Assessment of the use of Multimedia Tools in Practical Skills among Student Nurses of Lagos State College of Nursing

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Abstract
The integration of multimedia tools in teaching practical skills has significantly enhanced learning effectiveness. However, effective teaching and learning are often hindered by disinterested teachers, students, and educational policymakers who fail to recognize the value of multimedia in skill development. Multimedia serves as a vital resource for teaching, learning, and research in academic institutions. Thus, evaluating the use of multimedia tools is essential for improving their application across schools and colleges. This study aimed to examine the usage, knowledge, perceived benefits, and challenges of multimedia tools in practical skill development among student nurses at Lagos State College of Nursing, Igando, Lagos State, employing a quantitative research design. The study adopted a descriptive approach and focused on 92 first- and second-year student nurses. Data were collected through a self-administered questionnaire and analysed using tables, frequency distributions, bar charts, and percentages. Findings revealed that 57% of respondents had a moderate level of knowledge about the use of multimedia tools. Half (50%) acknowledged the benefits of multimedia tools in enhancing practical skills. A majority (66%) pointed out existing barriers such as unreliable power supply and lack of funds for acquiring necessary resources. Based on these results, the study concludes that student nurses generally possess a reasonable understanding of the use and advantages of multimedia tools in practical skills. The study recommends that nursing students consistently enhance their knowledge and application of multimedia tools. Additionally, efforts should be made to address and improve the factors affecting the effective use of multimedia in practical education.

Keywords: Assessment, Multimedia tools, Practical skills, Nursing students.

Chapter One
Introduction
1.1 Background to the Study
Educationis fundamentally about facilitating positive behavioural transformations in learners. Educational objectives serve as a guide for teachers, outlining what learners are expected to achieve by the end of the instructional process (Badret & Sunnet, 2023). These objectives are typically categorized into three domains: knowledge, attitude, and performance — all of which are essential areas in which nurses must be trained. Teachers then assess how effectively learners apply what they've learned to meet these objectives. A persistent challenge in nursing education is identifying effective teaching methods that ensure students gain up-to-date knowledge and enhance their performance. Although modern teaching strategies—such as problem-solving approaches, internet-based

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learning and computer-assisted instruction—have been introduced, the traditional lecture method remains widely used (Akaye, 2020; Suhr, Amiri, Ternad, & Bahagu, 2023). Over recent decades, traditional learning methods have evolved significantly with the emergence of modern information and communication technologies like multimedia. The conventional classroom lecture is increasingly being replaced by more interactive and engaging teaching approaches (Geonad & John, 2020). Nursing educators are committed to creating engaging and impactful learning experiences by leveraging the best available teaching strategies (Nelgar, Kurad, Martin, Geonard, & Gadsby, 2021). Nursing education aims to develop skilled, compassionate, and adaptable student nurses who are equipped to function effectively in dynamic healthcare environments. Mastery of hands-on clinical skills is crucial in nursing, as it directly affects the quality of patient care (Gazbare & Rathi, 2020). Learning practical skills demands consistent practice and up-to-date techniques, which significantly contribute to student success. Research indicates that audiovisual tools such as educational television and videos not only support reading comprehension but also create a shared base of knowledge, enhance understanding, encourage classroom discussions, support diverse learning preferences, boost motivation, and improve teaching efficiency (Abrahams & Reiss, 2021). Nurse educators play a key role in developing innovative educational tools that inspire students to master essential health assessment skills. These tools not only strengthen clinical competence but also improve patient care and learning outcomes in health assessments (Tomesko, Touger-Decker & Dreker, 2012; Russell, Joyce, Catherine, John, & William, 2020). Given this context, the use of instructional multimedia in nursing education is becoming more prevalent. However, the impact of this method on learning outcomes has not been extensively explored. This study therefore aims to investigate how instructional multimedia affects learning outcomes among nursing students in a selected institution.

1.2 Statement of the Problem

Despite the proven effectiveness of multimedia in enhancing teaching and learning, its integration into practical skills training remains limited due to the lack of interest from some teachers and educational policy makers, who underestimate its value. Although multimedia serves as a vital resource for instruction, research, and academic development, many nursing schools are still not adequately equipped with these tools. In addition, financial constraints pose a major challenge, making it difficult for institutions to procure necessary multimedia equipment. Even in settings where such resources exist, their usage is often limited due to insufficient computer literacy among educators, preventing effective operation of digital tools. Other significant barriers include inconsistent power supply required to run multimedia devices and a shortage of trained educational technologists to support their usage. Multimedia systems are generally costly, as they involve multiple media formats and require electronic devices capable of rendering different media types simultaneously.

1.3 Objectives of the Study

The primary aim of this study is to examine the utilization of multimedia tools in developing practical skills among student nurses at Lagos State College of Nursing.

The specific objectives include:

1. To evaluate the level of knowledge student nurses, have regarding the use of multimedia tools in acquiring practical skills.

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2. To explore the advantages of using multimediatoolsinpracticalskill development among student nurses.
3. To identify the challenges associated with the use of multimedia tools in practical skill acquisition among student nurses of Lagos State College of Nursing.

1.4 Research Questions

1. How knowledgeable are student nurses at Lagos State College of Nursing about using multimedia tools for acquiring practical skills?
2. What advantages do multimedia tools offer in enhancing practical skills among student nurses at Lagos State College of Nursing?
3. What obstacles do student nurses face when using multimedia tools for practical skill development at Lagos State College of Nursing?

1.5 Hypotheses

1. A significant relationship exists between students' knowledge and their use of multimedia tools in developing practical nursing skills.
2. There is no significant association between the challenges faced in using multimedia tools and the practical skills of student nurses.

1.6 Significance of the Study

Multimedia learning harnesses the brain's ability to connect verbal and visual information, promoting a deeper understanding of practical skills and enhancing nursing students' interest in learning. These tools also help to capture students' attention and positively influence their engagement and motivation throughout the learning process. The outcome of this study will contribute to enhancing the effective use of multimedia tools in teaching practical skills among nursing students, thereby improving their overall academic performance. It will also help determine the extent to which multimedia tools are available and utilized at Lagos State College of Nursing. Furthermore, the data generated will provide valuable insight for the Nursing Council, highlighting the importance of integrating multimedia tools into practical skill training across all nursing schools. The findings could also support the implementation of relevant in-service training programs aimed at equipping educators with the necessary skills and knowledge to effectively use multimedia tools in teaching and learning.

