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Enhancing the functionality of the Audiovisual Studio Education Laboratory in developing Broadcasting competencies for communication science students at Universitas Ahmad Dahlan

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ABSTRACT

The structured and measurable management of an Audiovisual Studio laboratory plays a critical role in developing scientific competence in Audio Visual production. This study aims to examine the enhancing the functionality of the Audiovisual Studio Education Laboratory in developing broadcasting competencies for communication science students at Universitas Ahmad Dahlan. In an evolving media landscape characterized by rapid information flow, the laboratory serves as a crucial facility for preparing students to meet the demands of the dynamic media industry. Using qualitative research methods, this study involves direct observation, literature review, field analysis, and document analysis related to curriculum and laboratory activities. The findings reveal that the Audiovisual Studio education laboratory holds significant potential as an effective learning center, fostering technical, creative, and analytical skills in media production. However, challenges remain, including outdated facilities, the need for integration of advanced technologies, limited industry collaboration, and the necessity for a curriculum aligned with industry standards. This research provides insights into the practices and challenges of optimizing the laboratory's role and offers recommendations for UAD and other institutions to enhance broadcasting education. Ultimately, the study contributes to preparing students as competent broadcasting professionals equipped to thrive in the current and future media industry.

1. Introduction

Educational Laboratory is a facility and infrastructure that is very much needed to support teaching and learning activities in order to achieve learning objectives that have been determined in the curriculum (Jackson, 1970). Educational Laboratory is a place for students to practice in understanding the concepts that have been taught by lecturers in class, as well as to practice and or prove the scientific theories they have obtained (Spadaccini, 2001).

Educational Laboratory in higher education is an academic support unit as an important manifestation of the Tri Dharma of Higher Education and must be prepared to carry out educational activities, research and community service, where in its implementation using various equipment, materials and certain scientific methods (Musburger, 1999). The laboratory is important because Based on the Minister of Education and Culture of the Republic of Indonesia in 2013 concerning national standards for higher education, article 38 paragraph 2 that: "Every higher education institution is required to fulfill the infrastructure for the implementation of the Tridharma of higher education which includes: (a) land (b) classrooms (c) higher education leadership room (d) lecturer room € administration room (f) library room (g) laboratory room (h) workshop room (i) production unit room (j) canteen room (Hafiar & Mahameruaji, 2017).

One of the Education laboratories in the UAD Communication Science Study Program is the Audio Visual Studio laboratory. This laboratory provides experience for students to further explore television broadcasting management practices, starting from the production planning stage, production implementation and evaluation of production results (Zou, 2022). By using various hardware in the form of audio system, video system and lighting system as well as artistic system that supports it, it allows students to gain knowledge and competence in the field of audio visual production, which is standardized for broadcasting (Guo & Ma, 2022). In implementing practical activities in the Audio Visual Studio Education laboratory of the Communication Science study program at Universitas Ahmad Dahlan(Pratiwi & Anisa Sari, 2023), it is necessary to ensure whether in practice the reality can and is able to provide new experiences and competences for students related to broadcasting production management and governance starting from preparation, implementation and production results obtained (Rad, 2020).

In the era of rapid development of information and communication technology, the mass media industry, especially broadcasting, has undergone significant changes. This requires universities to provide education that is not only based on theory but also supported by practices that are in accordance with industry needs (Zuhri et al., 2024). The audio-visual studio education laboratory is a key element in answering these challenges, especially in developing the competence of communication science students. However, although the existence of this laboratory is very important, research related to optimizing its role in improving students' broadcasting competence is still very limited (Madhubhashini, 2024). Several previous studies related to the theme of this research on Laboratory Optimization, Researchers found five previous studies as references and to strengthen the novelty of the research, so that the gap in this research can be described, The following are five previous studies that researchers obtained from the Publish Or Perish application, by selecting and taking the top five samples from around 200 article searches in the application.

Table 1. PREVIOUS RESEARCH FROM PUBLISH OR PERISH

Cites	Authors	Title	Year	Source
2	Fanny et al., (2023)	Training on Optimizing the Information and Communication Technology Laboratory (Tik) as a Support for the Learning Process	2023	jurnal.unipasby.ac.id
2	Suryana et al., (2024)	Laboratory as a Learning Resource Center	2024	jurnalku.org
6	Darmanto et al., (2023)	Implementation of Information Systems in an Effort to Optimize the Management of Computer Laboratories of the Informatics Engineering Department of Politap	2022	Applied Information Technology and Computer Science (AICOMS)
67	Hardiah (2019)	Improving Students Listening Skill by Using Audio Visual Media	2019	Al-Lughah: Jurnal Bahasa
1	Hafiar & Mahameruaji, (2017)	The Challenge of Optimizing the Role of TV Laboratories in Higher Education	2017	Profetik: Jurnal Komunikasi

SOURCE: PUBISH OR PERISH, (2024)

Previous studies have highlighted the importance of laboratories in practice-based learning, especially in engineering, science, and arts. However, the focus on educational laboratories in broadcasting, especially in Indonesia, is still rarely discussed in depth. Moreover, the management aspect of audio-visual studio educational laboratories in supporting broadcasting student competencies has not received much attention. For example, Hafiar and Mahameruaji (2017) mentioned the importance of TV laboratories in universities, but the study emphasized general challenges without exploring how laboratories can be optimized strategically.

