

**UNDERGRADUATES AWARENESS AND UTILIZATION OF SCREENCAST
APPLICATIONS FOR LEARNING IN UNIVERSITY OF ILORIN, ILORIN NIGERIA.**

By

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18/25PC180

**A PROJECT SUBMITTED TO THE DEPARTMENT OF EDUCATIONAL
TECHNOLOGY, FACULTY OF EDUCATION, UNIVERSITY OF ILORIN, ILORIN,
NIGERIA IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD
OF BACHELOR'S DEGREE BSC. (ED) IN EDUCATIONAL TECHNOLOGY**

DECLARATION

I declare that this project titled "Undergraduates Awareness and Utilization of Screencast Applications for Learning in University of Ilorin, Ilorin, Nigeria", is my own work and has not previously been submitted by me or any other person for any course or qualification at this or any other tertiary institution.

I also declare that, as far as I am aware, all cited works have been acknowledged and referenced.

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CERTIFICATION

This is to certify that this study titled "Undergraduates Awareness and Utilization of Screencast Applications for Learning in University of Ilorin, Ilorin, Nigeria" was carried out by YAKUBU, Isaac Ifeanyichukwu (18/25PC180). The Project has been read and approved as meeting partial requirements for the award of the B.Sc. (Ed.) in Educational Technology, in the Department of Educational Technology, Faculty of Education, University of Ilorin, Ilorin, Nigeria.

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DEDICATION

This research is dedicated to the Almighty God, Binta Yakubu, Abraham Yakubu & Nji Gabriel Yakubu.

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I would like to express my deepest appreciation and gratitude to the Almighty God, and appreciation to all those who provided me the possibility to complete this project.

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ABSTRACT

Screen casting applications are software's that allows you to record your computer screen and audio. some of them includes zoom, goggle meet, and Microsoft teams. However, the awareness and utilization of screen cast applications among undergraduate students may vary depending on factors such as their field of study, technical literacy and academic requirements. Hence, this study examined the undergraduates Awareness and utilization of screencast applications for learning in University of Ilorin, Ilorin, Nigeria. Specifically, the study: (i) determine whether screen casts are effective tools for delivering instruction and supporting student learning outcomes. (ii) investigate the level of Awareness and utilization of screen cast applications for learning among undergraduates (iii) To identify the best practices and strategies for creating effective screen casts that support student learning engagement. (iv) Investigate if screen cast applications enhances undergraduates' motivation to actively participate in online learning activities (v) investigates the usage level of screen cast applications (zoom, Microsoft teams, goggle meet etc).

The descriptive research of the survey type was employed to achieve the purpose of this study. The population for this study was all undergraduate students in university of Ilorin, Nigeria. Target population of the study consisted of the students in nine sampled departments in Education, University of Ilorin. Convenience sampling technique were used to select the respondents from each department. Total number of 150 students formed the sampled size for the study. Descriptive statistics involving frequency count, percentage and mean were used to answer the research questions while t-test with the use of Microsoft Excel was used to test the three research hypotheses at 0.05 level of significance.

The findings of the study were that:

1. Undergraduate's awareness of screencast applications for learning [$4.25 > 2.50$];
2. Undergraduate's Utilized screen cast applications for learning [$3.62 > 2.50$];
3. Undergraduates' Perception of screen cast applications for learning in university of Ilorin was positive;
4. There were no significant differences between male and female on the awareness of screen cast applications for learning [$1.69 > 0.05$];
5. There is no significant difference between male and female undergraduates' utilization of screen cast applications for learning. [$0.59 > 0.05$]; and
6. There was no significant difference between male and female undergraduates' perception. [$2.09 > 0.05$].

The study concluded that there were valuable insights into the awareness, utilization, and perception of screen cast applications among undergraduate students at the University of Ilorin. The integration and use of screen cast applications which includes the likes of Zoom, goggle meet, and Microsoft teams has drastically improved its impact in the educational system of the university, but there is a need for continuous improvements, increased instructor involvement, and

gender-sensitive approaches to maximize their effectiveness. The study recommends for Further research and initiatives on how the integration of screen cast applications can be refined into the educational landscape.

CHAPTER ONE

INTRODUCTION

Background to the Study

The first screen cast application was SnagIt released in 1990 and which was developed by TechSmith cooperation in 2002. Camtasia was designed to enable users to record their own computer screen, add voice over narration and then edit the resulting video. The application was primarily used by software developers to create instructional videos for their products.

Since the introduction of Camtasia screencast applications have been more widespread and accessible to non-technical users.

Today, there are many screencast applications available, ranging from simple tools that enable users to record their screen and voice, to more advanced programs that editing and production capabilities.

Screen casting is a technique that has been used in educational contexts to deliver lectures and provide feedback. The word "screencast" was first coined by columnist Jon Udell in 2005. According to Ben Davis, senior education market analyst at Futuresource Consulting, who took part in a CDW panel at ISTE 2019, the demand for Screen casting and screen-sharing software in the education space accounts for 50 percent of the global demand in the United States.

Screen casting applications have many applications in education. They can be used for training such as learning new software and orientations to new products, teaching a lesson on a

particular topic or showing a step-by-step process in which students can learn material at their own pace or catch up on missed sessions, selling a product, blogging and YouTube communication of opinions, facts and ideas among others.

There are many Screen casting tools available for use in classrooms. Some of the best Screen casting tools for the classroom include Screencast-O-Matic, Loom, Camtasia, OBS Studio and Zoom.

Screencasts can provide learners with a student-centered and engaging learning experience in both distance and traditional learning settings.

To align screencasts with lesson objectives, goals, assessment practices, and standards, instructors can create their own screencasts rather than searching through the thousands of educational screencast videos on the web.

Good educational screencasts depend not only on thorough planning but also on thoughtful and careful editing to re-sequence lesson elements, eliminate awkward and unnecessary portions, and craft a focused, easy-to-follow presentation that uses students' time efficiently.

Students in both K–12 and higher education will spend all their personal and professional lives immersed in a digital society. Educators in today's classrooms must be able to use and integrate both current and emerging technologies. One of the keys to effective 21st century teaching is to balance traditional pedagogical methods with the effective use of technology to foster learning.

Many educational technology tools can be used in instruction; however, one fundamentally useful tool in teaching is the screencast. This article focuses on educational screencasts. The topics explored include an overview of Screen casting, its benefits, the flipped classroom, screencast

software, tools, planning, and teacher-created screencasts. (For specifics on creating screencasts from PowerPoint slides,

A screencast is a digital video and audio recording of what occurs on a presenter's computer screen, and it can be used to create sophisticated, information-rich multimedia presentations. The word "screencast" was first coined by columnist Jon Udell in 2005. Udell first used the word in an article published in InfoWorld, describing the benefits of using this technique to show his readers how computer applications worked. In a screencast, the presenter records all the screen activity and images continuously to complete a designated task. Audio can be recorded simultaneously or afterwards in postproduction along with sound effects and music tracks.

Screen casting can be integrated across the curriculum and into many learning activities. Screencasts are an effective instructional format that can be used for tutorials, demonstrations, digital storytelling, and narrated PowerPoint presentations. During the video editing process, a variety of media can be imported into a screencast project, such as video clips, photos, music, and animations. Screen casting is a multimedia alternative to video recording, is easy to use, and helps fill a need for dynamic, engaging content.

Screencasts have many uses, which includes:

- i. **Training;** such as learning new software and orientations to new products.
- ii. **Teaching;** A lesson on a particular topic or showing a step-by-step process, in which students can learn material at their own pace or catch up on missed sessions.
- iii. Selling a product, and
- iv. **Blogging and YouTube;** communicating opinions, facts, and ideas, etc.

As computer technology continues to evolve and advance, many teachers from K–12 and higher education use Screen casting as an online or stand-alone teaching tool with traditional teaching approaches to enhance and engage the learning experience of their students. Sugar, Brown, and Luterbach noted that Screen casting as an instructional strategy may be viewed as a modern descendant of instructional film and video.

A screencast can include many multimedia elements such as music, sound effects, audio, and graphics along with text, making any content topic engaging while also appealing to different learning modalities. Mayer's theory of multimedia learning suggests that animated presentations that have a corresponding audio component, essentially moving picture and sound, provide a more effective learning experience than a more traditional alternative (e.g., a sequence of still images accompanied by descriptive text).

Screen casting has emerged as a prominent teaching tool on the Internet. There are several advantages for both the instructor and the student. For the teacher a screencast is an efficient and effective means of describing a step-by-step process, explaining a particular concept, or presenting a PowerPoint presentation with narration. Teachers could craft succinct and concise presentations because each screencast can be edited. The inclusion of video-based instruction in online environments, such as Screen casting, can have positive effects on student learning and can be pedagogically equivalent to their face-to-face instruction counterparts.

For the students, Screen casting allows them to learn by example, seeing for instance a step-by-step sequence in detail or viewing a screencast video directly related to lesson content. In addition, students can watch a screencast video anytime, anywhere and have complete control of the lesson, which means they review any part of the presentation as needed. Screencasts can be delivered via streaming or downloaded in their entirety for later viewing.

The ability to pause or review content also gives students the option to move at their own pace, which is not always feasible in the classroom. Screencasts are excellent for those learners who just need an aural as well as a visual explanation of the content presented. Screen casting is a perfect medium to explain difficult technical concepts to anyone with a non-technical background. Teachers can also use Screen casting for a variety of other classroom activities such as reviewing lesson content and presenting online lectures and professional development.

Screen casting applications are software that allow you to record your computer screen and audio. There are many screen casting applications available for both Windows and Mac operating systems. Some of the best free screen casting software includes Screen Rec, Movavi Screen Recorder, and OBS Studio. These applications are easy to use and offer a variety of features that can help you create high-quality screencasts.

Screen casting is a useful tool in teaching that can provide learners with a student-centered and engaging learning experience in both distance and traditional learning settings. Screen casting tools are easy to use and can be used to record lectures, including screen content, real-time audio and video of instruction. It can be tricky to determine the best Screen casting tool for the classroom as most options have a limited free version along with a paid subscription.

There are many courses available online that teach screen casting applications. Some of these courses are free while others require payment. Some popular websites that offer courses on screen casting include Udemy, Coursera, and LinkedIn Learning. Also, on YouTube.

Screen casting is a powerful tool that can be used in teaching and learning. It involves recording the screen of a computer or mobile device while providing audio narration to explain

what is happening on the screen. According to Screen casting has several benefits for both teachers and students. Some of these benefits include:

- i. Screencasts give students a combined audio-visual learning environment.
- ii. Screencasts help improve self-study.
- iii. Screencasts allow students to learn by examples.
- iv. With screencasts, students become more proactive.
- v. Screencasts help improve students' attention and retention, compared to classroom and text-based learning.
- vi. Screencasts offer students 24/7 online access to knowledge.

Screen casting can provide learners with a student-centered and engaging learning experience in both distance and traditional learning settings. It also allows the viewer to watch the screencast at a time when it's best for them because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace by pausing and rewatching portions.

Screen casting has numerous benefits in education, including:

- i. Increased student learning
- ii. Development of knowledge and skills
- iii. Reduced cognitive overload
- iv. Engaging and effective method for students to learn
- v. Student-centered and engaging learning experience
- vi. Improved self-study
- vii. Learning by examples

- viii. Improved attention and retention, compared to classroom and text-based learning
- ix. 24/7 online access to knowledge
- x. Versatility in teaching and classroom style
- xi. Scalability of lessons and learning resources
- xii. More opportunity for personalization
- xiii. Creative teaching innovations
- xiv. Teacher training and curriculum transparency
- xv. Keeping absent students from falling behind
- xvi. Easy editing of videos for more accuracy, privacy, and succinct lessons.