1.7 Scope of the Study

The scope of this study is focusing on assessment of the use of multimedia tools in practical skills among Student nurses of Lagos State College of Nursing, irrespective of their tribe, religion, culture, age, level, and other demographic characteristics.

1.8 Operational Definition of Term.

Assessment: Assessment is the systematic basis for making inferences about the learning and development of students.
Multimedia tools: Are various technological tools used in the learning process that makes learning effective, easier and more interesting for nursing students in the Nursing school.
Nursing school: It is an educational institution that equips students on various theoretical and practical nursing skills.
Nursing students: Are the students that undergo various theoretical and practical nursing education that makes them qualified nurses at the end of the training.
Use of multimedia: It refers to how well the multimedia tools are used in the learning process

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Chapter Two
Literature Review
2.1 Conceptual Review

Multimedia refers to a modern mode of communication that integrates various content formats such as text, audio, images, animations, and video into a cohesive presentation—distinct from traditional teaching and learning approaches. Common examples include videos, audio-visual slideshows, animated content, and films. According to Dave Marshall (2020), multimedia involves the use of computers to combine and manage text, graphics, drawings, static and dynamic images (such as video), animations, audio, and other data types, all of which can be digitally stored, processed, and transmitted. These technical processes are essential in achieving desired educational outcomes and are particularly beneficial for nurses in delivering patient care during various clinical procedures. Recent research conducted among undergraduate nursing students at the University of Melbourne, Australia, investigated the impact of e-learning on the use of personal protective equipment. When Computer-Aided Learning (CAL) was implemented for second-year nursing students at Melbourne and Griffith International Universities, the results showed a significant improvement in practical performance skills across all groups, regardless of whether they experienced CAL alone, CAL with lectures, or CAL combined with lectures and demonstrations. However, there was no notable improvement in factual knowledge (Suppan, Laurent, et al., 2020). Another experimental study carried out at two universities in Northern California explored the effectiveness of different instructional methods—including an online interactive multimedia tool, text-only content, text with images, and multimedia explanations—on mathematics achievement, math self-efficacy, and student satisfaction. The findings indicated that students who used the interactive multimedia tool performed equally well in both post-tests and retests compared to those in control groups, and showed similar levels of self-efficacy. However, they reported higher satisfaction, found the method more engaging and enjoyable, and appreciated the quality of feedback provided. The study concluded that online interactive multimedia tools offer an effective and innovative approach to teaching complex topics like medication dosage calculations (Maag Margaret, 2021).

Understanding the Use of Multimedia Tools

Multimedia tools have become essential in today's communication, education, and entertainment sectors. By combining elements like text, audio, video, graphics, and animation, these tools create engaging and interactive experiences that stimulate multiple senses, improving both understanding and memory retention. In educational environments, multimedia tools such as smart boards, e-learning platforms, and educational software are revolutionizing traditional teaching methods, making learning more dynamic, interactive, and accessible (Johnson et al., 2020).

They also support different learning styles—whether visual, auditory, or kinesthetics—thereby promoting a more inclusive and effective learning process. In business and marketing, multimedia is vital for building compelling and engaging campaigns. Companies utilize tools like multimedia presentations, video ads, and social media content to effectively deliver their messages. These tools allow for creative brand storytelling and include interactive features that enhance user engagement. With the support of multimedia analytics, businesses

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can also better understand their audience's preferences and behaviour, helping them refine their marketing strategies for greater effectiveness. The entertainment industry extensively relies on multimedia to craft captivating experiences. From cinematic special effects and advanced video game design to immersive virtual reality, multimedia technology expands creative boundaries and enhances realism. These tools help creators develop complex storylines, characters, and virtual environments that deeply engage audiences. This approach enriches storytelling and allows for new forms of artistic innovation and expression. In the communication sector, multimedia has transformed how people connect and share information. Platforms such as social media, video conferencing apps, and collaborative tools enable real-time communication and teamwork, regardless of location. These platforms support a variety of formats—including video, images, and documents—which improves the richness and effectiveness of communication (Pun, 2021). Additionally, multimedia plays a vital role in professional training and development. Through interactive tutorials, virtual simulations, and online learning modules, individuals can gain practical skills in a flexible and engaging way. These tools offer self-paced learning opportunities and are often more cost-effective and scalable for organizations, ensuring uniform training across large groups (Robin, 2012). In summary, the widespread application of multimedia tools across different sectors highlights their importance and adaptability. They enhance how information is delivered and understood, making learning, communication, and entertainment more impactful. As technology advances, the influence of multimedia tools is expected to grow, opening new possibilities for innovation across multiple industries.

Benefits of Utilizing Multimedia in Practical Skills

Since the early 21st century, the approach to acquiring practical skills in nursing has evolved significantly. With the integration of modern technologies into classrooms, the use of multimedia has become increasingly prevalent, simplifying and enhancing the teaching and learning experience compared to previous methods (Pun, 2019). Multimedia provides a diverse range of tools for skill acquisition, including audio materials, graphic design software, and online video resources. These tools are readily accessible and supported by various digital devices such as multimedia projectors, computers, and audio-visual equipment, all of which contribute to making the learning of practical skills more engaging and efficient (Pun, 2021). Current global educational trends emphasize the effectiveness and relevance of multimedia in both academic and professional settings. Numerous studies have highlighted the advantages of using multimedia in nursing education. For instance, both students and educators benefit from learning with visual aids like graphics, images, and projectors.

These tools not only enhance the learning process but also support teachers in developing technical skills for personal and professional growth. However, the impact of multimedia is maximized when it is complemented by direct teacher-student interaction. In this regard, digital tools serve as a valuable supplement to traditional teaching methods, aligning with modern pedagogical approaches (Härkänen et al., 2019). Daniel and Buffee (2021) emphasized that multimedia enriches the learning experience by offering students a variety of instructional formats and by focusing their attention more effectively on the subject matter. The use of multimedia projectors allows educators to present lessons using both verbal and non-verbal

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communication, combining theoretical explanations with visual materials. Certain nursing procedures that may be challenging to convey through speech alone become clearer when illustrated with pictures or audio-visual demonstrations (Callaham, 2019). Yunus, Salehi, and John (2020) also observed that visuals provided by multimedia projectors enhance reading and comprehension. Tools like images and videos help students grasp complex concepts by creating a stronger connection between the learner and the content. These visual aids make reading more interactive and engaging, speeding up the learning process. According to Smedley (2021), another key advantage of multimedia is its flexibility in terms of time and location. Students have the freedom to choose when and where to engage with learning materials, allowing them to acquire practical skills at their own pace and convenience.