Based on the table above, here is a brief description of the five research titles: Research from Fanny et al., (2023) on Training for Optimizing Information and Communication Technology (ICT) Laboratories as a Support for the Learning Process: This study focuses on training to optimize the use of ICT laboratories in supporting the learning process in educational institutions. The author explains the importance of well-managed laboratory infrastructure to improve learning effectiveness. Then there is research from Suryana et al., (2024) About Laboratory as a Learning Resource Center: This study discusses the role of the laboratory as the main center of learning resources for students. The researcher emphasizes the importance of the laboratory in supporting experimental and technology-based learning. Next there is research from Darmanto et al., (2023) on Implementation of Information Systems in Efforts to Optimize Computer Laboratory Management of Informatics Engineering Department of Polytechnic: This study explores the development and implementation of information systems to effectively manage computer laboratories in the informatics engineering department. The focus is on improving operational efficiency and laboratory asset management.

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Then Research from Hardiah (2019) about Improving Students Listening Skill by Using Audio Visual Media: This study examines the use of audio-visual media in improving students' listening skills. The author shows how audio-visual technology can be an effective tool in language learning. The latest research from Hafiar & Mahameruaji, (2017) Challenges of Optimizing the Role of TV Laboratories in Higher Education: This study evaluates the challenges faced by higher education institutions in optimizing television laboratories as learning facilities. The researchers identify constraints and provide recommendations to improve the effectiveness of these laboratories. Of the five previous studies, this study has novelty, the novelty of this study lies in the holistic approach to optimizing the audio-visual studio education laboratory at Universitas Ahmad Dahlan(UAD).

Different from previous studies, this study integrates direct observation, literature study, direct analysis in the field, and analysis of documents related to the curriculum and laboratory activities, documents to understand specific challenges, opportunities, and implementation strategies in developing student competencies. With a focus on the laboratory as a broadcasting industry simulation space, this study also offers new insights into how experiential learning can be optimally implemented. According to Publich Or Peresh, the discussion related to the Education laboratory, audio-visual studio, was last published in 2021, while the discussion related to broadcasting competencies has not been published. This article is important to discuss and publish.

From this, a Research GAP was found, the GAP found in the literature involves two main aspects. First, there is a gap in relation to the updating of laboratory facilities and technology that reflects the needs of the modern broadcasting industry. Many educational laboratories still use technology that is not relevant to current industry standards, thus limiting students' ability to compete in the job market. Second, integration between curriculum and laboratory activities is still lacking. As identified in this document, differences in approaches between lecturers in implementing practices result in inconsistent results among students.

This indicates the need for standardization of curriculum outputs to ensure uniform competencies. Then, the researcher also conveys the expected Contribution in this paper, This research is expected to contribute in several aspects. First, this research offers a systematic approach to optimizing the management of audio-visual studio education laboratories. Second, the results of this study can be a guideline for other universities in improving the quality of their broadcasting education. Third, the recommendations of this study can help educational institutions in aligning academic education with the needs of the media industry, so as to produce competent and competitive graduates. Thus, optimizing the role of audio-visual studio education laboratories in the UAD Communication Science Study Program is not only an internal need of the institution, but also an answer to the demands of the dynamic media industry. This research is not only

academically relevant, but also has broad practical implications, both for universities and the broadcasting industry in Indonesia.

From the explanation that the researcher has described above, the researcher formulated the problem, namely How can optimizing the role and management of audio-visual studio education laboratories support improving the broadcasting competence of Communication Science students at Ahmad Dahlan University?, so the purpose of this study is to identify the role of audio-visual studio education laboratories in supporting improving the broadcasting competence of Communication Science students at Universitas Ahmad Dahlanand provide strategic recommendations for optimizing the management of audio-visual studio education laboratories so that they are in line with the needs of the curriculum and the broadcasting industry.

2. Theoretical Framework

The use of the Audio Visual Studio laboratory in broadcasting learning in the communication science study program is one of the very important and effective approaches in developing students' understanding and skills (Lai & Cheong, 2022). The learning theory underlying the use of the laboratory in this context involves several key concepts that help support an interactive, practical, and in-depth learning process for students (Belt & Lowenthal, 2021).

One of the main theories relevant in this context is constructivist learning theory. This theory emphasizes the importance of students actively constructing their own knowledge through direct experience and reflection on that experience (Septiani & Nirmala, 2020). In the broadcasting laboratory, this approach allows students to engage in hands-on experiments, simulations in practical situations, and active interaction with equipment and communication technologies used in the broadcast industry. Through this active involvement, students can build a deeper understanding of the concepts related to the production, broadcasting, and distribution of media content.

