

Research Article

E-Portfolio and E-Catalog Integration System as Learning Media and Promotion of Broadcasting Study Program

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ORCIDSyahyuni Srimayasandy: <https://orcid.org/0009-0000-7829-5513>**Abstract.**

This article discusses the design of a web-based portfolio and catalog integration system as a medium for learning and promoting the work of Polymedia Broadcasting Study Program students. The systems entitled 'Nakula' and 'Sadewa' are designed in an integrated manner to meet the needs of the distribution and promotion process of student work. There are three main needs in managing audio-visual works in the broadcasting study program: (1) The need for a work archive system. (2) Open access to works for students as a learning medium. (3) Showcase student work so that it can be accessed on a limited basis by stakeholders or sponsors. These findings can complement the findings of previous studies which have been able to use the E-portfolio system as a promotional medium and the E-Catalog as a student learning medium. These two systems are then combined into an integrated system that can answer the three main needs for the distribution and archiving of works in the broadcasting study program.

The method used in this research is the development research method (DRM). This method tries to map the problem at a locus and find a solution based on the problem found. Apart from that DRM also prioritizes the involvement of each actor in these activities so that it can maximize the role of each actor. The findings in this article are a platform called Nakula-Sadewa, which has features including a showcase of student assignments that can be accessed in full version for polymedia students so that it can be maximized as a learning medium, limited access by sponsors or external parties, work archive facilities, and writing practice for students.

Keywords: Nakula-Sadewa, promotion, learning, media, platform

1. Introduction

Over-the-top services and video-based social media are increasingly growing. Entertainment choices for the community are increasingly diverse. Audiovisual program production is carried out not only at the large production house level but also on a small scale, including in the world of education. Work produced on campus as part of student and lecturer research often has economic value. However, unfortunately, there

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are many limitations to the distribution of student work on campus. One of them is the unavailability of an audio-visual showcase that is flexible and has open access for all stakeholders. Even though currently access to information is increasingly widespread. People can access audio-visual shows easily via the internet. Thus, by utilizing sophisticated technology, students' work can be disseminated. This dissemination must be regulated so that students still receive copyright protection, but the work can be used for educational purposes.

The growth in the number of works and the number of programs produced requires not only exhibition space but also good archive space so that student work in the form of books and videos can be stored properly. This storage should not hinder stakeholder access to production design videos and books. Even though it is stored as part of the development of science, this work must continue to be used for educational purposes. Issues of plagiarism and copyright infringement occur very often, therefore, although we need an archive platform that can be widely used, it can also protect work creators from plagiarism issues.

A beginner video maker needs references from previous programs. Just like an article that requires state-of-arts, a program maker must know the positioning of his program compared to its predecessor programs. Therefore, students need to be able to access previous works to look for differences and similarities with previous works. This is also to foster diversity in work in an educational institution. In 2022, an analysis was carried out Thematic Element (theme element) of the student's final project work. As a result, Student's Final Project can still be increased to more than 2500 types. [2]In 2023, a digital-based categorization system for final projects will be built to open access to this categorization information for broadcasting students and lecturers. It is hoped that this open access will spur other students to create works that are different and more innovative than previous works. Innovative works will strengthen the variants of works that can be displayed by Polimedia students.

As an important part of education, students will be required to be able to argue and think critically. Thus, student training facilities are needed to write criticism as part of fostering critical thinking for students. This exercise must be consistent and done continuously. Audio-visual works that have been previously created can spark discussion between students who create works and other students as spectators.

This platform is also designed to meet students' needs for accessing reference videos and writing exercises. E-Portfolio and E-Catalogue can answer this need. E-Portfolio is a showcase platform for students to showcase their programs. E-Catalogue can function as a means of selling videos and program designs created by students. showcase as

done before. This is different from an E-portfolio which has a single function but must be integrated so that it can answer student needs. E-Portfolio can be combined with E-Catalogue. E-Catalogue is believed to have a positive impact on the promotion of a product.