Effectiveness of Multimedia in Practical Skills

In today's educational landscape, especially within nursing training, the effectiveness of multimedia in enhancing practical skills acquisition cannot be overstated. Multimedia has revolutionized teaching methods, bringing them into alignment with 21st-century standards and enabling students to gain in-depth knowledge and clearer understanding of clinical procedures taught in class. By integrating videos, audio content, animations, and projectors, multimedia allows learners to engage with instructional materials both in the classroom and remotely. It supports independent learning by enabling students to develop practical skills through hands-on interaction with appropriate learning resources (Shah & Khan, 2019; Gilakjani, 2020). Multimedia-based presentations tend to improve students' comprehension of key concepts and enhance their motivation to learn. Visual aids strengthen memory retention and help learners focus on crucial points. Additionally, multimedia improves the structure and delivery of lectures, making teaching more organized and impactful. When effectively applied, multimedia tools serve as strong motivators and enhance learning efficiency (Holmes & Gardner, 2022). Using multimedia in instruction creates an engaging and interactive learning atmosphere. It fosters critical thinking and problem-solving abilities, and it demands a broad set of transferable skills that are vital in nursing practice. This approach to teaching is now widely adopted globally and is recognized as a reliable and efficient way to support hands-on learning in undergraduate nursing education.

For example, one initiative involved creating a dedicated website featuring instructional videos and step-by-step guides for essential nursing procedures like catheter insertion, blood sampling, nasogastric tube placement, and IV-line insertion—effectively narrowing the gap between theoretical knowledge and real-world application (Jang H.W. & Kim K.J., 2020). Multimedia can be just as effective as a human instructor when it comes to demonstrating procedures or conveying essential facts. It supports individualized learning by allowing students to revisit content as often as needed until they achieve full comprehension. Visual and auditory learners, in particular, benefit greatly from multimedia tools, as they facilitate easier information retention. Furthermore, training time can be significantly reduced by using these tools, and students can manage their learning schedules more effectively with clear expectations on time commitment (Algahtani, 2019). One of multimedia's key strengths is its flexibility. Users can pause, rewind, or replay content, making it easier to review difficult sections, predict outcomes, and reflect on key points during skill

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acquisition. These features also encourage classroom interaction, such as discussions, demonstrations, and repeated experiments. The use of multimedia enhances student retention and reinforces understanding of complex concepts (Urdan & Weggen, 2020).

Challenges in Using Multimedia for Practical Skills

Although modern technology has become increasingly prevalent in education, several obstacles continue to hinder the effective use of multimedia tools in teaching practical skills. According to David Nagel (2019), these challenges can stem from systemic issues, limitations in technology, or even from educators themselves when their computer literacy and technological skills are outdated. A significant hurdle is the insufficient ongoing professional development for teachers who are expected to integrate new multimedia technologies into their teaching. Many educators lack the training or understanding needed to use these tools effectively. When teachers possess the necessary skills and knowledge, they can present multimedia content in a more comprehensible and engaging manner to students (Nagel, 2020). Technical problems and concerns about the quality of multimedia resources are also key challenges. In institutions where up-to-date technological support is available, teachers are more confident in using multimedia tools to enhance students' practical skills. These schools often have technical staff who can identify issues, troubleshoot problems, and communicate with developers to ensure smooth operation of multimedia software (Schunk, 2019). Another major issue is inconsistent power supply, which continues to pose a barrier for both educators and learners. Frequent power outages can reduce the use of electronic multimedia during skill-based lessons or interrupt ongoing learning activities, leading to frustration and reduced student engagement in practical sessions (Zhang, 2019).

Disadvantages of Not Using Multimedia in Practical Skills

The absence of multimedia tools in the teaching of practical skills can significantly hinder students' ability to grasp and retain information efficiently.

Without multimedia support, learners often need to repeatedly read and review material before fully understanding the procedures being taught. This traditional approach can make learning monotonous and mentally exhausting. As a result, students' academic performance may not reach its full potential compared to when multimedia is utilized in practical training. Additionally, teaching without multimedia can be more time-consuming, as it lacks the visual and interactive elements that facilitate quicker comprehension (Virtyt Lesha, 2018).

2.2 Theoritical Frame Work

Cognitive Learning Theory

Cognitive Learning Theory uses metacognition (thinking about thinking) to understand how thought processes influence learning. It was propounded by Jean Piaget in 1936 and it comprises of three stages:

- Sensory memory
- Short term memory (working memory)
- Long term memory

Sensory Memory: The first stage is sensory memory which contains receptors that briefly hold on to only that information that enters through our senses (smell, hearing, taste, vision). The environment makes a variety of sources of information (light, sound, smell, heat, cold) available but the brain only understands electrical energy. The body has special sensory receptor cells that change this electrical energy to something the brain can understand and a memory is created.

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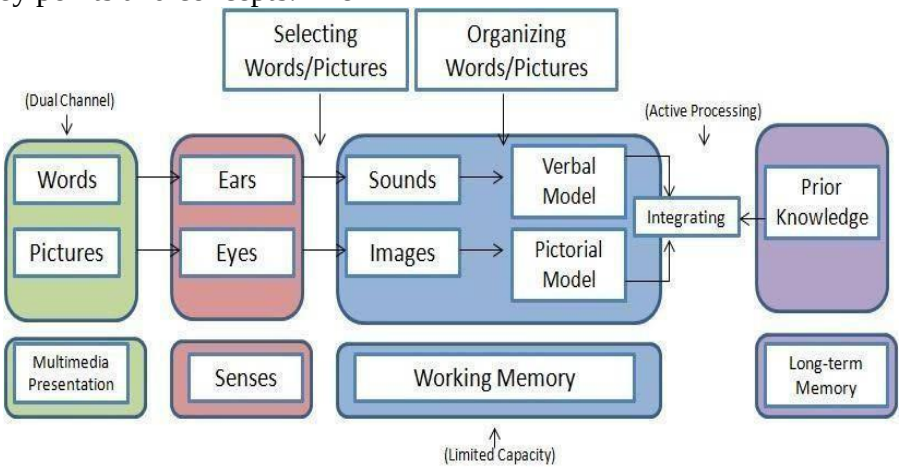
Short-term Memory (Working Memory): This is the second stage which is a temporary storage facility. Short-term memory is created by our paying attention to an external stimulus, thus an external stimulus or internal stimulus. It will initially last around 15 to 20 seconds unless it is repeated (that is, Maintenance Rehearsal) at which point it may be available for up to 20 minutes. The hypothalamus is a brain structure thought to be involved in this shallow processing information.