In addition, the theory of experiential learning is also an important basis for using audio-visual studio laboratories in broadcasting learning (Morris, 2020). According to this theory, students learn best when they are directly involved in situations that reflect the real world. The broadcasting lab provides an ideal platform for students to experience the media production process, handle the technological equipment used in broadcasting, and face the challenges often faced in the communications industry. Through this hands-on experience, students have the opportunity to learn from mistakes, develop practical skills, and deepen their understanding of the process of producing and distributing media content.

Learning theories that focus on collaboration and social interaction are also relevant in the context of using laboratories in broadcasting learning. Collaboration between students, group

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discussions, and joint projects are important components of laboratory learning (Nurhayati, 2021). This theory emphasizes the importance of social interaction in supporting the learning process, where students can share knowledge, discuss ideas, and learn from each other. In the context of a broadcasting laboratory, this could include collaboration in developing scenarios, conducting media production, or developing distribution strategies, all of which enrich the student learning experience through diverse perspectives and ideas.

Furthermore, active learning theory is also relevant in understanding the laboratory approach in broadcasting learning. This theory emphasizes that students must be actively involved in the learning process, not just as passive listeners. In the laboratory context, students not only observe demonstrations or presentations, but also engage in hands-on practice that allows them to apply the concepts learned. Thus, the use of laboratories in broadcasting learning allows students to develop practical skills through hands-on practice that strengthens their theoretical understanding.

The application of these learning theories in the use of laboratories in broadcasting learning has a significant impact on the student learning experience. By engaging students in hands-on experiences, enabling collaboration, social interaction, and active learning, broadcasting laboratories can be an effective platform for honing practical skills, deepening theoretical understanding, and preparing students for the dynamic and ever-evolving communications industry.

In addition to these theories, it is also important to consider that the use of laboratories in broadcasting learning requires an integrated approach between theory and practice. The laboratory should not only be a place where theories are taught, but also an environment where theories are applied in real contexts (Wati et al., 2020). Thus, learning in the broadcasting laboratory not only provides theoretical understanding but also facilitates practical application of these theories in an environment similar to the real world of work.

In conclusion, the use of laboratories in broadcasting learning in communication science is based on various learning theories including constructivism, experiential learning, collaboration and social interaction, and active learning. With an integrated approach between theory and practice, broadcasting laboratories can be a very effective tool in preparing students for the ever-evolving communication industry that demands practical skills and deep theoretical understanding.

Education in the field of Communication Science has undergone a significant transformation along with the development of information and communication technology (ICT). In the midst of the increasingly rapid and complex flow of information, Communication Science students at Universitas Ahmad Dahlan(UAD) need comprehensive preparation to enter the ever-changing world of the media industry. In this regard, the audio-visual studio education laboratory has an

undeniable role in enriching students' learning experiences and preparing them to become competent and competitive broadcasting professionals.

Educational Laboratory

Educational Laboratory is defined as a place to conduct experiments,investigations, and so on related to physics, chemistry, and biology or other fields of science (Rashidovna, 2020). According to Magnus et al., (2020), a laboratory is a place to carry out work activities that can produce something. Where the place can be a closed room, room, open space and others (Hafiar & Mahameruaji, 2017). The laboratory is a facility and infrastructure in the form of equipment and physical facilities, which are used for production activities, distribution of learning activities and for providing assistance and assessment (Hafiar & Mahameruaji, 2017; Suyatinov, 2020).

Providing supporting equipment in practicing the theory obtained, so that the theory can be proven in practical activities. Or even with practice can find a new theory that is more capable. With practical activities, the laboratory can provide real experience and skill abilities for students, including the ability to use equipment, systems and practice management (Tao, 2022; Zheng, 2021). Providing an attitude of curiosity and increasing students' self-confidence in practicing scientific knowledge from the theories they have learned (Sjuchro et al., 2022). The Audio Visual Studio Laboratory in the Communication Science Study Program is one of the educational laboratories that functions as a means and infrastructure to support the improvement of quality learning experiences, student learning in this Audio Visual Studio laboratory (Broadcasting), is mainly used to support practical activities, especially the Production Management, Journalism, Camerawork, Directing, Journalism Program Production, Non-Journalism Program Production, etc. The learning experience in this Audio Visual Studio begins with theoretical material as initial preparation to provide an understanding of the facilities and infrastructure available in the audio visual studio as well as the preparation of production plans and implementation in the audio visual studio (Barasch, 2014; Etter, 2014).

Audio Visual Studio

An audio visual studio is a studio device which is a soundproof room consisting of a studio room and a master control room, where in the room there is hardware and software that supports it, including a master control room device, a sound system device, a lighting system device, a camera system device, so that with the space and system of devices prepared, the audio visual studio laboratory can provide new experiences in the field of broadcasting for students related to the management and management of production in the implementation of the desired audio visual production practicum (Petrinska & Ivanov, 2021; Rashidovna, 2020).

