.2.1 Dynamic Capability Theory

2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT) Theory

2.2.3 Juran Trilogy Theory

2.3 Review of Empirical Studies

2.3.1 Information Communication Technology (ICT) Adoption and Agility Assessment

2.3.2 Total Quality Management Practice and Agility Assessment

2.4 Conceptual Model

2.4.1 Researcher Explanation of Conceptual Model

2.5 Summary of Gap in Literature

2.5.1 Summary of Reviewed Literature

Endnotes

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2.1 Conceptual Review

2.1.1 Agility Assessment

In today's fast-paced, constantly changing business environment, the ability to adapt and respond quickly to emerging challenges and opportunities has become a critical competency for organisations and their employees. This concept of agility has gained widespread recognition as a key driver of success in an increasingly volatile, uncertain, complex, and ambiguous (VUCA) world. Agility, at its core, encompasses the capacity to quickly reconfigure strategies, business models, and operations in response to shifting market conditions. It requires a mind-set and organisational culture that embraces continuous learning, experimentation, and the adaptability to thrive in dynamic environments. As such, the assessment of agility among employees has become a crucial area of focus for organisations seeking to build a resilient and future-ready workforce.[1]

Agility is said to be the most important characteristic of organisations in standing out against market turbulence. Organisational agility as a cultivated capability allows organisation to make timely, efficient, rapid, and continual changes when changing circumstances require it. Similarly referred to as an essential dynamic capability, agility represents the capacity to sense, shape, and seize opportunities and threats, solve problems, and change the firm's resource base[2]. Agility is the result of alertness to comprehensive changes both in internal and external environments. It implies that agility refers to the capacity to use the available resources sustainably to meet the changes at a suitable time and in a flexible way that the organisation can run it. In today's modern environment, each agile organisation should have the power to produce different short life cycle products at the same time, redesigning its everyday products, changing the production method, and reacting efficiently to changes. These organisations acquire the expertise required

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to carry out the current strategy as well as the capacity to create and support prospective new capabilities. They also develop the organisational systems and architecture, knowledge, and skills needed[3].

Agility is the capability of a firm to sense the opportunities and threats in the business environment and cope with the changing environment through flexibility and adaptability to its advantage[4]. Firm agility from human resource perspectives includes responsiveness to changes, competency, flexibility, and speed. Firm agility can be attained through leadership, reward systems, organization culture, suppliers, customers, IT applications, and employees. Agility depends on how employees handle and respond to changes in unpredictable market conditions. Agility includes proactivity, adaptability, and resilience[5]. An agile workforce can adapt to the changes in the business environment quickly and efficiently. In addition to improving quality, customer service, and scope economy, agile employees boost a company's bottom line in dynamic work environments[6]. They improve company success by swiftly adapting to changing opportunities and market situations. Their efficiency and flexibility allow them to do more work in less time. They improve the calibre of work, which lowers expenses[7].

Agility assessment refers to the process of measuring how quickly and effectively an entity can respond to change. This includes the ability to make swift decisions, adapt strategies, and implement changes while maintaining performance levels[8]. Agility assessment refers to the process of evaluating and measuring the agility of individuals, teams, or organisations. Extant literature on agility assessment highlights the multifaceted nature of this concept, encompassing both technological and human factors. These perspectives illustrate the broad applicability and importance of agility assessments in various domains, each with its unique requirements and evaluation criteria. Organisational agility assessment evaluates a company's capability to

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continuously adapt and respond to market changes and customer demands in a timely and efficient manner. This involves assessing processes, culture, technology, and workforce adaptability[9]. In the context of software development, agility assessment involves evaluating how well a development team or organisation implements agile practices such as Scrum or Kanban, and how effectively they can deliver iterative improvements and respond to feedback[10]. Agility assessment in sports and physical training refers to measuring an athlete's ability to quickly change direction, speed, or position in response to a stimulus. This typically involves tests like the T-test, Illinois Agility Test, or shuttle runs[11]. Business agility assessment measures how well a business can sense opportunities or threats and adapt accordingly in various areas such as leadership, strategy, operations, and innovation[12].

Supply chain agility assessment evaluates how quickly and efficiently a supply chain can respond to changes in demand, supply disruptions, or other unexpected events. This includes assessing flexibility, speed of response, and the ability to reconfigure supply chain operations[13]. Healthcare agility assessment involves evaluating the ability of healthcare organisations to adapt to changing patient needs, regulatory requirements, and technological advancements. This includes assessing the flexibility of care delivery models, responsiveness to public health emergencies, and the adaptability of healthcare IT systems[15]. Leadership agility assessment evaluates a leader's ability to anticipate and respond to changes, make quick decisions, and inspire adaptability within their teams. This includes assessing strategic thinking, emotional intelligence, and the ability to drive organisational change[16]. Economic agility assessment looks at how well an economy can adapt to global changes, such as shifts in trade policies, technological advancements, and market trends. This involves evaluating regulatory flexibility, innovation capacity, and workforce adaptability[17]. Innovation agility assessment measures an

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organisation's ability to rapidly develop and implement new ideas, products, or services. This includes evaluating the processes, culture, and structures that support innovation and the speed at which new solutions can be brought to market[18].

Agility assessment in the educational sector is a relatively new but increasingly important concept. It involves evaluating the ability of educational institutions, educators, and students to adapt to rapid changes and challenges. This concept has gained prominence with the increasing pace of technological advancements, shifting educational paradigms, and unforeseen disruptions such as the COVID-19 pandemic. Agility assessment, however, measures the ability of educational institutions to adapt to changes such as new technologies, pedagogical methods, and evolving student needs. This includes evaluating curriculum flexibility, administrative adaptability, and the integration of innovative teaching practices[19].

Evaluating curriculum flexibility in the context of educational agility assessment involves examining how adaptable and responsive a curriculum is to the changing needs of students, educators, and the broader educational environment. A flexible curriculum should be able to accommodate diverse learning styles and paces. It is the ability to modify and update curricula to align with current knowledge, skills demands, and societal needs. This includes integrating interdisciplinary approaches, incorporating real-world applications, and ensuring relevance to students' future careers. It includes the extent to which educational institutions leverage technology to enhance learning. This includes the use of digital tools, online learning platforms, and virtual classrooms. Effective technological integration also involves training educators to use these tools efficiently[20]. The adoption of innovative teaching methods that foster critical thinking, creativity, and collaboration among students. Examples include project-based learning, flipped classrooms, and experiential learning. The ability to tailor educational experiences to

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meet diverse student needs, including those with different learning styles, abilities, and socio-economic backgrounds. This involves providing personalized learning paths, offering support services, and promoting inclusivity. Gathering and utilizing student feedback is crucial for curriculum flexibility. This feedback can inform curriculum adjustments and improve the learning experience. Mechanisms for collecting feedback might include surveys, focus groups, and suggestion boxes[21].

Administrative adaptability refers to the ability of educational administrators to respond effectively to changes, challenges, and opportunities within the educational environment. This includes strategic planning, resource allocation, policy development, and crisis management. Effective administrative adaptability ensures that educational institutions remain resilient and capable of delivering high-quality education despite external and internal pressures[22]. In administrative adaptability, strategic planning plays a critical role. The development and implementation of flexible and forward-thinking strategic plans that can be adjusted as circumstances change involve - setting clear goals, anticipating potential challenges, and being prepared to pivot strategies as needed, the efficient and equitable distribution of resources, including financial, human, and technological resources, to support adaptive initiatives. Administrators must be adept at reallocating resources to address emerging needs and priorities, crafting policies that support agility and adaptability within the institution[23]. This includes policies related to curriculum development, technology use, professional development, and crisis response. Building and maintaining strong relationships with all stakeholders, including students, parents, faculty, staff, and the community. Engaging stakeholders in decision-making processes ensures buy-in and support for adaptive initiatives[24].

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Assessing educational agility and integrating innovative technology practices are crucial steps in modernizing education and ensuring it meets the needs of contemporary learners. Integrating innovative technology practices refers to the process of incorporating new and advanced technological tools, resources, and methods into educational settings to enhance teaching and learning experiences. This involves using technology not just as an add-on, but as an integral part of the educational process to improve student outcomes, foster engagement, and prepare learners for a technology-driven world. Using online tools that help with communication, tracking student progress, and content organisation. Examples of these tools include Moodle, Blackboard, and Canvas.

The teaching staff in higher institutions play a pivotal role in embodying and promoting agility. They must continuously update their skills and methodologies to keep pace with the latest developments in their respective fields and educational technology. This includes integrating innovative teaching techniques, embracing digital tools, and fostering an inclusive and engaging classroom atmosphere that can pivot as required. Agility in higher education is not solely about responding to change but also about anticipating it and preparing students for the challenges of the future. Agile educators are proactive, seeking out new opportunities for growth and improvement, and are committed to lifelong learning. By fostering a culture of agility, OTM teaching staff in polytechnics can better prepare their students to thrive in a world characterized by constant change and uncertainty. It is through their adaptability, forward-thinking, and commitment to excellence that educational institutions can continue to meet the evolving demands of society and equip students with the skills necessary for success in an unpredictable future.

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The measures used in the study are sensing opportunities and threats, seizing opportunities, and transforming resources, adopted from Dynamic Capability Theory (DCT). Sensing opportunities and threats includes the processes of exploring, discovering, and evaluating opportunities and risks in the business environment, which requires scanning, searching, and exploring across technologies and markets[25]. Sensing opportunities involves identifying and implementing innovative curriculum designs and pedagogical approaches that can improve student engagement and learning outcomes while recognizing threats from outdated practices[26]. Sensing capabilities refer to a firm's ability to identify and assess changes and opportunities in the business environment, which includes understanding market trends and technological advancements[27].The sensing capability encompasses recognising market opportunities and threats through environmental scanning, interpreting market trends, and understanding customer needs[28]. Sensing involves the continuous monitoring and analysis of the external environment to detect signals of change, which are essential for recognizing market opportunities and threats[29].

Sensing opportunities and threats is a crucial component of agility assessment in higher education institutions. It involves the systematic process of identifying, analyzing, and responding to changes and trends that could impact educational institutions, stakeholders, and the overall learning environment. Sensing involves monitoring global trends in education, such as international student mobility, cross-border collaborations, and global education standards, to enhance institutional competitiveness and innovation[30] Sensing opportunities and threats in education requires continuous environmental scanning and market analysis to identify advances in technology, and changes in student needs and preferences[31]. Sensing opportunities and threats involve staying informed about policy changes and regulatory developments that could impact funding, curriculum standards, and operational compliance[33].

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Educational institutions and the teaching staff must monitor the competitive landscape, including the emergence of new educational providers, online learning platforms, and alternative credentialing programs, to identify opportunities for differentiation and threats to market share[32]. Sensing opportunities and threats involve staying informed about policy changes and regulatory developments that could impact funding, curriculum standards, and operational compliance. This vigilance ensures they remain aware of industry trends, adopt innovative teaching methods, and maintain high standards of education to attract and retain students. By staying informed about new entrants and their offerings, institutions can better differentiate themselves and continuously improve their academic programs to meet evolving student needs and market demands.

Teaching staff in higher institutions are at the forefront of this agile transformation. Their roles extend beyond traditional instruction to encompass mentorship, innovation, and leadership. To effectively contribute to an agile educational environment, teaching staff should stay informed about changes in the educational landscape, including technological advancements, policy changes, and shifts in student needs and preferences. Identifying internal strengths, such as strong research capabilities, diverse faculty expertise, or robust infrastructure, can help institutions and the teaching staffs leverage these assets to gain a competitive edge. Innovations in curriculum design or unique program offerings can also be seen as internal opportunities. Threats might encompass declining student enrolment, increasing competition from other institutions, changes in government funding policies, and socio-economic changes. For instance, global events like pandemics can pose a significant threat. Internal threats could include outdated administrative processes, lack of faculty development programs, or resistance to change among staff and faculty[34.]

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Recognizing these threats can help in developing strategies to mitigate them and enhance the overall effectiveness of the institution. By addressing outdated administrative processes, it can streamline operations and improve efficiency. Implementing faculty development programs can enhance the skills and knowledge of the staff, leading to better educational outcomes for students. Overcoming resistance to change requires engaging staff and faculty in the decision-making process, providing clear communication about the benefits of proposed changes, and offering support throughout the transition. By proactively addressing these internal threats, the institution can create a more dynamic and responsive educational environment that is better equipped to meet the evolving needs of students and society.

In dynamic capability theory, seizing refers to an organisation's ability to capitalize on opportunities and threats in its external environment by effectively deploying its resources and capabilities. In the context of educational institutions, seizing involves identifying and exploiting opportunities to enhance their competitive advantage, improve educational outcomes, and adapt to changes in the educational landscape. Seizing opportunities is the ability of an employee to take advantage of and also do something that they wish to do for professional growth. Seizing opportunities not only leads to success, but it also brings growth and development. When employees embrace new challenges and experiences, they could be forced to learn, adapt, and grow. Teaching staff may gain new skills, knowledge, and perspectives that can be valuable in their personal and professional lives. Opportunity seizing among employees is influenced by various individual, interpersonal, and organisational factors. Individual characteristics such as entrepreneurial mindset, creativity, and risk-taking propensity play a significant role in fostering a proactive orientation towards opportunity identification and exploitation. Interpersonal factors, including social networks, collaboration, and knowledge

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sharing, facilitate the exchange of ideas and the recognition of emerging opportunities within teams and across departments[7]. Opportunity seizing among employees operates through a series of cognitive, behavioural, and social mechanisms[7]. Seizing opportunities by rapidly transitioning to and enhancing digital learning platforms to ensure continuity of education during disruptions such as the COVID-19 pandemic[35]. It provides educators with professional development opportunities to enhance their skills in online teaching, digital tool utilization, and innovative pedagogical practices[36]. Establishing partnerships with local communities and industries to provide students with real-world learning experiences and opportunities despite physical distancing restrictions[37].

Employees engage in continuous scanning of their environment, actively searching for signals of change, market gaps, and unmet customer needs. This process involves information processing, pattern recognition, and sense making activities aimed at identifying and evaluating potential opportunities. Furthermore, employees leverage their social networks to gather diverse perspectives, access valuable resources, and mobilize support for pursuing identified opportunities. Teaching staff in higher education institutions must proactively sense and seize opportunities to enhance their professional growth, improve student outcomes, and contribute to the institution's mission. By engaging in professional development, research, technology integration, curriculum innovation, community engagement, networking, mentorship, and leveraging institutional support, educators can stay at the forefront of academic and industry advancements. The process of rearranging a firm's existing resources to create new capabilities or improve existing ones[38]. It is the shifting of resources from less productive uses to more strategic ones within the firm[39]. It includes continuous updating and improvement of a firm's resource base to prevent obsolescence and enhance performance[40].

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Transforming resources within DCT is about how firms strategically reconfigure, renew, redeploy, and acquire resources to adapt to and capitalize on changes in their environment. It involves the modification and reallocation of a firm's asset base to align with evolving market demands and opportunities. These actions are crucial for maintaining and building competitive advantage in dynamic markets. Transforming involves altering existing resources or acquiring new ones to maintain or gain competitive advantage[41]. The process of rearranging a firm's existing resources to create new capabilities or improve existing ones[42]. The shifting of resources from less productive uses to more strategic ones within the firm[43]. The process of obtaining new resources, whether through acquisition, alliance, or internal development, to enhance the firm's capability set[44]. The continuous updating and improvement of a firm's resource base to prevent obsolescence and enhance performance[45].

Transforming resources among employees encompasses a wide range of tangible and intangible assets, including knowledge, skills, expertise, networks, and social capital. These resources can be transformed through processes such as learning, collaboration, innovation, and organisational change initiatives. Moreover, the transformation of resources may occur at the individual, team, or organisational levels, depending on the nature of the resource and the context in which it is utilized. Effective resource transformation among employees can yield a variety of positive outcomes for organisations, including enhanced innovation, increased productivity, improved decision-making, and greater adaptability to change. By leveraging their collective resources and capabilities, employees can drive organisational growth, foster a culture of continuous improvement, and maintain a competitive edge in dynamic and uncertain environments[9].

To harness the full potential of resource transformation among employees, organisations must adopt strategies that promote a culture of learning, collaboration, and innovation. This may

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involve investing in employee development initiatives, creating opportunities for cross-functional collaboration, and establishing systems and processes that facilitate knowledge sharing and organisational learning. Moreover, leaders play a crucial role in setting the tone for resource transformation efforts, providing support, recognition, and incentives to encourage employees to invest their time and energy in enhancing their capabilities and contributing to the organisation's success[46].

The rapidly changing educational landscape necessitates that teaching staff in Nigerian polytechnics, particularly those specializing in Office Technology and Management (OTM), are agile. Agility assessments measure the ability of educators to adapt, innovate, and respond effectively to dynamic changes, ensuring that they remain effective and relevant in their roles. Agility assessment helps to ensure that OTM teaching staff can quickly adapt to changes in technology and industry practices. The field of office technology is fast-paced, with continuous advancements in software, tools, and methodologies. By regularly assessing the agility of teaching staff, polytechnics can ensure that the curriculum remains up-to-date and relevant, providing students with the knowledge and skills needed in the modern workplace[47]. Agile teaching staff can employ diverse strategies and methodologies catering to different learning styles. This flexibility enhances overall teaching effectiveness, making learning more engaging and impactful for students. Agility assessments can identify areas where teachers need additional support or training, ensuring continuous improvement in teaching quality[48].

Agile educators foster an environment of innovation and creativity. They are more likely to experiment with new ideas, integrate technology into their teaching, and develop creative solutions to educational challenges. This innovative mindset is crucial for preparing students to think critically and creatively, skills highly valued in the modern workplace[49]. The educational

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sector is influenced by various external factors, including policy changes, technological advancements, and economic shifts. Agility assessments enable OTM teaching staff to respond promptly and effectively to these external changes. This responsiveness ensures polytechnics maintain high educational standards and meet the evolving job market needs[50]. Agility assessment promotes a culture of continuous professional development and lifelong learning among OTM teaching staff. By identifying skill and knowledge gaps, these assessments encourage educators to pursue further training and professional development opportunities. This commitment to ongoing learning is essential for maintaining a high level of expertise and competency in the field[51].

Agile educators are typically better communicators and collaborators. They can effectively share ideas, strategies, and feedback with colleagues, leading to a more cohesive and supportive teaching environment. This collaborative spirit can improve departmental functioning and contribute to a more unified approach to curriculum development and student support[52]. Assessing agility helps align teaching staff with the broader goals of the polytechnic. By ensuring educators can adapt to institutional changes and priorities, polytechnics can more effectively implement new policies, initiatives, and strategic plans. This alignment is essential for the institution's overall success and growth[53]. An agile teaching staff is more likely to embrace and effectively utilize technology in education. From incorporating new software and tools into the .classroom to leveraging online platforms for remote learning, agile educators can enhance the learning experience through technology. This is particularly important in fields like OTM, where proficiency with technology is a fundamental skill for students[54].

Agile educators are better equipped to create dynamic and interactive learning environments that engage students. By adapting to students' needs and preferences, they can enhance student

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satisfaction and motivation. Higher engagement levels typically lead to better academic performance and retention rates[55]. Ultimately, the agility of teaching staff has a direct impact on student readiness for the future. Educators who can adapt to changes, innovate in their teaching methods, and stay current with industry trends are better positioned to provide students with a high-quality education. This leads to improved student performance, higher employability, and greater success in their careers[56]. The importance of agility assessment for OTM teaching staff in Nigerian polytechnics cannot be overstated. By ensuring that educators can adapt to changes, innovate in their teaching, and respond to external influences, polytechnics can provide a relevant, effective, and high-quality education. This not only enhances the professional development of teaching staff but also significantly improves student outcomes, preparing them for success in the dynamic and competitive job market.

2.1.2 Information Communication Technology (ICT) Adoption

The evolution of information and communication technology (ICT) in Nigeria has been a transformative journey that has opened new avenues for education, knowledge dissemination, economic growth, and social development. This journey, which began in earnest in the 1960s, has witnessed significant breakthroughs in the realms of computers, the internet, and the World Wide Web, fundamentally altering the country's landscape. As the most populous country in Africa, Nigeria's rapid urban growth over the past few decades has created an ideal environment for the proliferation of ICT, influencing various sectors such as education, health, agriculture, business, government, and transportation. The integration of ICT in these sectors has resulted in greater access to information and services, higher efficiency, and enhanced communication. Additionally, the government's investment in ICT infrastructure and policies has played a vital

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role in fostering digital inclusion and bridging the digital gap among different parts of the country[57].

The path to widespread ICT adoption in Nigerian educational system has not been without its challenges. In 2012, the country's internet usage stood at less than 16%, highlighting a significant digital divide. The average download speed at that time was a mere 1.38 Mbps, lagging far behind the 10.1 Mbps enjoyed in the United States. Despite these challenges, Nigeria's government recognised the transformative potential of ICT and took strategic steps to bridge the digital gap. In March 2001, the National Information Technology Policy was approved, laying the foundation for Nigeria's ICT development. The establishment of the National Information Technology Development Agency further solidified Nigeria's position as a key player in the African ICT landscape. Over the last 15 years, Nigeria has leveraged ICT as a catalyst for sustainable development and international competitiveness[58].

The country outlined a visionary mission, aiming to become a globally competitive, knowledge-based society while integrating ICT into every aspect of its socio-economic development. Nigeria's dedication to ICT development is apparent in its endeavours to narrow the digital gap and foster digital literacy among its populace. The government has enacted several measures, including the development of ICT training institutes and the deployment of broadband infrastructure, to provide broad access to technology and internet connectivity. These policies have not only given individuals and businesses more power, but they have also established Nigeria as a central location for innovation and technical progress in Africa[59].

The world is experiencing a time of transformative change (technological revolution) brought by information and communication technology (ICT) that has extended through all industries. As the emergence of ICT is transforming the workplace, it is also revolutionising the healthcare

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industry, which inevitably affects the improvement, quality of operation, research, learning, administration, and management. Also, communication is a mechanism in which individuals establish and exchange knowledge to shared understanding. Particularly in healthcare, Nigeria is a nation in demand of consistent communication solutions. The technology of information communication is becoming more important for communication. ICT comprises an immense range of technologies, software, and devices that allow information and expertise to be distributed, processed, and used. It also allows the use of wired and wireless media as well as related devices to provide services such as voice/audio calls, data, video, and fax that are integrated through internet protocol (IP) and non-IP networks[60].

In recent years, Nigeria has witnessed significant growth in the ICT sector, driven by the increasing adoption of smartphones and affordable internet services, as well as the government's commitment to promoting digital innovation and entrepreneurship. Additionally, the rise of e-commerce and digital payment solutions has created new opportunities for businesses and consumers alike. As more Nigerians gain access to ICT services, there is a positive ripple effect on various sectors, including education, healthcare, and agriculture, leading to improved efficiency and productivity. Therefore, the ICT sector is expected to play a crucial role in Nigeria's economic development in the coming years. The government has recognised the potential of the ICT sector and has implemented policies and initiatives to support its growth. This includes the establishment of technology hubs and incubators, as well as providing training and funding opportunities for startups and entrepreneurs. With these efforts in place, Nigeria is poised to become a hub for technological innovation and digital transformation in Africa[61].

The approval of 5G technology in Nigeria in 2021[61] and subsequent licensing to major operators like MTN, MAFAB Communications, and Airtel signalled a new era of advanced connectivity in

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the country. This leap in technology promises to revolutionize various sectors and enhance Nigeria's position in the global ICT landscape. Nigeria has the potential for enhanced internet speeds and improved reliability with the adoption of 5G technology, facilitating seamless communication and data transmission. This development will open up new possibilities for creative solutions and enhanced services for sectors including healthcare, education, and e-commerce. Furthermore, by drawing more foreign investments and promoting technological developments domestically, Nigeria's standing in the global ICT market will be enhanced[62].

For the Nigerian workforce, this growth, which hinges on 5G technology, will also create new opportunities. With the increasing prevalence of high-speed internet, remote work and telecommuting will become increasingly viable, enabling professionals to work from their homes or any preferred location. This adaptability will not only enhance the equilibrium between work and personal life but also diminish traffic congestion and carbon emissions linked to commuting. Moreover, the heightened connectivity facilitated by 5G will allow professionals to collaborate and share knowledge more effectively, resulting in improved productivity and innovation across diverse sectors. For instance, a Nigerian software developer can be employed by a global technology corporation without the need to physically travel, resulting in savings of both time and money on travel costs. By collaborating with colleagues across several time zones, individuals can effortlessly contribute to projects, leading to expedited product development and enhanced productivity. Furthermore, by connecting freelancers and businesses with clients around the world, this improved connectivity will also give them more opportunities to reach a wider audience[61].

Information communication technologies (or ICTs) are a collection of all manner of internet-based, electronic, and digital tools, devices, systems, tools, programmes, software, and hardware

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designed to enable users to maximize productivity while minimizing their efforts. They are the instruments and technology that allow for the generation, storage, processing, and transfer of information and communication. In this study, they comprise technologies such as computer systems, mobile application software, social media resources, inventory management systems, business productivity tools, and electronic accounting systems. Since their inception in business processes, ICTs have altered the way business organisations operate and communicate with their stakeholders. Their objective in corporate organisations is to improve communication, promote efficiency, enhance production, and create a competitive edge[63].

ICT (Information Communication Technology) adoption in teaching and learning refers to the integration and use of digital tools, resources, and methods to enhance the educational process. ICT adoption refers the utilization of digital tools and technologies to improve instructional methods and student engagement. This involves using computers, the internet, educational software, and other digital devices to facilitate learning[64]. ICT adoption is a systematic integration of digital technologies, including computers, the internet, and mobile devices, into the curriculum to enhance teaching methodologies and learning experiences. This integration aims to improve educational outcomes by providing teachers and students with access to information and innovative instructional tools[65]. ICT adoption in the educational context involves the use of digital tools and platforms, such as online learning management systems, educational apps, and multimedia resources, to facilitate and improve the teaching and learning process. The focus is on creating an interactive and engaging learning environment that leverages technology to support educational goals[66]. ICT adoption is the incorporation of technology-based resources and practices into the educational process to enhance teaching effectiveness and student learning

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outcomes. This includes the use of computers, tablets, interactive whiteboards, and internet resources to create a more dynamic and effective learning environment[67].

ICT adoption in the teaching and learning process involves utilizing digital technologies to support and transform educational practices. This includes the use of e-learning platforms, virtual classrooms, and other ICT tools to facilitate access to information, enhance instructional delivery, and promote student engagement and collaboration[68]. ICT adoption in education is defined as the strategic implementation of information and communication technologies to improve the quality of teaching and learning. This encompasses the use of digital tools, online resources, and technology-enhanced pedagogies to support educational processes and outcomes69.

In the modern world, the adoption of information and communication technologies (ICTs) has been rapidly expanding. This has made it easier for many institutions to engage in numerous teaching practices and device strategies to ensure that the goals of the institutions are met. In Nigeria, where many organisations play a vital role in the economy, the usage of ICTs has been crucial in increasing teaching and learning in the institutions because this gives both teaching staff and students the opportunity to engage in teaching and learning anywhere and anytime with the use of the internet and social media, students can now be reached from various areas of the country and even beyond. Many institutions have been able to flourish by establishing a strong online presence, which has facilitated teaching engagement and institution promotion[70].

Information and communication technology ICT access has the potentials to improve academic staff performance in Nigerian tertiary institution. Today's world, greater number of academic staff in the University and polytechnic has the possibility of changing the way responsibility are

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being handled and can increase creative output. So, sharing of knowledge; the relationships between supervisor and supervisee, downloading and printing of students results from Tertiary institution portal have reduced time wasting in manual method. Presently the manners in which people learn, communicate, and do business has been influenced by ICT facilities. It is cost effective way of bringing people with common interest together and many academic staff simply use the ICT partly due to the cost element, inadequate availability, inadequate access and under usage. Networking of ideas through the use of ICT facilities allows you to save money, share documents, information and relevant resources, share ideas, collaborate with many people, build and strengthen your community of interest[71].

Many renowned professors and senior academic staff members resort to computer clouding simply because in their school days as students ICT skills in terms of teaching, learning and research had not been in practice in less developed nations. Consequently, they find it difficult to settle down to visit ICT facilities and acquire the appropriate ICT usage skills as well as use the same in inculcating the appropriate knowledge to the students they teach. To a reasonable extent, ICT access suffers limited appreciation of the values of ICT facilities by the academic staff. The researcher assumes that the availability of ICT facilities and usage may improve academic staff performance in the Tertiary institution. This is because, it has changed the way the academic staff carry out their duties and to a great extent employed software packages designed to allow the user the chance to edit, present, and share documents[72].