Screen casting is a useful tool in teaching that provides learners a student-centered and engaging learning experience in both distance and traditional learning settings. Here are some benefits of Screen casting for students and teachers:

1. Screencasts give students a combined audio-visual learning environment.
2. Screencasts help improve self-study.
3. Screencasts allow students to learn by examples.
4. With screencasts, students become more proactive.
5. Screencasts help improve students' attention and retention, compared to classroom and text-based learning.
6. Screencasts offer students 24/7 online access to knowledge.
7. Screen casting creates versatility in teaching and classroom style.
8. Screen casting lets you scale your lessons and learning resources.

9. Screen casting provides more opportunity for personalization.
10. Screen casting allows for creative teaching innovations.
11. Screen casting helps with teacher training and curriculum transparency.
12. Screen casting keeps absent students from falling behind.
13. Screen casting lets you easily edit videos for more accuracy, privacy, and succinct lessons.

Screen casting has many applications in the classroom. It can be used to record lessons for asynchronous learning, to reflect on learning, to create voiceover presentations, to explain a process or problem and solution, to create voiceover portfolios, to teach others, to create end of the year memories, and for SEL check-ins. Screen casting also allows students to interact with material in their own way and at their own pace. There are many Screen casting tools available for use in the classroom, such as Screencastify and Screencast-O-Matic.

Statement of the Problem

The awareness and utilization of screen cast applications among undergraduate students may vary depending on factors such as their field of study, technical literacy and academic requirements.

However, screen cast applications are becoming more popular and they allow students to create multimedia content, which can enhance their learning experiences and help them understand complex concepts. Some of them are applications like Zoom, Google Meet, Microsoft Teams etc.

Screencast applications can be useful tools for learning, but there are also some potential problems which includes.

- i. **limited interactivity**; screen cast applications are typically one-way communication tools, where the teacher or presenter creates a video for students to watch. This limits the interactivity of learning experiences, as the students are not able to ask questions or receive immediate feedback.
- ii. **Lack of Engagement**; Watching screencasts can be a passive activity, and students may find it difficult to stay engaged for long periods of time. This is especially true for younger or easily distracted learners.
- iii. **Limited Access**; Screencast applications may require specific hardware or software to be installed, which can be a barrier to access for some students.

Additionally, students who do not have consistent access to the internet may not be able to view screencasts.

- i. **Limited Customization**; Screencast applications typically do not allow for customization or personalization of the learning experience. Students may have different learning needs or preferences and screen casts may not be able to meet these individual needs.
- ii. **Limited Feedback**; Screen casts typically do not provide immediate feedback to students. This can be a disadvantage for learners who need feedback to learn effectively

According to the information provided on the limitations or problems of screen cast applications, there is some evidence that backs up the drawbacks.

1. A study published in the journal of online learning and teaching found out screen casts were less effective at promoting interactivity and student engagement than other online teaching methods like discussion forums or synchronous online classes.
2. A study published in the journal of education multimedia and hypermedia found that students tended to be less engaged and less motivated when using screen cast applications than when participating in face- to- face or online discussions with their peers.
3. Limited Access; A study published in the journal of asynchronous learning networks found out that students who did not have regular access to a computer or the internet had a more difficult time completing online course work, which included watching screen casts.
4. A study published in the journal of computing in higher education found out that students may have different learning needs or preferences and screen casts may not be able to meet these individual needs.
5. A study published in the international journal of instructional technology and distance learning found out students who received personalized feedback on their assignments performed better than those who did not receive the feedback.

Purpose of the Study

The purpose of studying screen cast applications for learning is to investigate the effectiveness of this technology as a teaching tool and to identify its potential benefits and limitations. Screen cast applications are becoming increasingly popular in the educational setting and as such, there is a need to understand how they can best be used to support student learning.

Some specific goals of studying screen cast applications for learning may include;

1. Determine whether screen casts are effective tools for delivering instruction and supporting student learning outcomes.
2. Investigate the level of Awareness and utilization of screen cast applications for learning among undergraduates.
3. To identify the best practices and strategies for creating effective screen casts that support student learning engagement.
4. Investigate if screen cast applications enhances undergraduates' motivation to actively participate in online learning activities.
5. Investigates the usage level of screen cast applications (zoom, Microsoft teams, goggle meet etc).

The purpose of studying screen cast applications is to get a better understanding on how the technology can be used to support effective teaching and learning practices in educational contexts, by identifying the potential benefits and limitations of screen casts, educators can make informed decisions about when and how to use this technology to support student learning.

Research Questions

Some research questions on screen casts are;

1. How does the use of screen cast applications affect student learning outcomes in different subject areas, such as math, sciences and language arts?
2. What are the most effective strategies for integrating screen casts into traditional classroom teaching methods, and how do these strategies vary by subject area and student demographics?
3. How do different types of learners engage with screen casts, and what are the best practices for creating screen casts that meet the needs of diverse learners?

4. How do screen cast applications compare to other forms of technology-mediated instruction, such as video lectures or online discussion forums, in terms of effectiveness for supporting student learning outcomes?
5. What is the role of screen cast applications in promoting collaboration and peer-to-peer interaction among students, and what are the best practices for incorporating these applications into collaborative learning environments?
6. How can screen cast application support accessibility for students with disabilities, and what are the best practices for designing and implementing screen casts that are accessible to all the learners?
7. How can screen cast applications be used to support teacher professional development and training, and what are the most effective strategies for incorporating these applications into teacher training programs?

Research Hypotheses

Research hypothesis on screen casts applications for learning may include;

1. Screen cast applications are effective tools for delivering instructions and supporting student learning outcomes in a variety of subject areas.
2. Screen casts can be an effective tool for promoting self-directed learning and exploration, particularly for students who struggle with traditional classroom instruction.

3. Screen cast applications that are designed with the needs of diverse learners in mind, including visual, auditory and kinesthetic learners are more effective than (ONE SIZE FITS ALL) screen casts.
4. Screen cast applications can be used to enhance collaboration and peer-to-peer interaction among students, particularly in online and hybrid learning environments
5. The use of screen cast applications in conjunction with traditional classroom instruction can lead to improved student learning outcomes and engagement.
6. Screen cast applications that are designed to support universal design for learning are more effective in promoting accessibility for students with disabilities than traditional classroom instruction.
7. Screen cast applications can be an effective tool for promoting teacher professional development and training, particularly in technology integration.

Scope of the Study

The scope of screen cast applications for learning in a region can vary depending on several factors such as the technological infrastructures, the educational system, the cultural and social context, and the economic conditions.

Major contents may include recordings like video recording which has the ability to record video of your computer screen is the core feature of screen cast applications, audio recording which also have the ability to record audio and also features which includes collaboration features which

has the ability to share videos with other users and interactive features which has the ability to add quizzes, polls or other types of assessments with the video.

Methods used to Analyse data would include content analysis, qualitative analysis, comparative analysis and descriptive analysis. The specific methods used will depend on the research questions, data collection methods and the type of data being analyzed.

Specific reasons for the study of screen cast applications for learning

1. **Visual and Audio Clarity:** Screen cast applications allow educators to create instructional videos that provide clear and concise visual and audio content. By recording their computer screens and narrating the steps or concepts being demonstrated, teachers can ensure that learners receive a high-quality learning experience with enhanced clarity.

2. **Demonstrating Complex Processes:** Screen cast applications are particularly useful for explaining complex processes or tasks that may be challenging to understand through text-based or static visuals alone. By capturing the entire workflow on screen and providing step-by-step explanations, educators can break down complex concepts into more manageable and comprehensible parts.

3. **Improved Retention and Understanding:** Research suggests that the combination of visual and auditory information can enhance learners' retention and understanding. Screen casts offer a dynamic and interactive way of presenting information, making it easier for learners to grasp and retain the material. The ability to pause, rewind, and re-watch the screen cast further promotes self-paced learning and deepens understanding.

4. **Accessibility and Flexibility:** Screen cast applications provide an accessible and flexible learning experience. Learners can access the instructional videos at their convenience, allowing

them to review the content as many times as needed. This flexibility accommodates different learning styles and preferences, ensuring that all students have equal opportunities to engage with the material.

5. Engaging and Interactive Learning: Screen casts can be created with interactive elements such as annotations, highlights, and pop-up notes, making the learning experience more engaging. These interactive features draw learners' attention to important information, facilitate active participation, and promote deeper engagement with the content.

6. Distance Learning and Remote Education: With the rise of remote learning and distance education, screen cast applications have become invaluable tools for educators. They enable teachers to deliver instruction and share course materials with students who may not have access to traditional classroom settings. Screen casts can be easily shared and accessed online, allowing for seamless remote learning experiences.

7. Cost-Effectiveness and Scalability: Screen cast applications offer cost-effective and scalable solutions for educational institutions. Once a screen cast is created, it can be reused across multiple classes or semesters, reducing the need for repetitive in-person instruction. This scalability allows teachers to reach a larger audience without significant additional effort or resources.

By studying screen cast applications for learning, researchers and educators aim to explore their effectiveness, identify best practices, and maximize the potential of this technology in enhancing teaching and learning experience.

Clarification of Major Terms and Variables

1. **Screen casting:** Screen casting refers to the process of capturing and recording the activities on your computer or mobile device screen, along with audio narration, and often additional annotations or visual effects. It allows you to create video tutorials or demonstrations of software, apps, or processes.

2. **Screencast application:** A screencast application is software that enables you to capture, record, and edit your screen recordings. It provides tools and features to enhance your screencasts, such as audio recording, video editing, adding annotations or callouts, and exporting the final video in various formats.

3. **Recording area or screen region:** This term refers to the portion of the screen that you select for recording. It can be the entire screen, a specific window, or a custom-defined region. Screencast applications typically allow you to choose the recording area based on your needs.

4. **Annotation tools:** Annotation tools are features provided by screencast applications to add visual elements, such as text boxes, arrows, highlights, or shapes, to your screen recordings. These tools help you emphasize certain aspects or provide additional information to viewers.

5. **Audio recording:** Audio recording allows you to capture your voice narration or other sounds while creating a screencast. It enables you to explain the steps, provide commentary, or give instructions during the recording process. Screencast applications often have built-in audio recording capabilities.

6. **Video editing:** Video editing is the process of modifying and refining your recorded screencast. It involves tasks like trimming or cutting unwanted parts, adding transitions, including additional

media elements (e.g., images or videos), adjusting the audio levels, or applying visual effects. Many screencast applications offer basic video editing tools.

7. **Exporting or saving:** Exporting or saving refers to the process of creating a final version of your screencast video file. It involves converting the edited video into a specific format (e.g., MP4, AVI) and saving it to your computer or uploading it to a hosting platform for sharing with others.

Significance of the Study

1. **Visual Instruction:** Screen cast applications allow educators to create video tutorials or demonstrations that visually guide learners through specific tasks or concepts. Visual instruction can be particularly effective for complex or technical subjects where seeing the process in action enhances understanding.

2. **Clarity and Consistency:** With screen cast applications, educators may create standardized instructional videos that ensure clarity and consistency across different learning materials. This could help reduce confusion among learners and provide a reliable resource for reviewing or revisiting topics.

3. **Accessibility:** Screen cast applications could improve accessibility by accommodating different learning styles and preferences. Visual learners benefit from the visual representation of information, while auditory learners may listen to explanations alongside the visuals. Additionally, learners with disabilities such as hearing impairments would utilize closed captions or transcripts provided in screen cast videos.

4. **Self-paced Learning:** Screen cast applications offer the flexibility for self-paced learning. Learners can pause, rewind, or fast-forward through the videos as needed, allowing them to control

the pace of their learning. This adaptability caters to individual learning speeds and preferences, promoting a personalized learning experience.

5. **Demonstrating Processes:** Some topics or skills require step-by-step instructions to understand the process effectively. Screen cast applications allow educators to demonstrate processes in real-time, making it easier for learners to follow along and grasp the sequence of actions required.