Long-term Memory: Long-term memory provides the lasting retention of information from minutes to a life time. Long-term memory appears to have an almost limitless capacity to retain information. In the communication process, the sensory register of memory acts as a filter. When stimuli are received, the sensory register quickly sorts out the most impactful pieces of information from less significant ones. Within moments, the most important information is transferred to short-term or working memory, where it is processed for potential storage in long-term memory. This process is enhanced by the use of appropriate multimedia that emphasizes key points and concepts. The capacity of short-term memory is limited in both time and space, so information must be broken down into manageable chunks for effective encoding, rehearsal, or storage. Carefully chosen multimedia elements like charts, graphs, images, and videos can help students grasp and retain important information. Additionally, the presentation should be clear, concise, and factual to make it easier for students to recall. The cognitive theory of multimedia learning serves as a basis for using multimedia in educational content delivery. This theory highlights the importance of the modality principle in the learning process. It builds on the cognitive load theory, which suggests that working memory has two separate channels for processing information: a visual/pictorial channel and an auditory/verbal channel. Despite each channel's limited capacity, using both can enhance the integration of new information with existing knowledge. The cognitive theory of multimedia learning aims for "Meaningful Learning," which involves cognitive processing that includes paying attention to the material, organizing it into a coherent structure, and linking it to prior knowledge (Khalil & Elkhider, 2019).



Source: en.wikiversity.org (2021)
Figure 1: Theoretical Framework of Cognitive Learning Theory

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Application of theory to the Study

The use of both visual and auditory channels in teaching helps integrate new information into existing cognitive frameworks. As a result, multimedia not only enhances students' cognitive learning but also makes the learning process more engaging and enjoyable. This leads to quicker assimilation of practical skills being taught, ultimately improving students' performance in practical tasks.

2.3 Empirical Review

Although computer-assisted learning and multimedia programs—such as video-based educational materials—have increasingly been adopted in university classrooms, Clay C.A (2020) conducted a study to evaluate the impact of multimedia use in teaching science subjects. Similarly, Gambari et al. (2023) examined how computer simulations helped SS II biology students in Minna, Niger State understand the digestive system. The majority of participants agreed that multimedia tools enhance the ease and speed of acquiring practical skills.

In another study, Karma (2020) identified the lack of access to multimedia equipment—such as laptops and projectors—as a significant barrier to using multimedia for learning practical skills. A related investigation by Giginna and Nweze (2021) focused on challenges faced by students in using multimedia tools. The study found that many of these tools are expensive and beyond the financial reach of most students. Additionally, literature suggests that instructional strategies involving active student participation led to improved academic performance and better acquisition of science process skills. Muhammad (2020) also reported a significant correlation between skill acquisition and academic success in chemistry. Competency-based, student-cantered clinical learning approaches have been shown to help learners reach expected outcomes. According to the Miller pyramid model, clinical competence is demonstrated in the "shows how" and "does" stages. The “shows how” level can be assessed through clinical performance evaluations, while the “does” level can be measured using observation, logbooks, and peer assessments (Wiworo Haryani, 2022). In the field of education, multimedia tools such as videos and guidebooks are increasingly used. Research shows that videos enhance motivation by effectively conveying processes, while guidebooks offer in-depth explanations, procedures, and instructional examples. In the current study, multimedia refers to instructional aids that illustrate the correct steps involved in applying Pit Fissure Sealant (PFS). These tools are designed to clarify objectives, benefits, indications, and contraindications of PFS treatment (Maria Dewi, 2018). Their goal is to enhance dental nursing students’ understanding and application of PFS, including isolation techniques, cleaning, etching, rinsing, drying, mixing, applying the sealant, and checking occlusion. Due to gaps in preventive dentistry practices, providing students with clear instructional media is essential. For this reason, Yuni Kusmiyati (2019) developed a multimedia package—including videos and guidebooks—to support learning and improve PFS practical skills among dental nursing students. The study aimed to explore how multimedia tools could strengthen students’ practical abilities in PFS application. It also sought to contribute to the knowledge base in dental nursing and help produce skilled graduates capable of improving dental healthcare services. Of the participants, 87% were female. Gender distribution between the treatment and control groups was roughly equal: about 50.6% and 49.6%, respectively. Among the 13% of male participants, 46% were in the

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treatment group, while 53.8% were in the control group. Because the pre-test and post-test scores on PFS skills were not normally distributed, the Wilcoxon test was used to compare mean differences. Although different media formats were used, both the treatment and control groups received identical content. The video and guidebook materials covered: 1) Definition of PFS, 2) Objectives of PFS, 3) Indications and contraindications, 4) Required materials and methods, and 5) Work procedures—covering instructions, safety protocols, and technical steps. These procedures included preparation, cavity cleaning, sealant application, and patient guidance.

Chapter Three
Methodology

3.1 Research Design

Quantitative descriptive survey design was used for this study. A questionnaire was used for the collection of data which was used for the analysis on a survey of the Assessment of the use of multimedia tools in practical skills among student nurses of Lagos State College of Nursing.

3.2 Research Setting

This study was conducted in Lagos State College of Nursing, Igando. Lagos is a state in the South-Western geopolitical zone of Nigeria. The college comprises of three departments Viz Department of nursing, Midwifery and Public Health. Presently it runs both basic Nursing and Midwifery programs. The Nursing department consists of about 212 students enrolled for full time Nursing program.

3.3 Target Population

The target population for the study were Year 1 and Year 2 Nursing students of the Lagos State College of Nursing.

3.4 Sampling Size

The sample size for this study was determined by using Taro Yamane Formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where:
n = Sample size
N = Population under study (120)
1 = Constant
e = Margin of error (0.05)

$$n = \frac{120}{1 + 120\,(0.05)^2}$$

$$n = \frac{120}{1 + 120\,(0.0025)}$$

$$n = \frac{120}{1 + 0.3}$$

$$n = \frac{120}{1.3}$$

n = 92.30
n = 92
Therefore, the sampling size for this research would be 92.

3.5 Sampling Technique

A purposive sampling technique was used for this research since the researcher selected an aspect of a population for the research according to the criteria that has been set. The purposive sampling helped the researcher to focus on the characteristics of the population for the research work.
The inclusion criteria;

- Respondents must be a student of the Lagos State College of Nursing, Department of Nursing and must be either a Year 1 or Year 2 student.