Research has shown that some packages like Microsoft Office packages are the most complete personal and business performance solution that enables academic staff to manage research output and create impressive marketing materials, manage e-mail and share information efficiently and surely, and streamline business processes all with familiar, integrated and easy to

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use software. The use of PowerPoint presentations enables both academic staff and students to create, present, and share powerful presentations. Excel contains powerful tools to help analyse, manage, and share critical research data. The observed application packages may help academic staff in higher institutions in Nigerian Tertiary institutions to develop course material, present lectures, create documents, and manage student records today is done using databases such as access[73].

The usage, availability, and accessibility to a great extent have been a challenge because most of the ICT facilities are obsolete when compared with what is needed in ICT adoption in this 21st century; the technology is moderated based on time and space. Information and communication technology (ICT) facilities have forced improve academic staff performance in Tertiary institutions, evidently using the e-portal, networking, and computerization of all the offices in the system, registration of students often takes weeks which is always characterized by long queues in the registration places and untold hardship in the part of the staff, but with the e-portal student can pay and register, print results themselves at their comfort, where ever internet access is available[74].

ICT facilities have also been seen to improve the performance of teaching staff in processing student results and transcripts. The issues of missing results, mismatched names, and grades were eliminated by automation of the records. With an identification code assigned to each student and staff, the computer processes information accurately. This has led to the development of the database to keep files electronically like transcript and relevant academic records that takes days to weeks to be processed in the institutions, now may be prepared in a matter of minutes because student data is already intact in the database and easily be called up and a hardcopy is produced.

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And to a reasonable extent makes it easier for the academic staff to manage the database and ensure the consistency of its data[75].

The objectives of Tertiary institutions are research, teaching, learning, and community development, and therefore cannot afford to neglect ICT and remain relevant in the face of a fast-globalizing world. It is believed that Western tertiary institutions had before now appreciated the importance of ICT in enhancing the achievement of the set goals of the Tertiary institution. However, as the majority of the Tertiary institutions in Nigeria are insufficiently equipped with ICT facilities, students and staff largely depend on private providers of Internet services (ISPS) to access or publish their research outputs. It, therefore, becomes doubtful the extent the Tertiary institution in Nigeria can queue into networking their ideas and research outputs to a reasonable extent the University may be more competitive among the citadel of learning. In a technology-driven society, getting information quickly is important for both academic staff and students. ICT has made it possible to quickly find and distribute information[76].

Furthermore, communication facilities are developed and designed to enable higher institutions find faster ways to achieve a dynamic academic environment. Funding and power constraints have remained a significant challenge to the adoption and usage of ICT facilities in tertiary institution. The position of utilization of ICT facilities becomes imperative to academic staff because of assumed benefits to improve performance in the system. It is the assumption that infrastructure, availability, and usage are the problems of ICT facilities in Nigerian Tertiary institutions, especially with the power fluctuation even compounded by inadequate access to technology. It is believed that funding and commitment to develop an appreciable ICT application seem very poor and below expectations in the tertiary institution[77].

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The measures adopted for ICT adoption are performance expectancy, effort expectancy, social influence, and facilitating conditions. They are extracted from the Unified Theory of Acceptance and Use of Technology UTAUT. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a model that aims to explain user intentions to use an information system and subsequent usage behaviour developed the theory in 2003[78]. The UTAUT model integrates elements from various existing models of technology acceptance and usage. The UTAUT model has been widely used in various contexts to understand and predict technology adoption and usage, providing a comprehensive framework that incorporates multiple factors influencing user behaviour. Applying the UTAUT model in polytechnics across Nigeria can significantly enhance the adoption of educational technologies among teaching staff. By focusing on performance expectancy, effort expectancy, social influence, and facilitating conditions, polytechnics can create a supportive environment that encourages the effective use of technology. Continuous training, strong leadership support, and robust infrastructure are key elements in this journey towards modernizing education and improving teaching outcomes.

Performance expectancy refers to an individual's belief about the extent to which using a technology system will help improve job performance. Performance expectancy (PE) can be defined as the degree to which an individual believes that using a system will help him or her to attain job performance. The term performance expectancy emerges from the combination of five factors that helped in the formation of perceived ease of use (technology acceptance model), external motivation (motivational model), job fit (personal computer utilization model), relative advantage (innovation diffusion theory) as well as outcome expectancy (social cognition theory)[79].

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It relates to perceived benefits that users believe they will gain from the use of the technology, particularly to increase their productivity and job performance. In line with this, it is noted that PE is related to the degree to which users perceive that acceptance and use of technology would make them achieve better results. Performance expectancy is the benefit that users will derive from the use of new information and communication technology. Various individual, organisational, and contextual factors influence lecturers' performance expectancy. Individual factors such as technological proficiency, attitude towards innovation, and perceived benefits of technology use play a significant role in shaping lecturers' beliefs about the potential impact of technology on their performance. Organisational factors, including institutional support, access to training and resources, and leadership endorsement of technology integration, also influence lecturers' perceptions of performance expectancy. Moreover, contextual factors such as discipline-specific norms, classroom dynamics, and student characteristics may affect lecturers' expectations regarding the effectiveness of technology use in teaching[80].

Teaching staff performance expectancy regarding technology adoption has significant implications for educational outcomes, including teaching effectiveness, student engagement, and learning outcomes. Lecturers who perceive technology as beneficial for enhancing their performance are more likely to integrate technology into their teaching practices, leading to innovative instructional approaches, increased student participation, and improved learning experiences. Furthermore, higher levels of performance expectancy may contribute to lecturers' job satisfaction, professional development, and retention within the academic profession[81].

In the context of education, effort expectancy refers to the degree of ease associated with the use of technology by students and educators[82]. Effort expectancy significantly impacts both teachers' and students' willingness to adopt new technologies. If a technological tool (such as an e-

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learning platform, digital whiteboard, or educational app) is perceived as easy to use, it is more likely to be embraced and integrated into daily routines. For instance, the use of Learning Management Systems (LMS) like Blackboard or Moodle can be influenced by Effort Expectancy. If these systems are designed to be user-friendly and require minimal effort to learn and navigate, their adoption rates among teaching staff and students' increase[83]. Effort expectancy plays a critical role in lecturers' decision-making processes regarding the adoption and integration of technology in teaching. Teaching staff in the polytechnic who perceive technology as easy to use are more likely to incorporate it into their teaching practices, leading to enhanced instructional delivery, increased engagement, and improved learning outcomes for students. Moreover, positive perceptions of effort expectancy may contribute to teaching staff job satisfaction, professional development, and overall willingness to embrace technological innovations in higher education[84].

Despite its importance, effort expectancy among lecturers is not without challenges. Factors such as resistance to change, inadequate training and support, and concerns about the compatibility of technology with existing teaching practices may hinder efforts to enhance effort expectancy. Future research should focus on developing strategies to promote positive perceptions of effort expectancy among teaching staff, including targeted training programs, user-friendly technology design, and institutional policies that prioritize ease of use and accessibility. Effort expectancy is a critical determinant of teaching staffs' willingness to adopt and integrate technology into their teaching practices. By understanding the factors influencing effort expectancy and its implications for technology integration, institutions can develop effective strategies to support lecturers in leveraging technology to enhance teaching and learning outcomes. Embracing a culture of innovation and providing adequate support and resources are essential for fostering

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positive perceptions of effort expectancy among lecturers and driving meaningful educational change in the digital age[85].

Social influence is the extent to which an individual believes that important others attitudes or beliefs can influence him or her in the use of technology. Social influence has been found to be a significant determinant of technology adoption, especially in environments where social and professional networks are strong. Social influence is the way and manner in which an individual allows the opinions of others to influence his or her decision to use a technology. It is indicated that people's intention to use technology can be influenced by other peoples' opinions, views, and perceptions. Social influence significantly influences the acceptance and use of technology by educators[86]. Social influence plays a major role in shaping employees' attitudes and behaviours regarding the adoption and use of ICTs in organisational settings. Several social factors can impact an individual's decision to use a particular technology which includes subjective norms, social identity, and interpersonal influence among others[87].

One key aspect of social influence is subjective norms, which refer to the perceived social pressure or expectations from others to perform or not perform certain behaviour. If an employee perceives that their colleagues, superiors, or others important to them expect them to use a specific ICT, they are more likely to do so. This normative pressure can come from the workplace culture or the individual's social groups. Social identity suggests that people tend to conform to the norms and behaviours of groups they belong to or aspire to belong to. Employees may adopt ICTs that are commonly used within their organisation or professional group as a way to maintain their social identity and sense of belonging[88]. Social influence within the UTAUT framework plays a pivotal role in the adoption of new technologies among teaching staff in Nigerian polytechnics. The interplay of peer pressure, administrative influence, student

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expectations, and cultural factors all contribute to shaping the attitudes and behaviours of teaching staffs towards technology use in education.

Facilitating conditions represents the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of a system. Facilitating condition (FC) is an individual's belief regarding the existence of adequate technical infrastructure, as well as management policies and other internal support mechanisms that will encourage the use of the technology. Facilitating condition refers to the degree to which users believe that organisational and technical infrastructure will support the use of Information and Communication Technology. Facilitating condition (FC) is related to the TAM's (Techlonology Acceptance Model) perceived ease of use, combined facilitating conditions (MPCU - Model of PC Utilization), and compatibility (DOI - Diffusion of Innovations). It is observed that FC is an effective motivational factor that promotes acceptance and use of ICT. They go on to say that the availability of computers and necessary policies will encourage users to use the technology. They also identify technical skills on computers and access to the facility as motivational factors[89].

The adoption of Information and Communication Technology (ICT) by teaching staff at polytechnic schools in Nigeria can be broken down into several components of the Facilitating Conditions, such as the provision of necessary hardware (computers, projectors, etc.), software (educational and administrative applications), and internet connectivity. For teaching staff to adopt ICT, these resources must be readily accessible and functional[90]. The presence of dedicated IT support staff to assist with technical issues is crucial[91], and regular maintenance and timely troubleshooting are necessary to keep ICT tools functional[92] who noted the importance of ongoing support and maintenance. Establishing supportive policies and a strategic plan for ICT integration can motivate teaching staff to adopt these technologies. The role of leadership in

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fostering a positive attitude towards ICT use is underscored[93]. Regular training sessions and professional development can help teaching staff develop the necessary skills for ICT integration and overcome resistance. Leaders who promote ICT use and integrate it into the institution's strategic goals will significantly influence adoption[94]. On-going training programs to develop ICT skills among teaching staff are crucial[95]. Providing hands-on workshops and seminars helps build confidence and competence in using ICT tools[96]

Facilitating conditions have significant implications for technology integration in higher education. Teaching staffs who perceive high levels of organisational and technical support are more likely to adopt and effectively use technology in their teaching practices. Moreover, facilitating conditions can enhance lecturers' confidence, motivation, and willingness to experiment with innovative teaching methods and tools. By investing in the development of facilitating conditions, institutions can promote a culture of innovation, collaboration, and continuous improvement in teaching and learning. Facilitating conditions play a critical role in shaping teaching staffs' attitudes, intentions, and behaviours toward technology adoption and integration in higher education. By understanding the theoretical foundations, measurement approaches, influencing factors, and implications of facilitating conditions in UTAUT, institutions can develop strategies to promote a supportive environment for technology-enhanced teaching and learning[97].

2.1.3 Total Quality Management Practices (TQMP)

A total Quality Management Practice (TQMP) is a management approach that focused on continuous improvement in all aspects of an organisation, emphasizing customer satisfaction, employee involvement, and systematic processes. Total quality management practices must be

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implemented as a strategic initiative. It involves setting long-term goals, aligning processes and resources, and continuously reviewing and adjusting strategies[98]. TQMP emphasizes understanding and managing processes to ensure efficient and effective output. This involves mapping processes, identifying areas for improvement, and streamlining operations. Implementing TQMP in the OTM programme involves a strategic and systematic approach to achieving quality objectives. This includes setting clear goals, developing action plans, and continuously monitoring and reviewing progress[99].

Every employee, from top management to frontline workers, must be involved in the continuous improvement process. This involves empowering employees, fostering a culture of teamwork, and providing necessary training[100]. Total quality management practice involves the formulation of strategies, setting goals and objectives, planning and implementing the plans; and using control systems for monitoring feedback and taking corrective actions. TQMP in education places students at the center of the educational process. For the OTM programme, this means designing courses and services that meet the needs and expectations of students, ensuring they are well-prepared for the workforce[101]. Process management ensures that teaching and administrative processes are efficient and effective. This includes clear guidelines for course delivery, assessment methods, and administrative support[102]. Continuous improvement in teaching and learning involves using feedback and data to enhance educational practices consistently.

In the OTM programme, this might include regular curriculum reviews, professional development for faculty, and incorporating the latest industry trends into the coursework[103]. Engaging faculty and staff in quality initiatives ensures that everyone contributes to improving

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the educational experience. In the OTM programme, this involves collaborative planning, open forums for idea sharing, and recognition of contributions to quality improvements[104]. TQMP in education places students at the center of the educational process. In the context of OTM programme, this means designing courses and services that meet the needs and expectations of students, ensuring they are well-prepared for the workforce[105]. Using data to inform decisions is a key aspect of TQMP. For the OTM programme, this involves analyzing student performance data, satisfaction surveys, and industry feedback to make evidence-based improvements[106].

Implementing TQM requires a strategic and systematic approach to achieve quality objectives. In the OTM programme, this includes setting measurable goals, developing strategic plans, and regularly reviewing progress[107]. An integrated system ensures that all parts of the institution work together towards common quality goals. For the OTM programme, this means alignment between academic departments, support services, and administrative units to deliver a cohesive educational experience[108]. Effective communication is essential for TQM. In the OTM programme, this means ensuring that information about quality initiatives, changes, and improvements is clearly communicated to all stakeholders, including students, faculty, and industry partners[109].

Total quality management practices is an effective system for integrating the quality development, quality maintenance and quality improvement efforts of various aspects of a system so as to enable services at most economical level and derive full satisfaction[110]. Total quality management practices have been applied to enhance the quality of teaching and learning processes, as well as the overall educational experience for students. One key aspect of TQMP in education is the emphasis on student satisfaction and meeting their needs and expectations. This

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involves actively seeking student feedback, analysing their perceptions of the teaching and learning processes, and using this information to make improvements. Engaging students as active participants in the quality management process can help educators better understand and address their concerns, and ultimately enhance their overall educational experience[111].

Furthermore, TQMP encourages a collaborative approach to problem-solving and decision-making among teaching staff. This can be facilitated through the formation of quality circles or teams, where educators can share best practices, identify areas for improvement, and develop strategies for continuous improvement. Such collaborative efforts can foster a sense of ownership and commitment among teaching staff, leading to increased motivation and job satisfaction. Effective communication and data-driven decision-making are also crucial components of TQMP in educational settings. Collecting and analysing data related to student performance, teaching methodologies, and educational processes can provide valuable insights for identifying areas that require improvement and for making informed decisions[112]. However, the successful implementation of TQM practices among teaching staff often requires a significant cultural shift within educational institutions. Overcoming resistance to change, promoting a quality-focused mind-set, and providing adequate training and resources are essential for ensuring the effective adoption of TQM principles[111].

Total quality management practice requires effective change in organisational culture and this can only be made possible with the deep involvement/commitment of teaching staff, and management to the institution's strategy of continuous improvement, open communication, and cooperation throughout the organisation. TQM practice implementation improves organisational performance by influencing other TQM dimensions. To be successful in promoting educational

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efficiency and effectiveness, TQM must start at the top starting from the heading of the institution, dean of the faculty, head of the department, and now to the teaching staff[113].

On the part of the teaching staff, the TQMP approach involves 'achieving broad employee interest, participation and contribution in the process of quality management. The concept assumes an institution's wide quality culture, which gives autonomy or a level of freedom to teaching staff in taking decisions that affect their job. Thus, teaching staff are encouraged to perform function such as information processing, problem solving and decision making. This is supported by other authors who noted that intrinsic motivation is at the heart of TQM practice, where empowerment and involvement in decision making is viewed as essential for sustained result. The main aim for the total involvement of teaching staff is to boost internal and external teaching process by developing a flexible environment which allows for creativity and innovatio[114]. Some of the measures of total quality management practice include quality planning, quality control and quality improvement which were derived from the Juran Trilogy Theory developed by Joseph M. Juran.

Quality planning is an essential aspect of total quality management practices in educational institutions, as it involves proactively designing and implementing strategies to ensure high-quality teaching and learning processes. Researchers have emphasized the importance of involving teaching staff in the quality planning process, as they have a direct understanding of the teaching and learning needs, challenges, and opportunities. By actively engaging teachers in the development of quality plans, educational institutions can leverage their expertise and insights, fostering a sense of ownership and commitment to quality initiatives[104].

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One key aspect of quality planning is the identification and prioritization of areas for improvement. This can be facilitated through data analysis, stakeholder feedback, and collaborative discussions among teaching staff. By carefully evaluating student performance, teaching methodologies, and educational processes, educators can identify potential areas for enhancement and develop targeted quality plans to address these areas. Quality planning also involves setting clear and measurable objectives, as well as defining strategies and action plans to achieve those objectives. These objectives should be aligned with the overall mission and vision of the educational institution and should take into account the needs and expectations of students, parents, and other stakeholders[114].

Effective quality planning requires allocating sufficient resources, such as time, funding, and training opportunities, to support the implementation of quality initiatives. This may involve providing professional development opportunities for teaching staff to enhance their knowledge and skills related to quality management practices, as well as establishing support systems and infrastructure to facilitate the execution of quality plans. Furthermore, quality planning should involve ongoing monitoring, evaluation, and adjustment processes. By regularly assessing the progress and effectiveness of quality initiatives, teaching staff can identify areas that require further improvement or modification and make necessary adjustments to ensure the continuous enhancement of teaching and learning processes[115].

Quality control is a crucial component of Total Quality Management (TQM) in educational institutions, as it involves monitoring and evaluating the teaching and learning processes to ensure that they meet established quality standards and objectives. One of the key aspects of quality control in education is the development and implementation of standardized procedures and guidelines for teaching and learning activities. These procedures and guidelines can help to

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ensure consistency in the delivery of instruction, assessment methods, and other educational processes, reducing variability and promoting a high level of quality across different classrooms and courses. Quality control also involves the collection and analysis of data related to student performance, teaching effectiveness, and other relevant metrics. This data can provide valuable insights into areas where improvements may be needed and can inform decision-making processes related to curriculum design, instructional strategies, and resource allocation[116].

Researchers have highlighted the importance of involving teaching staff in the quality control process, as they have a direct understanding of the challenges and opportunities associated with teaching and learning. By engaging teachers in activities such as classroom observations, peer evaluations, and student feedback analysis, educational institutions can leverage their expertise and insights to identify areas for improvement and develop effective strategies for quality control. Effective quality control among teaching staff often requires the establishment of clear performance standards and evaluation criteria. These standards and criteria should be developed in consultation with teaching staff and align with the institution's overall quality objectives and student learning outcomes. Furthermore, quality control efforts should be supported by on-going professional development and training opportunities for teaching staff. These opportunities can help educators enhance their knowledge and skills related to quality management practices, instructional methods, and assessment techniques, enabling them to better identify and address quality issues in their teaching and learning processes[117].

Quality improvement is a continuous process that is essential for maintaining and enhancing the effectiveness of teaching and learning processes in educational institutions. Several studies have explored the role of quality improvement initiatives among teaching staff and their impact on educational outcomes. One key aspect of quality improvement is the use of data-driven decision-

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making. By collecting and analysing data related to student performance, teaching effectiveness, and other relevant metrics, educational institutions can identify areas that require improvement and develop targeted strategies to address these areas. This data-driven approach helps to ensure that quality improvement efforts are focused and effective[118].

Researchers have emphasized the importance of involving teaching staff in the quality improvement process. As the primary stakeholders in the teaching and learning processes, educators can provide valuable insights and perspectives on areas that need improvement, as well as potential solutions and strategies for addressing these issues. Their involvement can foster a sense of ownership and commitment to quality improvement initiatives. Effective quality improvement among teaching staff often requires the establishment of collaborative teams or quality circles. These teams can bring together educators from various disciplines or departments to share best practices, identify common challenges, and develop innovative solutions for improving teaching and learning processes[119].

Professional development and training opportunities are also crucial for supporting quality improvement efforts among teaching staff. By providing educators with opportunities to enhance their knowledge and skills related to instructional strategies, assessment methods, and quality management practices, educational institutions can empower them to continuously improve the quality of their teaching and learning processes. Researchers have also highlighted the importance of fostering a culture of continuous improvement and encouraging experimentation and innovation among teaching staff. By creating an environment that values risk-taking and embraces change, educational institutions can promote the development and implementation of new and innovative approaches to teaching and learning, ultimately leading to improved quality[120].

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2.2 Theoretical Framework

2.2.1 Dynamic Capability Theory

The notion of dynamic capability basically states that corporate agility is what counts for businesses It focuses on ability to perceive and shape opportunities and threats, seize opportunities, and maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets[121]. Dynamic Capability Theory (DCT), originally developed by David Teece, Gary Pisano, and Amy Shuen in the 1990s, emphasises firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments. It states clearly that a DC is a process that impacts upon resources. Dynamic capabilities (DC) theory appeared as an alternative approach to solve some of the weaknesses of RBV theory[122]. Dynamic capability theory presents path-dependent processes that allow firms to adapt to rapidly changing environments by building, integrating, and reconfiguring their resource and capabilities portfolio. Until the 1980s, however, there had been little interest in the subject of strategic management. Particularly in the 1980s, Porter's industry-based theory attracted the greatest attention.

During that period, the Resource Based View (RBV) theory was the major subject of discussion. It viewed a firm as a portfolio of tangible and intangible resources and human resources and capabilities. The ability to combine resources in an innovative and efficient manner constituted the firm's capabilities. In this view, competitive advantage is when a firm is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors, and sustainable competitive advantage is, when a firm is implementing a value creating strategy that is not simultaneously being implemented by any existing or potential competitors and when these other firms are unable to duplicate the benefits of the strategy[123].

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These ideas emerged from Valuable, Rare, Inimitable, and Non-substitutable (VRIN) resources. Dynamic Capability theory was derived from RBV theory and compensated for that theory's shortcomings when it came to explaining sustainable competitive advantage and superior performance in a dynamic environment. Dynamic Capability is defined as the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments[124]. Dynamic Capability, however, is the organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die. According to this definition, dynamic capabilities are process-improvement techniques that constitute the firm's way of modifying operating routines[51]. The generation of capabilities requires enough experience that tacit organisational knowledge becomes stored in new patterns of activity, known in routines. These routines help the firm integrate, reconfigure, or develop and release new resources[126].

Teece made a major contribution to DC theory by writing about the micro-foundations for each of the three dimensions of sensing (identification and assessment of an opportunity), seizing (mobilization of resources to address an opportunity and to capture value) and transforming (continued renewal and reconfiguring the business firm's intangible and tangible assets). Interestingly, these characteristics are not all specified in terms of processes but rather touch on a range of structural, cultural, skill-set, and strategic elements. It is useful to consider them as elements of a management system for major innovation (MI)[53]. The first observation from the theory is that, under conditions of high uncertainty, as with high market velocity, the end state is more central in managers' minds than the means to getting there[116]. Achievement of the goal overrides the process, since processes vary by situation. Routines are simple, and investment in building them is minimal. They focus on specifying boundary conditions or priorities; they are

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not rigid processes. People who can solve problems become more important than any process. It is known that a focus on ends over means enhances creativity in work organisations and that in knowledge creation and major innovation, creativity is at a premium[127].

Second, in high-uncertainty environments, building dynamic capabilities involves the creation of new, situation-specific knowledge. Existing knowledge is not only likely irrelevant; it can even also be harmful if it colours the interpretation of discovery. Therefore, frequent experiential actions that lead to quick learning compensate for limited understanding. Iteration is critical as new information and changing conditions are uncovered. Such frequent iteration and active engagement with internal and external constituents require real-time information, cross-functional networking, and intensive communication to help link the nonlinear learning experiences to one another and to the ultimate objective[127]. Real-time information builds intuition about the marketplace and the problem in general; cumulative experience counts over time. Third, in high-uncertainty markets, dynamic capabilities are characterized by ‘‘parallel consideration and often partial implementation of multiple options’’. This is manifested in many ways. One is the use of rough prototyping, which provides rapid learning by engaging the market experientially rather than analytically. Others include exploring with multiple co-development partners, multiple potential application spaces, or multiple external and internal sources of funding[127].

Fourth, dynamic capability theory implies that, under conditions of high uncertainty, unique skill sets are required[128]. Courage is the first, since empirical evidence shows that managers’ inability to cope with ambiguity and risk slows their decision-making, thus requiring strong influence skills on the part of the project leader. A certain kind of intellect is also required. Major innovation is a form of deuteron-learning that requires questioning implicit assumptions and

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inquiry methods, triggering a fundamental rethinking of the problem. MI learning includes searching for preferences and alternate actions in addition to linking current actions to past outcomes, requiring use of both divergent and convergent thinking. Deciding what to keep from the experience set and what to discard is more crucial than deepening capabilities based on small frequent variations through related experiences. The implication is that individuals working in this kind of environment must be capable of dealing with complex information, able to articulate assumptions and call them into question, able to rely on intuition, and able to reconceptualize problems. This complex set of capabilities holds implications for staffing that are far reaching. To evolve the competency, a system of apprenticeship, information sharing, and coaching may be necessary to build on cumulative experience and wisdom[128].

Moreover, the literature notes that dynamic capabilities in high-uncertainty markets tend to dissipate. Since they cannot be routinized or codified, they are easy to forget, so vigilance is required to sustain them. Sustaining activity can come in the form of practice, experience, and clarity of purpose. It takes so long to build the experience and networks required to be effective at MI that it is torturous to note that many corporate entrepreneurship or major innovation initiatives last a short time, only to be restarted later. Firms expecting to reinvigorate these capabilities after years of dormancy run up against this dissipative character of MI dynamic capabilities[129]. Intense criticisms, nonetheless, have been levelled against the theory, such as the nature of the term itself and difficulties in determining the merits of the outcomes of the theory, difficulty in understanding the nature of a DCs, and the absence of clear models to measure these capabilities and how they affect the performance of organisations. The theory has also been criticized for being repetitive and ineffective in providing a complete answer regarding DCs and how they operate. Dynamic capability theory has also suffered from a lack of clarity about what

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constitutes its core concepts. Despite the intense growth of studies discussing the idea of DCs, the progress of the theory still requires further collective efforts from researchers to illustrate concepts related to the theory and how to link them to empirical practices within organisations[130].

Dynamic Capability Theory (DCT) is increasingly relevant in the context of educational institutions, particularly polytechnic institutions, which need to adapt rapidly to technological advancements, changing industry requirements, and evolving student needs. By applying the components of DCT, sensing, seizing, and transforming, polytechnic institutions can enhance their ability to innovate and remain competitive. In educational settings, their concepts of sensing, seizing, and transforming can be applied to understand how institutions adapt to changes[131]. Debate the relevance of dynamic capabilities in various organisational contexts, which can be inferred to educational institutions striving for innovation and adaptability. A comprehensive review of DCT and suggested that capabilities are developed through learning processes[131]. In education, this learning can be seen in continuous curriculum updates and faculty development. Polytechnic institutions must conduct thorough environmental scanning to identify technological trends, industry demands, and regulatory changes[134]. This can include partnerships with industry leaders and participation in academic conferences. Engaging with stakeholders such as industry partners, alumni, and students helps institutions understand emerging needs and expectations. Regular feedback mechanisms, like surveys and focus groups, can be crucial. Conducting market research to identify gaps in the current educational offerings and anticipating future skill requirements in various industries.

An institution might identify the growing importance of cyber security through industry reports and partner with tech companies to develop specialized courses in this area, DCT emphasized the

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evolutionary aspect of capabilities. For polytechnics, this means evolving curricula and teaching methods in response to changing educational demands[135]. Seizing in this sense involves rapidly developing and updating curricula to incorporate new knowledge and skills that align with industry needs. This includes creating interdisciplinary programs and integrating practical, hands-on training; efficient allocation of financial, human, and technological resources to support new initiatives; investing in state-of-the-art laboratories, hiring expert faculty, or developing online learning platforms; and forming strategic partnerships with industry players, other educational institutions, and government bodies to co-develop programs, conduct joint research, and facilitate internships and job placements for students. Transforming in educational setting has to do with continuously evolving the institution's organisational structure to support innovation and adaptability. This includes fostering a culture of continuous improvement and agility, developing leadership that is capable of driving change and inspiring innovation. Governance structures should support decision-making processes that are responsive to new opportunities and challenges; and Embracing new technologies to enhance both administrative efficiency and the learning experience. This includes implementing learning management systems, utilizing data analytics for decision-making, and adopting virtual reality for immersive learning experiences[135].

