



## **IMPLEMENTATION OF OPEN BROADCASTER SOFTWARE STUDIO IN MUSIC PERFORMANCE MANAGEMENT THROUGH LIVE STREAMING**

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### **Abstract**

*This study aims to compile the management of performing arts in musical performances through live streaming at the Music Education Study Program, State University of Medan and to develop methods for implementing Open Broadcaster Software Studio in musical performances through live streaming in the Music Education Study Program. This study uses a qualitative approach by following the opinions of Miles and Huberman (1984), namely (1) data collection (data collection), which is carried out through interviews, observations, document digests, recording and recording; (2) data reduction, which is done by summarizing, selecting the main things, focusing on the important things, looking for themes and patterns and discarding unnecessary ones; (3) data display, which is done by showing data and presenting it in the form of narrative text and charts; (4) conclusion drawing/verification conducted by drawing conclusions and verifying the research findings. The results of the study indicate that the management of performing arts in Karya Musik performances through Live Streaming starts from the planning, organizing, actualizing, and controlling stages. A show can be managed well if it has a good management system too. By having a good management system, the performance of the musical works will be able to achieve greater goals, targets, or outputs. Planning begins with preparing Human Resources and preparing hardware and software. The organization consists of the Program Director as the person in charge, Production manager who oversees the Floor Director and Talent/musicians, Multimedia manager who oversees IT operators, Software and Hardware Operators, and Camera Man, and Stage Manager who oversees Sound Operators and Lighting Operators. The implementation of Musical Performances through Live Streaming has been carried out 3 times. They are the Nusantara Tetabuhan Music Show, the Langkat Tamiang Rentak Show, and also the Orchestra Music Show. the methods and steps taken in implementing the OBS Studio software as a medium for the virtual musical performance process include input and output methods and using OBS Studio Software. The Method of Performing Live Streaming Music Works using OBS Studio Software begins with determining the settings and design layout, selecting Capture Card, Copy Code Live Streaming on Youtube, Paste Code Live Streaming to the OBS system, and Start Streaming.*

**Keywords:** OBS Studio, Performance Management, Musical Works, Live Streaming

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## **INTRODUCTION**

Telecommunications and Video Conferences have become very popular in the last 1 year due to social distancing throughout 2020 to 2021. Throughout that year, humans interacted socially and created creativity through networks through various live streaming platform applications such as youtube, Instagram, Facebook, and applications that are specifically designed for the continuity of existence in the work, not least in the field of music. Concerts and jamming music sessions are held virtually via live streaming to prevent the spread and transmission of COVID-19. Live streaming is a new way to present musical works in a virtual form that can be watched by many people through devices such as computers, laptops, smartphones, tablets, and so on directly (live). Anang et al (2012) explain "Streaming is a continuous process of sending data continuously which is carried out by broadcast, multicast or unicast through the internet or intranet networks to be displayed by streaming applications on PCs or portable devices such as laptops and mobile phones".

In following the development of information and communication technology in the field of music, the production and performance of musical works of art must be technology-oriented. The Music Education Study Program, Faculty of Language and Arts, State University of Medan must be able to be a barometer in producing and managing performing arts in Virtual or Live Streaming through student artworks within the scope of North Sumatra Education in order to realize the era of Society 5.0.

Performing arts management has entered a new era, where humans must master technological devices and cooperate with technology for the implementation of a great performing arts. Broadcasting and live streaming are lessons that can be used as a means for Music Education Study Program students to develop wider potential in their work.

This can be developed through performing arts management courses, musical compositions, and musical performances.

In order to support art performances in the field of music through live streaming, various devices and applications are needed to support the running of a Virtual show. These components consist of software and hardware that are interconnected. One of the required software is OBS (Open Broadcaster Software) Studio. OBS Studio software is a Live Streaming application whose output can be expanded to various platforms such as YouTube, Instagram, and others. To meet the needs of musical performances, of course other components are needed such as musical instrument equipment, computers and sound system devices. Then these devices will be mixed and input to the computer channel where the OBS Studio software provider is and processed into Live Streaming Performance.

Performing arts according to Murni (2013: 5) are the efforts and works of groups of artists or people who work to produce works of art as a performance. Performances are activities to introduce or show the results of works of art, music, dance, theater or drama and others to the wider community. Murni (2017:13) says that management or management is part of art. According to Jazuli (1994:2-5) explains the management of performing arts is a system of activities in the context of organizing performances, meaning that it involves efforts to optimally manage the use of existing resources (production elements) in the process of transforming raw materials and labor into products. more efficient performances. Management involves a variety of things that are complex in nature. For example, between internal and external factors with setting goals, program policies, work procedures, which are influenced by available materials, capital, and labor. It aims to produce products that are in accordance with the objectives required by the aspects of production and technology; marketing through supply or demand.

Music is a branch of art that focuses on using melody, rhythm, tempo, harmony, as well as vocals that act as a means of expressing the feelings of the creator. Jamalus (1988:1) argues that, "something that produces works of art, in the form of sounds in the form of songs or compositions that express the thoughts and feelings of the creator through the main elements of music, namely rhythm, melody, harmony, as well as the form or composition of songs and expressions. as a unit is called the art of music. Video streaming can be interpreted as a method that utilizes a streaming server to transmit digital video over a data network so as to allow video playback to be carried out directly without the need to wait until the download process is complete or save it first on the client computer. The video streaming system involves encoding the content of the video data, and then transmits the video stream over a network (wired or wireless), so that the destination client can access, decode, and display the video in real time.