The exclusion criteria;

- Year 3 students of Lagos State College of Nursing
- Midwifery students of Lagos State College of Nursing

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3.6 Instrument for Data Collection

A self-administered questionnaire was used for data collection on the assessment of use of multimedia tools in practical skills among student nurses of Lagos State college of Nursing Igando.

The questionnaire consists of five sections; Section A, B, C and D.

Section A: Elicited information on the demographic data of the respondents.

Section B: Elicited the knowledge of students on the use of multimedia tools in practical skills among student nurses of Lagos State College of Nursing.

Section C: Elicited the benefits of using multimedia tools in practical skills among student nurses of Lagos State College of Nursing.

Section D: Elicited the barriers in the use of multimedia tools in practical skills among student nurses of Lagos State College of Nursing.

3.7 Validity of the Instrument

Validity refers to the degree to which the research instrument measures what it is intended to measure in the interest of the researcher. The questionnaire was submitted to the research expert for face and content validity. All their inputs and modifications were effected before the final draft was approved.

3.8 Reliability of the Instrument

Reliability is the ability of the instrument to consistently measure what is designed to measure. In order to establish the reliability of the instrument, a pilot test was carried out.

The questionnaire was admitted once to ninety-two students at the Lagos State college of Nursing. The students were similar to the group under study. Split half method was employed to determine the internal consistency and reliability of the instrument using Pearson product moment-correlation formula.

3.9 Methodo Data Collection

Questions were formulated from the research question in form of a questionnaire which respondents are expected to tick appropriate.

3.10 Method of Data Analysis

Dataobtained was collated, tallied, subjected todescriptivestatisticsoffrequency, percentage, mean and standard deviation and analysed using t-test. Data was represented in tables.

3.11 Ethical Consideration

A letter of introduction from the Head of Department of Nursing and a summary of the research proposal was submitted to the research and ethical committee of Lagos State College of Nursing. Approval was obtained before data collection. All respondent was informed that the survey is voluntary and they will not have to participate, if they chose not to and they could withdraw at any time. Respondent are assured of confidentiality of responses during and after data collection. All the data obtained in the course of this study from the respondents were acknowledged.

In addition, informed consent was obtained from the students prior to data collection. The student confidentiality and anonymity were ensured.

Chapter Four
Results

4.1 Presentation Of Results

This chapter presents the analysis of data based on the validated questionnaires used for this study. A total number of 92 copies of the questionnaire were distributed to the study population. All the copies of the questionnaire were returned but only eighty-

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eight (88) completely filled and validated (response rate of 96%) while four (4) were invalidated due to incomplete filling of the questionnaire.

Table 4.1: Socio-demographic characteristics of respondents

Variables	Frequency	Percentage
Age		
18-21	**57**	**62**
22-25	**21**	**23**
26 and above	**10**	**15**
Total	**88**	**100**
Sex		
Male **Female**	**15** **73**	**16** **84**
Total	**88**	**100**
Ethnicity		
Yoruba	**75**	**86**
Igbo	**10**	**11**
Hausa	**3**	**3**
Total	**88**	**100**
Religion		
Christianity	**61**	**71**
Islam	**27**	**29**
Others	**0**	**0**
Total	**88**	**100**
Marital status **Single**	**76**	**87**
Married	**11**	**12**
Divorced	**1**	**1**
Total	**88**	**100**
Educational level		
Year 1	**50**	**58**
Year 2	**38**	**42**
Total	**88**	**100**

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From table 4.1 above, the majority of participants, 57 (62%) were between the ages of 18 and 21. Respondents aged 22 to 25 accounted for 21 (23%), while 10 (15%) were 26 years or older. In terms of gender, 73 (84%) were female and 15 (16%) were male. Most of the respondents, 75 (86%), identified as Yoruba, followed by 10 (11%) who were Igbo and 3 (3%) who were Hausa. Regarding religion, 61 (71%) were Christians and 27 (29%) were Muslims. Marital status showed that 76 (80%) were single, 11 (12%) were married, and 1 (1%) was divorced. In terms of academic level, 50 (58%) were in their first year, while 38 (42%) were in their second year.

Table 4.1.1: Knowledge of students on the use of multimedia tools in acquisition of practical skills.

Variables	Strongly agree	Agree	Strongly disagree	Disagree	Undecided	Total
Have heard of multimedia before	**52(57%)**	**36(37%)**	**0(0%)**	**0(0%)**	**0(0%)**	**88(100%)**
Multimedia involves the use of computer to present and combine text, graphic audio and video	**54(62%)**	**34(38%)**	**0(0%)**	**0(0%)**	**0(0%)**	**88(100%)**
Multimedia offers avenue for presenting material through videos, audio, projector, animations and so on	**57(66%)**	**31(34%)**	**0(0%)**	**0(0%)**	**0(0%)**	**88(100%)**

From the table 4.1.1 above, majority of the respondents, 52 (57%) strongly agreed that they had previously heard of multimedia, while 36 (37%) also agreed to having heard of it. Similarly, 52 (62%) strongly agreed that multimedia entails using computers to present and integrate text, graphics, audio, and video, with 36 (38%) also agreeing with this definition. Furthermore, 57 (66%) of the participants strongly agreed that multimedia provides a platform for delivering content through videos, audio, projectors, animations, and similar tools, while 31 (38%) agreed with this statement.

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Table 4.1.2: Benefits of using multimedia tools in practical skills.

Variables	Strongly Agree	Agree	Strongly Disagree	Disagree	Undecided	Total
It creates curiosity for learning in students	36(39%)	42(50%)	0(0%)	0(0%)	10(11)	88(100%)
It saves the time because it can give detailed idea, effective and accurate	53(62%)	35(43%)	0(0%)	0(0%)	0(0%)	88(100%)
Multimedia can demonstrate complex ideas and access other places better than speaking can.	53(62%)	27(30%)	2(2%)	2(2%)	4(4%)	88(100%)
It aids student retention of knowledge.	37(45%)	32(35%)	6(6.5%)	7(7%)	6(6.5%)	88(100%)
It makes learning easier and faster	60(65%)	22(28%)	0(0%)	0(0%)	6(7%)	88(100%)

Table 4.1.2 above shows that out of the respondents, 36 (39%) strongly agreed that multimedia stimulates curiosity in students, while the majority, 42 (50%), agreed with this statement, and 10 (11%) remained undecided. Regarding time efficiency, 53 (57%) of the participants strongly agreed that multimedia saves time by providing clear, detailed, and effective information, while 35 (43%) agreed. Additionally, 53 (62%) strongly agreed that multimedia can effectively illustrate complex concepts and provide access to locations beyond what verbal explanation can achieve. Another 27 (30%) agreed with this, while a small number—2 (2%) each—strongly disagreed and disagreed, and 4 (4%) were undecided. On the topic of knowledge retention, 37 (45%) strongly agreed that multimedia helps students retain information better, 32 (35%) agreed, while 6 (6.5%) strongly disagreed, 7 (7%) disagreed, and another 6 (6.5%) were undecided. Finally, 60 (65%) of the respondents strongly agreed that multimedia facilitates easier and faster learning, 22 (28%) agreed, and 6 (7%) were undecided.