6. **Remote Learning:** The importance of screen cast applications has been amplified during periods of remote or online learning. These applications enable educators to create and share instructional videos with learners who may not have access to traditional classroom settings. They bridge the gap between the teacher and student, enabling distance learning to occur effectively.

7. **Multimedia Integration:** Screen cast applications often provide features to incorporate multimedia elements, such as annotations, highlighting, or additional images/videos within the instructional videos. These multimedia elements could enhance engagement, provide additional context, and enrich the learning experience.

8. **Shareability and Reusability:** Screen cast applications allow educators to share their instructional videos easily with multiple learners or across various platforms. This makes it possible to reach a wider audience and enables collaborative learning experiences. Furthermore, once created, screen cast videos could be reused in future courses or by other educators, saving time and effort in content creation.

Screen casting applications for learning can benefit various stakeholders. Here are some of the key stakeholders who would benefit from screencast applications in the context of learning:

1. **Students:** Screencast applications provide students with a visual and interactive way to learn. They can watch recorded screencasts to understand complex concepts, step-by-step processes, or

software demonstrations. Screencasts allow students to revisit the content at their own pace, pause, rewind, and review as needed. It enhances their understanding, retention, and engagement with the learning material.

2. Teachers and Instructors: Screencast applications enable teachers and instructors to create high-quality instructional videos and tutorials. They may record lessons, explanations, and demonstrations using screencasts, enhancing their teaching methods and making it easier to communicate complex ideas. It allows educators to provide visual aids, annotate on-screen, and highlight important points, facilitating effective instruction and improving student comprehension.

3. Institutions and Schools: Educational institutions could leverage screencast applications to enhance their teaching methodologies. By encouraging teachers to create screencasts, institutions can provide students with additional learning resources outside the classroom. Screencasts may be used for flipped classrooms, blended learning, and distance education programs, enabling flexible and self-paced learning options.

4. Professionals and Trainers: Screen casting is beneficial for professionals and trainers who conduct workshops, seminars, or training sessions. They could record their presentations, software demonstrations, or simulations using screencast applications. This allows them to reach a wider audience, share knowledge, and provide on-demand learning experiences to trainees or colleagues.

5. Content Creators: Individuals or organizations creating educational content, such as online courses, tutorials, or instructional videos, can utilize Screen casting applications to produce high-quality and engaging content. Screencasts could be combined with audio narration, graphics, and animations to create interactive learning materials that cater to different learning styles.

6. IT Support and Helpdesk: Screencast applications may be utilized by IT support teams to provide visual instructions and troubleshooting guides. Instead of relying solely on written documentation or verbal explanations, support staff can create screencasts to demonstrate solutions to common technical issues. This can improve the efficiency of problem-solving and enhance customer or user experience.

7. Researchers and Presenters: Researchers and presenters can use screencast applications to record their experiments, data analyses, or presentations. This allows them to share their findings, methodologies, and insights with others in a more engaging and interactive manner. Screencasts could be valuable for academic conferences, online presentations, and research collaborations.

In summary, screencast applications have the potential to benefit students, teachers, institutions, professionals, content creators, IT support teams, researchers, and presenters, enhancing the learning experience and knowledge dissemination in various domains.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter focuses on the review of relevant literatures to the study ‘‘undergraduates’ awareness and utilization of screencast application for learning in the university of Ilorin’’ and will be presented under the following sub-headings

1. Meaning, features and concept of screencast applications for learning.

2. Awareness and utilization of technological tools for learning in education.
3. Technologists and Companies of the 21st century technologies in screen cast, for learning.
4. Relevance and impact of screencast technologies to Education.
5. The characteristics of screencast technologies to Education.
6. Factors affecting the utilization of screencast technologies in university institutions.
7. Relevance of screencast technologies to various course of studies.
8. Gender differences in screencast applications in Education.
9. Appraisal of the reviewed literature.

MEANING, FEATURES AND CONCEPT OF SCREENCAST APPLICATIONS FOR LEARNING

A screencast is a digital video recording of your computer screen and usually includes audio narration. Screencasts are just one of many different types of instructional videos. Screen casting not only saves you time answering the same questions over and over, but it has been proven that 80% of viewers can recall a video they have seen in the past month. You can use it to demonstrate a presentation, show new concepts or features, display videos and pictures, and much more. To cast screen, you need to connect your devices to the same Wi-Fi network and enable wireless display or screen mirroring in the settings. Some TVs are smart and have this feature built-in, while others need a Miracast adapter to support it.

A screencast is essentially a repayable version of a lesson that in person you would deliver to someone peering over your shoulder at your computer screen. A well-made screencast can show in a short few second what might require pages of written instructions to explain.

Much of the research that has been done on Screen casting in the educational realm deals with student feedback and creating “process videos’ to show students how to complete a step-by-step task on their own.

One study by Bowles-Terry, Hensley & Hinchliffe (2010) at the University of Illinois examined library videos that were all under three minutes long. Students still found this too long. The same study also found that students liked to frequently skip around the videos using navigational tools.

(Thompson & Lee, 2012) also explore screencasts as feedback, reporting that while traditional written feedback can confuse students, video feedback, or “Veedback’ to use their term, improves student understanding of what they need to improve in their revision process, and can help them better understand future written feedback.

Screencasts have many uses, which include:

1. **Training;** such as learning new software and orientations to new products.
2. **Teaching;** lesson on a particular topic or showing a step-by-step process, in which students can learn material at their own pace or catch up on missed sessions.
3. **Selling;** a product.
4. **Blogging and YouTube;** communicating opinions, facts, and ideas, etc.

There are many screen casting software available in the market that can be used for different purposes. Some of the notable screen casting software include:

1. Camtasia

2. Snagit
3. Loom
4. Screencastify
5. OBS Studio
6. Bandicam
7. ScreenFlow

Screencasts support learning and teaching. They contain audios, images, closed captions, voiceovers, interactive elements, and other visual cues. These things are beneficial to students who prefer learning through seeing and practicing. Teachers may use screen casting to create e-learning tutorials and courses.

A screen casting application, also known as screen recording software or screen capture software, allows users to record their computer screens along with audio narration. This technology is particularly useful for creating video tutorials, online courses, software demonstrations, and other educational content. Users can record their actions on the screen, explain concepts, and share their knowledge in a visual and interactive way.

One popular example of a screen casting application is "**Camtasia**", developed by TechSmith. Camtasia offers a range of features for creating high-quality screen recordings and professional-looking videos. It allows users to capture their screen, edit the footage, add annotations, effects, and callouts, import media, and export the final video in various formats.

People have made significant contributions to the development and popularization of screen casting in education and other fields. Some key contributions include:

1. **Eric Faden** Coined the term "screencast" in (2004) and contributed to the early development of the concept.
2. **(Jon Udell, 2006)** Pioneered the use of Screen casting in technical communication and education, helping to popularize the medium.
3. **(TechSmith Corporation, 2002)** Created the popular screen recording software, Camtasia, which made it easier for people to create and share screen casts.
4. **YouTube and other video-sharing platforms:** These platforms played a crucial role in making screen casts accessible to a broader audience and facilitated the sharing of educational content.
5. **Educators and trainers:** Many teachers and trainers have embraced screen casting as a tool to deliver online lessons, tutorials, and training materials, expanding its application in education.
6. **Open-source community:** Various open-source screen casting tools and resources have been developed and shared freely, encouraging innovation and collaboration.
7. **Learning management systems:** Platforms like Moodle, Blackboard, and Canvas have integrated screen casting features, allowing educators to use the technology seamlessly within their course structures.

These contributions have collectively contributed to the widespread adoption of screen casting as an effective and efficient method for teaching, training, and sharing knowledge across different fields.

Screen casting applications have become increasingly popular for various learning and instructional purposes. Here are some more details about their features and benefits:

Features of Screen Casting Applications for Learning

1. **Screen Recording:** The primary function of screen casting software is to capture everything that happens on your computer screen. This includes recording software demos, presentations, webinars, coding tutorials, and more.
2. **Audio Narration:** Screen casting applications allow you to record your voice along with the screen capture. This enables you to provide explanations, instructions, and insights while demonstrating tasks on the screen.
3. **Editing Tools:** Most screen casting software comes with built-in video editing tools. After recording, you can trim, cut, and merge video clips, add annotations, callouts, and text to enhance the clarity of your explanations.
4. **Cursor Highlighting:** Cursor highlighting is a helpful feature that allows viewers to easily follow your actions on the screen by emphasizing mouse clicks and movements.
5. **Zoom and Pan:** These features enable you to focus on specific areas of the screen and highlight elements during the recording or editing process.
6. **Video Effects:** Some screen casting applications offer video effects like transitions, animations, and visual filters to add a professional touch to your videos.
7. **Import Media:** You can import additional media like images, audio, or video files to complement your screen recordings and create more engaging content.
8. **Export Options:** Screen casting applications usually support multiple video formats, making it easy to share your content on various platforms, such as YouTube, Vimeo, or learning management systems (LMS).

Benefits of Screen Casting Applications for Learning

1. **Interactive Learning:** Screen casts provide an interactive learning experience, as viewers can follow along with demonstrations, pause, rewind, and rewatch as needed.
2. **Visual Clarity:** Video-based tutorials enhance understanding by combining visual and auditory explanations, making complex topics easier to comprehend.
3. **Flexible Learning:** Learners can access screen casts at their convenience and pace, allowing for self-directed learning.
4. **Reusability:** Once created, screen casts can be reused and repurposed for different courses and platforms, saving time and effort.
5. **Engagement:** Videos often have higher engagement rates than textual content, keeping learners more interested and focused.
6. **Real-world Application:** Screen casts can simulate real-world scenarios, making them effective tools for teaching software applications or technical skills.
7. **Global Reach:** By uploading screen casts online, educators can reach a wide audience and share knowledge beyond geographical limitations.
8. **Feedback and Improvement:** Educators can review their own screen casts to improve their teaching style and delivery.

Overall, screen casting applications are versatile tools for educators, trainers, and content creators to deliver engaging and informative learning experiences. Whether you're teaching complex concepts, showcasing software, or creating instructional content, screen casting software can be a valuable addition to your teaching arsenal.

The concept of screen cast applications in education revolves around using screen recording software to create video-based instructional content for teaching and learning purposes. It involves capturing the actions on a computer or mobile device screen while simultaneously recording audio narration to explain the content being demonstrated. These screen casts, also known as screencasts or screen recordings, can be used across various educational settings to enhance the learning experience in multiple ways.

Here are some key aspects of the concept of screen cast applications in education

1. **Visual Learning:** Screen casts provide a visual representation of tasks, processes, and concepts, making them effective tools for visual learners. Visual aids can enhance understanding and retention of information, especially for complex topics.
2. **Demonstrating Software and Applications:** Screen casts are commonly used to demonstrate how to use software, applications, or online tools. They offer step-by-step guidance, showcasing specific functions and workflows, which is especially helpful for technical and computer-related subjects.
3. **Flipped Classroom:** Screen casts enable the "flipped classroom" model, where students watch instructional videos as homework and use class time for more interactive discussions, activities, and problem-solving.
4. **Asynchronous Learning:** Screen casts support asynchronous learning, allowing students to access instructional content at their own pace and convenience. This flexibility accommodates diverse learning styles and schedules.

5. **Online Courses and Tutorials:** Many online courses and tutorials utilize screen casts as a primary method of delivering content. Instructors create video lessons that students can watch, and review as needed.

6. **Teacher Professional Development:** Educators can use screen casts to create training videos for other teachers, helping them learn about new teaching techniques, technology tools, or curriculum changes.

7. **Student Presentations and Projects:** Students can create their own screen casts for presentations, project demonstrations, or to showcase their understanding of a topic.