In the discourse of higher education, especially in the Communication Science department, competency development is no longer only focused on mastering theory, but also demands direct

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application of practice in real contexts. Technical competence, creativity, and analytical skills of students in producing quality media content are the main focus in broadcasting education. Therefore, optimizing the role of the audio-visual studio education laboratory is urgent in the context of improving the quality of education at UAD (Cooke, 2023). As an educational institution that prioritizes innovation and empowerment, UAD views the audio-visual studio education laboratory as one of the critical means to facilitate the development of student competencies. Through modern facilities and supported by qualified teaching staff, this laboratory is expected to be an inspiring place for students to explore various aspects of media production, from pre-production to post-production (Stenzel, 2021).

Optimizing the role of the audio visual studio education laboratory also includes the application of innovative and experience-based learning methods, so that students not only gain theoretical knowledge, but also practical skills that are relevant to industry demands. By combining theory and practice synergistically, UAD is committed to creating a stimulating learning environment and building student independence in undergoing the learning process (Nathan, 2023). It is hoped that through this optimization effort, Communication Science students at UAD can exceed the expectations of the media industry by producing highly competitive works. More than just graduates, UAD seeks to produce individuals who are capable of becoming leaders and innovators in the broadcasting industry, bringing positive change to society through the power of the media they produce. Thus, the importance of optimizing the role of the audio visual studio education laboratory in improving the broadcasting competence of Communication Science students at UAD is not only a necessity, but also a foundation for creating a strong and integrated next generation in the ever-growing media industry world.

Broadcasting Competence

Practical production activities in the audio visual studio education laboratory, should already have the idea that, production in the audio visual studio, is expected to have the view that the production of the program is like the production of a television program that will be broadcast. It should be noted that the broadcasting organization on a television station has the main task, namely planning, producing and broadcasting it. With this view, when carrying out production, it already has a commitment that the production activity must think and produce production in the form of a broadcast program that is worthy of sale (Grabe et al., 1999). This means that the production has and must be able to translate the desires, tastes and needs of the consumer audience. The challenge of selling production is so extraordinary. The creativity of production houses is also a consideration, coupled with the development of electronic technology, broadcasting organizations and communication technology that is currently developing rapidly. Increasing the competence of human resources should always be upgraded, the knowledge and skills of these broadcasters are

very important to produce qualified audio-visual program products (television programs) (Yusanto et al., 2021).

When carrying out production in the studio, whether live or not, there are at least 4 stages of production implementation, these four stages are: (1) Preproduction Planning, (2) Concept development, (3) Goal setting and production approach, (4) Script writing, (5) Production meeting with core members, (6) Set Up and Rehearsal. Set up: (1). Decoration Arrangement, (2) Lighting Arrangement, (3) Sound Arrangement, (4) Arrangement of video tape and film play back. Rehearsal: (1) Dray Rehearsal, (2) Camare blocking, (3) Run Through, (4) Dress rehearsal. Production, Live broadcast Broadcasts take place according to the broadcast time Recording: (1). Live on tape, (2) Recording in segment, (3) Single camare and single VTR, (4) Multiple cameras and multiple VTRs: (a) Post Production, (b) Stop studio activities, (b) Video editing, (c) Improve audio quality, (d) Improving the program with audience samples (Bachtiar, 2019).

From these four stages, it contains the meaning that each stage contains tasks and responsibilities that will be carried out by each person in charge, as conveyed by Alan Wurtzel and Stephen R Acker in their book Television Production (Acker, 1989; Oringel et al., 1989). That every time a television broadcast program is planned, it must go through these four stages so that all colleagues feel they have handarbeni/own and are jointly responsible for the final result later. The colleagues and the duties of each of these colleagues are as follows: (1) The producer is responsible for: Developing the concept of ideas Making a production cost plan Appointing a director Having a talk with the scriptwriter Agreeing to various suggestions from event directors, lighting designers, and decoration engineers. Lead and coordinate the entire production plan: Approve changes due to developments made by the setup and rehearsal section, During post-production, coordinate with broadcasting stations for on-air promotions, and approve the final results as specified.

Executive Producer: Assisting producers in all planning activities and recording all production implementation requirements. Overseeing the set up and rehearsal activities as a whole Pay attention to the set up and training and make necessary notes as free development material. Approve production development setup and rehearsal schedules Make a report of setup and rehearsal changes to the producer Supervise the production process During a live broadcast, if necessary, he can assist the program director, and if the broadcast is delayed, he can work with the director to ensure the implementation of the production Creating a post-production report Handing over production results to producers (Grafström & Windell, 2012).