In previous research, it was known that digital portfolios can be used as an effective learning and promotional medium. However, most of these platforms have a single function as a showcase of student work or learning media for ongoing lessons in class. This article will discuss work archiving methods for educational institutions which have additional functions as a showcase and promotional media for student work through a digital platform. The educational institution that is the locus of this research is the Broadcasting Study Program, Creative Media State Polytechnic or Polimedia. The Creative Media State Polytechnic is considered suitable for developing this platform because this institution has various study programs with audio-visual output.

2. Material and Methods

2.1. Methods

The method in this research is the developmental research method. The developmental research method goes through three stages, problem definition, literature review, and research procedures. To define the problem, the researcher focuses on the problem itself. Three important aspects are focused on in this stage, design, development, and evaluation processes. The stages of defining problems must be measurable, starting from the stages of design, development, and evaluation process. To define the problem, several stages are carried out, namely Focus Group Discussion (FGD) with prospective active participants, both students, spectators, and sponsors. The results of the FGD become the basis for the need for managing video works in the broadcasting study program. There are three main needs in managing audio-visual works in the broadcasting study program: (1) The need for a work archive system; (2) Open access to works for students as a learning medium; (3) Showcase student work so that it can be accessed on a limited basis by stakeholders or sponsors.

After defining the problem the process of framing the problem must be carried out. This process should be able to describe the type of process that will be used to explain the objectives of the research project. Project perancangan E-Catalog dan E-Portofolio ini mengakomodir tiga kebutuhan dari prodi penyiaran sesuai dengan hasil FGD. The next stage is to define the limitations of this study. Each method has limitations in

explaining a problem, so limitations are needed that limit the scope of this research. Limitasi pada penelitian ini adalah hasil prototipe platform digital yang menjawab kebutuhan terhadap pengarsipan, akses karya sebagai media pembelajaran dan showcase untuk stakeholder eksternal atau sponsor. To get a conceptual foundation, a literature review was carried out. The literature review includes Procedural appropriate models that have been performed in the past; Research in the past that has similar characteristics to this study; factors affecting the construction of this system; and the effects of building similar systems in the past. The final stage of the developmental research method is to make research procedures. Research procedures must describe participants, Research Design, Collecting methods, and data analysis. Participants in this research include Students, Spectators, Sponsors, and Admins.

2.2. References

Researchers will design a page-based application that accommodates various needs of Stakeholders to access the work of polymedia students, namely: the Nakula System and Sadewa System. The Nakula system is a storage system and exhibition room for student production works and designs that can be accessed internally by Polimedia. This platform will carry out the function of answering the internal needs of Polimedia, namely the development of education in broadcasting study programs, such as reference sources, discussion of works, and training students' abilities in writing critical analyses of television broadcast programs. This will lead to a better discussion climate regarding broadcast programs in broadcasting study programs. In research conducted by Fernanando, et al, it is known that this system can help students get references to previous works. [1]

The Nakula platform is designed to support the Sadewa System in terms of content designed for external parties. The Sadewa system is a system that functions as an E-catalog that contains teasers of student works. Sadewa is designed for promotion, publication, and opening opportunities for students to offer their work to the industry. This will increase the opportunity for student work to be absorbed into the industry and used by the wider community. This increase will be one of the points in the accreditation system of broadcasting study programs.

E-Catalog is believed to have a positive impact on the promotion of a product. Previously, E-Katalog has been able to help MSMEs in Garut to increase the promotion of their products. Web-based applications make it easier for business actors to present

information and make it easier for people to find products. Not only that, E-catalogs can show locations and selected items. [3]

The e-Portfolio platform is the result of the development of information and communication technology, especially in the field of education so that it can be used to achieve targeted learning objectives. The e-Portfolio platform is specifically used as a place to collect works so that they can be more easily accessed anytime, anywhere, and with any device. The e-portfolio platform in the field of education is often used as an alternative assessment and assessment instrument, especially when teaching and learning activities are carried out online. [4] [5]