8. **Feedback and Assessment:** Screen casts can be used for providing feedback on assignments or exams. Instructors can review student work and offer personalized comments through video annotations.

9. **Engaging and Interactive Content:** Well-designed screen casts with clear explanations and engaging visuals can capture students' attention and improve engagement with the material.

10. **Global Reach:** Screen casts can be easily shared online, reaching a broader audience and enabling access to educational content across geographical boundaries.

11. **Accessibility:** Screen casts can be made accessible by adding closed captions or subtitles, making them more inclusive for students with hearing impairments or those who prefer reading along with the narration.

Overall, the concept of screen cast applications in education aligns with the broader use of multimedia and technology to enhance the learning process. It empowers educators to create

dynamic, interactive, and easily shareable content, contributing to more effective and engaging educational experiences.

AWARENESS AND UTILIZATION OF TECHNOLOGICAL TOOLS FOR LEARNING IN EDUCATION

Screen casting is a technology that allows you to record your computer screen and audio. It is used in education to create video tutorials, lectures, and presentations that can be shared with students. Screen casting can be used to create flipped classroom videos, where students watch the video before class and then come to class prepared to discuss the material. It can also be used to create instructional videos for students who are absent or need extra help. According to a blog post by Screencastify on (October 12, 2021). Screen casting has 10 benefits for teachers and students including increased student engagement, personalized learning, and flipped classroom videos

According to the blog post by Screencastify, here are the 10 benefits of Screen casting for teachers and students:

1. **Increased Student Engagement:** Screen casting can make lessons more interactive and engaging, which can lead to increased student participation and understanding.
2. **Personalized Learning:** Teachers can create personalized videos for individual students or groups, catering to their specific learning needs.
3. **Flipped Classroom Videos:** Teachers can record lessons or lectures for students to watch at home, freeing up class time for more interactive activities.
4. **Student-Created Content:** Students can create their own screencasts to demonstrate their understanding of a topic, fostering creativity and critical thinking.

5. **Feedback and Assessment:** Teachers can provide personalized feedback through screencasts, making it easier for students to understand and apply the feedback.
6. **Professional Development:** Teachers can use screencasts for their own professional development, such as sharing best practices with colleagues.
7. **Parent Communication:** Screencasts can be used to communicate with parents about what's happening in the classroom.
8. **Substitute Teacher Plans:** If a teacher is absent, they can create a screencast to guide the substitute teacher through the day's lesson plan.
9. **Software Tutorials:** Screencasts are an effective way to teach students how to use new software or digital tools.
10. **Language Learning:** For language classes, teachers can create screencasts in the target language, providing students with valuable listening practice.

A screencast can provide learners a student-cantered and engaging learning experience in both distance and traditional learning settings.

Screen casting can be used in education in many ways. Here are some examples of how screen casting can be used in education:

- i. Record procedures and answer common questions.
- ii. Give students audio-visual feedback (the next best thing to a 1:1 conversation).
- iii. Record lessons that students can access anytime, anywhere.
- iv. Make a video to help your substitute teacher if you must miss class.

Students can learn by example, seeing for instance a step-by-step sequence in detail or viewing a screencast video directly related to lesson content. In addition, students can watch a

screencast video anytime, anywhere and have complete control of the lesson, which means they review any part of the lesson as many times as they want.

There are various tools that have contributed to the evolution of screen cast, they include;

1. **OBS Studio:** Open Broadcaster Software (OBS) Studio is a free and open-source screen recording and live streaming software. It gained popularity for its versatility and features, making it suitable for both beginners and advanced users. OBS Studio supports multiple platforms, including Windows, macOS, and Linux.

2. **Camtasia:** Camtasia, developed by TechSmith, is a comprehensive screen recording and video editing software. It is widely used for creating professional-quality tutorials and instructional videos. Camtasia offers a user-friendly interface and a range of editing tools to enhance the final video.

3. **Screen Flow:** Screen Flow is a screen recording and video editing software designed specifically for macOS users. It offers features like multi-channel audio recording, iOS device recording, and advanced editing capabilities.

4. **Screencast-O-Matic:** Screencast-O-Matic is a web-based screen recording tool that allows users to capture their screen and webcam simultaneously. It provides basic video editing options and is suitable for creating simple tutorials and presentations.

5. **Loom:** Loom is a cloud-based screen recording tool that allows users to quickly capture and share video messages, tutorials, and demonstrations. It is often used for short, informal recordings and communication purposes.

6. **Snagit:** Snagit, also developed by TechSmith, is primarily known as a powerful screenshot tool, but it also offers screen recording features. It is suitable for capturing specific areas of the screen and adding annotations.

7. **Screenpresso:** Screenpresso is a screen capture and screen recording software that offers features like image editing, exporting to various formats, and sharing options.

8. **Movavi Screen Recorder:** Movavi Screen Recorder is a screen recording tool that offers options for capturing the full screen or specific regions. It also provides video editing capabilities.

9. **ShareX:** ShareX is an open-source screen capture and screen recording software that supports multiple capture methods, various codecs, and advanced customization options.

Due to its involvement to the educational sector, it became a way to advance teaching and learning. But there were several ways in which people were aware of this technology, they include:

1. **Remote Work and Collaboration:** During the rise of remote work, screen casting tools became essential for virtual collaboration and communication. They allowed team members to share knowledge, conduct training sessions, and demonstrate workflows.

2. **Gaming and Livestreaming:** Screen casting tools were popular among gamers and live streamers, enabling them to broadcast their gameplay or create gaming tutorials for their audience.

3. **Educational Context:** In the field of education, screen casting tools were commonly used by teachers, instructors, and e-learning content creators to develop video-based instructional materials. These tools allowed educators to create engaging tutorials, explain complex concepts visually, and deliver asynchronous learning content.

4. **Software Development and Tech Industry:** Screen casting was prevalent in the tech industry, particularly for software developers and IT professionals. It enabled them to create demonstrations of software applications, programming tutorials, and troubleshooting guides.

5. **Content Creation and social media:** Content creators and influencers used screen casting tools to produce tutorial videos, product reviews, and how-to guides. These videos were often shared on social media platforms, such as YouTube and Instagram.

6. **Presentations and Webinars:** Professionals frequently utilized screen casting to create presentations, webinars, and conference materials. It allowed them to share visual content and engage with remote audiences.

7. **Accessibility and Inclusivity:** Screen casting was recognized for its potential in enhancing accessibility and inclusivity in educational settings. Closed captions, subtitles, and sign language interpretation could be added to screen casts, making content more accessible to individuals with hearing impairments or those who preferred multiple modes of learning.

8. **Open Educational Resources (OER):** Screen casts were increasingly integrated into open educational resources, enabling educators to share knowledge freely and globally.

9. **Ease of Use and Accessibility:** The awareness of screen casting tools was further heightened due to their user-friendly interfaces, which allowed individuals with minimal technical expertise to create high-quality instructional content.

TECHNOLOGISTS AND COMPANIES OF THE 21st CENTURY TECHNOLOGIES IN SCREENCAST FOR LEARNING

There are many screencast applications that are used in the 21st century. Here are some examples:

1. **Screencastify:** Chrome's simplest free screen recorder and video-creation platform.
2. **Microsoft Screen Mirroring:** If you're working on a Windows PC and want the apps and content from another device to show on your PC screen, you'll want to consider mirroring that device's screen or projecting it to your PC.
3. **Multimedia Technologies and Applications for the 21st Century:** A book that tackles several critical issues in distributed multimedia systems and applications.

In the 21st century, several technologies have emerged to facilitate screen casting, making it easier for users to share their screens or stream content. Some of these technologies include:

1. **Screen Mirroring:** Wireless technologies like Miracast, Airplays, and Google Cast allow users to mirror their device screens onto larger displays, such as TVs or projectors.
2. **Live Streaming Platforms:** Services like Twitch, YouTube Live, and Facebook Live enable users to broadcast their screens in real-time to an online audience.
3. **Video Conferencing Tools:** Applications like Zoom, Microsoft Teams, and Google Meet support screen sharing during video calls, facilitating collaboration and presentations.
4. **Screen Recording Software:** Various software applications, like OBS Studio, Camtasia, and Bandicam, allow users to record their screens for later sharing or editing.
5. **Cloud-based Screen Sharing:** Cloud-based platforms such as GoToMeeting and Cisco Webex offer screen sharing capabilities for virtual meetings and webinars.

6. **Mobile Screen Casting:** Mobile devices have built-in screen casting features, allowing users to share their screens wirelessly with compatible displays or smart TVs.

7. **Browser Extensions:** Extensions like Screencastify and Loom provide screen recording functionality directly within web browsers for easy sharing and quick video creation.

These technologies have greatly enhanced the ability to share and present content from screens, whether for work, educational purposes, or entertainment.

In the 21st century, there have been several technologists and companies that have developed screen cast applications specifically geared towards learning and educational purposes. Some of these notable technologists and companies include:

1. **Salman Khan** - Founder of Khan Academy (2008). Khan Academy is an online educational platform that offers a wide range of video tutorials, including screen casts, covering various subjects like math, science, and humanities.

2. **Udemy:** Udemy is a popular online learning platform that hosts numerous courses with screen cast videos created by instructors to teach various skills and subjects.

3. **Coursera:** Coursera collaborates with universities and organizations to offer online courses with high-quality video content, including screen casts, on a wide range of topics.

4. **Codec Ademy:** This platform focuses on teaching coding and programming languages using interactive lessons and screen cast tutorials.

5. **edX:** Founded by MIT and Harvard, edX provides a platform for universities and institutions to offer massive open online courses (MOOCs) with video lectures and screen casts.

6. **Lynda.com (now LinkedIn Learning):** This platform offers a vast library of video courses, including screen casts, covering different skills, software, and creative subjects.

7. **Teachable:** This platform allows educators to create and sell online courses with screen cast videos, making it easy to share knowledge and expertise.

These technologists and companies have played a significant role in revolutionizing online learning by leveraging screen casting technologies to create engaging and accessible educational content for learners worldwide.

RELEVANCE AND IMPACT OF SCREENCAST TECHNOLOGIES IN EDUCATION

Screen cast applications play a significant and relevant role in education, offering various benefits and enhancing the learning experience for both educators and students. Here are some of the keyways in which screen cast applications are relevant for learning in education:

1. **Visual and Interactive Learning:** Screen casts allow educators to present complex concepts visually and interactively. By recording their screens, they can demonstrate software applications, conduct virtual experiments, and showcase step-by-step processes, making learning more engaging and accessible for students.

2. **Flexible Learning:** With screen casts, students can access educational content at their own pace and convenience. They can review the material multiple times, pause and rewind when needed, and tailor their learning experience according to their individual needs and preferences.

3. **Distance Learning and Flipped Classroom:** Screen casts are valuable tools for distance learning and the flipped classroom model. Educators can create pre-recorded lessons and upload them online, allowing students to access the content outside of regular class time and use class time for more interactive activities and discussions.

4. **Personalized Feedback:** Screen casting applications enable educators to provide personalized feedback to students. They can record video feedback while reviewing assignments or projects, offering detailed explanations and suggestions for improvement.

5. **Professional Development:** Screen casts are used for professional development in education. Teachers can create tutorials or share best practices with their colleagues, promoting continuous learning among educators.

6. **Accessibility and Inclusivity:** Screen casts can be beneficial for students with diverse learning needs and disabilities. Transcripts or captions can be added to videos to enhance accessibility and ensure all students can benefit from the content.

7. **Demonstration of Skills:** Screen casts are an effective way for students to demonstrate their skills and understanding. They can create presentations, software demos, or video projects to showcase their learning outcomes.

8. **Lectures and Webinars:** Educators can use screen casts for recording lectures and hosting webinars, allowing them to reach a broader audience beyond the physical classroom.