Dynamic Capability Theory offers valuable insights into how educational institutions, particularly polytechnic institutions, can innovate and adapt to rapidly changing environments. By focusing on the processes of sensing, seizing, and transforming resources, these institutions can better align their offerings with industry needs, enhance their responsiveness to emerging trends, and maintain a competitive edge in the educational landscape. The Theory is related to this study because it emphasizes the importance of an organisation's ability to sense and

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anticipate changes in the external environment. In the context of teaching staff, this relates to their ability to detect and respond to changes in student needs, educational trends, technological advancements, and other factors that may impact teaching and learning processes. It also highlights the need for organisations to continuously learn and adapt to changing circumstances. For teaching staff, this translates to their ability to acquire new knowledge, skills, and teaching methodologies, as well as their willingness to engage in continuous professional development to stay current and effective[136].

2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT) Theory

The UTAUT is built upon the Technology Acceptance Model (TAM) and is improved by adding social influence and positive factors[137]. Venkatesh developed a technological acceptance model that makes use of UTAUT to explain users' aspirations to adopt information technology, digital transformation, and subsequent user behaviour. The theory of rational behaviour (TRB) is a paradigm of technology acceptance (TAM), diffusion of innovations (DOI), social cognitive theory (SCT). Among these competing models is the recent launch of a new groundbreaking user acceptance research, which looks at current user acceptance models and introduces another coherent model called the Coherent Theory of Acceptance and Use of Technology (UTAUT). The theory strongly emphasizes four key concepts which are performance expectancy, effort expectancy, social characteristics, and enabling conditions. The model employed four basic concepts concerning the technology's intent and use. The four considerations are expectations of achievement, expectations of participation, social impact, and promotion of the conditions[57].

The study intends to use the modified unified theory of acceptance and use of technology (UTAUT). The theory aimed at the determinants of behavioural intention and the use of technology. The UTAUT model has been one of the eminent models for understanding users'

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agreement and usage of various types of technologies including social media (SM) technologies. The UTAUT model affirms that certain factors are responsible for the usage of technology which are performance expectancy, effort expectancy, social influence and facilitating condition.

Performance expectancy describes users' perceptions and expectations of the usefulness of a given technology. It measures users' willingness and motivation to adopt the technology. This factor is the major factor iexplaining the behavioural intention of accepting to use a certain technology. The perception of this factor of the model is that Social media (SM) technologies are useful for learning purposes and can be used to send, receive interactively, and collaborative learning resources. It describes users' perception of how well a technology influences their endeavours. The factor predicts users' acceptance and behavioural intention to accept and use technology. Some researchers have put this concept to the empirical test. These studies have revealed a mix-finding on the effect of performance expectancy on the usage of technology[138]. A relevant study confirmed that the usefulness of a computer predicts the acceptance of a computer[139]. Performance Expectancy is a critical factor in determining the acceptance and use of new technologies. By understanding and addressing the components and influences of PE, organisations can better design, implement, and promote technologies that meet user needs and enhance job performance. For OTM teaching staff in Nigerian polytechnics, the perception that ICT will improve their teaching performance is a critical factor in their decision to adopt these technologies. By emphasizing the benefits of enhanced efficiency, improved student outcomes, access to current resources, and better communication, institutions can positively influence performance expectancy. Providing practical examples, training, pilot programs, and continuous support can further bolster lecturers' confidence in the value of ICT in education. Strategies to enhance PE involve demonstrating clear benefits, providing adequate training and support,

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aligning the technology with job roles, communicating success stories, and ensuring continuous improvement.

Effort expectancy is the level of ease associated with users' perception of technology. It describes users' perception of applicability, flexibility, and usability of a particular technology. It shows that teaching staff have the perception that, if technology is not flexible or determined that it is not convenient for them to use for learning, it does not matter whether they have access or not to the technologies, they would not consider using it for teaching and learning purpose. Researchers revealed that every technology user has a certain level of expectancy on the usability and accessibility of the given technology. This notion is highly supported by the expectancy theory which explained that when a user believes a technology or system is too complex to use, he or she ordinarily will avoid the use of the system and technology. It is suggested that effort expectancy has positive effects on behavioural intention on technological acceptance[141].

Social influences as a factor explain how users' social composition can influence their decision to adopt a technology. This was so because technology in particular is a collaborative and interactive platform for engaging other parties. Both the users have to be very cooperative and have the same perception towards the use, if not implemented technology will be in turmoil for any purpose. It becomes difficult to implement technology for learning purposes if a student's peers and collaborative partners do not have similar perceptions use of the technology. This factor is further divided into peer influence and social influence to better understand the concept. The essential self-reliance is to understand users' attitudes and perceptions towards a given technology[142]. This factor has been adopted by many pieces of research in a different context and to understand different technologies which includes knowledge management, SM services, eLearning, blogs, and e-commerce. These previous studies have consistently demonstrated that

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social influence such as family, colleagues, friends, and other important people influence the acceptance of a technology. Some author conducted a study in the context of information technology and found that social influence affects the acceptance and the continuous usage of information technology[143].

Facilitating conditions reflect not on the individual situation but the organisational framework. Therefore, since this study deals with ICT adoption of OTM teaching staff which is more about individualized rather than organisational usage, the enabling conditions in this study are more representative of the conditions of ICT adoption which vary from individual to individual. The use of ICT depends on an individual teaching staff and its usage. Every teaching staff chooses the type of technology to use whether for teaching, learning or other uses. Organisations or the institution management as the case may do not have power on the ICT used any teaching staff[144].

This theory is related to this study because it could help evaluate the extent to which OTM teaching staff perceives new educational technologies or teaching methodologies as useful and beneficial for enhancing their teaching effectiveness and student learning outcomes. Teachers who perceive higher performance expectancy from adopting new technologies or approaches may be more agile and willing to adapt to changes in the educational landscape. Also, this theory could help evaluate the perceived ease of use and usability of new educational technologies or teaching methodologies among teaching staff. Teachers who perceive new technologies or approaches as easy to use and learn may be more agile in adopting and integrating them into their teaching practices. The theory could help evaluate the influence of peer teachers, institutional norms, and societal expectations on the agility of teaching staff in adopting new technologies or teaching approaches. Teachers who perceive strong social influence and support from their colleagues, institutions, and society may be more agile in embracing changes in the educational landscape.

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The UTAUT model provides a comprehensive framework for understanding and enhancing the adoption of technology among OTM teaching staff in Nigerian polytechnics. By addressing the key factors of performance expectancy, effort expectancy, social influence, and facilitating conditions, polytechnics can develop targeted strategies to overcome barriers and promote the effective use of technology. This, in turn, can lead to improved teaching methods, administrative efficiency, and professional development, ultimately enhancing the quality of education in OTM programme.

2.2.3 The Juran Trilogy Theory

The Juran Trilogy, propounded by Joseph M. Juran (1992) is one of the most enduring frameworks in quality management. It emphasizes that quality is not accidental but a result of deliberate planning, systematic control, and continuous improvement. The three components are: Quality Planning**,** Quality Control**,** and Quality Improvement which provides a managerial roadmap for organisations to achieve and sustain excellence. It is a foundational concept in quality management, focusing on the systematic process of ensuring that products or services meet certain standards and are free from defects. Juran Trilogy emphasizes that organisations should view quality as a continuous process, integrating three components for sustained success. It also highlights that quality is not just the responsibility of the quality department but of everyone in the organisation. Juran's theory provides a systematic approach to managing quality in organisations and is centered on three key processes. Today, the three fundamental stages are known as the Juran Trilogy or the Quality Trilogy. They are used to both describe the quality management journey and establish quality control best practices. Each of these processes is universal; it is carried out by an unvarying sequence of activities[145]. In the context of higher education, particularly polytechnic education in Nigeria, Juran's Trilogy offers a practical

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approach for ensuring that teaching, learning, and administrative processes deliver outputs that meet the expectations of students, employers, regulatory bodies, and society at large.

The starting point is quality planning which involves creating a process that will be able to meet established goals and do so under operating conditions. According to Juran, quality planning involves identifying customers (or stakeholders), determining their needs, and developing processes and systems capable of meeting those needs. The subject matter of the planning can be anything: an office process for producing documents; an engineering process for designing products; a factory process for producing goods; a service process for responding to customers' requests, creating a curriculum that aligned with global and local standards and ensuring it meets academic and practical needs, providing sufficient resources such as qualified teachers, learning materials, and technology.[146].

Following the planning, the process is turned over to the operating forces. Their responsibility is to run the process at optimal effectiveness. In the planning stage, it is critical to define who your customers are and find out their needs (the voice of the customer). After you know what your customers need, you are able to define the requirements for your product/process/service/system, etc., and develop it. Additionally, any plans that might need to be transferred to operators or other key stakeholders should be done during the planning phase. Planning activities should be done with a multidisciplinary team, with all key stakeholders represented[147]. Within Nigerian polytechnic quality planning entails: designing curricula that reflect NBTE standards**,** industry demands**,** and global trends; establishing clear learning outcomes aligned with the national skills, recruiting and developing qualified academic and technical staff, providing adequate physical and digital infrastructure, such as ICT-enabled classrooms and well-equipped laboratories; formulating institutional policies that promote excellence, accountability; and innovation[114].

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It involves setting clear objectives and goals for the agility of teaching staff, such as the ability to adapt to new teaching methodologies, integrate emerging technologies, or respond to evolving curriculum requirements. Quality planning can help educational institutions proactively design strategies and allocate resources to enhance the agility of their teaching staff. In teaching, this means, identifying who your customers are (students and stakeholders) and determining students need, develop practical, project-based learning experiences, and align instructional content with NBTE curriculum standards and workplace expectations. A teaching plan and curriculum that are relevant, competency-based, and industry-aligned ensure that OTM graduates can perform effectively in modern office environments.

Quality control refers to the process of monitoring and evaluating the actual performance of products or services against the predetermined quality standards and goals. It involves measuring and analysing quality data, identifying deviations from the desired standards, and taking corrective actions to address any quality issues or defects. In education the phase focuses on monitoring the teaching and learning processes to ensure they meet established standards and expectations. It includes measuring student performance through test, assignments and continuous assessment to gauge understanding and progress, regularly assessing teaching methods and classroom management, identifying and correcting areas where students or teachers are not meeting the expected standards. Quality control determines what you need to measure (what data do you need to know if your process is working?), and set a goal for your performance. It extends to getting feedback by measuring actual performance, and act on the gap between one's performance and one's goal. In Statistical Process Control (SPC), several tools could be used in the "control" phase of the Juran Trilogy[148] Quality control ensures that what has been planned is actually achieved during teaching, learning, and administration.

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It focuses on monitoring performance and taking corrective actions where deviations occur. Quality control ensures consistency, fairness, and accountability in OTM instruction and assessment - maintaining the standards that were set during planning.

Quality improvement involves continuously identifying opportunities for improvement and implementing strategies to enhance the quality of products, services, or processes. This is the process of breaking through to new levels of performance - beyond maintaining the status quo. Continuous improvement is essential to remain competitive and relevant. In education, the phase involves making systematic and sustained efforts to enhance teaching and learning processes. Quality improvement involves continuously seeking ways to make teaching, learning, and administrative processes better than before. It is a systematic effort to achieve higher performance levels. In the quality improvement phase, there are four different strategies for improvement that could be applied during this phase - Repair: Reactive; and fix what's broken. Refinement: Proactive; continually improve a process that is not broken (like the continual pursuit of perfection) Renovation: Improvement through innovation or technological advancement. Reinvention: The most demanding approach; start over with a clean slate[148] In the context of Nigerian polytechnics, quality improvement can be realized through regular curriculum review in collaboration with industry partners, capacity-building programmes for staff in pedagogy, research, and emerging technologies (AI, data analytics, digital literacy), integration of ICT-driven teaching and learning platforms, institutional benchmarking against global best practices and so on. In teaching it includes continuous professional development curriculum review and innovation student-centered innovations, institutional/departmental improvement.

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By applying the principles of the Juran Trilogy Theory, educational institutions could establish a systematic approach to assessing and improving the agility of their teaching staff. Quality planning can ensure that agility goals are clearly defined and aligned with institutional objectives, quality control can provide regular feedback and monitoring of agility levels, and quality improvement can drive continuous efforts to enhance the adaptability and responsiveness of teaching staff to evolving educational needs and trends.



Figure 2.1: Stages in Juran Trilogy theory

This Juran Trilogy Theory is related to this study in the context of agility assessment among teaching staff. Quality planning can involve identifying the changing needs and expectations of students, educational stakeholders, and the job market; identifying who your customers are (students, employers of labour, industries, and professional bodies such as NIM, ICAN, and secretarial associations) and determining students need ICT competence; office automation skills, communication ability, and professional ethics, integrate global ICT tools (e.g., Microsoft 365, Google Workspace, virtual conferencing, AI office tools); developing practical, project-

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based learning experiences, and aligning instructional content with NBTE curriculum standards and workplace expectations. Planning enables the teaching staff to set performance targets. For example, achieving 90% student competence in keyboarding, and industry-aligned; ensuring that OTM graduates can perform effectively in modern office environments.

Quality control involves monitoring and evaluating actual performance to ensure that teaching and learning meet the planned standards. It is about detecting deviations early and correcting them. It includes checking lesson delivery methods and student engagement, ensuring the use of modern teaching aids (projectors, simulations, and practical sessions), evaluating students' performance in continuous assessment tests, practical exams, and project work to monitor learning outcomes. It also extends to reviewing students' results and feedback to identify areas needing improvement. Departmental and external review moderation of examination questions and scripts to maintain fairness and uniformity is important. It also covers organising retraining for educators where teaching gaps are identified, and updating instructional materials to match current industry tools and technology.

Quality improvement is particularly relevant to agility assessment among OTM teaching staff. It involves continuously seeking ways to make teaching, learning, and administrative processes better than before. It is a systematic effort to achieve higher performance levels. to ensure quality improvement, the OTM should be committed to continuous professional development – attending workshops, seminars, and training on new technologies (AI tools, office management software, digital communication); updating the OTM curriculum to include emerging areas like digital filing systems, e-records management, and remote office operations Introducing global certification programs (e.g., MOS – Microsoft Office Specialist) to complement NBTE requirements; incorporating problem-based and collaborative learning, and using e-learning

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platforms for assignments and assessment. Departments can, also, set annual quality goals, such as improving students' pass rates, reducing absenteeism, or enhancing practical exposure through internships and industry visits.

2.3 Review of Empirical Studies

2.3.1 Information Communication Technology (ICT) Adoption and Agility Assessment

An author observed that lecturers' understanding of ICT operations is a key step toward incorporating ICT into education. They emphasize that knowledge of and ability to use ICTs will assist lecturers in incorporating technology into classroom activities and appreciating the adaptability of ICTs as a vital instrument in teaching and learning. This means that instructors who are well-versed in ICT are more prepared and capable of using computer technology in their classes. The availability of equipment can be used to describe access to ICTs[149]. [138]Some authors stressed that the success of utilizing ICT involves not only the availability of equipment but also its good maintenance, which includes additional peripherals such as PCs, printers, multimedia projectors, and scanners[150]. However, some authors discover that poor access to ICT resources is caused not only by a lack of hardware and software or other ICT materials within an institution, but also by poor resource organisation, poor quality hardware, inappropriate software, or a lack of personal access for lecturers. As mentioned earlier, a few studies have been conducted in relation to this present area[152].

Another study examined the level of readiness of TVET institutions for the adoption of technology-enhanced learning (TEL) in practical instruction delivery in Nigerian tertiary institution. The study adopted a descriptive survey research design. The population for the study was 360 lecturers from 6 TVET institutions, each from six geopolitical zones of the country that

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accepted to join in the study. The questionnaire was used for data collection. The study found that most lecturers in TVET institutions have low skill in the use of blogs, video clips, social media, YouTube, and audio recording and that the institutions do not provide technical support and training to academic staff which implies that the institutions' readiness for adoption of technology is low. This reviewed study is similar to the present study. The similarity is because this reviewed study investigated the adoption of technology-enhanced learning which is quite related to this present study. This study shares similarities to the present study in terms of research design and instrument. However, this study differs from the present study in terms of scope, sampling and sampling technique, population, and method of data analysis[70].140

In another related study, by some authors who studied the utilization of information and communication technology (ICT) for teaching and learning science and technical subjects in senior science and technical colleges for sustainable economic development in the north-eastern geopolitical Zone of Nigeria. The design of this study is a survey type of research design. The population of this study was comprised of twelve (12) Science and Technical schools in northern states of Nigeria. Simple random sampling was used to select 12 schools from the study area. The authors found that inadequate provision of Information and Communication Technology facilities for effective teaching of science, lack of interest among teachers to adopt the use of modern Information and Communication Technology facilities for teaching, and lack of constant supply of electricity affect the use of Information and Communication Technology facilities for teaching Science and Technical, lack of constant supply of electricity affects the use of ICT facilities for teaching science and technical and lack of spare parts of most of the Information and Communication Technology facilities required for the teaching of Science and Technical are some of the problems faced by science and technical teachers in teaching senior secondary

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schools students in the north-eastern states of Nigeria. This study is similar to the present study in terms of design and instrument. This study also covers the utilization of ICT which is related to this present study. However, the study differs in terms of geographical scope, sample and sampling technique, population, and method of analysis[141].

Another study investigated the preparedness of preservice and in-service teachers toward the use of mobile devices in Nigeria. This descriptive quantitative research was employed for this study. This study's participants included second-year to final-year students and in-service teachers majoring in education in Nigeria's urban area. The questionnaire was used for data collection. The study found that teachers play a significant role in adopting any technology in the classroom, so it is essential to probe into preparedness related to the adoption in the classroom. Quantitative data revealed that teachers are willing to adopt learning, and rate themselves above average on the technology adoption stage; however, a few factors like an unsupportive curriculum and lack of infrastructure are causing its setback. The study shares similarities with this present study in terms of design and instrument for data collection while it differs in terms of geographical scope, sample and sampling technique, and methods for data analysis[142].

Another study examined technology-based factors challenging lecturers' utilization of information communication technology in teaching at Nnamdi Azikiwe University, Awka, Anambra State. A descriptive survey research design was employed to conduct the study. Population for the study consisted of all the 1,964 Heads of Departments (HODs) together with lecturers within 91 Departments from 14 Faculties in Nnamdi Azikiwe University (NAU), Awka, Anambra State. The sample size for the study comprised a total of 1,440 participants, incorporating 65 HODs and 1,375 lecturers selected from 14 Faculties in the university (NAU) using a stratified random sampling technique. A researcher's self-developed was used for data

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collection. They found that revealed that the technology-based factors were challenging to lecturers' utilization of information communication technology in teaching at Nnamdi Azikiwe University, Awka, Anambra State. This study relates to the present study because of its coverage of ICT, research design, and instruments. However, they both differ in terms of geographical scope and method of data analysis[143].

Furthermore, a study examined faculty members' and students' perspectives on the adoption and use of instructional technology in Nigerian tertiary institution. This study was conducted using a generalized qualitative approach, where data were collected using semi-structured interviews. Eight faculty members and three students were recruited through purposive and convenience sampling techniques and the interviews were conducted via Zoom. The author revealed that both faculty members and students perceive instructional technology to be relevant and also an essential part of their teaching and learning process. The study is similar to this present because of the usage of instructional technology in Nigerian tertiary institution which relates significantly to the study, however, they both differ because the reviewed study employed a qualitative approach and interviews were used for data collection while this present study employed a quantitative research approach and questionnaire was used for data collection[144].

Another study investigated the awareness and perception of education lecturers regarding the utilization of Open Educational Resources (OER) for instructional delivery in Kwara State. The study employs a descriptive research design, utilizing a survey questionnaire. The sample consisted of education lecturers from tertiary institution in Kwara State. The findings highlight the need for enhanced awareness and professional development opportunities specific to OER in education. Their findings highlight the need for enhanced awareness and professional development opportunities specific to OER in education. Furthermore, the study reveals

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lecturers' positive perceptions regarding the utilization of OER, such as means to improve instructional delivery and enhance student engagement. This study relates to the present study because of its coverage of open educational resources (OER), research design, and instruments. However, they both differ in terms of geographical scope and method of data analysis. While the reviewed studies provide valuable insights into the adoption and challenges of Information and Communication Technology (ICT) and technology-enhanced learning among educators in various regions of Nigeria, there is a noticeable gap in the literature regarding a comprehensive examination of the interplay between technology adoption, readiness, and use of ICT by lecturers in institutions across different geopolitical zones in Nigeria[145].

Another study examined Awareness, Adoption and Perception of Lecturers toward the Use of Information and Communication Technology (ICT) in Nigeria adopting the descriptive research design of survey type. Findings showed that the Internet (80.2%) and smartphones (67.8%) were the most available type of ICT resources used by the lecturers. It was also revealed that the reason for using these ICT resources may be due to the fact that the smartphone has internet accessibility and can be carried anytime by them, so it is accessible anywhere and at any time. \This makes accessing learning content easy, regardless of the location or the time of day. So, lecturers 'can have access to the tools that expand their learning without interruption. The finding also showed that the frequency of usage of ICT by lecturers. Data reveals that lecturers use ICT every day. This implies that the lecturers were aware of the various ICT technologies. The justification for using the resource every day by lecturers is related to the fact that they use it to reduce tension and stress[146].

Some author conducted a study that examined the impact of performance expectancy on ICT integration among lecturers in higher education. Their findings indicated that lecturers who

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perceived ICT as a tool that could enhance their teaching performance and effectiveness were more likely to integrate technology into their courses[147]. Similarly, another study investigated the factors influencing ICT adoption in Malaysian public universities. Their study revealed that performance expectancy was a strong predictor of lecturers' intention to use ICT, as they believed that technology would help them improve their productivity and teaching outcomes[148]. Another study explored the challenges that lecturers face in leveraging ICT to improve their performance. Their study revealed that issues such as lack of technological skills, limited access to technology, and concerns about the reliability and security of digital tools could hinder lecturers' ability to realize the performance benefits of ICT, thereby dampening their performance expectancy and adoption[147].

A related study to examine factors that motivated library users from Southwest Nigeria to adopt automated library systems revealed that performance expectancy was among the significant factors that affect the acceptance and utilization of automated library systems by the respondents. In addition to performance expectancy, there are empirical evidence to show that effort expectancy also determines the use of information system which include institutional repositories. It was found that effort expectancy ($t = 0.546$, $p > 0.05$) is the most significant predictors of behavioural intention towards using Google classroom. Other constructs such as social influence ($t = 1.460$, $p > 0.05$) and facilitating conditions ($t = 1.249$, $p > 0.05$) were found to be less significant in determining behavioural intentions of students18. The implication of this finding is clear enough; students follow the path of least resistance when they search for information resources for various tasks[148].

A study examined the factors influencing ICT adoption among teaching staff in higher education institutions. The study found that perceived usefulness, perceived ease of use, and social

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influence had a significant positive impact on the agility and adaptability of teaching staff in adopting new educational technologies. Teaching staff perceived ICTs as useful and easy to use, and were influenced by their peers and institutional norms, were more agile in integrating these technologies into their teaching practices[149]. Another author applied the Unified Theory of Acceptance and Use of Technology (UTAUT) to assess the agility of technology adoption among teaching staff. The study found that performance expectancy, effort expectancy, social influence, and facilitating conditions were significant predictors of the agility of teaching staff in adopting new technologies. When teaching staff perceived the technologies as useful, easy to use, socially accepted, and supported by the institution, they were more agile in embracing and effectively utilizing these technologies[149].

In a systematic review by some authors titled "Technology Acceptance Model in M-learning Context," authors found that the acceptance of technology, particularly in mobile learning contexts, is influenced by various factors such as perceived usefulness and ease of use. This suggests that teaching staff may be more inclined to adopt ICT tools and platforms if they perceive them as beneficial and user-friendly. This study focused on how teachers' pedagogical beliefs impact their use of digital media in classrooms. The findings revealed that teachers' beliefs about teaching and learning play a significant role in shaping their integration of ICT into educational practices. Teachers who hold constructivist beliefs, for example, tend to utilize digital media more extensively to support student-centred learning approaches. Investigating interventions to increase motivation in ICT studies and careers, this study highlighted the importance of addressing factors that influence individuals' interest in ICT. Findings suggested that targeted interventions aimed at enhancing motivation could positively impact the willingness of teaching staff to adopt ICT in their teaching practices[150].

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A study explored the gap between educational technology and practice from multiple perspectives, including teachers, school leaders, intermediaries, and researchers. The findings underscored the complexity of integrating technology into educational settings and identified barriers such as lack of support, inadequate training, and resistance to change among teaching staff. Addressing these barriers is crucial for promoting the effective adoption of ICT in teaching[151]. Although slightly earlier than the specified timeframe, this review of literature on technological pedagogical content knowledge (TPACK) is relevant for understanding the intersection of ICT adoption and teaching practices. The TPACK framework emphasizes the importance of integrating technological, pedagogical, and content knowledge for effective teaching with technology. Teaching staff who possess strong TPACK are better equipped to leverage ICT tools and resources to enhance teaching and learning outcomes[152].

2.3.2 Total Quality Management Practice and Agility Assessment

Research conducted by some authors found that holistic implementation of TQM brings a lot of advantages to the organisation in the area of quality, productivity as well as employees' development through creativity, innovation, training, teamwork, communication, trust and also decision-making process[86]. Research conducted by some authors found that TQM is relatively significant with the production worker's satisfaction[153], and the same result was obtained by another author who found that TQM practices have a significant and positive impact on employees" performance, and indirectly lead to greater job satisfaction[88]. In addition, a study found that TQM is the viewpoint that strives for preparing the organisation with guidelines for development through their customers' satisfaction. In addition, he also concluded that TQM is the sequence method of developing an organisation's environment, aided by top management contribution[154]. Some author conducted a study on the Influence of total quality management

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practices towards employee agility assessment and the objective is to have a better understanding on one of the approaches as in TQM practices in preparing the organisation which is to deal with environmental changes. This study involved 261 respondents from lower and middle level management employs. Result showed that there was significant influence of total quality management practice on agility assessment. It was also found that training and teamwork dimension of TQM practices had the greatest influence towards employees' job satisfaction. Top management commitment was the second influential factor of TQM practices towards employees' job satisfaction[155].

A study examined the relationships between total quality management practices and agility assessment among employees in manufacturing companies in Tunisia. Data for the study were collected from a survey of 205 industrial companies and the relationships proposed in the framework were tested using structural equation modelling. Result showed that there was significant impact of total quality management practices on agility assessment among employees. It was concluded that agile manufacturing system may also play a part in the development of agility culture[91]. Another study examined the effect of total quality management practices and JIT production practices on agility assessment. the study adopted the survey design and the population comprised 280 employees in selected organisation. Result showed that there was significant influence of total quality management practices on agility assessment. It was further reported that TQM should be regarded as the platform to maximize the effect of JIT production on agility assessment[156].

A study examined the impact of total quality management on organisational performance Case of Jordan Oil Petroleum Company and the study sample size was (103) managers from different levels. The researcher used two sources for data collection and they are: - secondary sources by

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referring to text books, periodical journals, etc. and primary sources in which the researcher used the questionnaire technique to collect data required for the research. Result showed that TQM has positive impact on organisational performance. It was also found that TQM implementation has an impact on operation efficiency and TQM implementation has an impact employees' satisfaction. It was concluded that top management in Jordan Oil Company should continue their effort in considering total quality management as a priority for their company in the future and involving the company to TQM implementation at all levels[157].

A study found a positive association between TQM implementation and organisational performance and five of TQM principles, customer focus, continuous improvement, top management commitment, employee involvement, and product innovation have a significantly positive effect on product quality, recommending the use of reward and recognition for involving employees in TQM efforts[158]. A study revealed that the implementation of TQM has a positive effect on both the operational and the organisational performance. The results show that customer focus, continuous improvement, top management commitment, employee involvement and product innovation are significantly and positively related to product quality[159].

A study found that different TQM practices significantly affect different performance outcomes and the main obstacles were lack of employee involvement, awareness and commitment of the employees, inappropriate firm structure, and lack of the resources[160]. A study indicated that the Jordanian private hospitals applying the total quality management practices with high degree. The highest focus of private hospitals within total quality management practices is on customer orientation, supplier management, high support from top management to the quality efforts and a concern from the target hospitals in participation of employees in quality management activities[161].

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Some authors conducted a study on Total Quality Management (TQM) implementation in the organisation and result showed that TQM concept is still being used by many organisations around the world and its successfully help the organisation to improve their competitiveness, business growth and the sustainability as well as increase employee's morale[162]. In Thailand, Some authors did a measurement the greatest factor affecting to the TQM in railway company, the results determined that organisational culture give the biggest impact[163]. Another study found that TQM could be implemented well in education sector; they concluded that the teaching and learning procedure are more effective and it's improved the overall quality[164].