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Table 4.1.3: Barriers to the use of multimedia tools in practical skills.

Variables	Strongly agree	Agree	Strongly disagree	Disagree	Undecided	Total
Inadequate Power supply.	**61(66%)**	**29(30.3%)**	**3(3.4%)**	**4(10.2%)**	**0(0.0%)**	**88(100%)**
Lack of expert human resources.	**38(43%)**	**40(45.5%)**	**4(4.5%)**	**6(7%)**	**0(0.0)**	**88(100%)**
Lack of fund to purchase the necessary requirement.	**42(47.7%)**	**43(50%)**	**1(1.1%)**	**3(3.4%)**	**0(0.0)**	**88(100%)**

Table 4.1.3 above highlights the challenges faced in the use of multimedia for practical skills. The data shows that a significant number of respondents, 61 (66%), strongly agreed that insufficient power supply hinders the effective use of multimedia. Additionally, 38 (43.5%) strongly agreed, and 40 (43.5%) agreed, that the lack of expert personnel is a major obstacle to using multimedia tools. Furthermore, 48 (47%) of the respondents strongly agreed that insufficient funding to acquire necessary resources poses a challenge, while another 43 (50%) agreed with this. These results indicate that various barriers do exist in the application of multimedia tools for practical skilldevelopment.

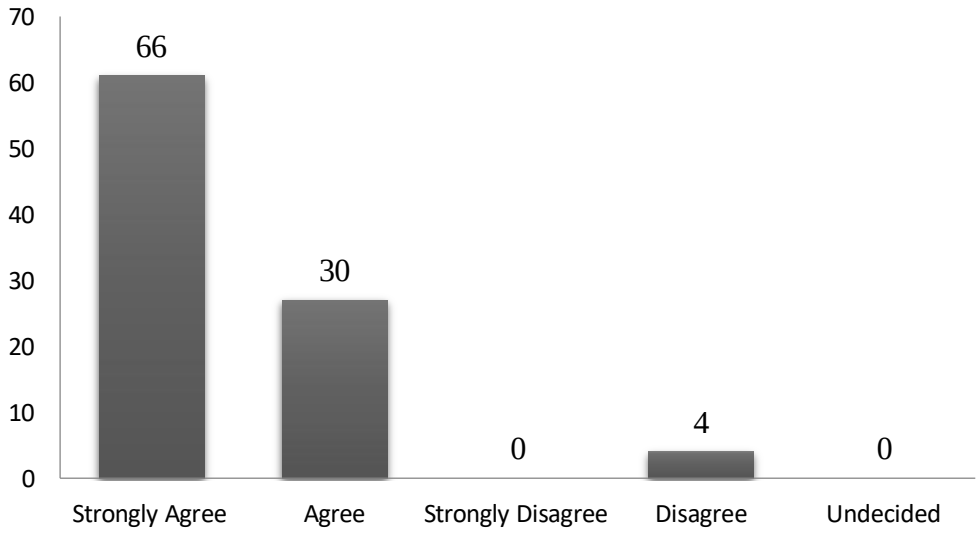

Figure 1: inadequate power supply

The bar chart above (figure 1) illustrates that a majority of respondents, 60 (66%), strongly agreed that an inadequate power supply poses a barrier to the use of multimedia tools. Additionally, 24 (30%) agreed with this view, while only 4 (4%) disagreed that inadequate power supply is a hindrancetomultimediausage.

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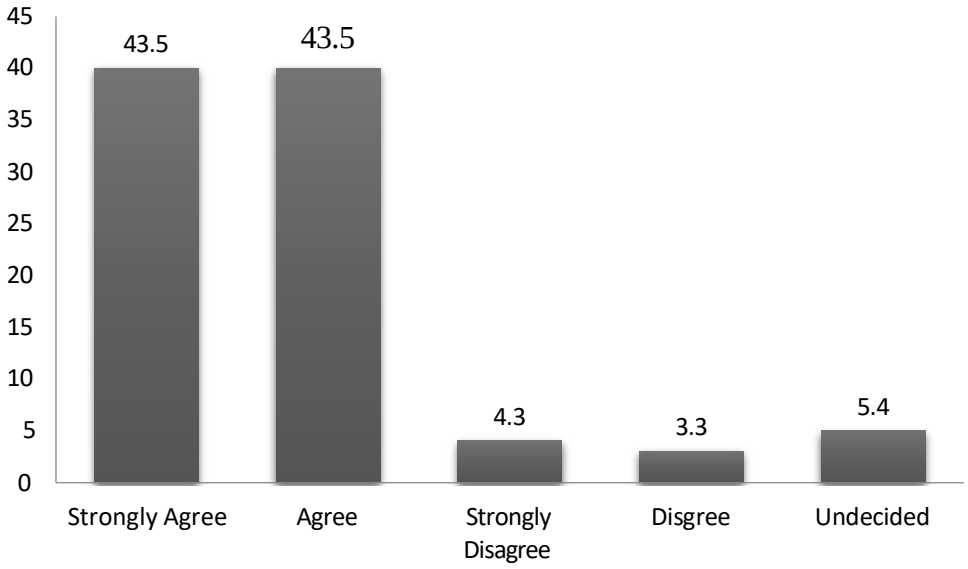

Figure 2: Lack of expert human resources

From the figure 2 above, the bar chart indicates that 38 (43.5%) respondents strongly agreed and another 38 (43.5%) agreed that the lack of expert resources is a barrier to the use of multimedia tools. Meanwhile, 4 (4.3%) respondents strongly disagreed, 3 (3.3%) disagreed, and 5 (5.4%) were undecided about whether the lack of expert resources hinders the use of multimedia tools.