9. **Revision and Review:** Students can use screen casts as a resource for review and revision during exams or when preparing for assessments. Having access to recorded lessons can reinforce their understanding and retention of key concepts.

Overall, screen cast applications offer a versatile and powerful toolset for educators and learners alike. They foster an interactive and dynamic learning environment, encourage self-paced learning, and enable educators to cater to diverse learning styles, ultimately enhancing the educational experience and outcomes for all involved.

Screen casting is an effective tool for teaching and learning, here are some of the relevance of screen cast technologies in education:

1. Screen casting can help students learn by example, seeing for instance a step-by-step sequence in detail or viewing a screencast video directly related to lesson content. In addition, students can watch a screencast video anytime, anywhere and have complete control of the lesson, which means they review any part of the lesson as many times as they want.
2. Screen casting can be used to record procedures and answer common questions.
3. Screen casting can be used to give students audio-visual feedback (the next best thing to a 1:1 conversation).
4. Screen casting can be used to record lessons that students can access anytime, anywhere.
5. Screen casting can be used to make a video to help your substitute teacher if you must miss class.

Here are some best practices for screen casting;

1. Plan your screencast before you start recording.
2. Keep it short and sweet.
3. Use a script or outline to keep you on track.

4. Use a good microphone to ensure clear audio.
5. Use a high-quality screen recorder to ensure clear video.
6. Use a good video editor to edit your screencast.
7. Use annotations and callouts to highlight important information.
8. Use transitions to make your screencast flow smoothly.
9. Use music and sound effects to add interest and keep your audience engaged.

Screen casting is a digital recording of the computer screen output, including audio narration. It was first implemented to show learners how to use computer software through demonstrations. Since then, it has also been used in educational contexts to deliver lectures and provide feedback. Screen casting can provide learners with a student-centered and engaging learning experience in both distance and traditional learning settings. A major benefit of screen casting is that the viewer can watch the screencast at a time when it's best for them because learning doesn't always take place in an academic setting. Additionally, the viewer can absorb the information at their own pace by pausing and rewatching portions (Michael Ruffini, 2022). A new generation of simple, lightweight Screen casting tools is having an impact on education across the globe. With these tools, educators can quickly and easily record lectures, including their screen content, plus real-time audio and video of their instruction (Ferit Kilickaya, 2022).

THE CHARACTERISTICS OF SCREEN CAST TECHNOLOGIES IN EDUCATION

Screen casting applications for learning have gained significant popularity due to their ability to create interactive and engaging educational content. These applications come with a

variety of features tailored to enhance the learning experience. Here are some common characteristics of screen casting applications for learning:

1. **Screen Recording:** The primary feature of screen casting applications is the ability to record the screen activity. This enables educators to demonstrate software usage, navigate websites, create tutorials, and show step-by-step processes.

2. **Audio Narration:** Screen casting applications usually allow users to record audio narration simultaneously with the screen recording. This feature is essential for providing explanations, commentary, and additional context to the visual content.

3. **Video Editing Tools:** Many screen casting applications come with built-in video editing tools, allowing users to trim, cut, merge, and add annotations to the recorded videos. This capability enables creators to refine their content and remove any unwanted sections.

4. **Screen Drawing and Annotations:** To highlight important points or draw attention to specific elements on the screen, screen casting applications often include drawing and annotation tools. These tools can be used in real-time during recording or added during the editing process.

5. **Multi-platform Compatibility:** Screen casting applications are typically available for various operating systems (e.g., Windows, macOS, Linux) and may offer mobile versions for Android and iOS. This ensures accessibility across different devices.

6. **Export Formats:** Screen casting applications usually support a range of export formats, such as MP4, AVI, or GIF, which are commonly used for sharing and uploading content to online platforms.

7. **Upload and Sharing Options:** Integrations with online platforms and video-sharing websites are common in screen casting applications. This allows creators to easily upload and share their educational content with a broader audience.

8. **Webcam and Picture-in-Picture (PiP) Support:** Some applications offer the option to include a webcam feed or picture-in-picture mode alongside the screen recording. This feature is useful for creating more personal and engaging videos.

9. **Real-time Feedback:** Certain screen casting tools include features for providing real-time feedback, such as quizzes or polls, which can be integrated into the video to assess learners' understanding and knowledge retention.

10. **User-Friendly Interface:** An intuitive and user-friendly interface is crucial for both educators and learners. It should be easy to navigate, set up, and start recording without a steep learning curve.

11. **Customization Options:** The ability to customize settings like video quality, frame rate, audio sources, and hotkeys enhances the overall user experience and allows content creators to tailor the application to their specific needs.

12. **Accessibility Features:** Some screen casting applications offer features to add closed captions, subtitles, or other accessibility options to ensure that the content is accessible to a diverse audience.

When choosing a screen casting application for learning purposes, educators and content creators should consider their specific needs, the audience they are targeting, and the level of technical expertise required to use the application effectively.

Screencast technology is a powerful tool in education that can provide learners with a student-centered and engaging learning experience in both distance and traditional learning settings. It enables teachers to create digital recordings of any instructional activity performed on a computer screen. Screencasts can be used as learning resources, learning tasks, and learning support. To align screencasts with lesson objectives, goals, assessment practices, and standards, instructors can create their own screencasts rather than searching through the thousands of educational screencast videos on the web. Good educational screencasts depend not only on thorough planning but also on thoughtful and careful editing to re-sequence lesson elements, eliminate awkward and unnecessary portions, and craft a focused, easy-to-follow presentation that uses students' time efficiently. Screen casting can be integrated across the curriculum and into many learning activities. Screencasts are an effective instructional format that can be used for tutorials, demonstrations, digital storytelling, and narrated PowerPoint presentations. During the video editing process, a variety of media can be imported into a screencast project, such as video clips, photos, music, and animations.

FACTORS AFFECTING THE UTILIZATION OF SCREEN CAST TECHNOLOGIES IN UNIVERSITY INSTITUTIONS

There are several factors that can affect the use of screencast technologies in education. According to a literature review by Stella Timotheou et al (2023), the integration of digital technologies in schools impacts more than just students' performance; it affects several other school-related aspects and stakeholders, too. Furthermore, various factors affect the impact of digital technologies on education. These factors are interconnected and play a vital role in the digital transformation process. Another article by Michael Ruffini (October 31, 2012) suggests that good educational screencasts depend not only on thorough planning but also on thoughtful

and careful editing to re-sequence lesson elements, eliminate awkward and unnecessary portions, and craft a focused, easy-to-follow presentation that uses students' time efficiently.

Here are some factors affecting the utilization of screen cast technologies in universities:

- I. Lack of awareness of screen casting technology.
- II. Lack of training on how to use screen casting technology.
- III. Lack of support from administration.
- IV. Lack of time to create screencasts.
- V. Lack of resources to create screencasts.
- VI. Lack of technical support for creating and using screencasts.

The utilization of screen cast technologies in education can be influenced by various factors, including:

1. **Technological Infrastructure:** The availability of suitable devices, internet connectivity, and reliable platforms plays a significant role in the successful implementation of screen cast technologies.
2. **Digital Literacy:** Both educators and students need to be proficient in using screen cast technologies effectively to create and access educational content.
3. **Pedagogical Integration:** Educators must understand how to integrate screen cast technologies into their teaching methods and curriculum to enhance learning outcomes.
4. **Content Creation Skills:** Teachers should have the ability to create engaging and informative screen cast content that aligns with the learning objectives.

5. **Time and Resources:** Incorporating screen cast technologies into the educational process requires time for preparation, content creation, and access to necessary resources.
6. **Technical Support:** A reliable technical support system is essential for troubleshooting issues and assisting educators and students when using screen cast technologies.
7. **Student Engagement:** The level of student engagement with screen cast content can impact its effectiveness in facilitating learning.
8. **Accessibility:** Ensuring that screen cast content is accessible to all students, including those with disabilities, is crucial for inclusive education.
9. **Privacy and Security:** Protecting student data and maintaining privacy when using screen cast technologies is vital.
10. **Acceptance and Attitude:** The willingness of educators and students to embrace screen cast technologies as part of the educational process can significantly affect their utilization.
11. **Institutional Support:** Support from educational institutions in terms of policies, training, and resources can encourage and facilitate the adoption of screen cast technologies in education.
12. **Cost Considerations:** The affordability and sustainability of implementing screen cast technologies in educational settings may also influence their utilization.

Considering and addressing these factors can lead to a more effective integration of screen cast technologies in education, ultimately enhancing the teaching and learning experience.

RELEVANCE OF SCREEN CAST TECHNOLOGIES TO VARIOUS COURSE OF STUDIES

Screen casting is a useful tool in teaching that provides learners a student-centered and engaging learning experience in both distance and traditional learning settings. Here are some benefits of Screen casting for students and teachers:

1. Screencasts give students a combined audio-visual learning environment.
2. Screencasts help improve self-study.
3. Screencasts allow students to learn by examples.
4. With screencasts, students become more proactive.
5. Screencasts help improve students' attention and retention, compared to classroom and text-based learning.
6. Screencasts offer students 24/7 online access to knowledge.
7. Screen casting creates versatility in teaching and classroom style.
8. Screen casting lets you scale your lessons and learning resources.
9. Screen casting provides more opportunity for personalization.
10. Screen casting allows for creative teaching innovations.
11. Screen casting helps with teacher training and curriculum transparency.
12. Screen casting keeps absent students from falling behind.
13. Screen casting lets you easily edit videos for more accuracy, privacy, and succinct lessons.

Screen casting has seen tremendous growth in the education sector, including in higher education, but particularly in K-12. The COVID-19 pandemic was a significant driver, as educators scrambled for tools to make distance learning and hybrid classrooms less burdensome.

Screen casting technologies have significant relevance to education and offer numerous benefits to both educators and learners. Here are some of the keyways in which screen casting is relevant to education:

1. **Enhanced Learning Experience:** Screen casting provides an enriched learning experience by combining visual and auditory elements. It allows educators to create engaging and interactive content, making complex topics easier to understand and retain for students.
2. **Flexible Learning:** With screen casting, educational content can be recorded and accessed at any time, allowing students to learn at their own pace and review the material as many times as needed. This flexibility accommodates various learning styles and preferences.
3. **Visual Demonstration:** Screen casting enables educators to visually demonstrate processes, software applications, scientific experiments, and other practical aspects that are difficult to explain through text alone.
4. **Distance Learning:** Screen casting is especially valuable for distance learning or online education, as it facilitates the creation of instructional videos and virtual classrooms, connecting educators and students regardless of geographical locations.
5. **Flipped Classroom Model:** In the flipped classroom model, students watch screen casts at home to grasp foundational concepts, while classroom time is reserved for discussions, problem-solving, and engaging activities. This approach promotes active learning and student engagement.

6. **Accessibility and Inclusivity:** Screen casts can include closed captions, subtitles, and other accessibility features, ensuring that educational content is accessible to learners with disabilities or those who prefer text-based learning.
7. **Personalized Feedback:** Educators can provide personalized feedback to students using screen casting, making it more effective and efficient than traditional written feedback.
8. **Professional Development for Educators:** Screen casting can be used by educators for professional development purposes, such as sharing teaching strategies, showcasing best practices, and conducting virtual workshops.
9. **Increased Student Engagement:** The dynamic and interactive nature of screen casts can increase student engagement and motivation to learn, leading to improved learning outcomes.
10. **Remote Collaboration:** Screen casting allows for collaborative projects and presentations, even when students and educators are not physically present in the same location.
11. **Student Creations:** Students can also use screen casting applications to create their own educational content, such as presentations, tutorials, and project demonstrations, fostering a deeper understanding of the subject matter.
12. **Cost-Effectiveness:** Screen casting reduces the need for printing and physical materials, making it a cost-effective solution for educational institutions.