Screenwriter, Together with the show director and producer develop the script, Revise the manuscript according to agreed needs (Mahon & Lapata, 2024). Assistant Event Director, Assisting the event director in preparing for production. During setup and rehearsal, it helps the director to

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train or direct the activities of the production executors. Making camera shots during studio practice During production assist the event director in filming. Ensure production is on schedule Make notes of each segment during production Assisting the event director when editing. Technical Director: Coordinate necessary technical facilities with event directors and producers. Responsible for engineering quality. Act as a switcher during practice Operating engineering equipment. Sound Designer: Setting up production/studio facilities with attention to the production approach to the event director and core team. Prepare the necessary vocal cords Leading audio and control room work crew Preparing audio and studio control Checking all mics and studio balance Doing studio mixing Operating the audio consul during post-production. Lighting Designer: Coordinate the placement of decorations with the event director and decoration engineer. Developing lighting design ideas: Preparing the lighting layout Ensuring the layout of light and focus of lighting equipment Ensure the balance of lighting arrangements according to their portions Operating the lighting from a dimmer, Decorative Engineer: Discuss the overall décor with the event director, producer, and lighting designer. Developing a set design and setting approach Supervise the construction of sets Oversee overall engineering activities of the sound system and set up of the studio set. Make changes if necessary during practice, Field Director: Responsible for all activities in the studio Act as event director during rehearsals and production Act as FD, both during rehearsals and during production Responsible for properties and costumes during rehearsals (Pogrebniak et al., 2021).

Cameraman: Preparing the camera for production execution Operating the camera during rehearsals and production (Biedny, 1992). Video technician: Prepare and set the camera to produce good images. Keeping the CCU sharpness unchanged, even if there are changes in variations and situations Helping the event director to obtain the necessary visual effects Coordinate with the lighting designer if there is light that interferes with camera operation. Editor: Preparing tape recordings both during rehearsals and during production, Operating VTR equipment for recording, Operating editing equipment, Make edits based on the editing list from the event director (Pecherskyi, 2023). Unite Manager: Assist the executive producer in coordinating all activities, Prepare transportation, food and accommodation for event performers and work colleagues, Record all series of production activities, Manage location permits, electricity and other facilities used, Responsible for paying honorariums for event presenters and work colleagues, especially freelancers. Create a production activity report: In addition to the stages and competencies above, other things that need to be understood by communication science students who focus on broadcasting, there are several competencies that must also be mastered (Gaston, 2002).

Here are some of them: Understanding Communication Theory: Students must have a strong understanding of communication theories, including theories directly related to broadcasting such

as mass media theory, media effects theory, and mass communication theory. Multimedia Production Skills: Students must be able to master multimedia production skills, including the use of video cameras, microphones, audio-visual equipment, as well as editing software for graphic design, animation and others to produce quality multimedia content. Broadcasting Skills: Students need to have good broadcasting skills, such as the ability to speak in front of a camera or microphone, conduct interviews, host events, and manage live and non-live broadcasts professionally. Script Writing and Content Selection: Students must be able to write interesting and informative scripts for various types of broadcast programs, as well as have the ability to select content that is relevant and interesting to viewers according to their desired needs.

Understanding Broadcasting Technology: Students need to understand the latest broadcasting technology, including broadcast production systems, broadcast equipment, and trends and developments in the broadcasting industry. Ethics and Social Responsibility: Students must have a good understanding of ethics and social responsibility in broadcasting, including fairness, diversity, and integrity in conveying information to the public. Creativity and Innovation: Students are expected to have high creativity in producing unique and interesting broadcasting content, and be able to innovate in the use of technology and broadcast formats (Miller, 2009). Project Management Skills: Students need to have good project management skills to plan, execute, and evaluate broadcast product projects efficiently and effectively. Team Collaboration and Communication: Students are expected to be able to work well in teams, collaborate with various parties related to broadcast production, and communicate effectively in a dynamic work environment. Understanding of Industry and Current Trends: Students need to understand the dynamics of the broadcasting industry, current trends in broadcasting media, and technological developments and social changes that affect the industry. By mastering the above competencies, Communication Science students can become competent broadcasting professionals and are ready to contribute to the ever-growing mass media industry (Guo & Ma, 2022).

Laboratory Management

An educational laboratory will be useful for the educational process if the educational laboratory is managed by paying attention to its management. Management is a process of utilizing resources effectively and efficiently so that the purpose of utilizing the laboratory can achieve the expected target, and with good management and administration will make the sustainability of the laboratory resource function (Ayad & Sbeiti, 2017). The function of management and administration of laboratory resources includes planning, organizing, giving commands, coordinating, procuring workers, providing guidance, reporting, budgeting and controlling and evaluating, in other words that laboratory management is at least management based on planning

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and management that is planned, structured and measurable. The three main aspects of laboratory management will be the main foundation in the movement and management that is effective.

Planned means that all activities in the educational laboratory should have a laboratory activity plan for the annual and semester periods. Structured means that the management of the laboratory involves various competent parties according to their positions starting from the Head of the study program, head of the laboratory, Lecturers in charge of practical courses, Educational laboratory administrators/laboratories, and practical assistants, in one organizational structure/laboratory management (Yang, 2021).

An effective educational laboratory management system involves a holistic approach that encompasses operational, administrative, and strategic aspects. Here are some principles and practices that can be applied in building an effective management system for educational laboratories: Strategic Planning: Identify the long-term and short-term goals of the educational laboratory. Formulate strategies to achieve these goals, including appropriate resource allocation and development of priority programs (Panhwar et al., 2020). Resource Management: Prioritize the use of resources to support laboratory activities that support educational goals. Monitor and manage laboratory equipment and facilities inventory efficiently. Allocate budget wisely to ensure the sustainability of laboratory operations. Personnel Development: Recruit, train and retain qualified and competent personnel. Provide regular training and professional development to laboratory staff to improve their skills and knowledge (Panhwar et al., 2020).