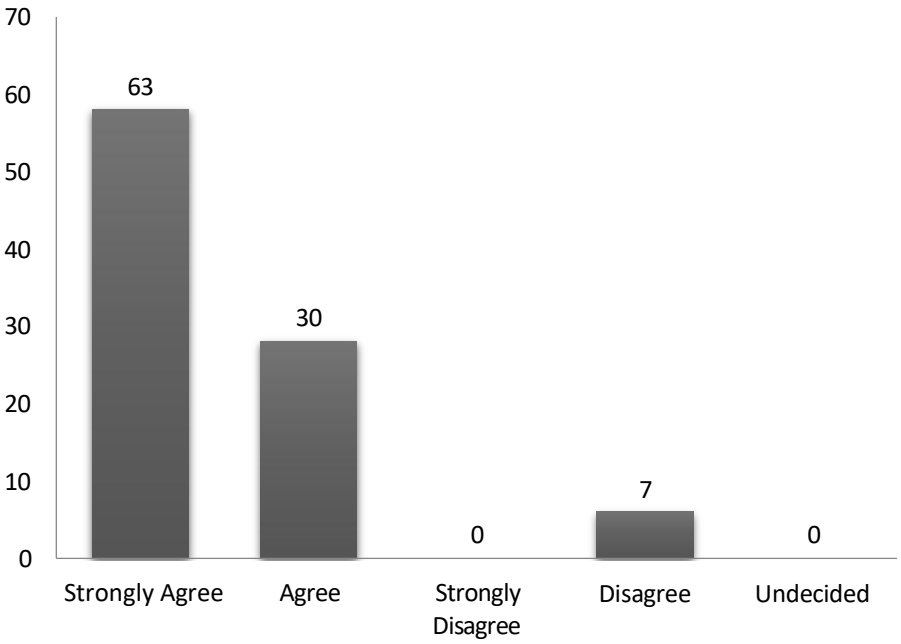

Figure 3: Lack of fund to purchase the necessary requirements

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The bar chart above (figure 3) indicates that a majority of the respondents, 54 (63%), strongly agreed that insufficient funding to acquire the required materials is a barrier to the use of multimedia tools. Additionally, 28 (30%) agreed with this statement, while 6 (7%) disagreed that lack of funds hinders the use of multimedia tools.

4.2 Answering Of Research Questions

Research question 1: What is the knowledge of students on the use of multimedia tools in practical skills among student nurses of Lagos State College of Nursing?

Table 4.2: Mean and Standard Deviation on what is the knowledge of students on the use of multimedia tools in practical skills among student nurses of Lagos State College of Nursing

	Mean	Std. Deviation	Decision
Have heard of multimedia before	**3.3350**	**.93657**	**Has Effect**
Multimedia involves the use of computer to present and combine text, graphic audio and video	**3.1300**	**1.00905**	**Has Effect**
Multimedia offers avenue for presenting material through videos, audio, projector, animations and so on	**2.6350**	**1.07122**	**Has Effect**

Table 4.2 above shows the mean and standard deviation of respondents regarding the knowledge of student nurses at Lagos State College of Nursing on the use of multimedia tools in practical skills. The table indicates that three items have mean scores of 2.5 or higher, which is the established benchmark, suggesting that students have knowledge of using multimedia tools in practical skills at the college.

Research question 2: What are the benefits of using multimedia tools in practical skills among nurses of Lagos State College of Nursing?

Table 4.2.1: Mean and Standard Deviation on what are the benefits of using multimedia tools in practical skills among nurses of Lagos State College of Nursing.

	Mean	Std. Deviation	Decision
It creates curiosity for learning in students	**2.7550**	**1.21753**	**Has Effect**
It saves the time because it can give detailed idea, effective and accurate	**2.7900**	**.76079**	**Has Effect**
Multimedia can demonstrate complex ideas and access other places better than speaking can.	**2.3200**	**1.13757**	**Has Effect**
It aids student retention of knowledge.	**2.5950**	**1.08019**	**Has Effect**
It makes learning easier and faster	**2.5800**	**.87028**	**Has Effect**

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Table 4.2.1 above presents the mean and standard deviation of respondents regarding the benefits of using multimedia tools in acquiring practical skills among nurses at Lagos State College of Nursing. The table shows that five items have mean scores of 2.5 or higher, which is the established benchmark, indicating that there are benefits to using multimedia tools in practical skills among the nurses at the college.

Research question 3: What are the barriers in the use of multimedia tools in practical skills among student nurses in Lagos Sate College of Nursing?

Table 4.2.2: Mean and Standard Deviation on what are the barriers in the use of multimedia tools in practical skills among student nurses in Lagos Sate College of Nursing.

	Mean	Std. Deviation	Decision
Inadequate Power supply.	**2.9650**	**.99434**	**Has Effect**
Lack of expert human resources.	**3.0300**	**.89054**	**Has Effect**
Lack of fund to purchase the necessary requirement.	**3.0800**	**1.00431**	**Has Effect**

Table 4.2.2 above displays the mean and standard deviation of respondents regarding the barriers to using multimedia tools in practical skills among student nurses at Lagos State College of Nursing. The table shows that three items have mean scores of 2.5 or higher, which is the established benchmark, indicating that there are barriers to the use of multimedia tools in practical skills among the student nurses at the college.

4.3 Hypotheses Testing

Hypothesis One

$H0_1$: There is a significant relationship between the knowledge of students and the use of multimedia tools and practical skills of students' nurse.

Table 4.3: Summary of t-test on the significant relationship between the knowledge of students and the use of multimedia tools and practical skills of students' nurse

	Gender	N	X	SD	t-value	df	P-Value
Students' Knowledge	**Male**	**88**	**3.76**	**0.431**	**.193**	**24**	**.076**
	Female		**3.90**	**0.309**			

Table 4.3 above shows that (t = 0.193, P > 0.05) there is a significant relationship between students' knowledge and the use of multimedia tools in relation to their practical skills. The p-value of greater than 0.05 indicates a significant difference between the two variables, as reflected in the obtained value of 0.076. Therefore, the hypothesis stating that there is a significant relationship between students' knowledge and the use of multimedia tools in practical skills is accepted.