E-Portfolio supports students' needs for various things, including documentation and accessibility. Student works uploaded on the e-Portfolio are expected to be accessible not only by students, but by lecturers, other students, and even by industry users. There are several e-portfolio-based functions Web [5]:

1. Compact, means that it does not require a large storage area because the document format is digital. Thus, archiving also becomes neat and accessible with keywords.
2. Can be accessed at any time, meaning that money work documents stored in the e-Portfolio can be accessed at any time for a long time. This also helps students or alumni to find the work that has been made.
3. Flexible, meaning that digital works in the e-Portfolio platform can be monitored by teaching staff. Thus, the use of an e-portfolio is not limited only to the storage and valuation of works.

E-Catalog (electronic catalog) is an important element in the book retrieval system that contains detailed information from books systematically and has been computerized. Catalogue comes from Latin [6] Catalogues which means goods or objects that are arranged for a specific purpose. An e-catalog is an electronic system that contains lists, types, technical specifications, and prices of certain goods/services. Electronic catalogs work together with catalogs in general and contain detailed information about a book or work. E-catalog has been developed in various institutions, including as a library online catalog platform, cloth-type learning media in the Family Welfare Vocational Education Study Program, and promotional facilities. The catalog in this study will be used as a means of communicating with the industry related to the products that have been produced by the broadcasting study program. [7][8][9]

The following are the results of similar studies that have been conducted by previous researchers and will be used as a reference in this study:

TABLE 1: Supporting Research.

| Research Title | Topics Covered | Settlement Problem | Referral Benefits |
|---|--|---|---|
| Increasing the Diversity of Television Program Final Projects with Thematic Analysis Methods in the Polimedia Broadcasting Study Program[1] | The predecessor research of this project was presented the method of categorization of works with theme elements and the potential to increase diversity from the final project of the broadcasting study program. | The problem solved in this study is how to categorize diverse television programs in order to grow | As a precursor research on categorization methods that can support the diversity of works so that it can be used as a categorization method in this system. |
| Design and Build an e-Portfolio Application of Unsera Student Work Using the Scrum Method [2] | The use of the Scrum Method as a means of building a portfolio of student work that is not writing-based. | This method solves the problem of managing and collecting student works outside of written works. This method is useful so that student work can be easily accessed by the academic community and the general public. | This design is a reference work for this project to manage student work for the learning needs of Polimedia broadcasting students. |
| The Effectiveness of E-Portfolio Assisted by Edmodo on Student Learning Activity and Creativity in Graphic Design Courses [3] | Measurement of learning activity by utilizing Edmodo as a means of learning between students through E-Portfolio | This research proves that peer review between students through E-Portfolio has an impact on the effectiveness of learning in the classroom. | This design is the basis that <i>peer review</i> can help students in learning, especially as a reference for making works. |
| STIMIK Triguna Dharma Promotion E-Catalog Design with User Centered Design Method to Improve Web and Mobile-based Promotion Quality Services[4] | The use of E-Catalog as a means of promoting study programs. | This research proves that E-Catalog can also be used as a promotional medium. | The basis for this research is to create an E-Catalog system that functions as a means of promoting products created by students and universities in general. |

In previous findings, most of them used e-catalogs and e-portfolios separately. The e-catalog functions as a promotional tool, while the e-portfolio functions as a student learning medium. Both media have proven effective in increasing promotion and students' ability to learn. Thus, e-portfolios and e-catalogs can be a solution to the Broadcasting Study Program's need for a platform that can be a learning medium, as well as a promotional medium for the work produced by students.

In 2022, research will be carried out regarding the mapping of program formats from broadcasting study programs through thematic analysis [1]. As a result, there are groups of programs that will be used as categorization in the learning and promotion platform created. The platform will be structured according to thematic analysis. Thematic analysis separates programs into two main parts, namely entertainment programs and information programs. Entertainment programs are imaginative, while information programs are factual or based on reality. In addition, by thematic analysis, categorization will be carried out based on program style, character, and plot.