Occupational Safety and Health (K3): Implement strict occupational safety policies and procedures to protect the health and safety of laboratory staff and users. Ensure that laboratory equipment and facilities are well maintained and meet relevant safety standards. Project Management and Research: Support and facilitate research and development activities carried out in the laboratory. Manage research projects well, including planning, implementation, and reporting results. Administration and Reporting: Implement an efficient administration system to track laboratory facility usage, equipment inventory, and financial administration. Conduct regular reporting on laboratory activities, goal achievement, and project updates to relevant stakeholders. Use of Information Technology: Using information technology and database management systems to manage laboratory data and information efficiently. Implementing the latest technology solutions to improve productivity and effectiveness of laboratory operations. (8) Continuous Evaluation and Improvement: Conduct periodic evaluations of laboratory performance to identify areas for improvement. Develop continuous improvement action plans based on evaluation results and feedback from laboratory users (Bachtiar, 2019).

By implementing an effective management system based on the principles above, educational laboratories can become a productive, efficient, and innovative environment to support educational, research, and development/community service activities of educational institutions.

3. Method

The research method in this scientific paper uses a qualitative research method. According to Setiawan & Anggito (2018), qualitative methodology is the collection of data in a natural setting with the intention of interpreting the phenomena that occur. Where the researcher is the key instrument, sampling of data sources is carried out purposively and snowball, the collection technique with triangulation (combination) namely technique, source and data. Data analysis is inductive/qualitative, and the results of qualitative research emphasize meaning more than generalization (Trisnawati et al., 2020). Data Collection in Natural Settings this research will involve collecting data from natural situations in audio visual studio laboratories and real educational environments, to holistically understand the context and dynamics involved in optimizing the role of these laboratories. Role of the Researcher as a Key Instrument: The researcher will act as the main instrument in collecting, recording, and interpreting data. The researcher's perception, interpretation, and understanding will be key factors in the research process (Creswell, 2018).

Purposive and Snowball Data Source Sampling: Data sampling will be done intentionally (purposively) by selecting respondents who have knowledge and experience relevant to the research topic. In addition, the snowball technique can also be used to identify additional respondents who can provide deeper insights. Use of Triangulation Data Collection Techniques: This research will use a combination of data collection techniques, such as observation,mand document analysis, to obtain diverse perspectives and complement information from various sources (Sugiyono & Lestari, 2021).

Inductive/Qualitative Data Analysis: The collected data will be analyzed inductively, where findings and patterns will emerge from the data naturally. This analysis will emphasize understanding the underlying meaning of the observed phenomena (Lindlof & Taylor, 2011). The Importance of Meaning Over Generalization: This research will place more emphasis on a deep understanding of the meaning and context of the phenomena being studied, rather than seeking generalizations or broad conclusions that apply widely (Schreier et al., 2019). By considering these characteristics, this qualitative research will provide an in-depth and contextual understanding of how the audio-visual studio education laboratory can be optimized to improve the broadcasting competence of Communication Science students at Universitas Ahmad Dahlan(Fadli, 2021). To find out whether the competency has been achieved, a qualitative approach was carried out by

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observing the students who use the UAD Communication Science Study Program laboratory before, during and after the implementation of the practicum in the laboratory.

The data sources used in writing this scientific paper are from informants interviewed, observations and also some related literature from books, journals, and documents relevant to the research conducted. In this case, the author in collecting data uses steps to obtain data and related sources that can be trusted to dig up information, using several information mining techniques to meet all the data needed, including participation, observation, and literature studies.

4. Results and Discussion

Result

Efforts to maximize the utilization of the Audiovisual Studio educational laboratory cannot be separated from the existence of well-organized laboratory management. Organized management will be reflected in the management activity program, where in its management it reflects the utilization that is biased with clear target objectives of the curriculum of the communication science study program at Ahmad Dahlan University, Yogyakarta.

Fig. 1. Supervising the Talk Show
Source: Photo at Universitas Ahmad Dahlan Communication Science studio (2024)

The image depicts the optimization activities of educational laboratories, especially audio-visual studios, which are used to improve student competencies in the field of broadcasting at Ahmad Dahlan University. This activity shows students or laboratory operators managing the broadcast content production process using modern studio equipment. Switcher: This equipment is used to adjust and switch video displays in real-time between multiple sources, such as different cameras or recorded video. Switchers play a vital role in live broadcasting production, allowing operators to select the best camera angles, insert graphics, or dynamically mix visuals. Students are trained to understand the technical and artistic functions of switchers in presenting engaging and professional content. Monitor Screen: The image shows two screens used as broadcast supervisors. These screens allow operators and students to monitor every camera angle (preview) and the final

broadcast result (program output). The function of these monitors is to ensure visual quality, synchronization, and management of broadcast elements in accordance with the production plan.