An author did a research in financial sector (banking) where He concluded that TQM is significantly improved the overall performance of the company[165]. Some authors did an observation in service industry to study the TQM application, beside the benefit of TQM, they also observed that lack of communication and lack of management commitment were the top barrier in TQM implementation[166]. The impact of TQM is showed by many researchers and conducted research in a Brazillian electricity distribution company[167] where he observed that implementation of TQM helped the company in improving the order scheduling by 12% and reduce unproductive visit by 22%. Some authors made another research of TQM implementation in SME (Small Medium Enterprise) sector in Indonesia, where they concluded that TQM implementation can improve the competitive advantage of the SME[104]. Similarly, [168]also did research in SME in Indonesia where they concluded that TQM implementation can improve the financial performance of SME[169]. Some authors did a study in UK manufacture company an they concluded that TQM is successfully improve the overall performance and it can be combined with Six Sigma to improve product quality[170]. It is also the same with the result of observation in Nigeria where TQM is improving the customer satisfaction[171].

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In hotel industry, TQM practices also significantly improve the organisation competitive advantage as it confirmed by research study by some authors in Malaysian's hotel[172]. In Indonesia, some authors did an observation in education sector where they conclude that TQM has a significant effect on student satisfaction[173]. While another author worked with department store in Indonesia to determine the impact of TQM practices where he found that TQM significantly improved customer satisfaction, He also realized that there are some key factors in implementing TQM which are focused to customer, quality obsession, teamwork, and employee involvement[110]. 163Some author did some research in New Zealand higher education and concluded TQM is not fully matched with the substance of higher education due to its complexity. However, it is more fruitful to explore the development of locally appropriate systemic approaches to improving quality in and of higher education[174].

Some authors did an observation in some organisation with different sectors in Jordan, they observed that the result showed that TQM implementation improves customer satisfaction which leads to an increase in customer order/demand, which means that will increase sales and profit[112]. Some authors did the same study, they focused on one of the pharmaceutical organisations in India, and they found that TQM is a holistic methodology towards the general change of an organisation, the theory of TQM has tended to be fruitful in all fields provided that the management has enough potential to actualize it[175].

Similarly in Indonesia, an author did a study on one of the SMEs and concluded that TQM are significantly improved the operational performance of the company, increased customer satisfaction as well as substantially increased product quality. These improvements will increase an organisation competitive advantage and business sustainability. The last grouping was to study the relationship of TQM with organisation vision in some industries[176]. An author did

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research in some industries sector in Greece where she found the relationship between the TQM and the strategic management, in this process, she found that the quality is a key success factor, so the business is must focused on the implementation of a quality programs such as TQM[177]. In India construction firm, an author observed the relationship of lack knowledge, lack motivation and culture issues as the top barrier in implementing of TQM where it was given an input to the management to create the correct strategy in ensuring the TQM is implemented well in the organisation[178].

Some authors explored the link between total quality management and business performance survey research. Primary data was used for the study with questionnaire as research instrument. Result showed that there was significant influence of total quality management on business performance. It was also found that leadership, supply quality management, employee participation, recognition and reward and quality system management jointly and independently predicted business performance. It was recommended that management should try to update themselves on the various TQM practices so as to face the competitive environment[179]. Some authors examined the relationship between TQM practices quality performance, and innovation performance and result showed that TQM significantly and positively relates to both product quality and product innovation performance although it appears that the magnitude of the relationship is greater against product quality. In addition, significant causal relationships between quality performance and innovation performance were found, suggesting that achievement of one aspect of performance could impact the other[180].

A study examined the impact of total quality management and supply chain management on Organisational Performance and result showed that there was significant impact of total quality management on organisational performance[118]. Another study investigated the links between the

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different TQM practices, attempting, in particular, to determine how they affect organisational performance on three levels: operational, marketing and financial. The results support the argument that only a few TQM practices (supplier quality management, product/service project, and process management) have a positive effect on an organisation's operational performance[119]. A study indicated that at both strategic and operational level, linkages exist among how total quality management, just-in-time and supply chain management are viewed by the organisation as part of their operations strategy. Results indicate that a commitment to quality and an understanding of supply chain dynamics have the greatest effect on performance[181].

Some authors conducted a survey on the relationship between TQM practice and operational performance; they found out that leadership, management of people and customer focus are the strongest indicators of operational performance[182]. Some authors conducted a survey of 226 quality managers using Malcolm Baldrige National Award; they indicated that leadership is the most import important driver of organisational performance. It consists of information and analysis, strategic planning, human resources management and process management. This drive, however, results in improved financial results and customer's satisfaction. Following table shows the tabulation of study dealing with the relationship between TQM and operational performance of the organisation[122]. The results of some authors in the survey on TQM practices on Palestinian Hospitals, and their connection to performance indicated that people management, process management, and information and analysis are significantly connected to performance. Thus, TQM practices are a valid and reliable instrument used to foretell performance[183].

A study found that TQM practices such as teamwork, continuous improvement, and employee empowerment had a positive impact on the agility and adaptability of teaching staff in Jordanian universities. Specifically, these practices fostered a culture of collaboration, knowledge sharing,

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and openness to change, which enhanced the ability of teaching staff to quickly adopt new teaching methodologies and technologies[124]. An author conducted a review and highlighted that TQM practices like data-driven decision-making, stakeholder involvement, and professional development were critical in enhancing the agility of teaching staff. By actively involving teachers in decision-making processes, providing them with relevant data and insights, and offering opportunities for continuous learning, these practices helped teaching staff stay agile and responsive to changing educational needs and trends[125]

A study examined the relationship between TQM practices and agility among teaching staff in Indian educational institutions. They found that leadership commitment to quality, process standardization, and a student-centred approach contributed significantly to the agility of teaching staff in adapting their teaching methods and adopting new educational technologies[184]. 175A study conducted explored the impact of the COVID-19 pandemic and found that institutions with strong TQM systems in place, such as continuous improvement processes, employee empowerment, and data-driven decision-making, were better able to support the agility of teaching staff in transitioning to online teaching and adopting new digital tools[127].

Some authors conducted an empirical study among Chinese university teachers and found that TQM practices like employee involvement, stakeholder collaboration, and continuous improvement had a positive influence on the agility of teaching staff in adopting new educational technologies. These practices fostered a culture of openness, trust, and a willingness to experiment with new approaches[129]. A study investigated the contingencies affecting technology adoption agility among teaching staff and found that TQM practices such as process management, quality assurance, and resource allocation played a crucial role in supporting the agility of teaching staff. By streamlining processes, ensuring quality standards, and providing

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necessary resources, these practices enabled teaching staff to be more agile in adapting to new technologies and educational trends[129].

A study in Saudi Arabian higher education institutions found that TQM practices such as leadership commitment, employee empowerment, and continuous improvement had a positive impact on the agility and adaptability of teaching staff in adopting new educational technologies and pedagogical approaches. The study highlighted that these practices fostered a culture of innovation, encouraged risk-taking, and enabled teaching staff to quickly respond to changing student needs and market demands[130178]. A study examined the impact of TQM practices on the digital agility of teaching staff in higher education institutions. The study found that practices such as employee empowerment, resource allocation, and continuous professional development had a significant positive influence on the agility of teaching staff in adopting and effectively utilizing new digital technologies in their teaching practices[179].

Some authors conducted an empirical study among university teachers in China and found that TQM practices like employee involvement, stakeholder collaboration, and data-driven decision-making had a positive impact on the agility of teaching staff in adapting to changes in educational policies, curriculum requirements, and student demographics. These practices fostered a culture of evidence-based decision-making and enabled teaching staff to make informed adjustments to their teaching approaches[186]. A study explored the influence of TQM practices on the agility of teaching staff in leveraging social media for educational purposes. The study found that practices such as customer focus (student-centred approach), process management, and continuous improvement had a positive impact on the agility of teaching staff in adopting and integrating social media platforms into their teaching and learning activities[187]

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2.4 Conceptual Model

Independent Variables **Dependent Variable**

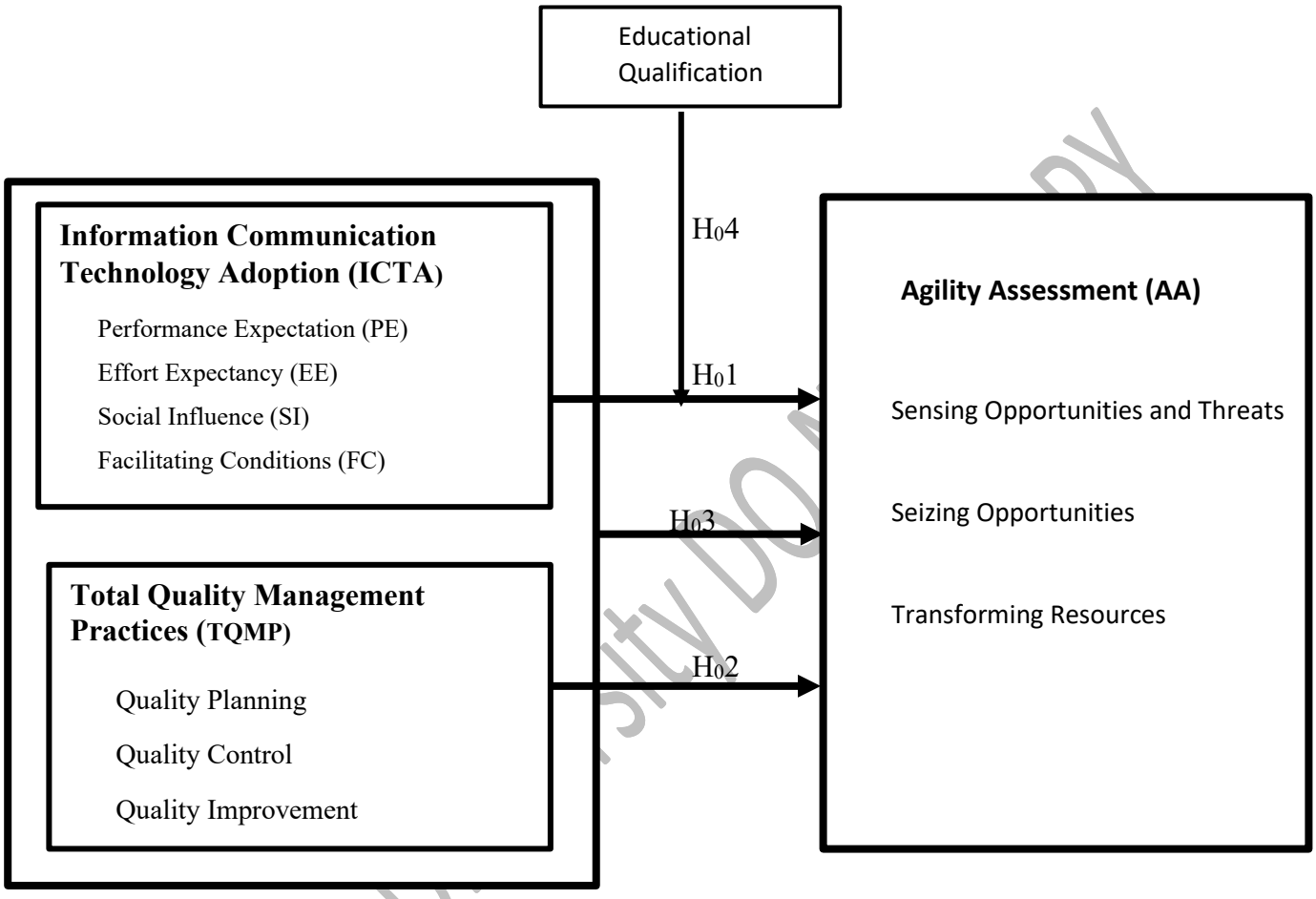


Figure 2.2: The Conceptual Model showing Influence of ICT Adoption (ICTA), Total Quality Management Practices (TQMP) on Agility Assessment (AA)

Source: Researcher, 2024.

2.4.1 Researcher Explanation of Conceptual Model

It is pertinent to explain the conceptual model adopted for this study so as to ensure a crystal and a precise reading that will lead to a consequent deeper comprehension of the utility of the research under study. Conceptual model is an explanation of the interrelationships among the variables or concepts that are used in the present study. Conceptual model is a set of interrelated

constructs that present a systematic view of phenomena by specifying relations among independent variables and dependent variable with the purpose of explaining and predicting the phenomena for decision making. Conceptual model of a research area is always constructed by the researchers by showing and linking the independent variables with the dependent variable.

The model on ICT Adoption, Total Quality Management (TQM) Practices, and Agility Assessment of OTM Teaching Staff in Public Polytechnics in Nigeria is built on the understanding that technological capability and quality-oriented management are essential drivers of staff agility in a dynamic educational environment. Both ICT Adoption and TQM Practices act as independent variables and agility Assessment of OTM teaching staff is the dependent variable. The interaction between ICT and TQM enhances the overall agility outcome. ICT adoption refers to the extent to which OTM teaching staff utilizes modern technological tools to enhance teaching and learning processes. TQM practices is a comprehensive management approach centered on continuous quality planning, control, and improvement in optimization of digital tools and technological resources in instructional delivery, administrative tasks, communication, and professional development. Agility assessment, in this context, refers to the ability of OTM teaching staff to respond swiftly and effectively to environmental changes including technological evolution, curriculum reform, and industry trends.

The model proposes that ICT adoption and TQM practices are independent but interrelated predictors of agility among OTM teaching staff in public polytechnics in southwest, Nigeria. The components of agility assessment are sensing opportunities and threats, seizing opportunities, and transforming resources[134]. The components of information and communication technology adoption are performance expectancy (PE), effort expectancy (EE),

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Social Influence (SI), and facilitating conditions (FC) [135]. And the components of total quality management are quality planning, quality control, and quality improvement.

It is important to note here that the dependent variable (agility assessment), independent variables (information communication technology adoption and total quality management practices) used for this study are replete with several indices. The researcher, however, restricted her choice of indices to the above-mentioned ones based on their relevance to the study and the respondents (teaching staff and students).

This model, however, suggests that the integration of information communication technologies enhance teaching efficiency, collaboration, and innovation. It tends to enables OTM teaching staff to respond swiftly to curriculum changes, digital demands, and students' learning needs, thereby fostering operational and instructional agility. TQM practices such as continuous improvement, staff involvement, and customers (students) focus create a quality-oriented environment. The conceptual model, therefore, displays that ICT adoption and TQM practices are interrelated independent variables that jointly influence the agility of OTM teaching staff. ICT adoption contributes to the technological capability for flexibility and efficiency, while TQM practices provide the quality management framework that sustains continuous improvement. Their interaction creates a synergistic effect that enhances the sensibility, responsiveness, and innovation of teaching staff within the polytechnic system. The conceptual model of this study was influenced by the theories which included, Dynamic Capability Theory, The Unified Theory of Acceptance and Use of Technology (UTAUT), and Juran Trilogy Theory.

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2.5 Summary of Gap in Literature

As there is a substantial body of literature on ICT adoption, TQM practices, and agility assessment in educational settings, there seems to be a lack of empirical studies specifically focusing on the Office Technology and Management teaching staff in public polytechnics in Southwest, Nigeria. Most of the available literature may be based on broader contexts or other geographical regions, which may not fully capture the unique challenges and dynamics faced by teaching staff in this specific context. Some studies tend to focus on ICT adoption, TQM practices, or agility assessment in isolation, however, there appears to be a gap in research that integrates these concepts within a comprehensive theoretical framework, exploring their interrelationships and potential synergies in enhancing the overall effectiveness and adaptability of the Office Technology and Management programme. While there are several studies on ICT adoption and TQM practices in education, empirical studies on agility assessment specifically tailored to teaching staff in vocational and technical education programmes like Office Technology and Management appears to be limited. Assessing the agility and adaptability of teaching staff in responding to rapidly changing technological and industry demands is crucial but may not have received sufficient attention in the reviewed literature.

The reviewed literature may not have adequately addressed the unique contextual factors and challenges faced by public polytechnics in Southwest Nigeria, such as resource constraints, insufficient staff training and development, infrastructural limitations, socio-cultural influences, and policy environments. These contextual factors can significantly impact ICT adoption, TQM implementation, and the agility of teaching staff, but their specific implications in this context may not have been fully explored. Much of the existing literature may have focused primarily on the perspectives of teaching staff or institutional administrators, while overlooking the

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viewpoints of other key stakeholders, such as students, industry partners, or policymakers. A comprehensive understanding of ICT adoption, TQM practices, and agility assessment in the Office Technology and Management programme requires a holistic consideration of the perspectives and experiences of all relevant stakeholders.

Most of the reviewed literature may have employed cross-sectional research designs, providing a snapshot of the current state of ICT adoption, TQM practices, and agility assessment at a specific point in time. Yet, the relationship between ICT adoption, TQM practices, and the agility of OTM teaching staff seems not thoroughly investigated. This lack of understanding may presents a significant problem for policymakers, administrators, and educators who aim to enhance the effectiveness of teaching staff and the overall quality of education in public polytechnics. Without a clear assessment of how ICT adoption and TQM practices impact the agility and performance of OTM teaching staff, efforts to improve educational outcomes may remain misdirected or ineffective. Thus, this study seeks to fill these gaps by exploring the adoption of ICT, the implementation of TQM practices, and their combined influence on the agility of OTM teaching staff in public polytechnics in Southwest, Nigeria. Addressing these gaps can contribute to a deeper understanding of the factors influencing the programme's effectiveness and adaptability, ultimately informing strategies for continuous improvement and better alignment with the institutions and societal needs. It is also expected to provide actionable insights that will inform policy formulation, capacity-building initiatives, and strategies for fostering a more responsive and technologically proficient teaching workforce.

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2.5.1 Summary of Reviewed Literature

Under the reviewed literature, several key concepts and frameworks have been explored to contextualize ICT adoption, Total Quality Management (TQM) Practices and Agility Assessment of Office Technology and Management (OTM) teaching staff in Nigeria public polytechnics. In OTM, agility assessment is crucial for aligning teaching with current office and management technologies. Literature underscores ICT adoption as a transformative tool in the teaching-learning process, especially in developing countries like Nigeria and further introduced total quality management (TQM) practices as a management approach that emphasizes quality planning, quality control, and continuous improvement as systematic approaches aimed at achieving high quality in all facets of teaching and learning process. With the increasing importance of sustainable development for businesses, particularly in developing countries like Nigeria, however, effective management of information has emerged as a critical factor in achieving long-term success. Trainees, therefore, are to be well-equipped to build and grow the e-business sector and generate the maximum possible output for social and economic development. In essence, the teaching staff plays a pivotal role in contributing significantly to academic excellence, student training development, and overall impact on society. While ICT has the potential to enrich teaching methodologies and increase the relevance of course content, barriers such as inadequate infrastructure, lack of technical training, technical supports, and resistance to change are common barriers to effective ICT implementation.

The study, therefore, assessed the level with which the teaching staff in the public polytechnics adapt to the technological uproar, and practice of total quality management. This in effect is to prepare OTM graduates in public polytechnic for the dynamic social-economic and technological

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changes by impacting the relevant digital knowledge and skills that will make them relevant, competitive, and self-reliant in the global market. It delves into the theoretical underpinnings and empirical studies on agility assessment, ICT adoption and TQM practices. The Unified Theory of Acceptance and Use of Technology (UTAUT) model is discussed as a primary framework, addressing factors that influence the acceptance of ICT. The reviewed literature identifies perceived ease of use, perceived usefulness, and facilitating conditions as key determinants of ICT adoption. The key steps in Juran's theory on quality encompass three fundamental stages which are quality planning, quality control, and quality improvement. Dynamic Capability Theory offers valuable insights into how educational institutions, particularly OTM teaching staff in the polytechnic institution can innovate and adapt to rapidly changing environments by focusing on the processes of sensing, seizing, and transforming resources. These formed the basis of conceptual model.

Empirical studies from similar educational environments demonstrate that when integrated with ICT, TQM practices lead to improved teaching outcomes, streamlined administrative processes, and enhanced student satisfaction. However, challenges related to funding, inadequate resources, and policy gaps are frequently cited as impediments to implementing TQM effectively. The review delves into the numerous barriers facing ICT adoption within Nigerian polytechnics. Studies consistently highlight inadequate infrastructure, including limited access to electricity, unstable internet connectivity, and insufficient digital devices, as significant obstacles. Additionally, funding shortages often prevent polytechnics from maintaining up-to-date ICT resources, further limiting teachers' and students' access to technology. These issues are compounded by the need for professional development; many OTM teaching staff lack the technical training to fully integrate ICT into their teaching and administrative practices.

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Empirical studies emphasize the importance of creating a supportive environment that encourages ICT use through continuous training, accessible resources, and a positive attitude toward technology, ultimately making ICT adoption more sustainable. In reviewing TQM practices, literature indicates that while many Nigerian polytechnics recognize the value of quality management, consistent implementation of TQM remains challenging. Key quality dimensions, such as leadership commitment, employee involvement, and a focus on stakeholder satisfaction, are frequently undermined by bureaucratic inefficiencies and resource constraints. The literature suggests that polytechnics committed to implementing TQM principles generally report better performance indicators, improved faculty morale, and increased student satisfaction.

The literature review identifies critical gaps in research, especially regarding the joint impact of ICT adoption and TQM practices on educational quality among OTM teaching staff in public polytechnics in Nigeria. Most studies focus on either ICT or TQM independently, with limited examination of how these two approaches can work together in educational settings. Moreover, there is a lack of empirical evidence on specific factors that influence OTM faculty's perceptions of and engagement with ICT-driven TQM practices. Based on the reviewed literature, while studies have explored the individual impact of ICT adoption and TQM practices in educational institutions, few have specifically examined their combined effect on teaching agility, particularly in the context of public polytechnics in Nigeria. This study addresses this gap by focusing on how ICT adoption and TQM practices influence the agility of OTM teaching staff, providing insights into the specific factors that can enhance teaching effectiveness and adaptability.

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As there is a substantial body of literature on ICT adoption, TQM practices, and agility assessment in educational settings, there seems to be a lack of studies specifically focused on the Office Technology and Management teaching staff in public polytechnics in Southwest, Nigeria. Most of the available literature may be based on broader contexts or other geographical regions, which may not fully capture the unique challenges and dynamics faced by teaching staff in this specific context. Some studies tend to focus on either ICT adoption, TQM practices, or agility assessment in isolation, however, there appears to be a gap in research that integrates these concepts within a comprehensive theoretical framework, exploring their interrelationships and potential synergies in enhancing the overall effectiveness and adaptability of the Office Technology and Management programme. While there are several studies on ICT adoption and TQM practices in education, the literature on agility assessment specifically tailored to teaching staff in vocational and technical education programmes like Office Technology and Management appears to be limited. Assessing the agility and adaptability of teaching staff in responding to rapidly changing technological and industry demands is crucial but may not have received sufficient attention in the reviewed literature. The reviewed literature may not have adequately addressed the unique contextual factors and challenges faced by public polytechnics in Southwest Nigeria, such as resource constraints, infrastructural limitations, socio-cultural influences, and policy environments. These contextual factors can significantly impact ICT adoption, TQM implementation, and the agility of teaching staff, but their specific implications in this context may not have been fully explored.

Much of the existing literature may have focused primarily on the perspectives of teaching staff or institutional administrators, while overlooking the viewpoints of other key stakeholders, such as students, industry partners, or policymakers. A comprehensive understanding of ICT

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adoption, TQM practices, and agility assessment in the Office Technology and Management programme requires a holistic consideration of the perspectives and experiences of all relevant stakeholders. Most of the reviewed literature may have employed cross-sectional research designs, providing a snapshot of the current state of ICT adoption, TQM practices, and agility assessment at a specific point in time. Yet, the relationship between ICT adoption, TQM practices, and the agility of OTM teaching staff seems not thoroughly investigated. This lack of understanding may presents a significant problem for policymakers, administrators, and educators who aim to enhance the effectiveness of teaching staff and the overall quality of education in public polytechnics.

Without a clear assessment of how ICT adoption and TQM practices impact the agility and performance of OTM teaching staff, efforts to improve educational outcomes may remain misdirected or ineffective. Thus, this study seeks to fill these gaps by exploring the adoption of ICT, the implementation of TQM practices, and their combined influence on the agility of OTM teaching staff in public polytechnics in Southwest, Nigeria. Addressing these gaps can contribute to a deeper understanding of the factors influencing the programme's effectiveness and adaptability, ultimately informing strategies for continuous improvement and better alignment with the institutions and societal needs. It is also expected to provide actionable insights that will inform policy formulation, capacity-building initiatives, and strategies for fostering a more responsive and technologically proficient teaching workforce.

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Chapter Three

Methodology

This chapter presents the methods adopted in this study. It gives a detailed research design. The aspects of the methods addressed are the study location and population, the sampling technique employed, the sample size, the research instrument adopted, the method of data collection, and method of data analysis.

3.1 Research Design

The research design employed for this study was the descriptive survey research design with a mixed-method approach. The mixed method approach incorporates the quantitative and qualitative methods to provide a more comprehensive understanding of the research questions. A descriptive survey is a non-experimental research method and it is perhaps the most widely used method for educational research. A descriptive survey critically examines events, opinions, objects, attitudes, subjects, or ideas to provide accurate information about the phenomena being studied. The descriptive research design was considered suitable in carrying out the study as it tends to examine the influence of information communication technology adoption (ICTA), and total quality management practices on agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

3.2 Population of the Study

The population of this study comprised teaching staff and students of the Office Technology and Management (OTM) departments in the accredited public polytechnics in Southwest Nigeria. Specifically, the study covered a total population of **218** respondents, made up of **166** teaching staff and a selected **52** student**s** across the 13 accredited polytechnic**s** in the region. The teaching

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staff population included all lecturers and instructors in the OTM departments who were actively involved in teaching and academic administration during the period covered by the research. In addition, selected 52 students (2 National Diploma and 2 Higher National Diploma) were included to provide complementary qualitative data through interviews. The combination of the two groups (teaching staff and students) ensured a holistic assessment of ICT adoption and Total Quality Management (TQM) practices within the OTM programmes of public polytechnics in Southwest Nigeria. Table 3.1a shows the total number of Office Technology and Management teaching staff in the public polytechnics, in Southwest, Nigeria.

Table 3.1: Population of Office Technology and Management Teaching Staff in Public Polytechnics, in Southwest Nigeria

S/N	Name of Institutions	State	Number of OTM Staff
1.	Federal Polytechnic, Ado Ekiti	Ekiti	14
2.	Federal Polytechnic, Ede, Ede	Osun	14
3.	Federal Polytechnic Ilaro	Ogun	15
4.	Yaba College of Technology, Yaba, Lagos	Lagos	18
5.	DS Adegbenro ICT Polytechnic, Itoro, Ewekoro	Ogun	10
6.	Gateway Polytechnic Sapaade	Ogun	12
7.	Osun State College of Technology, Esa Oke	Osun	11
8.	Moshood Abiola Polytechnic	Ogun	10
9.	Osun State Polytechinc, Iree	Osun	12
10.	Rufus Giwa Polytechnic, Owo	Ondo	14
11.	Adeseun Ogundoyin Polytechnic, Eruwa	Oyo	12
12.	Oyo State College of Agriculture and Technology, Igboora	Oyo	10
13.	The Polytechnic Ibadan, Ibadan	Oyo	14
	Total		**166**

Sources: ***Institutions' Establishment and Research Field data, 2024***

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3.3 Sample Size and Sampling Techniques

Considering the relatively small size of the population (218), the study adopted a total

enumeration (census) approach for the quantitative aspect involving the 166 teaching staff. This approach enable the inclusion of all members of the population, thereby eliminating sampling error and ensuring comprehensive coverage of the views and experiences of all teaching staff in the study area. For the qualitative aspect, a purposive sampling technique was employed to select the 52 student**s** (2 ND and 2 HND) for the interview sessions. The selection was based on their exposure to ICT tools, familiarity with departmental activities, and participation in OTM-related learning experiences. These criteria ensured that the participants were information-rich and capable of providing in-depth insights to complement the quantitative findings. The integration of total enumeration for the quantitative phase and purposive sampling for the qualitative phase strengthened the reliability and validity of the study by combining breadth and depth in data collection and analysis.

3.4 Description of the Research Instruments

The instruments used for data collection in this study were structured questionnaires and interview. These techniques were preferred because of the high literacy level of the study population. The questionnaire was chosen as the instrument because it is appropriate for getting to large number of respondents and their dispersion time. The questionnaire was adapted[2,3, &5] and was modified to suit the study. The questionnaire is an acceptable instrument in non-experimental studies. The questionnaire contains scales to measure the various constructs of the research model. The questionnaire is divided into four (4) sections (A, B, C, and D) with a focus

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on the variables of the study. The interview section A, B, C, and D contains ten questions which covers the areas of the research questions

Section A elicited information on the demographic characteristics of the respondents which included; institution, designation, gender, age, marital Status, educational qualification, religion, and years of working experience.