Overall, screen casting technologies offer a versatile and powerful toolset to enhance teaching and learning experiences in various educational settings. By leveraging these technologies effectively, educators can create more engaging and accessible content, leading to improved student outcomes and a more inclusive learning environment.

Relevance to various course of study

- 1. Computer Science and Engineering:** In technical disciplines like computer science and engineering, screen cast technologies are valuable for demonstrating coding and programming concepts, software development, debugging processes, and explaining complex algorithms. Screen casting can also be used to create interactive tutorials on using specific software tools and simulating practical applications.
- 2. Business and Management Studies:** In business courses, screen casting can be utilized to create presentations, case studies, and virtual business simulations. These technologies help in explaining financial models, marketing strategies, management principles, and other business-related concepts in an engaging and visually appealing manner.
- 3. Medicine and Health Sciences:** In medical and health science fields, screen cast technologies can be used for virtual patient consultations, explaining medical procedures, showcasing anatomy and physiology lessons, and creating interactive simulations for medical training and practice.
- 4. Language and Literature Studies:** For language courses, screen casting can be employed to facilitate language learning by presenting grammar lessons, vocabulary exercises, and language conversations. It can also be useful for literature studies in providing analysis and discussions of literary works.
- 5. Social Sciences and Humanities:** Screen cast technologies can support social sciences and humanities courses by presenting historical events, philosophical discussions, sociological concepts, and psychological theories in a visual and interactive format.

6. **Mathematics and Sciences:** In mathematics and sciences, screen casting can be beneficial for explaining mathematical concepts, demonstrating scientific experiments, and illustrating complex equations, graphs, and visualizations.

7. **Art and Design:** For courses related to art and design, screen casting can be utilized for presenting digital art processes, design software tutorials, and showcasing artistic techniques, providing students with visual inspiration and guidance.

8. **Education and Pedagogy:** In education courses, screen cast technologies can be employed by both instructors and future educators to create instructional videos, model effective teaching practices, and develop educational resources for diverse learning styles.

9. **Architecture and Engineering Design:** For architecture and engineering courses, screen casting can assist in visualizing and presenting design projects, architectural plans, and engineering concepts in a dynamic and accessible manner.

10. **Environmental Studies and Geography:** In these fields, screen cast technologies can be used to present geographical data, environmental issues, and geospatial analyses through interactive maps and visualizations.

GENDER DIFFERENCES IN SCREEN CAST APPLICATIONS IN EDUCATION

There are some studies and articles that discuss gender differences in education and technology. For example, a study published in *Frontiers in Psychology* investigated gender differences in digital learning during the COVID-19 pandemic. The study found that girls had higher perceived teacher support, intrinsic value, and learning engagement than boys, while no significant sex differences were found in competence beliefs regarding digital learning. Another study published in *Education and Information Technologies* conducted a systematic review and

meta-analysis on gender differences in information and communication technology (ICT) use and skills. The study found a small and positive, yet not significant, effect size in Favor of boys. Additionally, UNESCO has emphasized the importance of gender equality in education and the need for attention to gender equality throughout the education system.

Research on gender differences in screen cast applications for learning in education is limited, and any conclusions drawn should be considered cautiously. It is essential to recognize that individual differences and preferences within genders are vast, and generalizations may not apply to everyone. However, there are some potential areas of consideration regarding gender differences in the use and impact of screen cast applications for learning:

1. **Learning Preferences:** Some studies suggest that males and females may have different learning preferences. For example, some research indicates that females may prefer collaborative and interactive learning experiences, while males may show a preference for problem-solving and hands-on activities. Screen cast applications that offer interactive elements and opportunities for collaboration could potentially cater to different learning preferences.

2. **Tech Savviness:** Research has shown that there can be differences in tech savviness and comfort with technology between genders. Females may sometimes express lower confidence in using certain technologies, while males may have higher confidence levels. Ensuring that screen cast applications are user-friendly and intuitive can benefit learners of all genders.

3. **Subject Interests:** Gender differences in subject interests may influence the types of screencast applications used in different fields. For instance, males may show more interest in technology-related subjects, leading to greater adoption of screen casting in those areas. Conversely, females

may exhibit more interest in social sciences or arts-related subjects, leading to different usage patterns.

4. Communication Styles: It is suggested that females tend to use more verbal communication and seek social interaction, while males may prefer visual communication and hands-on activities. Screen cast applications that combine audio narration with visual demonstrations can cater to both communication styles.

5. Self-Efficacy and Confidence: Research has found that gender differences in self-efficacy and confidence levels can impact how learners' approach and use technology. Females may sometimes exhibit lower self-efficacy in technical tasks, which could influence their engagement with screen cast applications.

6. Multimedia Preferences: Studies have shown that males and females may have different preferences for multimedia content. For example, males may prefer action-oriented and visually stimulating content, while females may show a preference for emotionally engaging content. Tailoring screen cast applications to meet these preferences could enhance engagement.

7. Presentation Styles: Some research suggests that gender differences may influence presentation styles. For example, males might prefer action-oriented and visually stimulating content, while females may respond better to emotionally engaging or narrative-driven content. Considering diverse presentation styles in Screen casting can enhance learner engagement.

It is important to emphasize that gender differences in technology use and learning preferences are influenced by various factors, including cultural, social, and individual variables. Educational institutions should aim to create inclusive learning environments that accommodate the diverse needs and preferences of all learners, regardless of gender.

To address gender disparities and promote equitable use of educational Screen casting, educators and instructional designers should:

- i. Ensure that Screen casting tools are user-friendly and accessible to learners of all genders.
- ii. Offer a variety of content formats and interactive features in screencasts to cater to different learning preferences.
- iii. Create an inclusive learning environment where all students feel valued and encouraged to participate in technology-enabled learning experiences.
- iv. Continuously evaluate the effectiveness of educational screencasts across diverse learner groups to identify potential disparities and improve learning outcomes for all students.

APPRAISAL OF REVIEWED LITERATURE

While there is growing interest in the use of screen cast tools in higher education, there are still gaps in the literature regarding the factors that influence lecturers' self-efficacy in using these tools for instructional delivery. The literature suggests that self-efficacy is a significant predictor of technology use in education, and that factors such as prior experience with technology, attitudes towards technology, age, and gender can influence self-efficacy.

According to an article on EDUCAUSE Review, as computer technology continues to evolve and advance, many teachers from K–12 and higher education use Screen casting as an online or stand-alone teaching tool with traditional teaching approaches to enhance and engage the learning experience of their students.

Screen casting is a digital video and audio recording of what occurs on a presenter's computer screen, and it can be used to create sophisticated, information-rich multimedia presentations. Screen casting can provide learners a student-centred and engaging learning experience in both distance and traditional learning settings. To align screencasts with lesson objectives, goals, assessment practices, and standards, instructors can create their own screencasts rather than searching through the thousands of educational screencast videos on the web. Good educational screencasts depend not only on thorough planning but also on thoughtful and careful editing to re-sequence lesson elements, eliminate awkward and unnecessary portions, and craft a focused, easy-to-follow presentation that uses students' time efficiently.

Screen casting is also a great way to make instructional videos, but it has been found to be extremely useful for providing guidance and critique, especially in the virtual setting. Using video to provide feedback with virtual students was so effective that some teachers have started making screencasts for their face-to-face students. This allows them to rewatch the videos rather than having to absorb it all during a single meeting in class.

In the United States of America, the demand for Screen casting and screen-sharing software in the education space accounts for 50 percent of the global demand.

The appraisal of related literature on screen cast applications in education typically highlights their benefits in facilitating remote learning, enhancing content retention through visual aids, and promoting interactive teaching methods. These applications have been praised for their potential to improve student engagement, provide opportunities for personalized learning, and offer flexible study options. However, some literature also acknowledges challenges related to technology accessibility, potential distractions, and the need for effective pedagogical strategies when integrating screen cast applications into the educational context.

CHAPTER THREE

METHODOLOGY

Introduction

Methodology is the hierarchical steps employed during research work in gathering valid information from different respondents on a specific topic during research work. It discussed the total numbers of respondents that were sampled, and the validation of data designed before administration.

This chapter directs its attention to the following methodologies and procedures to achieve its aims: Research Design, Population, Sample and Sampling Technique, Research Instruments, Validation of the Research Instruments, Procedure for Data Collection and Data Analysis.

Research Design

The research design for this study is descriptive survey. Descriptive survey is adopted because an evocative discourse is adopted. The study is designed to investigate University students on the Awareness and utilization of screen cast applications for learning in university of Ilorin, Nigeria.

Population, Sample and Sampling Technique

The population of this work covers the university of Ilorin campus. 150 undergraduates' respondents are the sample size for the study, drawn out from nine (9) education departments from the University of Ilorin (Educational Technology, Educational Management, Adult and primary Education, Science Education, Arts Education, Counsellor Education, Health promotion and Environmental Health Education, Human kinetics Education, Social Sciences Education

Research Instruments

The instrument used in gathering information on the awareness and utilization of screen cast applications for learning in the university of Ilorin, Nigeria" is a structured questionnaire for students. This questionnaire Was divided into Four parts, Section A contains questions about the bio data of the respondents, Section B contains awareness of screen cast applications, section C contains utilization of screen cast applications for learning and Section D contains overall perception. Section B were structured using Nominal scale Yes and No. While section C and D were structured using Likert scale responses modes of Strongly Agreed, agree(A), Neutral(N), Disagree(D), and Strongly Disagree (DA) respectively. This will be represented by a five-point rating scale using the mean score benchmark of 2.5 for correspondents' utilization

The questionnaire is a closed-ended type, which contain a set of pre-determined option to the items presented.

Validation of the Research Instrument

The questionnaire was designed by the researcher and screened by the supervisor of this research work, to ensure that the questionnaire measure up to standard and to make it error free. A pilot study was conducted to authenticate the efficiency of the instrument. The result of the pilot study shows the relationship existing between screen cast applications and student's perception.

Procedure for Data Collection

The questionnaire was administered online to respondents at the university of Ilorin, and the respondent information were retrieved or saved on the google form through selected email, this was done to ensure accuracy.

Data Analysis Technique

Descriptive statistic involving frequency count, percentage and mean were used to answer research question 1,2 and 3 and mean difference was also used for research question hypothesis 1, 2 and 3 and tested using t-test with the aid of statistical package for social science (SPSS) and Microsoft Excel. The alpha value 0.05 level of significance were used for accepting or not accepting hypotheses.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

This chapter presents the data analysis and interpretation of data collected for the study through the administered instrument (questionnaire). The study is descriptive research; hence the results are presented in a descriptive format using frequency count and percentage for demographic information and the research questions, while t-test were used to test the hypothesis at 0.5 significant level. All analysed data are represented on tables.

Demographic Information

The data collected and analysed in this section represents the variables of focus for the study and background information of undergraduate students that were actively involved in the study. The demographic information in which data were collected and analysed included undergraduate departments, gender and academic level. Which are presented on tables as follows:

Demographic Data		Frequency	Percentage
Department	Educational Technology	29	19%
	Educational Management	13	8.9%
	Adult and primary Education	11	7.3%
	Science Education	14	9.3%
	Arts Education	20	13.3%
	Counsellor Education	11	7.3%
	Health Promotion and	14	9.3%

	Environmental Health		
	Education		
	Human Kinetics	14	9.3%
	Social Sciences	24	16%
	Education		
	TOTAL	150	100%
	Gender		
	Male	69	46%
	Female	81	54%
	TOTAL	150	100%
	Academic Level		
	100	16	11%
	200	17	11.4%
	300	45	30.2%
	400	72	48.3%
	TOTAL	150	100%

Table 1 revealed the demographic properties of participants in this study. As indicated in table 1, undergraduates from nine departments participated in this study and each department has almost equal proportion to others. Also, the gender differences rate of 7.8% was observed, indicating that there was a difference in the proportion of participants in the study: female respondents (54%) were more than male respondents (46%). Also, more respondents (48.3%) in 400 level formed larger percentage of the sample size, while participants in 300 level formed 30.2%; 200 level 11.4% and those in 100 level 11% Of sample size. The implication of this demography is that there is an almost proportionate representation among the categories of participants.