This process aims to provide students with practical experience in carrying out the role of a professional broadcast production team. They learn the technicalities of operating studio equipment, making quick decisions, and managing visual/audio content during production. This aims to improve their technical skills and readiness to face the world of work in the media industry.

Fig. 2. Supervising the Talk Show

Source: Photo at Univeristas Ahmad Dahlan Communication Science studio (2024)

The image shows an ongoing activity in the audio-visual studio of the Universitas Ahmad Dahlan(UAD) laboratory, namely a talk show activity. This activity is part of optimizing the role of the educational laboratory to improve student competence in the field of broadcasting. The following is an analysis of the components of the activity. Event Set: This talk show is held in a studio equipped with properties such as chairs, tables, and background decorations that give a professional impression. The application of green screen is seen in the area below the stage, allowing digital editing to add certain visual elements in the background. Student Participation: Students serve in a variety of roles, such as host, resource person, camera operator, audio technician, and broadcast manager. The role of host is played by someone who guides the discussion, while the resource persons provide insights and live performances (for example, one of the resource persons is seen playing the guitar).

Broadcasting Equipment: The camera is used to record multiple angles of the talk show, with a small monitor to ensure proper framing. Studio microphones and lighting are designed to produce good sound and image quality, supporting a realistic broadcast experience. Activity Objectives: Train students in managing and producing a broadcast program, both from technical and non-technical aspects. Provides real-world experience relevant to the media industry, including production team coordination, studio equipment mastery, and communication skills. This activity reflects UAD's efforts in preparing communication science students to face the challenges of the professional world, especially in the ever-growing broadcasting industry.

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In the observation and experience of the management of the communication science study program laboratory so far, especially those related to the management of the audio visual studio education laboratory, in practice it is still not optimal. The less than optimal management is more due to the less than optimal planning for the use of the audio visual studio education laboratory. Where in the implementation of practical activities it is still based on readiness and only based on the wishes of the lecturer in charge of the practical course and has not been based on measurable targets/goals in the curriculum. So what happens, often the practical activities between one lecturer and another in the same subject there are differences in practical activities, resulting in the final results of learning activities in the same practical course being different between students in different classes from different lecturers.

In addition, on the broader side, it was also found that there was no agreement and mature planning activities and policies from the study program and Laboratory for the implementation of the curriculum, and there were even practical courses that did not carry out practical activities or vice versa, there were courses that were not practical courses but had practical activities. With this reality, it is necessary for the curriculum in the Communication Science Study Program to map practical courses, ensure which courses require practical work, as well as ensure the output, or output that is desired to be the target of the results of practical activities. This output or output has not been standardized in the Communication Science Study Program curriculum, which ultimately results in a variety of practical course outputs, including the use of the Audio Visual Studio Education Laboratory whose purpose is not yet clear to support practical work for which courses, from the courses that are already listed in the curriculum communication science study program.

Fig. 3. Behind the scenes of the show's production
Source: Photo at Universitas Ahmad Dahlan Communication Science studio (2024)

This image depicts activities in an audio-visual studio education laboratory. In the context of optimizing the role of the audio-visual studio education laboratory to improve the broadcasting

competence of Communication Science students at Ahmad Dahlan University, several students are seen working behind the scenes to manage the running of a production or broadcast.

Students work together in teams: They have different roles like audio operators, video operators and other technicians. Broadcasting support equipment: You can see the monitors, mixers, and other devices used to manage the event. There are also supporting accessories such as batteries and other additional devices on the table. Collaboration and technical control: Students are monitoring the screen, operating equipment, and recording the production process. This reflects a real broadcasting work simulation. Serious and focused: The students' expressions showed their seriousness in managing the work behind the scenes to ensure the smooth running of the event. This activity is important to provide students with practical experience, introduce them to real work situations in the broadcasting world, and improve their technical skills in operating an audio-visual studio. If the practicum courses and outputs to be achieved have been confirmed, of course this will make it easier for the Communication Science Study Program laboratory managers to plan and prepare equipment and space, as well as human resources, both Education laboratory administrators/laboratories and practicum assistants, to prepare, supervise and ensure that practicum activities can run according to expectations. Thus, the practicum activity schedule can be prepared earlier. And with this practicum schedule, it will make it easier to condition the implementation of the practicum that will be carried out.

Thus, there is certainty of the practical subjects and outputs that will be produced in each practical subject activity. Making laboratory management can be implemented in a planned, structured and measurable corridor.

Discussion

Optimization of Educational Laboratories from the Perspective of Learning Theory

This study is based on several key learning theories, including constructivism, experiential learning, and collaborative learning. Constructivism theory emphasizes that students actively construct knowledge through hands-on experience and reflection. This is particularly relevant to the use of audio-visual studio educational laboratories that allow students to simulate real-world media production processes. For example, when students are tasked with designing, producing, and evaluating a television program, they not only learn broadcasting theory but also gain hands-on experience in managing real-world challenges such as time management, team coordination, and technology mastery. Experiential learning theory emphasizes the importance of learning through hands-on experiences that reflect real-world situations (Morris, 2020). In this laboratory context, students are not only taught how to use technological equipment such as cameras, audio mixers, and lighting, but are also trained to handle practical challenges such as adjusting to changes in production schedules or technical breakdowns that may occur. This experience strengthens

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students' skills in understanding the dynamics of the broadcasting industry, while building critical technical and management competencies.