Section B elicited information on agility assessment of OTM teaching staff using a standardized scale which was adapted for the study[2,3]. This section had three (3) sub-metrics with a total of fifteen (15) items. The first sub-scale measured sensing opportunities and threats and it contained five (5) items. The second sub-scale measured seizing opportunities and it contained five (5) items. The third sub-scale measured transforming resources and it consisted of five (5) items. The scale has a four-point Likert scale with ranked options: Very High (VH) = 4 points, High (H) = 3 points, Low (L) = 2 points, Very Low (VL) = 1 point. Examples of items of the section are "I am constantly on the lookout for new opportunities that can be of benefit in my career" and "I take prompt action to capitalize on any opportunity that arises."

Section C elicited data on information communication technology adoption using a standardized scale adapted for this study[4,5]. This section has four (4) sub-scales with a total of twelve (12) items. The first sub-scale measured performance expectancy and it contained three (3) items. The second sub-scale measured effort expectancy and it contained three (3) items. The third sub-scale measured social influence and it consisted of three (3) items. The fourth section measured facilitating conditions and it comprised three (3) items. The scale has a four-point Likert scale with ranked options: Very High (VH) = 4 points, High (H) = 3 points, Low (L) = 2 points, Very Low (VL) = 1 point. Examples of items of the section are "Learning how to use modern

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technology is easy for me" and "Using modern technology would improve my teaching performance".

Section D obtained information on total quality management which was adapted for the study[6,7,&8]. This section has three sub-scales with a total of fifteen items. The first sub-scale measure quality planning and it contains five items, the second sub-scale measured quality control and it contained 5 items while the third sub-scale measured quality improvement and it consisted of five items. The scale has a four-point Likert scale with ranked options: Very High (VH) = 4 points, High (H) = 3 points, Low (L) = 2 points, Very Low (VL) = 1 point. Examples of items of the section are: "I clearly define the learning objectives and desired outcomes for my course" and "I regularly monitor and assess students learning and progress throughout the course".

3.5 Validity of the Research Instrument

To establish the validity of the instruments used for the study, the face and content validity of the questionnaire was established by the thesis supervisor and two other experts. It was re-validated using the Cronbach's Alpha method. An in-depth interview was also conducted to gather qualitative insights into students' experiences and perceptions. Examples of items of the section are "Do your teachers regularly update the course content to reflect new development in the Technology Company or industries? Yes ( ) Not Really ( ) No ( ), If yes. Can you recall a recent instance when this happened in the course of your study? What specific office

Copies of the instrument were given to the project supervisor and the two experts who are in the field of Office and Information Management. These experts checked the instrument to point out the researcher's statements that are poorly worded and those that do not agree with the purpose of the study. They examined the instrument for comprehensiveness, relevance of contents, clarity

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of instructions and statements, and possible ambiguities, errors, and/or omissions. Content validity was also conducted by the project supervisor and the two experts by examining the content of the instrument to ensure that the data collected using the questionnaire would be useful in answering the research questions and testing the hypotheses that was employed for this study.

3.6 Reliability of the Research Instruments

The reliability of the measuring instruments was done through a pilot study. The pilot study helps to ensure consistency and dependability of the scale and the ability to elicit data that answers the research questions of the study. It was carried out by using 30 copies of the questionnaire administered to OTM teaching staff in public polytechnics in North Central, Nigeria (Kwara State Polytechnic, Ilorin; Kwara State, Federal Polytechnic Idah; Kogi State, Federal Polytechnic Ofa, Kwara State) who are outside the scope of the study. The data obtained was subjected to Cronbach's alpha test to establish the internal consistency of the items in each of the scales. The instrument's reliability was confirmed using Cronbach's Alpha, which yielded coefficients of 0.78, 0.81, and 0.87, for ICT adoption, total quality management practices and agility assessment, indicating acceptable internal consistency.

3.7 Method of Data Collection

An introductory letter was collected from the Head of the Department of Information Management, Lead City University, which was addressed to the authority of the public polytechnics in Southwest Nigeria, where the OTM teaching staff are working by introducing the survey and the researcher. The letter described the reasons for the survey and soliciting the OTM teaching staff assistance in promptly filling and returning the questionnaire. The promise of

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anonymity of the respondents and confidentiality of the results was the content of the questionnaire cover page. The OTM teaching staff were made to know the essence of the study, as the data collected from them would only be used for academic purpose. Some of the copies of the questionnaire were personally administered and the interviews conducted by the researcher while two trained research assistants were employed to help in administering the other questionnaires and to conduct the interviews. The OTM teaching staff were given ample time to complete the questionnaires. The interview questions was also explained to the set of selected students and allowed enough time to pen down their opinions on the paper, after which the completed copies were retrieved and collated for analysis.

3.8 Method of Data Analysis

The data collected for this study was analyzed using Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics which include frequency counts and percentages was used to analyze the demographic information of respondents. Frequency counts, percentages, mean and standard deviation was used to analyze data on the research questions 1-3. For the testing of the null hypotheses, inferential statistics of simple linear and multiple regression were used at $p< 0.05$ level of significance. Thematic analysis was used for the qualitative data.

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Chapter Four

Results and Discussion of Findings

This chapter presents the data from the field, analysis of the data, and interpretation of the results. The research questions and stated hypotheses guided the presentations in this chapter. The descriptive analyses were presented in the first section, revealing the use of tables with frequencies and percentages to present the demographic profile of respondents. Likewise, the second section presents the analyses of research questions using tables with frequencies, percentages and mean distribution of data from the respondents. The test of hypotheses using regression analysis was presented in the third section; while the discussion of findings was presented in the concluding section.

For the quantitative part of the study, total copies of one hundred and sixty-six (166) questionnaires were administered, and one hundred and thirty-nine (139) copies were returned. Nevertheless, only one hundred and seventeen (117) copies of questionnaires returned were ascertained to be properly filled and usable for analysis. The response rate of the usable copies of questionnaire, as presented in Table 4.1, is 70.5%.

Table 4.1: Response Rate

Response	Frequency	Percent (%)
Usable copies	117	70.5
Copies not returned	27	16.3
Not usable, but returned	22	13.2
Total copies administered	**166**	**100.0**

Source: Field Survey, 2024

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4.1 Analysis of Demographic Data

The demographic profiles of respondents were presented in this section. This includes the gender, age, marital status, educational qualification, religion, work experience, tertiary institutions and current designation, as shown in Table 4.2.

Table 4.2: Demographic Data of Respondents

Variables	Measurement	Frequency	Percentage (%)
Gender	No response	10	8.5
	Male	72	61.5
	Female	35	29.9
	Total	**117**	**100.0**
Age	No response	09	7.7
	31-40	21	17.9
	41-50	42	35.9
	51-60	31	26.5
	61 and above	14	12.0
	Total	**117**	**100.0**
Marital Status	No response	11	9.4
	Single	09	7.7
	Married	94	80.3
	Widow	01	0.9
	Widower	02	1.7
	Total	**117**	**100.0**
Educational Qualification	No response	10	8.5
	HND	18	15.4
	BSc	19	16.2
	Masters	53	45.3
	PhD	02	1.7
	Others	15	12.8
	Total	**117**	**100.0**
Religion	No response	18	15.4
	Christianity	64	54.7
	Islam	34	29.1
	Others	01	0.9
	Total	**117**	**100.0**

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Variables	Measurement	Frequency	Percentage (%)
Work Experience	No response	12	10.3
	1-5	17	14.5
	6-10	22	18.8
	11-15	23	19.7
	16-20	17	14.5
	21 and above	26	22.2
	Total	**117**	**100.0**
Tertiary Institution	Federal Polytechnic, Ado Ekiti	12	10.3
	Federal Polytechnic, Ede	13	11.1
	Federal Polytechnic, Ilaro	08	6.8
	Yaba College of Technology	11	9.4
	D.S. Adegbenro ICT Polytechnic, Itoro	06	5.1
	Gateway Polytechnic, Sapade	09	7.7
	Osun State College of Technology, Esa Oke	05	4.3
	Moshood Abiola Polytechnic	08	6.8
	Osun State College of Agriculture	06	5.1
	Rufus Giwa Polytechnic	10	8.5
	Adeseun Ogundoyin Polytechnic, Eruwa	07	6.0
	Oyo State College of Agriculture and Technology	10	8.5
	The Polytechnic Ibadan	12	10.3
	Total	**117**	**100.0**
Current designation	No response	30	25.7
	Assistant Chief Instructor	06	5.1
	Assistant Lecturer	01	0.9
	Assistant Principal Instructor	01	0.9
	Chief Instructor	06	5.1
	Chief Lecturer	04	3.4
	Higher Instructor	03	2.6
	Lecturer I	09	7.7
	Lecturer II	13	11.1
	Lecturer III	08	6.8
	Principal Instructor	09	7.7
	Principal Lecturer	05	4.3
	Principal Technologist	03	2.6
	Senior Instructor	11	9.4
	Senior Lecturer	04	3.4
	Senior Technologist	02	1.7
	Teaching Assistant	01	0.9
	Total	**117**	**100.0**

Source: Field Survey, 2024

For the demographic profile by gender, Table 4.2 shows that 72 participants, representing 61.5% were male while 35 participants, representing 29.9% were female. 10 participants, representing 8.5% did not respond. This data indicated a lower level of female representation in the study. Additionally, 8.5% did not indicate their gender. Although relatively small it possibly may be due to privacy concerns or survey fatigue. This distribution, however, suggests a male-dominated sample, which may reflect the existing gender composition of the teaching staff within the studied polytechnics or could indicate a gender imbalance in participation. Presentations on age reveals that 21 participants, representing 17.9% were between 31 and 40 years; 42 participants, representing 35.9% were between 41 and 50 years; 31 participants, representing 26.5% were between 51 and 60 years; and 14 participants, representing 12.0% were 61 years and above. A total of 09 participants, representing 7.7% did not respond. The age distribution reveals a predominant number of middle-aged and senior teaching staff, which suggests that the workforce in the OTM departments of public polytechnics is largely experienced.

The Table 4.2 shows that 09 participants, representing 7.7% were single; 94 participants, representing 80.3% were married; participants representing 0.9% were widows and 2 participants, representing 1.7% were widowers. Also, 11 participants, representing 9.4% did not respond. The data revealed that the OTM teaching staff population is largely married, this trend is consistent with the maturity and experience level observed in the age and years-of-service profiles. This demographic feature may also contribute to a stable and responsible workforce, which can be an advantage for implementing Total Quality Management (TQM) practices in OTM programme and fostering institutional discipline.

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For educational qualification, 18 participants, representing 15.4% had HND; 19 participants, representing 16.2% had BSc; 53 participants, representing 45.3% had MSc; 02 participants, representing 1.7% had PhD; and 15 participants, representing 12.8% had other qualifications which were not specified. A total of 10 respondents, representing 8.5% did not respond. The educational profile demonstrates a moderately high academic qualification structure, which aligns with the professional requirements of polytechnic system but highlights the need to strengthen postgraduate training and doctoral-level capacity among the staff to enhance instructional quality, research engagement, and institutional competitiveness.

Also, for religion, 64 participants, representing 54.7% were Christians; 34 participants, representing 29.1% were Muslims; and participants, representing 0.9% practiced another religion. A total of 18 participants, representing 15.4% did not respond. The findings indicate that the teaching staff population is predominantly Christian, followed by a significant Muslim representation. Even though religion is not a direct determinant of professional performance, the diversity among the OTM teaching staff may contribute to a culturally inclusive work environment which may be beneficial for quality management and workforce agility.

For years of work experience, 17 participants, representing 14.5% were between 1 and 5 years; 22 participants, representing 18.8% were between 6 and 10 years; 23 participants, representing 19.7% were between 11 and 15 years; 17 participants, representing 14.5% were between 16 and 20 years; 26 participants, representing 22.2% were 21 years and above. A total of 12 participants, representing 10.3% did not respond. This data suggest a mature and experienced workforce, which could positively influence the implementation of institutional policies, quality assurance mechanisms, and agility in teaching and learning. However, it also highlights the need for

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continuous professional development and ICT retraining programmes to ensure that long-serving staff stay up-to-date with modern pedagogical and technological innovations.

The researcher penned 12 participants, representing 10.3% for Federal Polytechnic Ado-Ekiti; 13 participants representing 11.1% for Federal Polytechnic, Ede; 08 participants, representing 6.8% for Federal Polytechnic, Ilaro; 11 participants, representing 9.4% for Yaba College of Technology; 06 participants, representing 5.1% for D. S. Adegbenro Polytechnic, Itoro; 09 participants, representing 7.7% for Gateway Polytechnic, Sapade; 05 participants, representing 4.3% for Osun State College of Technology, Esa-Oke; 08 participants, representing 6.8% for Moshood Abiola Polytechnic; 06 participants, representing 5.1% for Osun State College of Agriculture; 10 participants, representing 8.5% for Rufus Giwa Polytechnic; 07 participants, representing 6.0% for Adeseun Ogundoyin Polytechnic, Eruwa; 10 participants, representing 8.5% for Oyo State College of Agriculture and Technology; and 12 participants, representing 10.3% for the Polytechnic, Ibadan. The data implies that teaching staff in each accredited polytechnic selected were represented in the research.

The table shows that for current designation, 06 participants, representing 5.1% were assistant chief instructor; a participant, representing 0.9% was assistant lecturer; another participant, representing 0.9% was assistant principal instructor; 06 participants, representing 5.1% were chief instructor; 04 participants, representing 3.4% were chief lecturer; 03 participants, representing 2.6% were assistant higher instructor; 09 participants, representing 7.7% were lecturer I; 13 participants, representing 11.1% were lecturer II; 08 participants, representing 6.8% were lecturer III; 09 participants, representing 7.7% were principal instructor; 05 participants, representing 4.3% were principal lecturer; 03 participants, representing 2.6% were principal technologist; 11 participants, representing 9.4% were senior instructor; 04 participants,

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representing 3.4% were senior lecturer; 02 participants, representing 1.7% were senior technologist; a participant, representing 0.9% was teaching assistant. A total of 30 participants, representing 25.7% did not respond. The designation distribution reveals a workforce dominated by mid-level teaching and technical staff**,** supported by a smaller number of senior academics. This structure suggests that most respondents are actively engaged in classroom delivery and operational aspects of teaching and learning. The limited number of senior academic staff may have implications for institutional mentorship, leadership continuity, and policy implementation, while the dominance of mid-level lecturers could provide a strong base for the adoption of ICT and Total Quality Management (TQM) practices that enhance institutional agility and performance.

For the qualitative part of the study, a total of 52 respondents participated in the research (26 participants from OND and HND classes, respectively). This data portrays balanced distribution that ensured adequate representation of perspectives across both academic levels within the Office Technology and Management (OTM) programme. Out of this number, there were 25 female participants, representing 48.1%; 19 male participants, representing 36.5%; and 8 participants, representing 15.4% who did not disclose their gender. Data on age shows that 28 participants, representing 53.8% were between the ages of 19 and 24 years; 15 participants, representing 28.8% were between the age of 25 and 30 years; one participant, representing 1.9% was less than 19 years; and 8 participants, representing 15.4% did not disclose their ages. Additionally, regarding marital status, 44 participants, representing 84.6% were single; one participant, representing 1.9% was married; and 7 participants representing 13.5% did not disclose their marital status.

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Overall, the qualitative demographic data implies that the participants were majorly young, single, and predominantly female students, characteristics that are consistent with the general student population in OTM programmes. These attributes may influence students' attitudes toward ICT adoption, their experiences with TQM-driven learning environments, and their agility in adapting to innovative instructional practices

4.2 Analysis of Research Questions

Research Question One: What is the level of agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria?

Table 4.3: Responses on level of agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

Sensing Opportunities and Threats	Very High	High	Low	Very Low	Mean
I am consistently on the look for new opportunities that can be of benefit in my career	80 (68.4%)	36 (30.8%)	1 (0.9%)	0 (0.0%)	3.68
I have keen eye for identifying potential areas of growth or improvement in OTM	91 (77.8%)	26 (22.2%)	0 (0.0%)	0 (0.0%)	3.78
I actively seek out information and stay updated on industry trends to identify emerging opportunities	77 (65.8%)	39 (33.3%)	1 (0.9%)	0 (0.0%)	3.65
I am willing to take calculated risks to pursue promising opportunities that could benefit my career	85 (72.6%)	29 (24.8%)	3 (2.6%)	0 (0.0%)	3.70
I collaborate with colleagues to identify and explore new opportunities in Office Technology and Management	71 (60.7%)	45 (38.5%)	1 (0.9%)	0 (0.0%)	3.60
Weighted Mean					**3.68**

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Seizing Opportunities	**Very**	**High**	**Low**	**Very Low**	**Mean**
I take prompt action to capitalize on any opportunity that arises	89 (76.1%)	27 (23.1%)	1 (0.9%)	0 (0.0%)	3.75
I have skill of mobilizing the necessary resources to seize opportunities	71 (60.7%)	43 (36.8%)	3 (2.6%)	0 (0.0%)	3.58
I possess ability to develop and implement effective strategies to exploit identified opportunities	81 (69.2%)	35 (29.9%)	1 (0.9%)	0 (0.0%)	3.68
I demonstrate perseverance and resilience in overcoming obstacles or challenges when pursuing opportunities	75 (64.1%)	42 (35.9%)	0 (0.0%)	0 (0.0%)	3.64
I have ability to see the bright side of opportunities and take proactive steps	86 (73.5%)	31 (26.5%)	0 (0.0%)	0 (0.0%)	3.74
Weighted Mean					**3.68**
Transforming Resources	**Very High**	**High**	**Low**	**Very Low**	**Mean**
I am skilled at identifying and utilizing available resources to enhance teaching and learning experience	81 (69.2%)	36 (30.8%)	0 (0.0%)	0 (0.0%)	3.69
I effectively combine and recombine existing resources in novel ways	54 (46.2%)	61 (52.1%)	2 (1.7%)	0 (0.0%)	3.44
I actively seek out new resources or tools that can be integrated into my teaching practices	64 (54.7%)	52 (44.4%)	0 (0.0%)	1 (0.9%)	3.53
I am willing to experiment with different resource combinations to find innovative teaching approaches	79 (67.5%)	37 (31.6%)	1 (0.9%)	0 (0.0%)	3.67
I possess ability to adapt and repurpose resources to meet the diverse needs of my students	59 (50.4%)	54 (46.2%)	4 (3.4%)	0 (0.0%)	3.47
Weighted Mean					**3.56**
Overall Weighted Mean					**3.64**

Decision rule: < 2.5 = low; 2.5 = moderate; > 2.5 = high
Key: Very High = 4, High = 3, Low = 2, Very Low = 1
Source: Field Survey, 2024

Data on sensing opportunities and threats in Table 4.3 shows that 68.4% of the participants reported very high for the item "I am consistently on the look for new opportunities that can benefit my institution"; 30.8% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.68. Also, 77.8% of the participants reported very high for the item "I have keen eye for identifying potential areas of growth or improvement within my

institution"; 22.2% reported high; and no participant reported low and very low. The responses have a mean of 3.78. Likewise, 65.8% of the participants reported very high for the item "I actively seek out information and stay updated on industry trends to identify emerging opportunities"; 33.3% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.65.

The table also shows 72.6% of the participants reported very high for the item "I am willing to take calculated risks to pursue promising opportunities that could benefit my institution"; 24.8% reported high; 2.6% reported low and no participant reported very low. The responses have a mean of 3.70. Likewise, 60.7% of the participants reported very high for the item "I collaborate with colleagues to identify and explore new opportunities for our institution"; 38.5% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.60. The weighted mean for sensing opportunities and threats is 3.68, which is high.

Results on seizing opportunities in Table 4.3 shows that 76.1% of the participants reported very high for the item "I take prompt action to capitalize on any opportunity that arises"; 23.1% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.75. Also, 60.7% of the participants reported very high for the item "I have skill of mobilizing the necessary resources to seize opportunities"; 36.8% reported high; 2.6% reported low; and no participant reported very low. The responses have a mean of 3.58. Likewise, 69.2% of the participants reported very high for the item "I possess ability to develop and implement effective strategies to exploit identified opportunities"; 29.9% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.68.

The table also shows 64.1% of the participants reported very high for the item "I demonstrate perseverance and resilience in overcoming obstacles or challenges when pursuing opportunities";

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35.9% reported high; no participant reported low and very low. The responses have a mean of 3.64. Likewise, 73.5% of the participants reported very high for the item "I have ability to see the bright side of opportunities and take proactive steps"; 26.5% reported high; and no participant reported low and very low. The responses have a mean of 3.74. The weighted mean for seizing opportunities is 3.68, which is also high.

Data on transforming resources in Table 4.3 shows that 69.2% of the participants reported very high for the item "I am skilled at identifying and utilizing available resources to enhance teaching and learning experience"; 30.8% reported high; and no participant reported low and very low. The responses have a mean of 3.69. Also, 46.2% of the participants reported very high for the item "I effectively combine and recombine existing resources in novel ways"; 52.1% reported high; 1.7% reported low; and no participant reported very low. The responses have a mean of 3.44. Likewise, 54.7% of the participants reported very high for the item "I actively seek out new resources or tools that can be integrated into my teaching practices"; 44.4% reported high; and no participant reported low and very low. The responses have a mean of 3.53.

The table also shows 67.5% of the participants reported very high for the item "I am willing to experiment with different resource combinations to find innovative teaching approaches"; 31.6% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.67. Likewise, 50.4% of the participants reported very high for the item "I possess ability to adapt and repurpose resources to meet the diverse needs of my students"; 46.2% reported high; 3.4% reported low and no participant reported very low. The responses have a mean of 3.47. The weighted mean for transforming resources is 3.56, which is high. Similarly, the overall weighted mean for level of agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria is 3.64, which is also high.

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Research Question Two: What is the level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria?

Table 4.4a: Responses on level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

Performance Expectancy	**Very High**	**High**	**Low**	**Very Low**	**Mean**
Learning how to use modern technology is easy for me	53 (45.3%)	64 (54.7%)	0 (0.0%)	0 (0.0%)	3.45
My interaction with modern technology is clear and understandable	51 (43.6%)	66 (56.4%)	0 (0.0%)	0 (0.0%)	3.44
I find it easy to get the modern technology to do what I want it to do	57 (48.7%)	58 (49.6%)	2 (1.7%)	0 (0.0%)	3.47
Weighted Mean					**3.45**
Effort Expectancy	**Very**	**High**	**Low**	**Very Low**	**Mean**
Using modern technology would improve my learning performance	100 (85.5%)	17 (14.5%)	0 (0.0%)	0 (0.0%)	3.85
Using modern technology increases my chances of achieving learning that are important to me	103 (88.0%)	14 (12.0%)	0 (0.0%)	0 (0.0%)	3.88
Using modern technology would enhance my effectiveness in teaching	103 (88.0%)	14 (12.0%)	0 (0.0%)	0 (0.0%)	3.88
Weighted Mean					**3.87**
Social Influence	**Very**	**High**	**Low**	**Very Low**	**Mean**
Opinions and experiences of my colleagues influence my decision to adopt new ICT tools in my teaching practices	53 (45.3%)	61 (52.1%)	3 (2.6%)	0 (0.0%)	3.43
Expectations and demands of students regarding the use of technology in the classroom influence my decision to adopt ICT tools	88 (75.2%)	27 (23.1%)	2 (1.7%)	0 (0.0%)	3.74
Social pressure or desire to conform to the norms of my colleagues or institution influences my adoption of ICT in teaching	43 (36.8%)	67 (57.3%)	7 (6.0%)	0 (0.0%)	3.31
Weighted Mean					**3.49**
Facilitating Conditions	**Very High**	**High**	**Low**	**Very Low**	**Mean**
We have adequate training on the use of ICT for teaching in my institution	23 (19.7%)	22 (18.8%)	12 (10.3%)	60 (51.3%)	2.07
My skills and abilities to use ICT for teaching	23 (19.7%)	56 (47.9%)	37 (31.6%)	1 (0.9%)	2.86
Adoption of ICT for teaching by other teaching staff	18 (15.4%)	54 (46.2%)	44 (37.6%)	1 (0.9%)	2.76
Weighted Mean					**2.56**
Overall Weighted Mean					**3.34**

Decision rule: < 2.5 = low; 2.5 = moderate; > 2.5 = high
Key: Very High = 4, High = 3, Low = 2, Very Low = 1
Source: Field Survey, 2024

Data on performance expectancy in Table 4.4a shows that 45.3% of the participants reported very high for the item “Learning how to use modern technology is easy for me”; 54.7% reported high; and no participant reported low and very low. The responses have a mean of 3.45. Also, 43.6% of the participants reported very high for the item “My interaction with modern technology is clear and understandable”; 56.4% reported high; and no participant reported low and very low. The responses have a mean of 3.44. Likewise, 48.7% of the participants reported very high for the item “I find it easy to get the modern technology to do what I want it to do”; 49.6% reported high; 1.7% reported low and no participant reported very low. The responses have a mean of 3.47. The weighted mean for performance expectancy is 3.45, which is high.

Results on effort expectancy in Table 4.4a shows that 85.5% of the participants reported very high for the item “Using modern technology would improve my learning performance”; 14.5% reported high; and no participant reported low and very low. The responses have a mean of 3.85. Also, 88.0% of the participants reported very high for the item “Using modern technology increases my chances of achieving learning that are important to me”; 12.0% reported high; and no participant reported low and very low. The responses have a mean of 3.88. Likewise, 88.0% of the participants reported very high for the item “Using modern technology would enhance my effectiveness in teaching”; 12.0% reported high; and no participant reported low and very low. The responses have a mean of 3.88. The weighted mean for effort expectancy is 3.87, indicating high level.

Data on social influence in Table 4.4a shows that 45.3% of the participants reported very high for the item “Opinions and experiences of my colleagues influence my decision to adopt new ICT tools in my teaching practices”; 52.1% reported high; 2.6% reported low and no participant reported very low. The responses have a mean of 3.43. Also, 75.2% of the participants reported

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very high for the item “Expectations and demands of students regarding the use of technology in the classroom influence my decision to adopt ICT tools”; 23.1% reported high; 1.7% reported low; and no participant reported very low. The responses have a mean of 3.74. Likewise, 36.8% of the participants reported very high for the item “Social pressure or desire to conform to the norms of my colleagues or institution influences my adoption of ICT in teaching”; 57.3% reported high; 6.0% reported low and no participant reported very low. The responses have a mean of 3.31. The weighted mean for social influence is 3.49, which is also high.

Results on facilitating conditions in Table 4.4a shows that 19.7% of the participants reported very high for the item “We have adequate training on the use of ICT for teaching in my institution”; 18.8% reported high; 10.3% reported high; and no participant reported very low. The responses have a mean of 2.07. Also, 19.7% of the participants reported very high for the item “My skills and abilities to use ICT for teaching”; 47.9% reported high; 31.6% reported low; and 0.9% reported very low. The responses have a mean of 2.86. Likewise, 15.4% of the participants reported very high for the item “Adoption of ICT for teaching by other teaching staff”; 46.2% reported high; 37.6% reported low; and 0.9% reported very low. The responses have a mean of 2.76. The weighted mean for facilitating conditions is 2.56, which is high. Also, the overall weighted mean for level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria is 3.34, which is also high.

For the qualitative part of the study, 37 participants representing 71.2% agreed that their teachers regularly update the course content to reflect new development in the techno-company or industries; 11 participants, representing 21.2% responded with “not really”; and a participant, representing 1.9% gave no response. The Table 4.4b below summarizes the responses to the questions for the section

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Table 4.4b: Responses to qualitative questions on level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

Category	Codes	Themes	Supporting Excerpts
Technology utilization	Wide range of equipment	Comprehensive technology adoption	"What specific office modern equipment have you learnt to use"
	Use of various software applications		"Microsoft Office package such as MS Excel and Corel draw"
	Experience with projectors		"Computer and projector"
	Regular use of printers		"Printer and scanners"
	Familiarity with web page design		"Computer and web page design"
Communication and engagement	Engagement through social media	Active online engagement	"Do your lecturers engage in blended teaching?"
	Blended teaching methods		"WhatsApp, telegram, google meet"
	Use of WhatsApp for communication		"WhatsApp and telegram"
	Utilization of google meet		"WhatsApp, telegram, google meet"
Challenges and barriers	Challenges with technology updates	Barriers to effective learning	"Keeping up with updates"
	Limited access to resources		"Not enough learning materials"
	Application of theoretical knowledge		"Struggling to apply theoretical knowledge to real world situation"
		Practical application of skills	"Practical application, struggling to apply theoretical knowledge"
		Dynamic teaching approaches	"Blended teaching methods"

Source: Field Survey, 2024

Overall, the participants seem to have a solid foundation in office technology but face significant challenges primarily related to resources and the fast pace of technological change. Their lecturers are actively using social media and online tools to enhance learning, which can be beneficial in navigating these challenges.

Research Question Three: What is the level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria.