3. Result and Discussion

By the stages of the developmental research method, the results of each stage of research will be summarized, which are as follows:

3.1. Problems of Archiving and Distribution of Audio Visual Works in the Polimedia Broadcasting Study Program

In the early stages of this research, a focus group discussion process was carried out to see problems related to archiving student audio-visual works. The results of this focus group discussion include a. The work of TV/ radio/ film programs assignments of broadcasting students does not have an archive system and is at risk of being lost; b. The work of TV/radio/film television programs is not widely accessible, distribution relies on screening activities held annually so that students find it difficult to learn from works made before; c. There is potential to market the audio-visual work of broadcasting students to industry; d. An integrated system is needed that can function as a student work archiving system, learning media, and student final project distribution system.

3.2. Nakula-Sadewa System as a Solution to the Problem of Archiving, Learning Media, and Promotion of Student Works in the Polimedia Broadcasting Study Program

The Nakula-Sadewa system is a web-based application system that will meet the needs of Polimedia students, especially broadcasting study programs in archiving, learning media, and promotion. The filing system of a work is very important to create. The filing system will make it easier to organize the work, the classification process, and identify the customers of the work. Therefore, a filing system is needed so that work is not lost,

can be searched more easily, and stakeholders can identify people who access the work. [11]

Polimedia broadcasting study program as a study program that focuses on the production of audio and audio-visual products requires references from various sources. These sources include work created by students in the previous year. The references needed by students are not only in the form of text literature but also in the form of audiovisuals to facilitate the learning process. Discussions about sound and images will be easier to do when students can see and hear what is written in the text. This sensory experience is important for students to be able to produce similar work. Students can also innovate from previously made works. Therefore, open access to works will help students in audio-visual learning.

Currently, access to information is getting wider. From 2022 to 2023, Indonesia's broadcasting system will move from analog broadcasting to digital broadcasting. The move from analog broadcasting systems to digital broadcasting systems causes content needs to increase. Through the digital broadcasting system, it can increase radio and television broadcasting channels. This need is also coupled with the opening of many over-the-top services in Indonesia. To respond to the needs of content in Indonesia and as a form of project-based learning, a bridge is needed that can connect students with industry. Website-based applications based on websites can overcome these needs because they can be widely accessed.

3.3. Development of the Nakula-Sadewa System

Nakula and Sadewa website-based applications are built through several stages, namely: determining participants or users of the application, determining business processes, website development, system testing, and widespread use.



Figure 1: Stages of the Development of the Nakula-Sadewa System.

In determining participants, researchers record parties who are stakeholders. The data collection resulted in four major groups related to the nakula-sadewa system. The four groups are students as creators, a curator team consisting of a team of lecturers managing the Nakula-Sadewa system, students as spectators, and industry partners called sponsors.

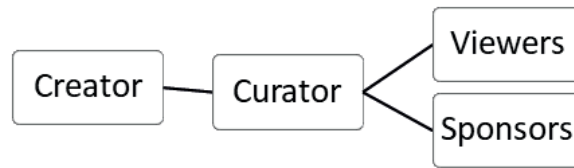


Figure 2: User/Participant

The business process in Nakula-Sadewa can be explained through the operational procedures of creators, curators, spectators, and sponsors. All accounts require registration for account creation. Users must choose each role, creator, curator, audience, and sponsor.

Form Pembuatan Akun

[Kembali](#)

Pembuatan akun mengisi form pengajuan sebagai berikut:

| | | |
|----------------------------|---|---|
| Peran* (Pilihan maks 1) | : | <ul style="list-style-type: none"> • Kurator • Kreator • Penonton • Sponsor |
| Nama* | : | |
| Jenis Nomor Identitas | : | <ul style="list-style-type: none"> • NIM • NIDN • NIP • NIK |
| NIM/NIDN/NIP/NIK* | : | |
| Prodi | : | |
| No. WhatsApp* | : | |
| Email* | : | |

*) Mandatori

Figure 3: User Registration Design.