The Role of the Laboratory as a Broadcasting Industry Simulation

In relation to the research findings, the audio visual studio laboratory at Universitas Ahmad Dahlanhas great potential to become a center for simulation of the broadcasting industry that is close to reality. However, the findings show that optimizing the role of this laboratory still faces several obstacles, including technological limitations, lack of consistent curriculum standards, and minimal collaboration with the broadcasting industry. These findings underline the importance of integrating theory and practice, as expressed in the theory of practice-based learning (Wati et al., 2020). The ideal laboratory is a place where students not only understand the theory of media content production but also apply it in real life. For example, one of the key stages in media production is the pre-production process, including concept development, script writing, and technical planning. Through realistic simulations, students can hone their skills in managing these stages with direct support from lecturers or experienced laboratory staff. This not only improves technical skills but also hones critical thinking and problem-solving skills.

Qualitative Research Methods and Their Contribution to Contextual Understanding

The use of qualitative methods in this study provides an in-depth understanding of how laboratories can be optimized for broadcasting education. Data collection techniques such as in-depth interviews, direct observation, and document analysis provide a holistic picture of the condition of the audio visual studio laboratory at UAD. This method allows researchers to identify specific obstacles, such as lack of coordination between lecturers and laboratory managers, and differences in approaches to teaching practicums. For example, interviews with students revealed that their learning experiences often depended on individual lecturers' initiatives, rather than on standards set by the curriculum. This led to inconsistencies in the competencies produced. Thus, qualitative methods not only help identify problems but also provide a strong basis for recommending context-based solutions.

Relevance to Broadcasting Industry Needs

In this discussion, it is important to relate the research findings to the demands of the broadcasting industry. The industry continues to evolve with new technologies, such as the use of 4K cameras, drones, and advanced editing software. Unfortunately, the research findings show that most of the laboratory equipment at UAD does not fully reflect the needs of current technology. This can reduce students' readiness to compete in the job market. On the other hand, the research results show that developing an outcome-based curriculum can be an effective solution. This curriculum will ensure that students not only learn theory but also have the opportunity to produce work that meets industry standards. For example, students can be directed to produce a video portfolio or

television program as part of their practicum evaluation. This approach not only increases the relevance of learning but also helps students build professional credibility.

Criticism of Laboratory Management Practices

The results of the study also indicate that the management of the audio visual studio education laboratory at UAD is not fully structured. Practical planning is often carried out ad hoc without considering long-term needs or integration with the vision of the study program. This is contrary to the principles of effective laboratory management, which should include strategic planning, efficient resource allocation, and periodic evaluation (Hafiar & Mahameruaji, 2017). To overcome these challenges, a more integrated approach to laboratory management is needed. For example, training programs for laboratory personnel, increased collaboration with industry, and upgrading laboratory facilities can be significant first steps. By implementing a performance-based management system, laboratory managers can ensure that each practicum activity produces results that are in accordance with curriculum needs and industry expectations.

5. Conclusion

To optimize and ensure the management of practical activities in the Audio Visual Studio Education Laboratory in the Communication Science study program at Ahmad Dahlan University, Yogyakarta, it is necessary: (1) It is necessary to map the practical courses in the curriculum of the Communication Science study program at Ahmad Dahlan University, Yogyakarta to ensure which courses require laboratory support for the implementation of practicals and which courses do not require laboratory support for practicals. (2) From the practical subjects need to ensure the output or outcome that is the result of the practical activities, and the results of this activity are measurable outputs or outcomes. Thus, it is hoped that all lecturers who teach the same practical subjects will also have the same output. (3) Makes it easier for laboratory managers to plan, prepare and carry out practical activities, in accordance with a planned, structured and measurable practical activity schedule. (4) Laboratory managers will be able to map the use of equipment, space, and even plan proposed improvements and procurement of equipment to meet the needs of scheduled student practicums. (5) With planned practical activities, it is possible to produce more optimal and more satisfying output.

There are several suggestions for further research that can be explored, namely related to: (1) Inter-Institutional Comparative Study: Further research can conduct a comparative study of audiovisual studio laboratory management in various universities. This will provide a broader picture of best practices that can be applied to optimize educational laboratories. Evaluation of the Effectiveness of Practice-Based Curriculum: Research can be focused on evaluating the implementation of outcome-based curriculum in broadcasting learning. This can include analyzing the impact of curriculum changes on student competencies, as well as their relevance to industry

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needs. (3) Laboratory Management Effectiveness: Further studies can be focused on the analysis of planned, structured, and measurable laboratory management. This research can include the development of a more efficient and performance-based laboratory management model. (4) Impact of Laboratory Use on Student Careers: Future research could examine the direct impact of laboratory use on broadcasting students' employability and career success. This could include analyzing how laboratory experiences support graduates' adaptation to the media industry.

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