Table 4.5a: Responses on level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

Quality Planning	**Very High**	**High**	**Low**	**Very Low**	**Mean**
I clearly define the learning objectives and desired outcomes for my courses	88 (75.2%)	29 (24.8%)	0 (0.0%)	0 (0.0%)	3.75
I develop detailed lesson plans and instructional strategies to achieve the desired learning outcomes	96 (82.1%)	21 (17.9%)	0 (0.0%)	0 (0.0%)	3.82
I carefully select and prepare teaching materials, resources, and activities that align with the learning objectives	82 (70.1%)	34 (29.1%)	1 (0.9%)	0 (0.0%)	3.69
I consider the diverse needs and learning styles of my students when planning my teaching approach	79 (67.5%)	38 (32.5%)	0 (0.0%)	0 (0.0%)	3.68
I collaborate with colleagues or subject matter experts to ensure the quality and relevance of my lesson plans	62 (53.0%)	55 (47.0%)	0 (0.0%)	0 (0.0%)	3.53
Weighted Mean					**3.69**
Quality Control	**Very**	**High**	**Low**	**Very Low**	**Mean**
I regularly monitor and assess student learning and progress throughout the course	83 (70.9%)	34 (29.1%)	0 (0.0%)	0 (0.0%)	3.71
I use various assessment techniques to evaluate the effectiveness of my teaching methods	79 (67.5%)	37 (31.6%)	1 (0.9%)	0 (0.0%)	3.67
I provide timely and constructive feedback to students to help them improve and achieve the desired learning outcomes	76 (65.0%)	40 (34.2%)	1 (0.9%)	0 (0.0%)	3.64
I analyse students performance data and assessment results to identify areas for improvement in my teaching practices	79 (67.5%)	38 (32.5%)	0 (0.0%)	0 (0.0%)	3.68
I seek feedback from colleagues or subject matter experts to identify potential gaps or areas for improvement in my teaching	48 (41.0%)	69 (59.0%)	0 (0.0%)	0 (0.0%)	3.59
Weighted Mean					**3.66**

Quality Improvement	Very High	High	Low	Very Low	Mean
I regularly review and align my teaching practices with the latest educational research and best practices	71 (60.7%)	46 (39.3%)	0 (0.0%)	0 (0.0%)	3.61
I continuously strive to enhance the quality of my teaching practices and improve student learning outcomes	78 (66.7%)	39 (33.3%)	0 (0.0%)	0 (0.0%)	3.67
I actively seek feedback from students, colleagues and administrators to identify areas for improvement in my teaching	64 (54.7%)	53 (45.3%)	0 (0.0%)	0 (0.0%)	3.55
I am willing to experiment with new teaching methods, technologies, or approaches to improve the quality of my instruction	87 (74.4%)	30 (25.6%)	0 (0.0%)	0 (0.0%)	3.74
I actively participate in professional development opportunities to enhance my knowledge, skills, and teaching practices	63 (53.8%)	53 (45.3%)	1 (0.9%)	0 (0.0%)	3.53
Weighted Mean					**3.62**
Overall Weighted Mean					**3.66**

Decision rule: < 2.5 = low; 2.5 = moderate; > 2.5 = high
Key: Very High = 4, High = 3, Low = 2, Very Low = 1
Source: Field Survey, 2024

Data on quality planning in Table 4.5a shows that 75.2% of the participants reported very high for the item "I clearly define the learning objectives and desired outcomes for my courses"; 24.8% reported high; and no participant reported low and very low. The responses have a mean of 3.75. Also, 82.1% of the participants reported very high for the item "I develop detailed lesson plans and instructional strategies to achieve the desired learning outcomes"; 17.9% reported high; and no participant reported low and very low. The responses have a mean of 3.82. Likewise, 70.1% of the participants reported very high for the item "I carefully select and prepare teaching materials, resources, and activities that align with the learning objectives"; 29.1% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.69.

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The table also shows 67.5% of the participants reported very high for the item "I consider the diverse needs and learning styles of my students when planning my teaching approach"; 32.5% reported high; and no participant reported low and very low. The responses have a mean of 3.68. Likewise, 53.0% of the participants reported very high for the item "I collaborate with colleagues or subject matter experts to ensure the quality and relevance of my lesson plans"; 47.0% reported high; and no participant reported low and very low. The responses have a mean of 3.53. The weighted mean for quality planning is 3.69, which is high.

Results on quality control in Table 4.5a shows that 70.9% of the participants reported very high for the item "I regularly monitor and assess student learning and progress throughout the course"; 29.1% reported high; and no participant reported low and very low. The responses have a mean of 3.71. Also, 67.5% of the participants reported very high for the item "I use various assessment techniques to evaluate the effectiveness of my teaching methods"; 31.6% reported high; 0.9% reported low; and no participant reported very low. The responses have a mean of 3.67. Likewise, 65.0% of the participants reported very high for the item "I provide timely and constructive feedback to students to help them improve and achieve the desired learning outcomes"; 34.2% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.64.

The table also shows 67.5% of the participants reported very high for the item "I analyse students' performance data and assessment results to identify areas for improvement in my teaching practices"; 32.5% reported high; no participant reported low and very low. The responses have a mean of 3.68. Likewise, 41.0% of the participants reported very high for the item "I seek feedback from colleagues or subject matter experts to identify potential gaps or areas for improvement in my teaching"; 59.0% reported high; and no participant reported low

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and very low. The responses have a mean of 3.59. The weighted mean for quality control is 3.66, which is also high.

Data on quality improvement in Table 4.5a shows that 60.7% of the participants reported very high for the item "I regularly review and align my teaching practices with the latest educational research and best practices"; 39.3% reported high; and no participant reported low and very low. The responses have a mean of 3.61. Also, 66.7% of the participants reported very high for the item "I continuously strive to enhance the quality of my teaching practices and improve student learning outcomes"; 33.3% reported high; and no participant reported low and very low. The responses have a mean of 3.67. Likewise, 54.7% of the participants reported very high for the item "I actively seek feedback from students, colleagues and administrators to identify areas for improvement in my teaching"; 45.3% reported high; and no participant reported low and very low. The responses have a mean of 3.55.

The table also shows 74.4% of the participants reported very high for the item "I am willing to experiment with new teaching methods, technologies, or approaches to improve the quality of my instruction"; 25.6% reported high; and no participant reported low and very low. The responses have a mean of 3.74. Likewise, 53.8% of the participants reported very high for the item "I actively participate in professional development opportunities to enhance my knowledge, skills, and teaching practices"; 45.3% reported high; 0.9% reported low and no participant reported very low. The responses have a mean of 3.53. The weighted mean for quality improvement is 3.62, which is high. Likewise, the overall weighted mean for level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria is 3.66, which is also high.

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For the qualitative part of the study, 34 participants representing 65.4% rated the effectiveness of teaching staff in using new technologies to teach as moderate; 13 participants, representing 25.0% as high; and 4 participants, representing 7.7% as low. A participant, representing 1.9% did not respond. On how effective the department is in promoting and supporting quality teaching and learning, 35 participants, representing 67.3% responded with very effective; 15 participants, representing 28.8% responded with effective; and a participant, representing 1.9% responded with fairly effective. Likewise, one participant, representing 1.9% did not respond. The Table 4.5b below summarizes the responses to the other questions for the section.

Table 4.5b: Responses to qualitative questions on level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria

Category	Codes	Themes	Supporting Excerpts
Teaching Preparedness and Organization	Well-prepared and organized teaching	Teaching Preparedness and Structure	"Yes, well prepared"
	Structured course outlines followed		"They follow the course outline"
	Focus on student development		"Help to develop a strong work ethic"
Student Experience and Engagement	Positive student ratings	Positive Student Engagement	"Intelligent"
	Engaging and valuable experience		"Exciting, valuable and enriching"
	Practical teaching and hands-on experience		"Practical teaching and hands-on experience"
Challenges and Inconsistencies	Inconsistency among lecturers	Inconsistencies in Teaching Quality	"Not all lecturers"
	Challenging and stressful coursework		"Very stressful"
Curriculum Relevance	High curriculum relevance and updates	Curriculum Relevance and Support	"Curriculum relevance and update"
	Supportive teaching staff		"Doing their best"

Source: Field Survey, 2024

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In summary, the feedback on the teaching staff of public polytechnics, Southwest, Nigeria in the Office Technology and Management (OTM) program indicates a generally high level of total quality management practices, with most lecturers well-prepared and organized, effectively following structured course outlines. While many students rate their instructors as intelligent and capable of providing practical, hands-on experiences, there is some variability in performance, with a few lecturers not meeting these standards. Overall, students report a positive experience, describing the programme as engaging and valuable for developing essential skills, though some express concerns about the stressful nature of the coursework.

4.3 Test of Hypotheses

The results of linear regression analyses carried out on hypotheses one to three are presented in this section. The pre-set and acceptable level of significance for this thesis was 0.05.

$H_0$1: There will be no significant influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria.

Simple linear regression analysis was used to test the above null hypothesis. The reported data on agility assessment of Office Technology and Management teaching staff were regressed on data reported for ICT adoption. The Tables 4.6 a, b and c shows the results of the analysis.

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Table 4.6: Regression results on influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria

a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.154[a]	.024	.015	.29358

a. Predictors: (Constant), ICT adoption

b. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.240	1	0.240	2.784	.098[b]
	Residual	9.912	115	.086		
	Total	10.152	116			

a. Dependent Variable: Agility assessment
b. Predictors: (Constant), ICT adoption

c. Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.130	.307		10.206	.000
	ICT adoption	.152	.091	.154	1.669	.098

a. Dependent Variable: Agility assessment

Source: Field Survey, 2024

The ICT adoption, as shown in Table 4.6a, has a very low and positive correlation (R = 0.154) with agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria. Also, the coefficient of determination (Adj. R^2 = 0.015) shows that ICT adoption explains only 1.5% of the total variance in agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria. Also, Table 4.6b shows that, overall, the model for hypothesis one does not have significant value ($F(1, 115) = 2.784$, $p > 0.05$). The coefficients are presented in Table 4.6c and it shows that there is no significant influence of ICT adoption on agility assessment as presented by data in the study ($p > 0.05$). Therefore, the null hypothesis one which states that there is no significant

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influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is accepted.

$H_0$2: There will be no significant influence of total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria.

Simple linear regression analysis was also used to test the above null hypothesis. The reported data on agility assessment of Office Technology and Management teaching staff were regressed on data reported for total quality management practices. The Tables 4.7 a, b and c shows the results of the analysis.

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Table 4.7: Regression results on influence of total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria.

a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507[a]	.257	.250	.25617

b. Predictors: (Constant), Total quality management practices

b. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.605	1	2.605	39.696	.000[b]
	Residual	7.547	115	.066		
	Total	10.152	116			

a. Dependent Variable: Agility assessment
b. Predictors: (Constant), Total quality management practices

c. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.842	.286		6.430	.000
	Total quality management practices	.492	.078	.507	6.301	.000

a. Dependent Variable: Agility assessment

Source: Field Survey, 2024

Total quality management practices, as shown in Table 4.7a, has moderate and positive correlation (R = 0.507) with agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria. The coefficient of determination (Adj. R^2 = 0.250) shows that total quality management practices explain 25.0% of the total variance in agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria. The other 75.0% variation in agility assessment of Office Technology and

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Management teaching staff in public Polytechnics, Southwest, Nigeria is explained by other factors not considered in this thesis. Overall, as shown in Table 4.7b, the model for the second hypothesis is significant ($F(1, 115) = 39.696$, $p < 0.05$). Also, if all other factors are constant, as shown in Table 4.7c, a unit change in total quality management practices will lead to 0.492 increase in the agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria at 95% level of confidence ($B = 0.492$, $p < 0.05$). Therefore, as revealed by the result of regression analysis, the null hypothesis two, which states that there is no significant influence of total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is rejected.

$H_0$3: There will be no significant combined influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria.

Linear regression analysis was also used to test the above null hypothesis. The reported data on agility assessment of Office Technology and Management teaching staff were regressed on combined data reported for ICT adoption and total quality management practices. The Tables 4.8 a, b and c shows the results of the analysis.

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Table 4.8: Regression results on combined influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria

Southwest, Nigeria

a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.457[a]	.208	.202	.26435

c. Predictors: (Constant), ICT adoption + Total quality management practices

b. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.116	1	2.116	30.275	.000[b]
	Residual	8.036	115	.070		
	Total	10.152	116			

a. Dependent Variable: Agility assessment
b. Predictors: (Constant), ICT adoption + Total quality management practices

c. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.484	.393		3.782	.000
	ICT adoption + Total quality management practices	.616	.112	.457	5.502	.000

a. Dependent Variable: Agility assessment

Source: Field Survey, 2024

The combination of ICT adoption and total quality management practices has moderate and positive correlation (R = 0.457) with agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria. Also, the coefficient of determination (Adj. R^2 = 0.202) shows that the combination of ICT adoption and total quality management

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practices explains 20.2% of the total variance in agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria. The other 79.8% variation in agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is explained by other factors not considered in this thesis. Overall, Table 4.8b shows that the model for the second hypothesis is significant ($F(1, 115) = 30.275$, $p < 0.05$). Also, the coefficients in Table 4.8c shows that if all other factors are constant, a unit change in the combined variables will lead to 0.616 increase in the agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria at 95% level of confidence ($B = 0.616$, $p < 0.05$). Therefore, as shown by the result of regression analysis, the null hypothesis three, which states that there is no significant combined influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is rejected.

$H_0$4: There will be no significant moderating impact of educational qualifications on the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria.

The Tables 4.9 a, b and c shows the results of the regression analysis.

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Table 4.9: Regression results for moderating impact of educational qualifications on the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria

a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	Sig. F Change
1	.200[a]	.040	.023	.29239	.040	2.372	0.098
2	.241[b]	.058	.033	.29090	.018	2.175	0.143

a. Predictors: (Constant), ICT adoption, Educational qualification
b. Predictors: (Constant), ICT adoption, Education qualification, Interaction

b. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.406	2	0.203	2.372	.098[b]
	Residual	9.746	114	0.085		
	Total	10.152	116			
2	Regression	0.590	3	0.197	2.322	.079[c]
	Residual	9.562	113	0.085		
	Total	10.152	116			

a. Dependent Variable: Agility assessment
b. Predictors: (Constant), ICT adoption, Education qualification
c. Predictors: (Constant), ICT adoption, Educational qualification, Interaction

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c. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.212	0.311		10.326	.001
	Educational qualification	-0.028	0.020	-0.128	-1.392	.167
	ICT adoption	0.149	0.091	0.150	1.636	.105
2	(Constant)	4.173	0.721		5.784	.001
	Educational qualification	-0.421	0.268	-1.957	-1.573	.118
	ICT adoption	-0.149	0.221	-0.150	-0.672	.503
	Interaction	0.122	0.083	1.851	1.475	.143

a. Dependent Variable: Agility assessment

d. Excluded Variables[a]

Model		**Beta In**	**T**	**Sig.**	**Partial Correlation**	**Collinearity Statistics**
						Tolerance
1	Interaction	1.851[b]	1.475	.143	.137	.005

a. Dependent Variable: Agility assessment
b. Predictor in the Model: (Constant), Interaction, Educational qualification

Source: Field Survey, 2024

The Table 4.9 shows that interaction effect between educational qualification and ICT adoption has low and positive correlation (R = 0.241) with agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria. Also, the interaction effect between educational qualification and ICT adoption increased the percentage of total variance accounted for in the agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria by 1.8% (R^2 Change = 0.018). However, Table

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4.9b shows that overall, model 1 ($F(2, 114) = 2.372$, $p > 0.05$) and model 2 ($F(3, 113) = 2.322$, $p > 0.05$) are not significant.

Likewise, Table 4.9c shows the correlation of the interaction effect is not significant ($p > 0.05$). In addition, Table 4.9d indicates that partial correlation between the interaction effect and agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is not significant ($r = 0.137$, $p > 0.05$). Hence, as a result of the analysis, the null hypothesis four which states that there is no significant moderating impact of educational qualifications on the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is hereby accepted.

4.4. Discussion of Findings

In carrying out the study titled "Information Communication Technology (ICT) Adoption, Total Quality Management Practices, and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria" descriptive and inferential statistic was used to analyze the findings based on the study research questions. For the first research question "What is the level of agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria?" The overall weighted mean (3.64) for level of agility assessment of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria shows that the study found a high level agility among office technology and management teaching staff. This finding supports previous studies and also disproves some other previous studies. For example, scholars in their study on organisational culture and effectiveness, found that high adaptability, or agility, was a key factor in organisational performance. They highlighted how staff agility significantly impacted the organisation's ability to adapt to changes and uncertainties, indicating a mean agility score of 3.5

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to 3.8, which aligns with the study's findings[1]. Another group of scholars in there study on the agile workforce in supply chain management found that higher agility, often rated high, allowed organisations to respond better to demand uncertainty and operational efficiency. It supported agility as a critical workforce attribute[2].

More so, the authors found that organizations that fostered agile teams saw increased innovation and adaptability. Their study indicated agility scores consistently around on employee evaluations, supporting the conclusion of high agility at a mean of[3]. In their research on strategic agility, a duo of scholars identified a significant correlation between agility and strategic responsiveness, with high agility scores being crucial for business success[4]. However, some studies challenge the concept of high agility, particularly in organizations with more traditional or bureaucratic structures. The research found that agility scores in such environments often fell below, as agility was stifled by rigid processes and resistance to change[5]. Some other authors found that in many large organisations, agility was more aspirational than a reality, with agility scores frequently falling between 2.5 and 3.2. They argued that cultural inertia and structural limitations often impede the realization of true agility in most staff[6]. More so, another study noted that while agility was a desirable trait, staff in bureaucratic or hierarchical organisations often scored lower in agility. The authors contended that without flattening the organisational structure, achieving high agility is unlikely[7].

Although, there are different and diverse studies on agility with different nomenclatures, it is affirmed beyond doubt that staffs with high agility level are advantageous to their organization and they enhance organization performance, quality of services rendered, customer satisfaction, staff productivity and so on. Organisations should, therefore, work on factors that enhance high level agility among their human resources. A high level of agility among the teaching staff

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suggests that they are adaptable, flexible, and responsive to changes in the educational environment. This is particularly important in a dynamic sector like education, where technological advancements, curriculum updates, and industry needs evolve rapidly. For OTM teaching staff, being agile can contribute to improve teaching methodologies, quicker adoption of relevant technologies, and more effective student engagement. The implication of this finding is that Institutions of higher learning should capitalize on the inherent agility of their staff by fostering environments that encourage continuous learning and adaptability. Secondly, Policies that support professional development and adaptability could further enhance this agility, benefiting both staff and students.

For the research question two "What is the level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria? The overall weighted mean for level of ICT adoption of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria is 3.34, which is also high. It can therefore be inferred that the study found a moderately high level adoption of ICT among Office technology and management teaching staff in public polytechnic, Southwest, Nigeria. The finding supports study that found that the adoption of ICT in academic libraries in Southwest Nigeria was moderately high, with librarians displaying good proficiency in information retrieval, communication tools, and digital record management. The study attributes this to enhanced training and awareness programs[8]. More so, some scholars also reported a relatively high adoption of ICT tools among librarians in Nigerian federal university libraries. They found that improved infrastructure, regular professional development, and a supportive institutional framework contributed to the moderate-to-high adoption levels[9].

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Moreover, a researcher in his study on the Technology Acceptance Model (TAM), demonstrated that perceived ease of use and perceived usefulness play a significant role in the moderate-to-high adoption of ICT among employees across various industries, especially in academic and research institutions[10]. Some other researchers revealed that the adoption of ICT tools among librarians in Nigerian university libraries was moderately high, primarily due to perceived relevance for improving service delivery and personal job performance[11]. Adoption of ICT definitely has advantages according to all researchers and their findings. However, adoption of ICT is a product of certain factors namely, perceived relevance for improving service delivery and personal job performance, enhanced training and awareness programs, improved infrastructure, regular professional development, and a supportive institutional framework contributed to the moderate-to-high adoption levels.

However, the finding of this study regarding ICT adoption negates the findings of some previous studies. For instance, a scholar found that while ICT adoption levels among academic library staff in Nigeria were growing, they remained low due to limited access to modern equipment, insufficient ICT skills, and inadequate organizational support[12]. Another scholar noted that the low adoption of ICT among public sector employees in Southwest Nigeria resulted from poor infrastructural development and inadequate training, which hindered their ability to effectively use advanced ICT tools[13]. To solidify further, researchers argued that despite efforts to increase ICT adoption among employees in developing countries, many organizations experience low to moderate levels of use due to cultural resistance and insufficient leadership support[14]. Low adoption of ICT found is as result of several factors like lack of training, negative cultural beliefs, insufficient leadership support, limited access to internet and some other technological inventions.

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From the interview conducted, overall, the participants seem to have a solid foundation in office technology but face significant challenges primarily related to resources and the fast pace of technological change. Their lecturers are actively using social media and online tools to enhance learning, which can be beneficial in navigating these challenges. The moderately high level of ICT adoption suggests that while OTM teaching staff are incorporating technology into their teaching practices, there is still room for improvement. ICT in education plays a critical role in enhancing learning outcomes, improving efficiency, and preparing students for technology-driven workplaces. However, the moderate adoption level indicates potential barriers, such as lack of resources, insufficient training, or resistance to change. The implication of this finding is that to fully leverage ICT for agility, polytechnics should invest in ICT infrastructure, training, and support for their teaching staff. More so, strategic planning and policies that focus on increasing ICT proficiency and usage in the classroom could further enhance the agility of teaching staff and improve educational outcomes.

For the research question three "What is the level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria?" The overall, for level of total quality management practices of Office Technology and Management teaching staff in public polytechnics, Southwest, Nigeria with a grand means score of 3.66. shows that level of total quality management practice is high. This is also in tandem with the qualitative findings where the feedback on the teaching staff of public polytechnics, Southwest, Nigeria in the Office Technology and Management (OTM) program indicates a generally high level of total quality management practices, with most lecturers well-prepared and organized, effectively following structured course outlines. While many students rate their instructors as intelligent and capable of providing practical, hands-on experiences, there is some variability in

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performance, with a few lecturers not meeting these standards. Overall, students report a positive experience, describing the program as engaging and valuable for developing essential skills, though some express concerns about the stressful nature of the coursework.

Findings of this study corroborate a Malaysian study found a high level of TQM implementation among manufacturing companies in Malaysia, which significantly improved employee performance and organizational efficiency. The study emphasized management commitment, employee training, and continuous improvement as key TQM components[15]. In support, a scholar reported a high level of TQM practices in several organizations worldwide, particularly in sectors like healthcare, manufacturing, and education. The study emphasized that leadership, customer focus, and employee involvement were crucial in sustaining high TQM practices[16]. Another researcher discovered that high levels of TQM practices were prevalent among service sector employees in Malaysia. TQM implementation positively impacted job satisfaction and organizational performance, driven by strong customer focus, teamwork, and employee empowerment[17]. In corroboration, a scholar conducted a cross-industry study and found high levels of TQM adoption in organizations across North America. TQM practices such as employee involvement, continuous improvement, and process management were strongly linked to increased quality performance[18].

However, the high level total quality management practices observed and found in this study negate the findings of previous study. For instance, a scholar argued that despite the growing interest in TQM, many U.S. organizations showed only moderate adoption levels due to challenges like resistance to change, lack of management commitment, and inadequate resources[19]. Another scholar found that TQM implementation in the Iranian service sector faced considerable barriers, leading to a lower level of TQM practices. Major obstacles included

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cultural resistance, lack of training, and insufficient leadership support[20]. It was concluded that the adoption of TQM practices was not as widespread as expected in Australian manufacturing firms. They found that TQM's success was contingent on organizational size and resources, leading to inconsistent implementation[21].

High levels of TQM practices indicate that OTM teaching staff are committed to continuous improvement, quality assurance, and excellence in teaching and management. TQM involves processes such as regular feedback, process optimization, and a focus on meeting stakeholders' needs (students, employers, and the institution). This focus on quality aligns well with the goal of fostering agility, as both emphasize responsiveness and adaptability. The implication is that TQM practices enhance agility by fostering a culture of continuous improvement. Institutions should therefore maintain or even deepen their commitment to TQM practices. More so, high-quality management practices can ensure that agility is not just a theoretical concept but is embedded into daily teaching and administrative routines. The null hypothesis one which states that there is no significant influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is accepted.

The lack of a significant influence of ICT adoption on agility assessment suggests that ICT adoption alone may not directly lead to increased agility among teaching staff. This could be due to several reasons like ICT tools may not be fully integrated into the teaching process or aligned with agile teaching methods. Secondly, Staff may not have received enough training or support to use ICT effectively in ways that enhance agility. This finding implies that ICT adoption needs to be paired with other factors (such as adequate training, organizational support, or process changes) to have a significant impact on agility. Furthermore, Policymakers should focus not just

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on providing ICT tools but also on how these tools are integrated into teaching practices in ways that encourage agility.

This finding negates the findings of some previous literatures, for instance a study found that ICT adoption enhances the agility of top management teams (TMTs) by improving connectivity and enabling better adaptation to continuous change and uncertainty[22]. More so, High levels of agility, supported by ICT, are crucial for the success of projects, particularly in the ICT sector. Agile components such as self-organizing teams and effective interactions among team members are essential for positive project outcomes[23]. ICT plays a critical role in improving corporate agility for small and medium enterprises (SMEs), enabling them to adapt quickly, innovate, and compete on a global scale. Moreover, the effective use of ICT tools in various company operations (sales, services, marketing, finance, administration) is contingent on the development of agile attributes in employees, such as commitment, credibility, dedication, competence, creativity, and innovation. Continuous improvement of digital competences is also crucial. ICT adoption supports long-term strategic objectives and profitability, and it is linked to an internal environment characterized by open organization and flexibility[24]. This adoption necessitates changes in strategy, organizational structure, management systems, and human skills[25].

Against the finding of this study, it is clear that several findings affirmed that the adoption of ICT significantly enhances organizational agility by improving connectivity, supporting agile project management, and enabling SMEs to compete globally. The development of agile attributes in personnel and strategic changes within the organization are essential for maximizing the benefits of ICT. Overall, ICT adoption is a key driver of agility in Office Technology and Management, facilitating better adaptation to change and improved project success.

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The result of regression analysis, the null hypothesis two, which states that there is no significant influence of total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is rejected.

The significant influence of TQM practices on agility assessment indicates that TQM is a key driver of agility among teaching staff. This suggests that a focus on continuous improvement, quality assurance, and structured feedback loops contributes to the ability of staff to respond quickly and effectively to changes. The implication in educational institutions like polytechnics is that educational institutions should continue to emphasize TQM practices, as they appear to positively influence the agility of their staff. Expanding TQM to include areas such as curriculum design, staff development, and student feedback may further enhance the agility of teaching staff, allowing them to better meet the evolving needs of the educational system and the labor market. This supports the findings of some previous studies. For instance, it was reported that digitalization and technology management significantly improve TQM performance, with organizational agility acting as a mediator[26].

Organizational culture also plays a moderating role in this relationship. Both core and supportive TQM practices are crucial for quality performance. Core practices such as leadership, management of people, and customer focus are strong predictors of operational performance. Supportive practices like training and employee relations also contribute significantly, often mediated by core practices. TQM practices, including statistical control/feedback and process flow management, are linked to quality performance measures that contribute to competitive advantage[27]. Top management support and workforce management are essential infrastructure components that support these practices. The effectiveness of TQM practices on firm performance has shown mixed results, often due to varying research designs. However, when

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TQM practices are implemented comprehensively, they generally lead to improved organizational performance.

The integration of digitalization and technology management into TQM practices significantly enhances organizational agility in Office Technology and Management. Core TQM practices such as leadership and customer focus, along with supportive practices like training, are essential for achieving high-quality performance and competitive advantage. The interplay between these practices and organizational culture further strengthens the impact on agility.

The result of regression analysis, the null hypothesis three, which states that there is no significant combined influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is rejected. The significant combined influence of ICT adoption and TQM practices on agility assessment suggests a synergy between the two factors. While ICT alone may not influence agility, when combined with strong TQM practices, it can have a meaningful impact. This finding underscores the importance of integrating ICT into a framework of continuous quality improvement. Polytechnics should not view ICT as a standalone solution but rather as part of a broader strategy that includes TQM. By doing so, they can create an environment where technology supports agility in a more structured and effective way. Institutions may need to develop policies that encourage the coordinated use of ICT and TQM to improve overall performance and adaptability.

Moreover, this finding supports findings of recent studies, for example it was found that ICT integration in teaching strategies, such as flipped classrooms and collaborative work, significantly improves teachers' digital literacy and teaching effectiveness[28]. More so, The adoption of ICT provides greater flexibility, interactivity, and accessibility, which are essential

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for engaging teaching and learning at individual, group, and societal levels[29]. Furthermore, There is a positive correlation between the adoption of ICT and the enhancement of teaching practices, particularly in challenging contexts like the COVID-19 pandemic, which forced a shift to online learning[30].