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Hypothesis Two

HO_2: There is no significant relationship between the barrier to multimedia use and the practical skills of the student's nurse

Table4.3.1:Summaryoft-tesonthesignificantrelationship

	Gender	N	X	SD	t-value	df	P-Value
Barriers to Multimedia tools	Male	88	3.67	0.475	.748	24	.075
	Female		3.72	0.450			

Table 4.3.1 above indicates that (t = 0.748, P = 0.075 > 0.05) there is a significant relationship between the barriers to multimedia use and the practical skills of student nurses. The p-value greater than 0.05 demonstrates a significant difference between the two variables, as evidenced by the obtained value of 0.075. Therefore, the hypothesis suggesting that there is no significant relationship between barriers to multimedia use and the practical skills of student nurses is rejected.

4.4 Summary Of Findings

The results of the study show that:

1.A significant relationship exists between students' knowledge and the use of multimedia tools in relation to the practical skills of student nurses.

2.A significant relationship is observed between the barriers to multimedia use and the practical skills of student nurses.

Chapter Five

Discussion, Conclusion and Recommendation

5.1 Discussion of Findings

The socio-demographic profile of the study participants revealed that the majority (84%) were female, with only 15% being male. Most of the respondents (62%) were aged between 18–21 years, while a smaller portion (15%) fell within the 26–30 age range. Over two-thirds (71%) identified as Christians, while 29% were Muslims. A large proportion (87%) of the participants were single, with 12% married and just 1% divorced. More than half (53%) of the respondents were in their first year of study, while 42% were in their second year. The findings also showed that a significant majority (92%) demonstrated a good understanding of multimedia use in practical skills. Similarly, 92% of the participants acknowledged the benefits of using multimedia in practical training, and 88% agreed that there are several challenges associated with its use.

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Comparing of Findings with Previous Studies

The study revealed that a significant portion of students (44.3%) demonstrated good knowledge of multimedia usage, with 45.5% agreeing that multimedia content is well-organized, and 45% stating that it makes learning more engaging and convenient. Additionally, 47.7% agreed that multimedia enhances their understanding of nursing procedures, thereby improving focus and retention. Notably, 92% of respondents strongly agreed that their performance improved when multimedia tools were used during practical sessions. Furthermore, 47.7% of students believed they performed better when taught with multimedia compared to traditional teaching methods. This aligns with the findings of Giginna and Nweze (2014), who noted that students exposed to e-learning methods outperformed those taught through conventional approaches. Another 46.6% of students agreed that multimedia allows for flexible learning of practical skills at their own pace, supporting Karma's (2013) assertion that a well-equipped multimedia setup combined with effective teaching is invaluable. Additionally, 47.7% of respondents agreed that practical skills are more effectively learned through diverse multimedia tools. This echoes Muhammad's (2015) conclusion that active learning strategies, particularly those involving student engagement, enhance academic achievement and the development of scientific skills. The study also found that a majority (88%) of participants identified several key obstacles to effective multimedia use in practical training—namely, poor power supply, a shortage of skilled personnel, and limited funding. These challenges are consistent with Schunk's (2018) findings, which highlighted the importance of reliable multimedia infrastructure and the presence of technical support. Schunk emphasized that modern technological tools help educators not only deliver effective lessons but also identify and resolve issues efficiently—especially if problems arise during software usage.

Similarly, the findings are in agreement with Zhang (2019), who pointed out that unreliable electricity supply poses a serious hindrance to multimedia use in teaching. Zhang noted that such interruptions negatively impact the learning process and may diminish students' enthusiasm for acquiring practical skills.

5.2.Implication of Findings to Nursing Profession

The findings and outcomes of this study carry significant implications for the field of nursing. The results indicate that student nurses possess a considerable level of knowledge and practical experience in using multimedia tools for acquiring hands-on skills. However, to maintain and enhance this practice, there is a need to further strengthen their knowledge and address the factors that influence the effective use of multimedia tools. To maximize the benefits, it is essential that all nursing courses incorporate diverse multimedia tools in their delivery. This approach will ensure that all students gain from the advantages of multimedia, leading to a deeper comprehension of the nursing procedures being taught.

5.3 Limitations Of The Study

Several limitations were encountered during the course of this research. One major constraint was time, as the study had to be conducted within a limited period set by the academic calendar. Additionally, financial limitations posed a challenge. Office workload further contributed to the stress experienced by the researcher. Despite these challenges, every effort was made to maximize the use of available resources and

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stay focused on the study's objectives. Importantly, these limitations did not compromise the reliability of the study's findings. However, due to time constraints, the research could not be extended to other nursing schools in Lagos State, which might have provided more diverse outcomes.

5.4 Summary of the Study

This study was a descriptive research survey focused on the utilization of multimedia in developing practical skills among nursing students at Lagos State College of Nursing. A structured questionnaire was employed as the data collection instrument and administered to 92 respondents. Data were gathered promptly and analysed using SPSS version 17.0, with results presented through tables and bar charts. The study aimed to assess students' knowledge of multimedia use in practical skills, explore its benefits, and identify potential barriers to its use. The results showed that 57% of the students had a good understanding of how multimedia can be applied in practical skill development. The identified benefits included time efficiency, the ability to demonstrate complex concepts, improved knowledge retention, and enhanced ease and speed of learning. The study also highlighted common challenges such as inadequate power supply, shortage of skilled personnel, and insufficient funding for acquiring necessary multimedia tools.

5.5 Conclusion

Based on the findings of this study, it can be concluded that the majority of students possess a good understanding of how multimedia can be used to enhance practical skills. They also acknowledge the various benefits associated with its use. However, addressing the challenges encountered in utilizing multimedia tools—such as power supply issues, lack of resources, and insufficient funding—is essential to improving students' performance in practical applications. The effective integration of multimedia tools in teaching will foster a deeper comprehension of practical skills and contribute significantly to the advancement of nursing knowledge.

5.6 Recommendations

In light of the study's findings, the following recommendations are proposed:

- Nursing students should receive proper training on the use of different multimedia tools and how these tools can be applied in developing practical skills.
- Schools should invest in acquiring a range of multimedia tools to enhance nursing education and practice.
- Students should be encouraged or required to utilize multimedia tools when presenting assignments to promote familiarity and proficiency.
- A reliable backup power supply should be provided to ensure the uninterrupted use of multimedia tools during practical sessions.
- Educators should be trained in the effective use of multimedia tools to support and enhance the teaching of practical nursing skills.

5.7 Suggestions for Further Studies

Due to financial and time limitations, this study was restricted in scope. It is therefore recommended that future research should include other nursing schools within Lagos State to obtain broader and more generalizable results. Additionally, it is suggested that alternative data collection methods, such as direct observation, be employed in subsequent studies to enhance the depth and accuracy of the findings.

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