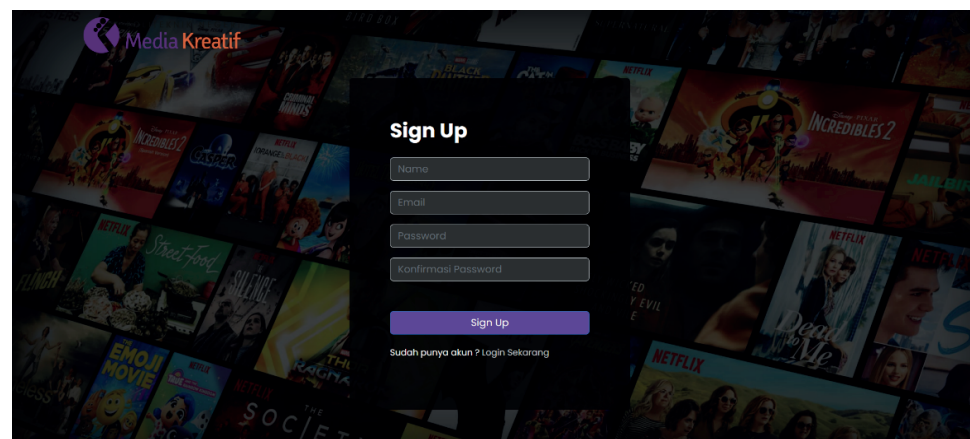


Figure 4: User Registration UI Display.

The UI of Nakula Sadewa opens with a wide cover page. This cover page will be used as a promotional medium for works that have a large number of views and information highlights.



Figure 5: UI Design: Home Page.

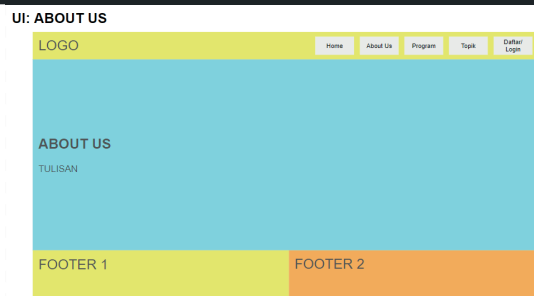
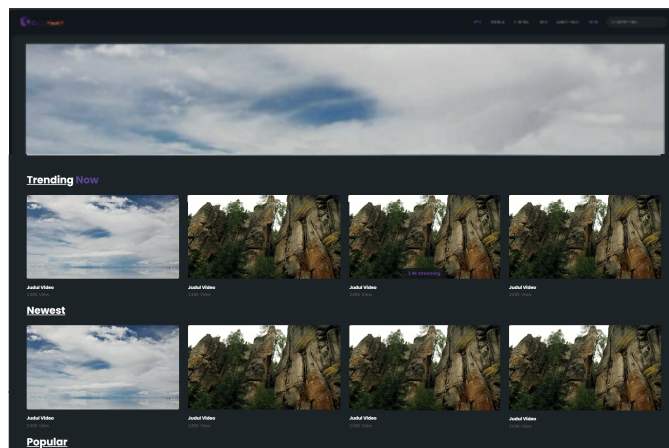


Figure 6: UI Display: Nakula-Sadewa Home Page.

The nakula-sadewa system has about us features. This feature serves to describe the services provided by the Nakula-Sadewa system.

There are form fields in Nakula-Sadewa, one of which is the work submission form. The submission form is the form used by the Curator to register his work. Curators will be asked to fill in production crew data and upload full works, teasers, and posters.