The adoption of ICT and TQM practices significantly enhances the agility and effectiveness of Office Technology and Management teaching. Key factors influencing this include the flexibility and interactivity provided by ICT, the contextual characteristics of the educational environment, and the necessity for tailored support and training programs. By addressing these factors, educational institutions can better harness the potential of ICT to improve teaching outcomes and adapt to changing educational demands.

The result of the analysis, the null hypothesis four which states that there is no significant moderating impact of educational qualifications on the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is hereby accepted.

The study's finding that educational qualifications do not significantly moderate the impact of ICT adoption on agility suggests that ICT proficiency and agility are not contingent on higher academic achievements. Polytechnics in Southwest Nigeria should consider a more inclusive approach to ICT training, focusing on practical skill development and fostering an organizational culture that supports technology adoption across all educational levels. In recruitment and staff development, greater emphasis should be placed on hands-on experience and adaptability rather than relying predominantly on formal educational qualifications. This broader approach will help build a more agile and tech-savvy teaching staff capable of meeting the demands of modern education.

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In tandem with the findings of this study, it was reported that ICT adoption enhances teaching flexibility, interactivity, and accessibility, benefiting both teachers and students in a digital age[31]. Moreover, Organizational support, leadership, training, and resources are critical for successful ICT adoption in educational settings. Furthermore, Teachers' initial perceptions and competencies in ICT significantly improve with proper training and support, leading to better integration of technology in teaching strategies[32].

Educational qualifications do not significantly influence the adoption of ICT among Office Technology and Management teaching staff. Instead, factors such as organizational support, leadership, training, and demographic variables like age and department play a more crucial role in determining ICT adoption and agility in teaching practices. Proper support and training can significantly enhance teachers' digital literacy and integration of ICT in educational contexts.

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Chapter Five

Conclusion

5.1. Summary of Findings

The title of the study is Information Communication Technology (ICT) Adoption, Total Quality Management Practices, and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria. Making use of necessary research methods and design, the data gathered were analyzed using descriptive and inferential statistics through the following were found:

1. The study, based on the assessment found a high level agility among Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria.
2. The study found a moderately high level adoption of technological inventions among Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria.
3. The study also found that the practice of total quality management is on a high level among Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria.
4. The test of hypothesis revealed that there is no significant influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria

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5. The result of regression analysis found that there is significant influence of total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria.
6. The result of regression analysis, shows that there is a significant combined influence of ICT adoption and total quality management practices on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria.
7. The study found that there is no significant moderating impact of educational qualifications on the influence of ICT adoption on agility assessment of Office Technology and Management teaching staff in public Polytechnics, Southwest, Nigeria is hereby accepted.

5.2. Conclusion

The study on the influence of Information Communication Technology (ICT) Adoption, Total Quality Management Practices, and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria has several important implications for the management of public polytechnics as well as some other institutions of higher learning in Southwest and in other zones of the country Nigeria. Agility, a critical trait for adapting to dynamic educational environments, is significantly enhanced by TQM practices, but not by ICT adoption alone. The study has several important implications for the management of public polytechnics as well as some other institutions of higher learning in Southwest and in other zones of the country Nigeria. Agility, a critical trait for adapting to dynamic educational environments, is significantly enhanced by TQM practices, but not by ICT adoption alone.

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The findings underscored the transformative potential of ICT adoption in modernizing teaching methodologies, enhancing administrative processes, and fostering a more agile and responsive teaching workforce. ICT adoption enables OTM teaching staff to adapt effectively to the dynamic demands of the educational environment, particularly in response to rapid technological advancements and shifting pedagogical needs. Total Quality Management (TQM) practices emerged as a vital enabler for achieving sustainable quality improvement in teaching and administrative processes. The emphasis on continuous improvement, stakeholder involvement, and systematic quality assurance positively influenced the operational agility and performance of OTM teaching staff. This synergy between ICT and TQM not only improved adaptability but also fostered innovation, collaboration, and an overall culture of excellence within the polytechnic system. Despite these positive findings, the study identified persistent challenges, such as inadequate ICT infrastructure, lack of professional development opportunities, insufficient funding, and resistance to change among staff. These limitations often hinder the full realization of the benefits of ICT and TQM adoption, thereby impacting the agility and effectiveness of teaching staff. Furthermore, educational qualifications play a vital role in how effectively ICT can be leveraged to improve agility, suggesting that differentiated training and professional development strategies are necessary for optimizing the use of technology in education.

Ultimately, the integration of ICT and TQM practices is not only critical for enhancing agility but also for achieving sustainable quality education in Nigerian polytechnics. By embedding these practices into the core operations of OTM departments, institutions can better equip their staff to navigate the complexities of a rapidly changing educational landscape. This study

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highlights the need for a holistic approach that combines technological advancements, quality management principles, and supportive management policies to foster a resilient, innovative, and competitive workforce. However, the moderating role of educational qualification on the relationship between ICT adoption and agility was not supported. This finding suggests that the ability of teaching staff to be agile depends more on their practical application and integration of ICT tools within TQM processes than on their academic qualifications alone. In other words, agility is a function of technological competence and institutional support rather than educational attainment.

Furthermore, the study contributes to the growing body of literature on educational quality and technological innovation by empirically linking ICT adoption and TQM to agility assessment within the Nigerian polytechnic context, a relatively underexplored area. It offers a practical framework for understanding how these constructs interact to influence and institutional teaching/learning processes and institutional transformation.

In conclusion, the study affirms that ICT adoption and TQM practices are key enablers of teaching agility in OTM programmes across Nigerian public polytechnics. For these institutions to remain relevant and competitive in a rapidly changing educational environment, management must strengthen ICT infrastructure, provide continuous professional development, and institutionalize quality assurance practices that encourage innovation and adaptability. Ultimately, fostering the synergy between ICT adoption and TQM practices will enhance the agility, effectiveness, and global relevance of OTM education in Nigeria's polytechnic system.

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5.3 Recommendations

Based on the findings and conclusions of this study, the following recommendations are made to strengthen ICT adoption, Total Quality Management (TQM) practices, and agility among Office Technology and Management (OTM) teaching staff in public polytechnics, Southwest Nigeria:

1. Polytechnic management should invest in modern ICT infrastructure, such as reliable internet access, functional computer laboratories, and interactive learning platforms, to facilitate digital teaching and research. Regular maintenance and upgrades should also be ensured to sustain effectiveness.
2. Regular training, workshops, and seminars should be organised to improve the digital competence and pedagogical agility of OTM lecturers. Such capacity-building programmes should focus on digital literacy, instructional technology, data-driven teaching, and virtual classroom management. Also, practical skill development should be emphasized more than theoretical qualifications, in line with the study's finding that agility depends more on practical ICT integration than on educational attainment.
3. Management of public polytechnics should institutionalize TQM practices across all levels of the academic system. This includes fostering teamwork, leadership commitment, process improvement, and a culture of accountability and innovation. Establishing internal quality assurance units and regular feedback mechanisms from students and staff will help sustain continuous improvement and responsiveness to change.
4. Since the study established a significant joint influence of ICT adoption and TQM practices on agility, management should ensure that ICT initiatives are aligned with

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institutional quality management frameworks. ICT should not be treated as an isolated technological function but as a key enabler for achieving quality teaching, learning, and administrative efficiency. This synergy will create a responsive and dynamic learning environment.

5. Government agencies such as the National Board for Technical Education (NBTE) should provide policy framework and funding support to enhance ICT adoption and TQM implementation in polytechnics. Policy frameworks should emphasize digital transformation, quality assurance, and the need for adaptive teaching practices that reflect global educational trends.
6. Management of public polytechnics should institutionalize TQM practices across all levels of the academic system. This includes fostering teamwork, leadership commitment, process improvement, and a culture of accountability and innovation. Establishing internal quality assurance units and regular feedback mechanisms from students and staff will help sustain continuous improvement and responsiveness to change.
7. Departments, faculties and institution as a whole should create platforms that encourage knowledge sharing and collaboration among OTM staff across polytechnics. This could include communities of practice, collaborative projects, or inter-institutional training programmes focusing on ICT and TQMP. Collaboration can enhance the agility of staff by exposing them to new ideas, tools, and best practices. By fostering a collaborative environment, polytechnics can support their teaching staff in adapting quickly to technological changes and quality improvement efforts.

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8. OTM lecturers should adopt blended and interactive teaching strategies that promote creativity, problem-solving, and adaptability in students. These methods will enhance the agility of both lecturers and learners.

5.4. Contribution to Knowledge

The study assessing the agility, ICT adoption, and Total Quality Management (TQM) practices of Office Technology and Management (OTM) teaching staff in public polytechnics in Southwest Nigeria could contribute to knowledge in several ways. It contributes to knowledge by showing how adaptability, flexibility, and responsiveness are essential qualities for educators, particularly in technical and vocational fields, where industry trends and technology evolve rapidly.

The findings helps to bridge the knowledge gap regarding the challenges and opportunities related to ICT use in teaching and administrative activities in polytechnics, offering a framework for improving technological integration in similar institutions.

By showing that ICT adoption does not significantly influence agility on its own; the study challenges assumptions in the literature that technology automatically enhances workforce agility. This has implications for policy and decision-making in educational institutions regarding ICT investments.

The findings of the study enriches the understanding of how continuous improvement strategies can be employed to enhance agility among teaching staff, offering a model that can be replicated in other institutions to improve service delivery and educational outcomes.

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The study provides a region-specific analysis of ICT adoption, TQM practices, and agility in public polytechnics in Southwest Nigeria. By focusing on a specific educational context, it contributes localised knowledge that can inform policy and decision-making within Nigerian polytechnics and similar developing country contexts.

Conceptually, the study came up with a conceptual framework that combined the trio of ICT adoption, total quality management practices as they both influence teaching staff agility.

5.5 Suggested Areas for Further Findings

While the study examined the influence of ICT adoption and total quality management practices on agility assessment of OTM teaching staff, it did not explore the influence of organizational culture. Further research could investigate how institutional culture, leadership style, and support influence the adoption of ICT and TQMP on the agility of teaching staff.

Future studies could extend this research to private polytechnics and universities to compare how ownership structures influence ICT adoption, TQM implementation, and staff agility.

Qualitative studies such as interviews or focus groups may be conducted to gain deeper insights into the lived experiences of OTM lecturers regarding ICT integration and quality management.

Further research could also consider a longitudinal study to examine how continuous ICT and TQM initiatives impact staff agility and institutional performance over time.

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APPENDIX I

LEAD CITY UNIVERSITY, IBADAN
FACULTY OF COMMUNICATION AND INFORMATION SCIENCE
DEPARTMENT OF INFORMATION MANAGEMENT

Research Questionnaire

Dear Sir/Ma,

Request to Participate in a Research

I am a PhD Degree Student in the Department of Information Management, Office and Information Management Unit. I am carrying out a study on: Information Communication Technology (ICT) Adoption, and Total Quality Management Practices on Agility Assessment of Office Technology and Management (OTM) Teaching Staff in Public Polytechnics, Southwest, Nigeria. Your response and cooperation in highly needed. Confidentiality to your responses will be strictly guided.

Yours faithfully,

Deborah O. Oduwole
The Researcher

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Questionnaire for Research Study

This questionnaire has been designed to elicit pertinent information on: Information Communication Technology (ICT) Adoption, and Total Quality Management Practices on Agility Assessment of Office Technology and Management (OTM) teaching staff in Public Polytechnics, Southwest, Nigeria. Please kindly fill in all the spaces provided as they apply to you.

SECTION A: Personal Data

1. Name of Institution: ……...
2. Designation: ……...
3. Gender: a. Male ( ) b. Female ( )
4. Age: (a) 31-40 years ( ) (b) 41-50 years ( ) (c) 51-60 years ( )
   a. (d) 61 years and above ( )
5. Marital Status: (a) Single ( ) (b) Married ( ) (c) Divorced ( ) (d) Widow ( )
   (e) Widower ( )
6. Educational Qualification: (a) HND ( ) (b) B.Sc. ( ) (c) PGD ( ) (d) Master (e) PhD ( )
7. Religion: (a) Christianity ( ) (b) Islam ( ) (c) Traditional ( ) (d) Others ( )
8. Work Experience: (a) 1-5 yrs. ( ) (b) 6-10 yrs. (c) 11-15 yrs. ( ) (d) 16-20yrs ( ) (e) 21 above ()

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SECTION B: Agility Assessment

Instruction: Please rate your responses and tick (√) the appropriate columns

Note: Very High (VH) = 4 Points, High (H) = 3 Points, Low (L) = 2 Points,
Very Low (VL)= 1Point

. S/N	STATEMENTS	VH 4 Pts.	H 3Pts.	L 2Pts	VL 1pt
	Sensing Opportunities and Threats				
1	I am constantly on the lookout for new opportunities that can be of benefit in my career.				
2	I have keen eye for identifying potential areas of growth or improvement in Office Technology and Management				
3	I actively seek out information and stay updated on industry trends to identify emerging opportunities				
4	I am willing to take calculated risks to pursue promising opportunities that could benefit my career				
5	I collaborate with colleagues to identify and explore new opportunities in office Technology and Management				
	Seizing Opportunities				
6	I take prompt action to capitalize on any opportunity that arises				
7	I have skill of mobilizing the necessary resources (e.g., people, funding, equipment) to seize opportunities				
8	I possess ability to develop and implement effective strategies to exploit identified opportunities				
9	I demonstrate perseverance and resilience in overcoming obstacles or challenges when pursuing opportunities				
10	I have ability to see the bright side of opportunities and take proactive steps				
	Transforming Resources				
11	I am skilled at identifying and utilizing available resources to enhance teaching and learning experiences				
12	I effectively combine and recombine existing resources (e.g., teaching materials, technology, classroom settings) in novel ways				
13	I actively seek out new resources or tools that can be integrated into my teaching practices				
14	I am willing to experiment with different resource combinations to find innovative teaching approaches				
15	I possess ability to adapt and repurpose resources to meet the diverse needs of my students				

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SECTION C: Information Communication Technology Adoption

Instruction: Please rate and tick (√) the appropriate columns

Note: Very High (VH) = 4Points, High (H) = 3 Points, Low (L) = 2 Points
Very Low (VL) = 1p Point.

	STATEMENTS	VH 4 Pts.	H 3 Pts.	L 2 Pts.	VL 1Pt
	Performance Expectancy				
1	Learning how to use modern technology is easy for me				
2	My interaction with modern technology is clear and understandable				
3	I find it easy to get the modern technology to do what I want it to do.				
	Effort Expectancy				
4	Using modern technology would improve my learning performance.				
5	Using modern technology increases my chances of achieving learn that are important to me.				
6	Using the modern technology would enhance my effectiveness in teaching.				
	Social Influence				
7	Opinions and experiences of my colleagues influence my decision to adopt new ICT tools in my teaching practices				
8	Expectations and demands of students regarding the use of technology in the classroom influence my decision to adopt ICT tools				
9	Social pressure or desire to conform to the norms of my colleagues or institution influences my adoption of ICT in teaching				
	Facilitating Conditions				
10	We have adequate training on the use of ICT for teaching in my institution				
11	My skills and abilities to use ICT for teaching				
12	Adoption of ICT for teaching by other teaching staff				

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SECTION D: Total Quality Management Practices

Instruction: Please tick (√) in the appropriate columns
Note: Very High (VH) = 4 Points, High (H) = 3 Points, Low (L) = 2 Points, Very Low (VL) = 1 Point.

S/N	STATEMENTS	VH 4Pts.	H 3Pts.	L 2Pts	VL 1Pt.
	Quality Planning				
1	I clearly define the learning objectives and desired outcomes for my courses				
2	I develop detailed lesson plans and instructional strategies to achieve the desired learning outcomes				
3	I carefully select and prepare teaching materials, resources, and activities that align with the learning objectives				
4	I consider the diverse needs and learning styles of my students when planning my teaching approach				
5	I collaborate with colleagues or subject matter experts to ensure the quality and relevance of my lesson plans				
	Quality Control				
6	I regularly monitor and assess student learning and progress throughout the course				
7	I use various assessment techniques (e.g., quizzes, assignments, projects) to evaluate the effectiveness of my teaching methods				
8	I provide timely and constructive feedback to students to help them improve and achieve the desired learning outcomes				
9	I analyze student performance data and assessment results to identify areas for improvement in my teaching practices				
10	I seek feedback from colleagues or subject matter experts to identify potential gaps or areas for improvement in my teaching				
	Quality Improvement				
11	I regularly review and align my teaching practices with the latest educational research and best practices.				
12	I continuously strive to enhance the quality of my teaching practices and improve student learning outcomes				
13	I actively seek feedback from students, colleagues, and administrators to identify areas for improvement in my teaching				
14	I am willing to experiment with new teaching methods, technologies, or approaches to improve the quality of my instruction				
15	I actively participate in professional development opportunities to enhance my knowledge, skills, and teaching practices				

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Appendix II

LEAD CITY UNIVERSITY, IBADAN
FACULTY OF COMMUNICATION AND INFORMATION SCIENCE
DEPARTMENT OF OFFICE AND INFORMATION MANAGEMENT

Research Questionnaire

Dear Student,

Request to Participate in a Research

I am a PhD Degree Student in the Department of Information Management, Office and Information Management Unit. I am carrying out a study on: Information Communication Technology (ICT) Adoption, and Total Quality Management Practices on Agility Assessment of Office Technology and Management (OTM) teaching staff in Public Polytechnics, Southwest, Nigeria. Your response and cooperation in highly needed. Confidentiality to your responses will be strictly guided.

Yours faithfully,

Deborah O. Oduwole
The Researcher

Lead City University DO NOT COPY

Interview Questions for Research Study

This questionnaire has been designed to elicit pertinent information on: Information Communication Technology (ICT) Adoption, and Total Quality Management Practices on Agility Assessment of Office Technology and Management (OTM) Teaching Staff in Public Polytechnics, Southwest, Nigeria. Please kindly fill in all the spaces provided as they apply to you.

SECTION A:

Please tick (√) the appropriate option.

1. Name of Institution:……...
2. Level: ND ( ) HND ( )
3. Gender: a. Male ( ) b. Female ( )
4. Age: (a) 16 – 20 years ( ) (b) 21 -25 years ( ) (c) 26 -30 years ( )

   (d) 31 years and above ( )
5. Religion: a. Islam ( ) b. Christianity ( ) Traditional ( )

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Interview Questions for Research Study

Please write your opinions to the questions below in the space provided based on your personal experience in the process of learning in Office Technology and Management programme at the Polytechnic:

1. Do your teachers regularly update the course content to reflect new development in the techno-company or industries? Yes ( ) Not Really ( ) No ( ) If yes. Can you recall a recent instance when this happened in the cause of your study?

   .....

2. What specific office modern equipment have you learnt to use in your course of study?

   …….....

3. What challenges do you face in learning new technologies?

…….....……

……

4. Do you feel the department has sufficient resources (financial, technical, etc.) to support your learning in the programme?

   ……

5. Do your lecturers engage in blended teaching (on-site and online) using different social media applications? If yes, specify the regular types?

   ……

6. How well-prepared and organised are the teaching for each class? Do they follow a structured course outlines?

…….....

7. How can you rate the effectiveness of the teaching staff in using new technologies to teach?
   High ( ) Moderate ( ) Low ( )

8. How effective is the department in promoting and supporting quality teaching and learning

   Very effective ( ) Effective ( ) fairly effective ( ) Not effective ( )

9. How would you rate the OTM teaching staff in preparing you for the new practices in techo-companies or industry?

   ……

   ……

10. How can you describe your overall experience with the OTM programme at your polytechnic?

    ……

    ……

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Lead City University, Ibadan

Motto: Knowledge for Self-reliance

Beside Methodist High School, Oba Otudeko Avenue Toll Gate
PO Box 30678, Secretariat Ibadan. Tel: 08153318702
E-mail: leadcity@lcu.edu.ng www.lcu.edu.ng

23rd July, 2024

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Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce **Deborah Omowumi Odawole**, with Matriculation Number: LCU/PG/002524 a PhD student of Office & Information Management in the Department of Information Management who is currently working on her Thesis. She is in the process of gathering data for her Master's programme which is "ICT Adoption, Total Quality Management Practices and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria."

We hereby appeal for your cooperation in this regard. Kindly note that the information collected is strictly for research purpose.

Thank you in anticipation of your kind consideration.

LEAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFOR' ATION
MANAGEMENT
26/7/24
SIGN DATE

Yours faithfully.

Dr. Sophia V. Adeyeye PhD
Head of Department

Dear Sir/Madam,

Research Project Attestation Form

The bearer is a student of the above named University and Department. He/she is conducting a research and your establishment has been selected as one of his/her research samples. Kindly grant him/her all necessary assistance to make the exercise a success.

Please complete the following attestation form for the student on completion of the exercise. The completion of the form serves as evidence that the student actually carried out part of the study in your establishment.

Thanks for your anticipated assistance.

EAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFOR' ATION MANAGEMENT
SIGN 26/7/24 DATE

.....

Head of Department (Signature, Date and Stamp)

Student's (Researcher) Surname..... **Other Names**.....
Matriculation Number..... **Programme (Degree, PGD, Masters and Ph.D)** .....
Project Topic: .....
.....
.....

Attestation Section

I hereby attest that the above named student conducted a study on the above named topic in my institution/establishment

Date(s) (Days) the Research was Conducted.....
Names of Attester..... Designation.....
Name and Address of the Institution.....
Phone No..... E-mail Address:.....

.....

Signature, Date and Stamp

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E-mail: leadcity@lcu.edu.ng www.lcu.edu.ng

Gateway Polytechnic
Sapade
.....

23rd July, 2024

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HEAD OF DEPARTMENT
DEPARTMENT OF INFORMATION MANAGEMENT
SIGN 26/7/24 DATE

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Head of Department

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HEAD OF DEPARTMENT
DEPARTMENT OF INFOR' ATION MANAGEMENT
SIGN 26/7/24 DATE

.....

Head of Department (Signature, Date and Stamp)

Student's (Researcher) Surname...Oduwole... **Other Names**...Deborah O.
Matriculation Number...LCU/PG/00524 **Programme (Degree, PGD, Masters and Ph.D)** .....Ph.D
Project Topic: INFORMATION COMMUNICATION TECHNOLOGY ADOPTION AND TOTAL QUALITY MANAGEMENT PRACTICES ON AGILITY ASSESSMENT OF OTM TEACHING STAFF IN PUBLIC POLYTECHNICS SOUTH WEST NIGERIA

Attestation Section

I hereby attest that the above named student conducted a study on the above named topic in my institution/establishment

Date(s) (Days) the Research was Conducted.....30th of August, 2024.....
Names of Attester...Mrs. Akah Olusegi..... Designation...Head of Department
Name and Address of the Institution...Gateway (ICT) Polytechnic, Saapade, Ogun state
Phone No...0802.919.5781..... E-mail Address:...olusegi.akah@gapoly.edu.ng

GATEWAY POLYTECHNIC SAAPADE

.....

Signature, Date and Stamp

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23rd July, 2024

D.C. Adeyeye
ICT Polytechnic Ifuro
Ewekoro, Ogun State

Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce **Deborah Omowumi Oduwole**, with Matriculation Number: LCU/PG/002524 a PhD student of Office & Information Management in the Department of Information Management who is currently working on her Thesis. She is in the process of gathering data for her Master's programme which is "ICT Adoption, Total Quality Management Practices and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria."

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LEAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFORMATION MANAGEMENT
SIGN 26/7/24 DATE

Dr. Sophia V. Adeyeye PhD
Head of Department

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EAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFOR' ATION MANAGEMENT
SIGN 26/7/24 DATE

.....

Head of Department (Signature, Date and Stamp)

Student's (Researcher) Surname...Odunle..... **Other Names**..Deborah O...
Matriculation Number..LC4/PG/02524 **Programme (Degree, PGD, Masters and Ph.D)** .....Ph.D.
Project Topic: INFORMATION COMMUNICATION TECHNOLOGY ADOPTION AND TOTAL QUALITY MANAGEMENT PRACTICES ON AGILITY ASSESSMENT OF OTM TEACHING STAFF IN PUBLIC POLYTECHNICS SOUTHWEST, NIGERIA

Attestation Section

I hereby attest that the above named student conducted a study on the above named topic in my institution/establishment

Date(s) (Days) the Research was Conducted....29th August, 2024.....
Names of Attester..Onabanjo Adetayo O. Designation...HOD.....
Name and Address of the Institution..D.S. Adegbenro ICT Polytechnic Itori, Ogun State
Phone No 08139387277 E-mail Address:..onabanjoayo2012@yahoo.com

HEAD, DEPT. OF OFFICE TECH. & MGT
D.S. ADEGBENRO ICT POLYTECHNIC, ITORI.
SIGN
DATE 29/08/24

.....

Signature, Date and Stamp

Lead City University, Ibadan

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23rd July, 2024

MOSHOOD ABIOLA POLYTECHNIC
ABEOKUTA, OGUN STATE

.....

Dear Sir/Madam,

LETTER OF INTRODUCTION

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DEPARTMENT OF INFOR' ATION
MANAGEMENT
26/7/24
SIGN DSTF

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Head of Department

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The bearer is a student of the above named University and Department. He/she is conducting a research and your establishment has been selected as one of his/her research samples. Kindly grant him/her all necessary assistance to make the exercise a success.

Please complete the following attestation form for the student on completion of the exercise. The completion of the form serves as evidence that the student actually carried out part of the study in your establishment.

Thanks for your anticipated assistance.

EAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFOR' ATION MANAGEMENT
SIGN 26/7/24 DATE

.....

Head of Department (Signature, Date and Stamp)

Student's (Researcher) Surname..Oduwole... **Other Names**..Deborah O.
Matriculation Number.LCU/PH/00524 **Programme (Degree, PGD, Masters and Ph.D)** .....Ph.D

Project Topic: INFORMATION COMMUNICATION TECHNOLOGY ADOPTION AND TOTAL QUALITY MANAGEMENT PRACTICES ON AGILITY ASSESSMENT OF OTM TEACHING STAFF IN PUBLIC POLYTECHNICS SOUTH WEST NIGERIA

Attestation Section

I hereby attest that the above named student conducted a study on the above named topic in my institution/establishment

Date(s) (Days) the Research was Conducted.....28/08/2024.....
Names of Attester.....MRS. A.O.T. SOTAYO. **Designation.**AG. HOD
Name and Address of the Institution..MOSHOOD ABIOLA POLYTECHNIC ABEOKUTA
Phone No.....08037168997..... E-mail Address:.1952023@yahoo.com

28/08/2024

MOSHOOD ABIOLA POLYTECHNIC ABEOKUTA
DEPT. OF OFFICE TECH.
HEAD OF DEPT

Signature, Date and Stamp

Sign.....

Lead City University, Ibadan

Motto: Knowledge for Self-reliance

Beside Methodist High School, Oba Otudeko Avenue Toll Gate
PO Box 30678, Secretariat Ibadan. Tel: 08153318702
E-mail: leadcity@lcu.edu.ng www.lcu.edu.ng

HOD, OTM
Yaba College of Tech.
Lagos
Lagos State

23rd July, 2024

Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce **Deborah Omowumi Oduwole**, with Matriculation Number: LCU/PG/002524 a PhD student of Office & Information Management in the Department of Information Management who is currently working on her Thesis. She is in the process of gathering data for her Master's programme which is "ICT Adoption, Total Quality Management Practices and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria."

We hereby appeal for your cooperation in this regard. Kindly note that the information collected is strictly for research purpose.

Thank you in anticipation of your kind consideration.

Yours faithfully,

LEAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFORMATION MANAGEMENT
SIGN 26/7/24 DATE

Dr. Sophia V. Adeyeye PhD
Head of Department

Dear Sir/Madam,

Research Project Attestation Form

The bearer is a student of the above named University and Department. He/she is conducting a research and your establishment has been selected as one of his/her research samples. Kindly grant him/her all necessary assistance to make the exercise a success.

Please complete the following attestation form for the student on completion of the exercise. The completion of the form serves as evidence that the student actually carried out part of the study in your establishment.

Thanks for your anticipated assistance.

EAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFOR' ATION MANAGEMENT
SIGN 26/7/24 DATE

.....

Head of Department (Signature, Date and Stamp)

Student's (Researcher) Surname Oduwole **Other Names** Deborah O.
Matriculation Number LCU/PG/00524 **Programme (Degree, PGD, Masters and Ph.D)** Ph.D

Project Topic: INFORMATION COMMUNICATION TECHNOLOGY ADOPTION AND TOTAL QUALITY MAGEMENT PRACTICES ON AGILITY ASSESSMENT OF OTM TEACHING STAFF IN PUBLIC POLYTECHNICS SOUTH WEST, NIGERIA

Attestation Section

I hereby attest that the above named student conducted a study on the above named topic in my institution/establishment

Date(s) (Days) the Research was Conducted 29/08/24 / 1 day
Names of Attester Ojoola, B Tawo Designation Senior Lecturer
Name and Address of the Institution Yaba College of Tech. Lagos. OTM Dept.
Phone No 08035737944 E-mail Address: Babatunde.ojoola@yabatech.edu.ng

YABA COLLEGE OF TECHNOLOGY
OFFICE TECHNOLOGY & MANAGEMENT
PART TIME
CO-ORDINATOR

.....