Results

Research Question One: Awareness of screen cast Applications?

Table 2: Awareness of screen cast

S/N	Items	Yes freq%	No freq(%)
1.	I am aware of the existence of screen cast applications being used for learning purposes at the University of Ilorin?	75(48%)	78(52%)
2.	I have used screen cast applications for learning before, e.g. (zoom, goggle meet, Microsoft teams,	130(87.2%)	19(12.8%)

Obs studio, Camtasia, loom etc.).		
3. My instructor has mentioned screen cast as a learning resource.	70(47.3%)	78(52.3%)
4. I have encountered screen cast in multiple courses across my academic program.	71(47.7%)	78(52.3%)
Cumulative Total	349(74.3%)	253(25.7)

To identify the level of awareness of screen cast among undergraduates, a percentage point scale of 50.0% was adopted. Data collected were analysed using frequency counts and percentages. As indicated in Table 2, higher parts of the responses were skewed towards the “yes” response, implying that most undergraduates are aware of screen cast applications for learning. Apparently, zoom, goggle meet, and Microsoft teams were used by most participants. In general, the cumulative total percentage point scale of 74.3% which is better than the benchmark of 50.0% indicated that undergraduates are aware of screen cast applications for learning. In the mean value, the Likert scale of 2.50 was adopted to match the grand mean of 4.25, which is greater than the benchmark 2.50 which implies it's positivity.

Research Question Two: utilization of screen cast application for learning.

Table 3: Utilization of screen cast applications for learning

S/N	Items	Mean	S.D	Rank Ordering
1	I find screen cast applications easy to use.	1.5%	.290	1st
2	I prefer screen cast applications over other forms of online learning materials (e.g., slides, PDFs, etc.).	3.75%	.123	2nd
3.	Screen cast applications enhance my understanding of the course content.	3.65%	.489	3rd
4.	Screen cast applications increase my interest and motivation in learning.	3.74%	.849	4th
Grand Mean		3.62%		

In investigating the utilization of screen cast applications for learning among undergraduates, a modified four-point Likert scale with a decision of 2.50 was adopted. Data collected were analysed using mean, standard deviation and rank ordering as indicated in Table 3. Many respondents find screen cast applications easy to use (Strongly Agree: 91, Agree: 37). However, opinions are divided on whether they prefer screen cast applications over other forms of online learning materials.

Most respondents believe that screen cast applications enhance their understanding of the course content and increase their interest and motivation in learning.

In summary, the grand mean of 3.62% which is greater than the benchmark of 2.50 implies that undergraduate's utilization of screen cast is positive.

Research question three: overall perception of the study.

Table 4: overall perception of screen cast applications for learning

S/N	Items	Mean	S.D	Rank ordering
1.	Screen cast applications improve my overall academic performance and grades.	3.75	.685	1st
2.	I believe that the University of Ilorin should provide more information and training on how to use screen casts.	3.5	.118	2nd
3.	screen cast enhances my motivation to actively participate in online learning activities.	3.66	.569	3rd
4.	I am satisfied with the quality and effectiveness of screen cast applications in the University of Ilorin.	3.41	.671	4th
Grand Mean		3.33		

In investigating the utilization of screen cast applications for learning among undergraduates, a modified four-point Likert scale with a decision of 2.50 was adopted. Data collected were analysed using mean, standard deviation and rank ordering as indicated in Table 4. Most respondents believe that screen cast applications improve their overall academic performance and grades.

A significant majority agree that the University of Ilorin should provide more information and training on how to use screen casts.

Most respondents believe that screen cast enhances their motivation to actively participate in online learning activities.

However, satisfaction with the quality and effectiveness of these applications is mixed among the respondents.

In conclusion, while there is a general positive perception towards screen cast applications, there is room for improvement in terms of awareness and quality. Providing more information and training on how to use these tools could potentially enhance their effectiveness in the learning process.

Hypotheses Testing

Hypothesis One: There are no significant differences between male and female on the awareness of screen cast applications for learning.

Table 5: Independent Sample t- test Analysis of Gender Difference in the Undergraduate Awareness of Screen cast Applications for learning

Gender	N	X	SE	SD	Df	t	Sig(2-tail)	Remark
Male	69	5.31		.707				
			0.55		148	-1.69	.976	Accepted
Female	81	6.23		.849				

From the Table 5, it can be deducted that there was no significant difference between male and female undergraduates on the awareness of screen cast applications for learning. This is reflected in the findings of the hypotheses tested $df (148)$, $t = -1.69$, $p > 0.05 = 1.976$. Thus, the hypothesis which states that “there is no significant differences between male and female on the undergraduate awareness of screen cast applications for learning” is accepted

Hypotheses Two: There is no significant difference between male and female undergraduate utilization of screen cast applications for learning.

Table 6: Independent Sample t-test Analysis of Gender Difference in the Undergraduate Utilization of Screen Cast Applications Learning.

Gender	N	X	SE	SD	Df	t	Sig(2-tail)	Remark
Male	70	5.83		.071				
			0.539		148	0.59	.976	Accepted
Female	80	6.15		.828				

From the Table 6, it can be deducted that there was no significant difference between male and female undergraduates on the Utilization of screen cast applications for learning. This is reflected in the findings of the hypotheses tested $df (148)$, $t = 0.59$, $p > 0.05 = 1.976$. Thus, the hypothesis which states that “there is no significant differences between male and female on the undergraduate Utilization of screen cast applications for learning” is accepted

Hypotheses Three: There is significant difference between male and female undergraduate overall perception.

Table 7: Independent Sample t-test Analysis of Gender Difference in the Undergraduate Overall Perception of Screen Cast Applications for Learning

Gender	N	X	SE	SD	Df	t	Sig(2-tail)	Remark
Male	90	6.92		.142				
			0.70		148	2.09	.976	Accepted
Female	60	5.45		.242				

From the Table 7, it can be deducted that there was a significant difference between male and female undergraduates on the Overall Perception of screen cast applications for learning. This is reflected in the findings of the hypothesis tested df (148), $t = 2.09$, $p \leq 0.05 = 1.976$).

Since 2.0994 is greater than 1.976, this suggests that there is a significant gender difference in the perception of whether screen cast applications improve academic performance and grades. Thus, the hypothesis which states that “there is significant differences between male and female on the overall perception of screen cast applications for learning” is accepted.

Summary of findings

The following are the identified summary of findings gotten from the results;

1. Undergraduate's awareness of screencast applications for learning [$4.25 > 2.50$];
2. Undergraduate's Utilized screen cast applications for learning [$3.62 > 2.50$];
3. Undergraduates' Perception of screen cast applications for learning in university of Ilorin was positive;
4. There were no significant differences between male and female on the awareness of screen cast applications for learning [$1.69 > 0.05$];
5. There is no significant difference between male and female undergraduates' utilization of screen cast applications for learning. [$0.59 > 0.05$]; and
6. There was no significant difference between male and female undergraduates' perception. [$2.09 > 0.05$].

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the discussions, and conclusions drawn from the findings of this study, as well as recommendations. Other aspects in this chapter included implications of the findings, limitations of the study, and suggestions for further studies.

Discussion

This study is premised on the fact that the flexibility and cost effectiveness of screen cast has made it a preferred option for learning among students. However, despite the numerous advantages and benefits of screen cast applications, its use has continually grown among students and it has proved to be a productivity barrier. Regardless of this, educators still push for the use of screen cast in education, as the benefits overshadow its disadvantage, consequent on this, the current study assumed that the continuous achievement of beneficial use of screen cast among students is dependent on learners' perception towards its use. Five research purposes were generated, while answering three major research questions and tested two research hypotheses at 0.05 level of significance.

The study included 150 undergraduate students from various departments and academic levels at the University of Ilorin. The gender distribution was almost balanced, with slightly more female respondents. Most respondents were in the 400 level. The study included 150 respondents from various departments and academic levels, ensuring a diverse sample. The demographic information indicates a well-balanced sample, which enhances the generalizability of the findings.

A significant portion of respondents (74.3%) were aware of the existence of screen cast applications for learning. This suggests that these tools have gained recognition among the student population. Zoom, Google Meet, and Microsoft Teams were commonly mentioned. A significant majority of respondents (74.3%) were aware of screen cast applications for learning. Most

respondents had used screen cast applications (87.2%) and encountered them in multiple courses (47.7%). However, a smaller percentage (47.3%) reported that their instructors had mentioned screen cast as a learning resource. The high awareness and usage of screen cast applications suggest that they are prevalent among undergraduate students, but there may be room for instructors to promote their use more actively.

Stella Timotheou's, (2023) research emphasizes the importance of digital technologies in education. The high awareness (74.3%) and usage (87.2%) of screencast applications among the respondents suggest that these digital tools have gained recognition among the student population, aligning with Timotheou's findings on the impacts of digital technologies on education.

Screencast applications, such as Zoom, Google Meet and Microsoft Teams are tools that allow users to record the activity on their screen, often for the purpose of creating tutorials or demonstrations. The successful adoption of these applications depends on the user's awareness and understanding of their features and functionalities.

For instance, a user needs to know how to start and stop a recording, how to select specific areas of the screen for recording, and how to save and export the recorded video. Some screencast applications also offer advanced features like adding annotations, changing the audio settings, or editing the video after recording. Awareness of these features can greatly enhance the user's experience and the effectiveness of their screencasts.

Moreover, understanding how to share or distribute the screencasts is another crucial aspect. Some applications provide options for sharing the recorded videos directly through various platforms, which can be very beneficial for users aiming to reach a wider audience.

Respondents generally found screen cast applications easy to use, and most of them (87.2%) had used them for learning purposes. Most believed that these applications enhanced their understanding of course content and increased their interest in learning.

Respondents generally found screen cast applications easy to use (91% agreeing). Opinions were divided regarding the preference for screen cast applications over other online learning materials. Most respondents believed that screen cast applications enhanced their understanding of course content and increased their interest and motivation in learning. The positive perception of screen cast applications in terms of ease of use and their impact on learning suggests that these tools are effective for educational purposes.

Michael Ruffini's, (2012) work highlights the potential of screencasts to provide a student-centered and engaging learning experience. This study found that most respondents believed screencast applications enhanced their understanding of course content and increased their interest in learning. This aligns with Ruffini's assertion that screencasts can improve student learning.

When a screencast application is both easy to use and user-friendly, users are more likely to utilize it for learning purposes. They can focus more on the content they are creating or consuming, rather than struggling with how to use the application itself. This can lead to more effective learning experiences, as users can create better quality educational content (like tutorials or lectures), and viewers can consume this content without distractions related to poor usability.

The overall perception of screen cast applications was positive, with most respondents believing that they improved their academic performance. There was a consensus that the university should provide more information and training on how to use screen casts, indicating a demand for further support. Most respondents believed that screen cast applications improved their

overall academic performance and grades. They also expressed a need for more information and training on how to use screen casts. Most respondents felt that screen cast applications enhanced their motivation to actively participate in online learning activities. Satisfaction with the quality and effectiveness of screen cast applications was mixed. The generally positive perception of screen cast applications indicates their potential to improve academic outcomes and motivation, although there is room for enhancing quality and providing more guidance.

Thompson & Lee's (2012) research focused on the use of Screen casting for providing feedback to students. "Talking with Students through Screen casting" explores this aspect, the general positive perception of screencast applications among the respondents supports Thompson & Lee's argument for the effectiveness of Screen casting in educational contexts. This research discusses the use of Screen casting technologies in traditional and online classes to engage students, improve the revision process, and enhance student learning.