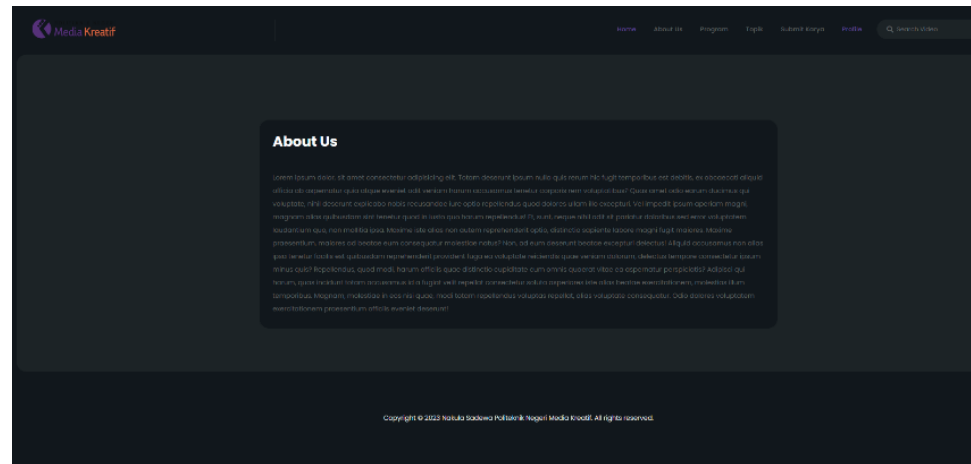


Figure 7: UI Design: About Us.

This form will be a database for curators to curate the completeness of works, program formats, target audience classification, and other preparation systems needed.

As an effort to market student products, the process of submitting works will be equipped with a security system where only internal polymedia parties can access the work in full access. External parties will have limited access to the work. Access to works for parties outside the Polimedia includes access to teasers and personal data of the creator of the work.

3.4. Features of the Nakula-Sadewa System

The Nakula-sadewa system to support tasks as an archive system, learning media, and promotion of student works has various features, namely:

1. The system is used with the registration system so that there is a filter on the interaction in the system.
2. The system consists of creators who function to submit works; Curators curate the completeness of forms, duration, and specifications of works, monitor the number of works, and manage the archive system; The audience is broadcasting students who can watch works for free; Sponsors are industry partners who can buy copyrights/broadcast rights from student works. Each *role* will have a different user interface and user experience (UI/UX). The features presented also follow each role.
3. The system is filtered in two stages, namely with the completeness of the form and the verification system from the curator. Only eligible users are allowed to use this system.

4. The Nakula-Sadewa system is designed as a learning medium. Viewers (students) can watch works with full access, but cannot download works. At the next stage, education will be carried out for students not to record works with any media.
5. The Nakula-Sadewa system as a learning medium applies a ticketing system obtained by writing reviews of the works watched. Thus, students can do review writing exercises.
6. Sponsors can watch works with limited access. Access is given in the form of watching program teasers and viewing work data.
7. Sponsors can schedule meetings with creators through the Nakula-Sadewa system

4. Conclusion

Nakula-Sadewa is an integrated blueprint system between e-catalog and learning media for students. This system has been able to integrate the needs of the Polymedia Broadcasting study program for both external and internal stakeholders. This system can become an exhibition place for students and a bridge between students and industry. The use of website-based applications makes Nakula-Sadewa widely accessible. Nakula Sadewa is equipped with various features, among others, video playback, both full access and limited access, scheduling for meetings between program makers and industry, review writing exercises, and special security systems so that works can be accessed according to established rules.

An integrated system like this can accommodate the needs of students and society in general. Student work is not only a matter of academic discussion but can also be channeled into entertainment options for the community. The scope of this research is to create a blueprint catalog system that is integrated with learning media. The effectiveness of using this system has not been answered. Therefore, we invite researchers to answer the effectiveness of similar systems. We also expect input regarding intellectual property protection systems that can protect these systems and works to be traded.

Nakula-Sadewa is a platform that has been able to combine e-catalog and media learning functions which have not been carried out in previous research. Through this platform, students can use it as a promotional medium for audio-visual works which are equipped with a program creation guidebook. Students can also watch works and provide comments regarding the program. This comment is an exercise in writing, critical thinking, and argumentation for students. For potential sponsors, this platform can be used as a communication bridge with program makers.

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