Signature, Date and Stamp

Lead City University, Ibadan

Motto: Knowledge for Self-reliance

Beside Methodist High School, Oba Otudeko Avenue Toll Gate
PO Box 30678, Secretariat Ibadan. Tel: 08153318702
E-mail: leadcity@lcu.edu.ng www.lcu.edu.ng

23rd July, 2024

Lagos State University of
Science & Tech
Lagos State

Dear Sir/Madam,

LETTER OF INTRODUCTION

I write to introduce **Deborah Omowumi Oduwole**, with Matriculation Number: LCU/PG/002524 a PhD student of Office & Information Management in the Department of Information Management who is currently working on her Thesis. She is in the process of gathering data for her Master's programme which is "ICT Adoption, Total Quality Management Practices and Agility Assessment of Office Technology and Management Teaching Staff in Public Polytechnics, Southwest, Nigeria."

We hereby appeal for your cooperation in this regard. Kindly note that the information collected is strictly for research purpose.

Thank you in anticipation of your kind consideration.

Yours faithfully,

LEAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT
DEPARTMENT OF INFORMATION MANAGEMENT
SIGN 26/7/24 DATE

Dr. Sophia V. Adeyeye PhD
Head of Department

Dear Sir/Madam,

Research Project Attestation Form

The bearer is a student of the above named University and Department. He/she is conducting a research and your establishment has been selected as one of his/her research samples. Kindly grant him/her all necessary assistance to make the exercise a success.

Please complete the following attestation form for the student on completion of the exercise. The completion of the form serves as evidence that the student actually carried out part of the study in your establishment.

Thanks for your anticipated assistance.

EAD CITY UNIVERSITY, IBADAN.
HEAD OF DEPARTMENT -
DEPARTMENT OF INFOR' ATION
MANAGEMENT
SIGN 26/7/24 DATE

.....

Head of Department (Signature, Date and Stamp)

Student's (Researcher) Surname Oduwole **Other Names** Deborah O.
Matriculation Number LC4/PA/002524 **Programme (Degree, PGD, Masters and Ph.D)** Ph.D.
Project Topic: INFORMATION COMMUNICATION TECHNOLOGY ADOPTION AND TOTAL QUALITY MANAGEMENT PRACTICES ON AGILITY ASSESSMENT OF OTI TEACHING STAFF IN POLYTECHNICS SOUTH WEST, NIGERIA

Attestation Section

I hereby attest that the above named student conducted a study on the above named topic in my institution/establishment

Date(s) (Days) the Research was Conducted.....
Names of Attester OJODU HAMEED O. Designation Associate Professor
Name and Address of the Institution LAGOS STATE UNIVERSITY, COLLEGE OF SCIENCE & TECHNOLOGY, KIRIKIRI
Phone No..... E-mail Address: omotola808@gmail.com

LAGOS STATE UNIVERSITY
SCIENCE & TECHNOLOGY, KIRIKIRI
P.M.B. 21666 IKEJA

Signature, Date and Stamp 28/08/2024

HEAD OF DEPARTMENT
OFFICE & INFORMATION
TECHNOLOGY

BIO DATA

Personal Data

1. **FULL NAME** : - Deborah Omowumi ODUWOLE
2. **DATE OF BIRTH**: - 10th March, 1964
3. **NATIONALITY/STATE OF ORIGIN**: - Nigerian/Osun State
4. **MARITAL STATUS**: - Married
5. **ADDRESS**: - Office Technology and Management Department, Adeseun Ogundoyin Polytechnic, Eruwa, Oyo State.
6. **E-MAIL ADDRESS & TEL. NO.**: - wumioduwole@gmail.com 08033949590
7. **NAME & ADDRESS OF NEXT OF KIN**: - Pastor A. O. Oduwole VSESC, The Polytechnic, Ibadan, Ibadan.

EDUCATIONAL BACKGROUND

A. Educational Institutions Attended with Dates

1. Lead City University, Ibadan	2021 - 2024
2. Olabisi Onabanjo University, Ago Iwoye	2011 – 2016
3. Lead City University	2017 - 2019
4. University of Ibadan, Ibadan	2004 – 2006
5. University of Ibadan, Ibadan	2006 – 2008
6. The Polytechnic, Ibadan, Ibadan	1999 – 2001
7. The Polytechnic, Ibadan, Ibadan	1994 – 1996
8. The Polytechnic, Ibadan, Iree Satellite Campus, Iree	1984 – 1986
9. Olubuse Memorial High School, Ile-Ife	1977 – 1981
10. St. Paul Anglican Primary Schools, More, Ile-Ife	1970 –1976

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B. Academic Qualifications with Dates

a.	PhD Office Information and Management		2024
b.	M. Ed Business Education	Ph.D. Grade	2016
c.	B. Sc (OIM) (Conversion Programme)	Second Class Upper	2019
d.	PGDE (Education)		2008
e.	MCA Applied Communication		2006
f.	PGDPA (Public Administration)	Lower credit	2001
g.	HND Secretarial Administration		1996
h.	ND (Secretarial Administration)	Lower Credit	1987
i.	WAEC/GCE		1983/2002
j.	Primary School Leaving certificate		1976

C. Professional Qualification

a.	Comptia Project Management	-	2019
b.	Professional Postgraduate Qualifying Diploma in Management Consultancy Practice & Organisational Transformation (IPMA) UK	-	2015
c.	Diploma Certificate in Word Processing & Desktop Publishing	-	2004

D. Work Experience

Teaching Experience

i. Employer: Adeseun Ogundoyin Polytechnic, Eruwa
Designation: Chief Lecturer
Courses Taught: Business Communication I, Professional Career Development, Professional Ethics and Social Responsibility**,** Office Administration and Management, Oral Communication, Skill**s,** Modern Office Technology, Career Development, Peoples Communication Skills, Project Supervision
Date: 2020 - date

ii. Employer: Adeseun Ogundoyin Polytechnic, Eruwa
Designation: Principal Lecturer
Courses Taught: Professional Ethics and Social Responsibility**,** Office Administration and Management I, Oral Communication Skill**s,** Modern Office Technology, Professional Career Development, Career Development
Peoples Communication Skills
Project Supervision
Date: 01/10/2018 – 2020

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ii. **Employer:** The Ibarapa Polytechnic, Eruwa
Designation: Chief Instructor
Courses Taught: Business Communication I, Office Administration and Management, Modern Office Technology, Career Development, People's Communication Skills, Project Supervision
Date: 01/10/11 - 01/10/2018

iii. Employer: The Polytechnic, Ibadan, P.M.B. 22, U.I Post Office
Designation: Assistant Chief Instructor
Courses Taught: Office Practice II, Modern Office Technology, Shorthand I, Keyboarding II, Career Development, People's Communication Skills, Project Supervision
Date: 01/10/2008 - 01/10/2011

iv. **Employer:** The Polytechnic, Ibadan, P.M.B. 22, U.I Post Office
Designation: Principal Instructor I
Courses Taught: Secretarial Studies, Office Practice I, Office Practice II, Shorthand II, Project Supervision
Date: 01/10/2005 – 01/10/2008

v. **Employer:** The Polytechnic, Ibadan, P.M.B. 22, U.I Post Office
Designation: Principal Instructor II
Courses Taught: Secretarial Studies, Office Practice II, Shorthand II, Typewriting, Project Supervision
Date: 01/10/2002 – 01/10/2005

vi. **Employer:** The Polytechnic, Ibadan, P.M.B. 22, U.I Post Office
Designation: Senior Instructor
Subject: Secretarial Studies, Office Practice II, Shorthand II, Typewriting, Project Supervision
Date: 01/10/1999 – 01/10/2002

vii. **Employer:** The Polytechnic, Ibadan, P.M.B. 22, U.I Post Office
Designation: Higher Instructor
Subject: Secretarial Duties, Office Practice I, Shorthand I, Typewriting I, Typewriting II, Project Supervision
Date: 01/10/1996 - 01/10/1999

viii. **Employer:** Continuing Education Centre, The Polytechnic, Ibadan Eruwa Campus
Designation: Senior Instructor
Subject: Typewriting I (Mass Communication Department)
Date: 1996 – 2015

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(a) Professional Work Experience

Employer and Address: The Polytechnic, Ibadan, (Eruwa Satellite Campus)

i. Designation: Secretarial Assistant I
Nature of Duty: Secretarial Administrative Functions
Date: 01/06/1996 – 30/09/1996

ii. Designation: Conf. Sec. III
Nature of Duty: Secretarial Functions
Date: 01/06/1988 – 01/10/1996

Administrative Experience

1. Dean – Faculty of Communication and Mgt. Studies - 2023 - Date
2. Head of Department – Office Technology and Management - 2020 – 2022
3. Ag. Head of Department - Office Technology and Management - 2017 – 2019
4. Member – Board of Studies – The Polytechnic Ibadan, Eruwa Satellite Campus - 2009 - 2014
5. Member: Board of Studies, The Ibarapa Polytechnic, Eruwa/AOPE - 2017 -2024
6. Accreditation Veteran - 2016
7. Accreditation Veteran (Revalidation of OTM Accreditation - 2015
8. Ag. Head of Department – Office Technology and Mgt. - 2009 -2014
9. Member: Board of Studies, The Polytechnic Ib. Eruwa Campus - 2009 -2014
10. Member: Board of Studies, The Ibarapa Polytechnic, Eruwa/AOPE - 2017 – till date
11. Chairperson, LOC , Faculty Conference - 2017
12. Member - Faculty Coordinating Committee - 2014
13. Member –Institutional Investigative Panel on Corrupt Practices - 2014
14. Member - Academic Programme Committee - 2006 - 2014
15. Member –Social Committee - 2006 - 2007
16. Member - Dress Code Committee - 2005 - 2006
17. Vice Chairman - ASUP (Eruwa Chapter) - 2004 – 2006
18. Furniture Loan Committee - 2002 - 2003
19. Member - Lagos Bomb Blast Committee - 2002
20. Member - Anti-Cultism Committee - 1997 - 2000
21. Member - Campus Examination Committee - 1997 to 2005
22. Member - Sexual Harassment Committee - 1997
23. Member - Students Disciplinary Committee - 1996 – 2010

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(b) Membership of Professional Bodies/Learned Societies

1. Fellow - National Institute of Office Administrators and Information Managers (NIOAIM)
2. Member - Institute of Business and Office Administrators of Nigeria (IBOAN)
3. Member - Association of Business Educators of Nigeria (ABEN)
4. Associate Member - International Professional Manager Association (IPMA) – UK

3. Publications/Exhibition/Design

i) Dissertation or Thesis

Oduwole, D. O. (2016). "Information and Communication Technology (ICT) Competency as a Predictor of Secretaries' Job Performance in Public and Private Polytechnics in Oyo State, Nigeria": M. Ed Thesis submitted to the Department of Educational Management and Business Studies, Olabisi Onabanjo University, Ago Iwoye, Ogun State.

Oduwole, D. O. (2019). "Evaluation of electronic record management for effective service delivery and decision-making in selected tertiary institutions in Oyo State, Nigeria": A B.Sc (Conversion) project submitted to the Department of Office Information and Management (OIM), Faculty of Environment, Management and Social Sciences. Lead City University, Ibadan.

Oduwole, D. O. (2006). "Industrial conflict and management strategies": An MCA Thesis Submitted to the Department of Communication and Language Arts, University of Ibadan, Ibadan.

Oduwole, D. O. (1996)."Impact of office technology in office practice": An HND Project submitted to the Department of Secretarial Administration, The Polytechnic, Ibadan, Ibadan, Oyo State.

Oduwole, D. O. (1986). "Impact of automation in office practice": A National Diploma Project submitted to the Department of Secretarial Studies, The Polytechnic, Ibadan, Iree Satellite Campus, Iree, Oyo State.

ii) Books or Monographs

a) Oduwole, D. O. (2009)."Keyboarding I (Producing Mailable Document) Ibadan. Greenminds Media Resources and Paulove Communication (ISBN978-978-49325-9-7) 89 Pages.

b) Oduwole, D. O. (2004)."Typewriting Made Simple": Ibadan. Grace Height Concepts International (ISBN No. 978-245065-0), 178 Pages.

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iii) Published Articles

a. Adenekan, T. E. & Oduwole, D. O. (2024). Digital competence and academic performance of students offering Office Technology and Management Programme in Oyo State-Owned Polytechnic, Nigeria. **Bi-annual**, **Ife Journal of Theory and Research in Education, Obafemi Awolowo University (IJOTRE),** 25(1&2), 135 – 149**.**

b. Oduwole, D. O. & Ajibola Rita E. (2024). "Role of training and development in enhancing competencies of office manager in the digital era". **Book of Proceedings of 2nd Biennial Conference" National Institute of Office Administrator and Information Mangers (NIOAIM**) 16th - 17th, April, 2024. Page 165-176. ISBN: 978-978-766-2298.

c. Oduwole, D. O. (2020). Information and Communication Technology (ICT) Resources and Competence for Employability in Nigeria. Cerebral Pages: **Journal of General Education**, (1), (9), 71 – 81.

d. Oduwole, D. O. (2019). Electronic record management as a basis for good governance and socio-economic development in Nigeria. **Polycom Journal**, (20), (1), 96 – 108.

e. Oduwole, D. O**.** & Oladeji, K. O. (2018). "Effect of economic recession on management information system and administrative office in Oyo State owned polytechnic": **Ede Journal of Business**, (5), (1), 136-161.

f. Onasoga, O. T. Akinwunmi, F. A. & Oduwole, D. O**.** (2018). "Integration of social media into learning business education courses in tertiary institutions in selected Ogun State": **Publication of School of Vocational Education, F.C.E., Abeokuta**, 2 (1), 242 – 256.

g. Oduwole, D. O**.;** Thomas, O.; Taiwo, O. O. & Mustapha, R. M. (2017). "Office Technology and Management curriculum and ict human capacity building for sustainability": **International Journal of Business and Workplace Education (INJBWED),** (1), (2), 121 -128.

h. Oduwole, D. O**.** & Oladeji. K. O. (2016). "Ethics in public office as a panacea to economic recovery". a curriculum approach": **Lanlate Journal of Educational Research LanJER),** (1), (1), 160 –172.

i. Mustapha, R. A., Oduwole, D. O.; Thomas, O. & Taiwo, O. O. (2016). "Office automation - a tool for quality assurance in work delivery in office technology and management*"*: Gbogbonise. A Journal of Professionals, The Ibarapa Polytechnic, Eruwa, (2), (3), 97 – 106.

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j. Oduwole, D. O**.** & Abu, H. B. (2015).“Implementation of NBTE curriculum in Office Technology and Management as a predictor of students’ entrepreneurial initiatives”: A study of Oyo State-owned Polytechnics)”. Journal for the Promotion/ Advancement of Office Management/Secretarial Profession, (9), (1), 148 – 158.

k. Oduwole, D. O**.** (2010). “Information Technology: A tool for effective office administration in achieving organizational goals”: A Journal of Faculty of Business and Communication Studies, The Polytechnic, Ibadan, Ibadan (POLYCOM), (14), (2**),** 129 - 138.

l. Oduwole, D. O**.** (2009). “Functional education in nigeria – metamorphosis and impediments”: A Journal of Women in Technical Education. JOWITTED. *6*, (3), (4), 308 – 313.

m. Oduwole, D. O**.** (2008). “Vocational and technical education- a panacea to poverty alleviation in the 21st century Nigeria”. **African Journal of Historical Sciences in Education.** 4, (1), (2), 65 – 73.

n. Oduwole, D. O. & Jaiyeoba, O. S. (2007). “Proficiency in English language towards efficient performance of students in Secretarial Studies”: **A Journal of the Faculty of Business and Communication Studies and Financial Management Studies (POLYCOM**). The Polytechnic, Ibadan (2), (2), 98-116.

Conference/Workshop Attended with Venue, Date and Paper Presented

Name of Conference:	2nd Biennial Conference of Faculty of Communication and Management Studies, Adeseun Ogundoyin Polytechnic, Eruwa, (AOPE) Oyo State
Venue:	Assembly Hall AOPE
Date:	14th - 16th May, 2024
Presented:	Upholding Ethical Standards in Office Administration in Nigeria Amid Global Economic Crises

Name of Conference:	2nd Biennial Conference, National Institute of Office and Information Mangers (NIOAIM)
Venue:	Lead City University
Date:	16th - 17th April, 2024
Paper Presented:	Role of Training and Development in Enhancing Competencies of Office Manager in the Digital Era

Name of Conference:	2nd National Conference (virtual) of School of ICT (SICT)
Venue:	The Federal Polytechnic, Ilaro, Ogun State
Date:	19th - 20th July, 2022

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Paper Presented: Records management practices and job satisfaction of administrative staff in selected tertiary institutions on Oyo. State
Presenter(s): **Oduwole, D. O**.

Name of Conference: Maiden Biennial Conference, OYSCATECH
Venue: **Oyo State College of Agriculture and Tech. Igboora**
Date: 14th – 17th October, 2019
Paper Presented: Promoting sustainable development in Nig. through information and communication technology (ICT)
Presenter(s): **Oduwole, D. O**., Oduwole, A. O. & Ibironke, O. F.

Name of Conference: 16th Annual National Conference, The Polytechnic, Ede School of Business Studies
Date: 5th – 8th June, 2018
Paper Presented: "Entrepreneurship Education in Tertiary Institution And Instructional Facilities For Sustainable Development in Nigeria"
Presenter(s): Oduwole, D. O**.;** Olayanju, T. E. & Oduwole, A. O.

Name of Conference: 2017 National Conference Faculty of Business and Communication Studies, The Polytechnic, Ibadan
Venue: New Conference Centre, The Polytechnic, Ibadan
Date: 15th – 18thAugust, 2017
Paper Presented: "Role of ICT in Combating Corruption in Nigeria"
Presenter(s): Fakorede, D. L., Hassan, A., Abodunde, S. M., & **Oduwole, D. O.**

Name Conference: 2017 International Conference (IBOAN), FCMS
Venue: New Conference Hall, The Ibarapa Polytechnic, Eruwa
Date: 9th – 11thAugust, 2017
Paper Presented: **"**Roles of ICT Resources and Competencies in Business Studies for Global Employability"
Presenter(s): **Oduwole, D. O.**; Oladeji, K. O., Fakorede, D. L. & Salami, G. O.

Name of Conference: 2017 International Conference (IBOAN), FCMS
Venue: New Conference Hall, The Ibarapa Polytechnic, Eruwa
Date: 9th – 11th August, 2017
Paper Presented: "Business and Employment Communication as Predictors for Employability in Oyo State of Nigeria". (A Study of Ibarapa East Local Government)
Presenter(s): Oladeji, K. O. & **Oduwole, D. O.**

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Name of Conference: 1st Annual National Conference, The Ibarapa Polytechnic,
Venue: New Conference Centre, The Ibarapa Polytechnic, Eruwa
Date: 17th – 20th July, 2017
Paper Presented: **"**The Roles of Effective Communication Techniques in Relieving Nigeria's Recession and Actualizing Her Change Agenda"
Presenter(s) Oladeji, K. O. &**Oduwole, D. O**.

Name of Conference: 13thNational Conf., Fed. College of Educ., Abeokuta, Ogun State
Venue: Federal College of Education, Abeokuta, Ogun State
Date: 4th – 7thJuly, 2017
Paper Presented: **"**Living with the New Media: Implications for School Learning and the Nigerian Youths"
Presenter(s): Muyiwa, P.; Oladeji, K.O.& **Oduwole, D. O.**

Name of Conference: 13thNational Conference, Federal College of Education, Abeokuta, Ogun State
Venue: Federal College of Education, Osiele, Abeokuta, Ogun State
Date: 4th – 7th, July 2017
Paper Presented **"**Integration of Social Media in Learning Business Education Courses in Ogun State tertiary institutions"
Presenter(s) Onasoga, O. T.; Akinwumi, S. A. and **Oduwole, D. O.**

Name of Conference: 15thAnnual National Conference, Federal Polytechnic, Ede,
Venue: Western Sun Hotel, NYSC Camp, Ede, Osun State
Date: 14th – 16thMarch, 2017
Paper presented: **"**Challenges of Economic Recession on Management Information Systems and Public Admin. Office in Oyo State-Owned Polytechnics"

Presenter(s): **Oduwole, D. O.** & Oladeji, K. O.
Name of Conference: 2010 National Conference, Faculty of Bus. and Comm. Studies (FBCS
Venue: Assembly Hall, North Campus, the Polytechnic, Ibadan
Date: 26th – 30th July, 2010
Paper Presented: "Globalization: Information Technology Efficiency–Enhancing Office Administration, Organisational Goals and Development"
Presenter(s): **Oduwole, D. O.**

Name of Conference: 5th National Conference, Faculty of Business and communication Studies (FBCS)
Venue: Conference Hall. Auchi Polytechnic, Auchi
Date: 2nd–5thNovember, 2009
Paper Presented: **"**Functional Education as a Source of Industrialisation in Nigeria"
Presenter(s): **Oduwole, D. O.**

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Other Conference/Workshop Attended Venue, Date and Organiser

i. **Theme** UN and UNESCO World Day for Cultural Diversity for Dialogue Development
Venue: Virtual
Organiser: International Council for Education; Research and Training (ICERT) - Lead City University, Ibadan
Date: **5**th June, 2024

ii. **Theme** Emerging Issues In Management, Information Technology, Sciences and Social Sciences In The Contemporary Global World
Venue: Virtual
Organiser: International Council for Education; Research and Training (ICERT) - Lead City University, Ibadan
Date: 11th August, 2024

iii. **Theme** "Managing the Boss for Effective Working Relationship" (1st Quarter, 2023, Capacity Building)
Venue: Virtual
Organiser: National Institute of Office Administrators and Information Managers (NIOAIM)
Date: 25th March, 2023

iv. **Theme** "Information Technology for Office Administration in the New Era" 4th Quarter, 2022, Capacity Building**)**
Venue: Virtual
Organiser: National Institute of Office Administrators and Information Managers (NIOAIM)
Date: December, 2022

v. **Theme** "Effective Team Building in the Workplace" (Capacity Building) **(**3rd Quarter, 2022, Capacity Building)
Venue: Viritual
Organiser: National Institute of Office Administrators and Information Managers (NIOAIM)
Date: 17th September, 2022

Theme: "Upskilling for Professionalism in the Information Age" (1st Quarter, 2022 Capacity Building)
Venue: Virtual
Organiser: National Institute of Office Administrators and Information Managers (NIOAIM)
Date: 10th February, 2022

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vi. **Theme:** "Repositioning Office Administration and Information Management for Innovation, Sustainable Development and Global Competitiveness"
Venue: Lead City |University, Ibadan
Organiser: Liprorich Consulting Limited
Date: 7th – 10h February, 2022

vii. **Theme:** Understanding the fundamentals of governance ethics and public service value mentality
Venue: New Conference Room, The Ibarapa Polytechnic, Eruwa
Organiser: Centre for Ethics and Self Value Orientation
Date: 27th March, 2018

viii. **Theme:** 3rd National Conference of the Association of Business Educators of Nigeria (ABEN)
Venue: OGD, Main Campus, Olabisi Onabanjo University, Ago-Iwoye, Ogun, State
Organiser: Association of Business Educators of Nigeria (ABEN) Ogun, State
Date: 20th- 23rd, 2016

ix. **Theme:** Academic publication and Research
Venue: Conference Hall, Emmanuel Alayande College of Education, Oyo
Organiser: Research and Publication Committee
Date: 28th – 29th January, 2014

x. **Theme:** 2-Day Institutional Sensitization Workshop on the Development of Curricular
Venue: Conference Hall, North Campus, the Polytechnic Ibadan
Organiser: Management, the Polytechnic, Ibadan
Date: 15th – 16th August, 2013

xi. **Theme:** On-line Teaching for Academic Staff
Venue: Assembly Hall, North Campus, the polytechnic, Ibadan
Organiser: Management, the Polytechnic, Ibadan
Date: 16th – 18th July, 2012

xii. **Theme:** One-Day retreat for all academic staff
Venue: Main Hall, Adeseun Ogundoyin Campus, Eruwa
Organiser: Management, Adeseun Ogundoyin Campus, Eruwa
Date: Academic Planning and Control Unit,

xiii. **Theme:** 3-Day Conference Retreat for Head of Department (Training and Building Capacity)
Venue: Ada, Osun State
Organiser: Management, the Polytechnic, Ibadan
Date: 17th -19th February, 2011

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xiv. **Theme:** Enhancing Secretarial Staff
Venue: Conference Hall, Adeseun Ogundoyin Campus, Eruwa
Organiser: Registry Department (AOCE)
Paper Presented: Technicalities involved in typing on computer
Date: 9th February, 2011

xv. Theme: Paper Writing: The Hall Marks of Academics
Venue: Campus Main Hall
Organiser: School of Arts & Social Sciences Emmanuel Alayande College of Educ., Oyo, Lanlate
Date: 18th March, 2008

xvi. Theme: How to Write Standard Textbooks in Tertiary Institution
Venue: Main Hall, Adeseun Ogundoyin Campus, Eruwa
Organiser: Textbooks standardization Committee (AOCE)
Date: 4thApril, 2007

xvii. Theme: Skill Development and Training
Venue: Main Hall, The Polytechnic, Ibadan, Ibadan
Organiser: UNESCO- Nigeria (South West Zone) – Management, the Polytechnic, Ibadan.
Date: 13th – 15th December, 2005

xviii. **Theme:** Revitalizing education in Nigeria: Innovative Approaches and Emerging Challenges
Venue: Conference Secretariat, University of Ibadan, Ibadan
Organiser: 2nd annual national History of Education Society of Nigeria (ISCHE)
Date: 13th – 15th December, 2005

xix. Theme: The Ideal Secretarial Staff in an Institution of Higher Learning
Venue: Main Hall, The Polytechnic, Ibadan, Eruwa Campus, Eruwa
Organiser: Registry Department (AOCE)
Paper Presented: The Ideal Secretarial Staff in an Institution of Higher Learning
Date: 6thNovember, 1996

xx. Theme: Typing of Result and Other Complicated Data
Venue: Main Hall, The Polytechnic, Ibadan, Eruwa Campus, Eruwa
Organiser: Registry Department (AOCE)
Paper Presented: Typing of Result and Other Complicated Data
Date: 7TH November, 1996

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SECTION E: EXTRA CURRICULAR ACTIVITIES

1. Other Activities within the Polytechnic

a)	Member - Board of Studies	2009 to 2014; 2017 till date
b)	Chairperson, LOC , Faculty Conference	2017
c)	Member - Faculty Coordinating Committee –	2014
d)	Member –Institutional Investigative Panel on Corrupt Practices	2014
e)	Member - Academic Programme Committee	2006 to 2014
f)	Member – Appointment and Promotion Committee	
g)	Member –Social Committee	2006 - 2007
h)	Member - Dress Code Committee	2005 - 2006
i)	Vice Chairman - ASUP (Eruwa Chapter)	2004 – 2006
j)	Member -Furniture Loan Committee	2002 - 2003
k)	Member - Lagos Bomb Blast Committee	2002
l)	Member - Anti-Cultism Committee	1997
m)	Member - Campus Examination Committee	1997 to 2005
n)	Member - Sexual Harassment Committee	1997
o)	Member - Students Disciplinary Committee	1996 – 2010

Awards and Fellowship

a) **Best Student (Prize Winner)** - HND Secretarial Studies (1996 Set) Awarded by The Polytechnic, Ibadan, Ibadan)

b) **Ethical Conduct Award Certificate**: - (Awarded by Centre for Ethics and Self Value Orientation Body) - 14th March, 2018

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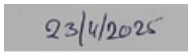
NAMES OF REFREES

1. Dr. Olugbade AKINTEYE,
   Ag. Rector,
   Adeseun Ogundoyin Polytechnic, Eruwa,
   Oyo State.

2. Dr. Sophia V. ADEYEYE,
   Head of Department,
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3. Dr. Sunday O. TUNMIBI,
   Department of Information Management,
   Faculty of Communication &Information Sciences,
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Signature of Candidate
Deborah O. ODUWOLE

Date

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The University Compliance Certification

This is to certify that this thesis **by Deborah Omowumi ODUWOLE** with Matriculation Number LCU/PG/002524 in the Department of Information Management, Leady City University, Ibadan, is in FULL compliance with the approved university format and style.

Signature

27/11/2015

Date

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