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Conclusions

1. High Awareness and Utilization: The study found that a significant proportion of undergraduate students at the University of Ilorin are aware of screen cast applications for learning. Moreover, a substantial majority of respondents reported having used screencast applications for their academic studies. This suggests that screen cast applications have gained considerable recognition and adoption among students.

2. Ease of Use and Positive Perception: Students generally found screen cast applications to be user-friendly and easy to use. This positive perception is vital as it indicates that these tools are accessible to a broad range of students, regardless of their technical expertise.

3. Enhanced Learning Experience: Respondents expressed that screen cast applications enhance their understanding of course content and increase their interest and motivation in learning. This suggests that screen cast applications have the potential to improve the overall learning experience for undergraduate students.

4. Gender-Based Differences in Perception: Notably, the study revealed gender-based differences in the perception of screen cast applications. While both male and female students exhibited similar levels of awareness and utilization, there was a significant gender difference in how they perceived the impact of these applications on academic performance. Female students had a more positive perception in this regard compared to their male counterparts.

5. Room for Improvement: Although screen cast applications generally received positive feedback, there was a mixed response regarding students' preference for screen casts over other online learning materials. Furthermore, satisfaction with the quality and effectiveness of these applications was not unanimous, indicating room for improvement in terms of content and delivery.

6. Need for Training and Support: Students expressed a desire for more training and information on how to effectively use screencast applications. This highlights the importance of providing educational institutions with resources and support to guide students in maximizing the benefits of these tools.

7. Instructor Involvement: The role of instructors in promoting the use of screencast applications appears significant. While a substantial number of students had encountered screen casts in multiple courses, a smaller percentage reported that their instructors had actively mentioned screen

casts as a learning resource. Encouraging instructors to incorporate screen casts into their teaching methods and promote their use could further enhance their adoption.

In conclusion, this study provides valuable insights into the awareness, utilization, and perception of screen cast applications among undergraduate students at the University of Ilorin. The findings suggest that these applications have the potential to positively impact the learning experience, but there is a need for continuous improvement, increased instructor involvement, and gender-sensitive approaches to maximize their effectiveness. Further research and initiatives can help refine the integration of screen cast applications into the educational landscape.

Implications of the Study:

Based on the findings of this study, the following implications can be drawn.

1. **Promotion of Screen Cast Applications:** Given the high awareness and usage, instructors and institutions should actively promote screen cast applications as a valuable learning resource.
2. **Training and Support:** Respondents expressed a need for more information and training on using screen casts. Institutions can provide workshops or resources to support students in effectively utilizing these tools.
3. **Quality Enhancement:** Institutions should focus on improving the quality and effectiveness of screencast applications to address mixed satisfaction levels.
4. **Gender Differences:** Institutions should be aware of the gender differences in the perception of screen cast applications and consider tailoring support or interventions accordingly.

Limitations of the Study:

1. **Sampling:** The study's sample size was limited to 150 undergraduate students from a single institution. This may limit the generalizability of the findings to a broader population.
2. **Self-Reporting:** The data collected relied on self-reported responses from participants, which may be subject to bias or inaccuracies.
3. **Cross-Sectional Design:** The study appears to have a cross-sectional design, which limits the ability to establish causation or track changes over time.
4. **Context-Specific:** The findings are specific to the University of Ilorin and may not be applicable to other institutions with different characteristics.
5. **Limited Detail:** The study could benefit from more qualitative data to gain a deeper understanding of student experiences.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were made:

1. **Promote Screen Cast Applications:** Educational institutions should actively promote screen cast applications as an essential tool for enhancing learning and understanding. Instructors should incorporate screen cast applications into their teaching methods and encourage students to use them for better comprehension and engagement.
2. **Provide Training and Resources:** Institutions should offer training sessions and resources to help students and instructors effectively use screencast applications. Create user-friendly guides and tutorials that demonstrate how to create and utilize screen casts for educational purposes.
3. **Quality Enhancement:** Developers of screencast applications should focus on improving the quality and functionality of their tools, addressing any technical issues and enhancing user

experiences. Regular updates and improvements can ensure that screen cast applications remain effective and efficient for learning.

4. **Tailored Support for Gender Differences:** Given the observed gender differences in perception, institutions should consider offering tailored support or interventions. Conduct further research to understand the underlying causes of these differences and design strategies to address them.

5. **Encourage Instructor Involvement:** Instructors should actively mention and recommend screen cast applications as a resource in their courses. They can provide guidelines on how students can utilize screen casts to supplement their learning.

6. **Feedback Mechanism:** Establish a feedback mechanism where students can provide input on the quality and usefulness of screen cast applications. Use student feedback to continuously improve the applications and the support provided.

7. **Comparative Studies:** Conduct comparative studies to assess the effectiveness of screen cast applications compared to other online learning materials. This can provide a better understanding of the specific benefits and drawbacks of using screen casts.

8. **Institutional Support:** Encourage universities to allocate resources for the development and maintenance of screen cast technologies and support services. Ensure that technical issues are promptly addressed by the IT departments. "Universities play a crucial role in providing guidance and training for the effective use of educational technologies." Davis, L. (2016).

9. **Collaboration with Technology Providers:** Collaborate with technology providers to explore the integration of advanced features and functionalities within screen cast applications that can enhance the learning experience.

10. **Longitudinal Studies:** Consider conducting longitudinal studies to track the long-term impact of screen cast applications on academic performance and motivation.

11. **Quality Assurance:** Implement quality assurance measures for screen cast content created by instructors to maintain consistency and ensure that they align with the curriculum. "Satisfaction with the quality and effectiveness of educational technologies can be a key factor in their successful implementation." Wilson, J. (2017).

12. **Awareness Campaigns:** Launch awareness campaigns targeting both students and instructors, emphasizing the benefits of screen cast applications in improving learning outcomes.

These recommendations aim to enhance the utilization and effectiveness of screen cast applications in educational settings, making them a valuable tool for both instructors and students.

Suggestions For Further Studies

For Further research in this area, the following suggestions are made:

1. **Comparative Analysis:** Conduct a comparative analysis between different types of screens cast applications (e.g., Zoom, Google Meet, OBS Studio) to determine which ones are most effective for specific learning outcomes.

2. **Longitudinal Studies:** Conduct long-term studies to track how the utilization of screen cast applications impacts students' academic performance over multiple semesters or academic years.

3. **Instructor Perspectives:** Investigate the perspectives and experiences of instructors who use screen cast applications in their teaching, including challenges faced and strategies for effective implementation.

4. **Content Analysis:** Analyze the content and quality of screen casts created by both instructors and students to assess whether they align with pedagogical goals and curriculum standards.
5. **Gender-Based Studies:** Further explore the gender differences in the perception of screen cast applications, examining potential underlying factors and strategies to address them.
6. **Qualitative Research:** Conduct qualitative research (e.g., interviews or focus groups) to gain deeper insights into students' experiences with screencast applications, including their motivations, challenges, and preferences.
7. **Impact on Different Disciplines:** Investigate how the utilization and perception of screen cast applications vary across different academic disciplines and subject areas.
8. **Effect on Diverse Student Populations:** Explore how screen cast applications impact the learning experiences of diverse student populations, including international students, students with disabilities, or non-traditional students.
9. **Comparative Studies with Traditional Instruction:** Compare the effectiveness of screen cast applications with traditional in-person instruction or other online learning methods in terms of student engagement, retention, and academic performance.
10. **Pedagogical Strategies:** Research the pedagogical strategies that instructors can employ when using screen cast applications to maximize their educational benefits.
11. **Faculty Development Programs:** Evaluate the impact of faculty development programs that aim to train instructors in the effective use of screen cast applications and other technology-enhanced teaching methods.

12. **Cross-Institutional Studies:** Extend the research to include multiple universities or institutions to assess how the utilization and perception of screen cast applications may vary across different educational contexts.

13. **Impact on Motivation and Learning Styles:** Investigate how screen cast applications impact student motivation and consider how different learning styles may be influenced differently by these tools.

14. **Post-Pandemic Studies:** Given the increased adoption of online learning tools during the COVID-19 pandemic, explore how the utilization and perception of screen cast applications have evolved post-pandemic.

15. **International Comparative Studies:** Compare the awareness, utilization, and perception of screen cast applications among undergraduate students in different countries to identify cultural influences on technology adoption in education.

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APPENDIX

Department of Educational Technology

Faculty Of Education

University of Ilorin,

Ilorin, Nigeria

**Questionnaire On the Undergraduate Awareness and Utilization of Screen Cast
Applications for Learning in University of Ilorin**

Dear Respondent,

I am a final year student at the university of Ilorin, faculty of Education, Department of educational Technology carrying out research on the undergraduate's Awareness and utilization of screen cast applications for learning in university of Ilorin, Ilorin. A screencast is a digital recording of a computer screen, often accompanied by audio narration or annotations. Screencasts can be used for various educational purposes, such as demonstrating a process, explaining a concept, providing feedback, or creating tutorials.

The purpose of this questionnaire is to understand how students use screencasts for learning purposes in the University of Ilorin. The questionnaire will take about 5 minutes to complete. Your participation is voluntary and confidential. No personal information will be collected or disclosed.

Thank you for your cooperation,

Yours sincerely,

ISAAC YAKUBU.

(RESEARCHER)

Section A: Respondents Demographic Information

Please indicate by ticking the appropriate option and provide necessary information

1. Gender:

- Male ☐

- Female ☐

2. Department/Major:

Educational Technology ☐

Educational Management ☐

Adult and primary Education ☐

Science Education ☐

Arts Education ☐

Counsellor Education ☐

Health promotion and Environmental Health Education ☐

Human kinetics Education ☐

Social Sciences Education ☐

3. Academic level

100 level ☐

200 level ☐

300 level ☐

400 level ☐

Section B: Awareness of Screen Cast Applications

Instruction: please indicate with a tick, the extent which you agree with the following statements the responses made for these parts are: YES OR NO

4. I am aware of the existence of screen cast applications being used for learning purposes at the University of Ilorin?

YES ☐

NO ☐

5. I have used screen cast applications for learning before, e.g. (zoom, goggle meet, Microsoft teams, Obs studio, Camtasia, loom etc).

YES ☐

NO ☐

6. My instructor have mentioned screen cast as a learning resource

YES ☐

NO ☐

7. I have encountered screen cast in multiple courses across my academic program

YES ☐

NO ☐

Section C: Utilization of screen cast applications

instruction: please indicate with a tick, the extent which you agree with the following statements the responses made for these parts are strongly agree (SA), Agree(A), Neutral(N), Disagree(D), and strongly disagree (DA)

8. I find screen cast applications easy to use.

Strongly Agree ☐

Agree ☐

Disagree ☐

Strongly disagree ☐

9. I prefer screen cast applications over other forms of online learning materials (e.g., slides, PDFs, etc.).

Strongly Agree ☐

Agree ☐

Disagree ☐

Strongly disagree ☐

10. Screen cast applications enhance my understanding of the course content.

Strongly Agree ☐

Agree ☐

Disagree ☐

Strongly disagree ☐

11. Screen cast applications increase my interest and motivation in learning.

Strongly Agree ☐

Agree ☐

Disagree ☐

Strongly disagree ☐

Section D: Overall Perception

12. Screen cast applications improve my overall academic performance and grades.

Strongly Agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

13. I believe that university of Ilorin should provide more information and training on how to use screen cast.

Strongly Agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

14. screen cast enhances my motivation to actively participate in online learning activities.

Strongly Agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐

15. I am satisfied with the quality and effectiveness of screen cast applications in university of Ilorin.

Strongly Agree ☐

Agree ☐

Neutral ☐

Disagree ☐

Strongly disagree ☐