There are several types of video streaming, including webcasts, where the shows shown are live broadcasts and Video on Demand (VOD), where the shows that will be displayed are already stored on the server. Factors that affect the distribution of video streaming over the network include: the amount of bandwidth, delay, lost packets, and also the technique of distributing the video to several destinations evenly and efficiently (Apostolopoulos, 2002:1).

Video streaming can be used in many applications, such as video conferencing, e-learning or distance learning, video surveillance (video surveillance), remote monitoring, and others. The presence of a network that allows the server as a video source to be physically separated from the client is a differentiating factor for video streaming from pre-recorded video that is commonly used by consumer electronics, such as CD/DVD. Therefore, video streaming has the following main

characteristics: a) Streaming technology allows real-time or on-demand access. b) Streaming data is transmitted from the server side, playback is immediately performed on the client side after being received and processed first. c) Do not leave residual data on the client side after the streaming process is complete.

Open Broadcaster Software Studio is a software that is used to record video or broadcast live or live which is then connected to a website (Kusuma, et al. 2018:15). OBS Studio is a free and open source video recording and live streaming application. Free means this application is free to download and use. Open source means that this application is equipped with its source code so that the application can contribute to development. OBS Studio is software that is specifically designed to facilitate the needs of those who are going to livestream.

This study aims to compile the management of performing arts in musical performances through live streaming at the Music Education Study Program, State University of Medan and to develop methods for implementing the Open Broadcaster Software Studio in musical performances through live streaming in the Music Education Study Program through the right steps to be applied. become works of art in the form of performances that are presented online.

The concept of implementing OBS Studio software in the management of musical performances through live streaming. It needs to be done in order to facilitate students to learn about the world of broadcasting management of musical arts performances and to support students to keep working in music by following the development of existing technology. So that later this method can be implemented into performing arts management courses, musical compositions, and musical performances.

## **METHOD**

This study uses a qualitative approach by following the opinions of Miles and Huberman (1984), namely (1) data collection (data collectors), which is carried out through interviews, observations, document digests, recording and recording; (2) data reduction, which is done by summarizing, choosing the main things, focusing on the things that are important, looking for themes and patterns and discarding unnecessary ones; (3) data display, which is done by showing data and presenting it in the form of narrative text and charts; (4) conclusion drawing/verification conducted by drawing conclusions and verifying the research findings.

Miles and Huberman's opinion is explored to determine the steps specified in the implementation of this research. These steps include the following:

1. Research preparation stage which includes designing proposals, conducting literature studies, determining research topics, formulating research problems and objectives, determining research locations, and determining research methods.

2. The stage of collecting primary and secondary data. Primary data were obtained through in-depth interviews and participant observation which aimed to collect data.

3. The data analysis phase is carried out by categorizing and analyzing primary and secondary data, conducting discussions with experts. Next, formulate a model for the application of teaching materials.

4. The trial phase applies the formulation of the Open Broadcaster Software Studio application to musical performances via live streaming in the Music Education Study Program. Then make corrections and improvements to the problems that occur.

5. The stage of concluding the results and making reports on research findings. At this stage, the results of the research will be concluded, conducting seminars on results and making research reports.

This research was conducted in the Music Education Study Program, Faculty of Language and Arts, State University of Medan as a means of place to implement and develop research to be carried out. Data were collected by means of observation, interviews, documentation and research sources or other relevant references. For this reason, researchers are provided with a theoretical perspective as stated in the theoretical study. In collecting data, the researcher was equipped with a camera, laptop, interview notes and field observation notes. The data used in qualitative research includes transcripts of interview results, data reduction, analysis, data interpretation and triangulation. From the results of data analysis which can then be drawn as a conclusion.

## **RESULTS AND DISCUSSION**

### **A. Management of Performing Arts in Performing Musical Works through Live Streaming**

Management in an art performance is one of the success factors in presenting a performance. Management of musical arts performances through live streaming has a difference in managing live music performances. In the case of research conducted at the Music Education Study Program, State University of Medan, the management of performing arts in performing musical works through live streaming has a special structure so that live streaming performances can run well and will have minimal errors.

The management of performing arts in Karya Musik performances through Live Streaming starts from the planning, organizing, actualizing, and controlling stages. A show can be managed well if it has a good management system too. By having a good management system, the performance of the musical works will be able to achieve greater goals, targets, or outputs.

#### **1. Planning**

To achieve the goals and objectives of a management is not off with a plan. Planning

is selection of facts and linking facts and making and the use of estimates or assumptions for the future will come by describing and formulating the activities needed to achieve the desired results.

In this study, the researchers planned by compiling Virtual Music Performance activities through the Youtube platform that could be viewed by the general public or the public. This is done so that the public can also assess and appreciate the musical performances performed. The planning carried out is as follows:

a. Preparing HR (Human Resources)

Human resources are a very important factor that cannot even be separated from a performance management. HR is also the key that determines the course of music performances, both live and virtual. In essence, human resources in the form of humans who are employed in an organizational management as movers, thinkers and planners to achieve performance goals. If the human resources are good, then the performance produced will be good too. In this case, the human resources that are being exploited come from students of the Music Education Study Program at the State University of Medan who are in charge of the Performing Arts Management course in the odd semester of the 2021/2022 academic year.

b. Setting up hardware and software devices

Hardware and software devices are needed in terms of supporting music performances that will be performed virtually. These devices are needed specifically and have certain specifications.

The hardware needed are:

1) Computer

Computers have a role in managing input components that play an important role in operating live streaming music performances through the Youtube platform. The computer specifications required are to have an Intel Core i7 or AMD Rizen 5 processor, have a minimum RAM of 16 Gb, and have a CPU speed of 1.80Ghz.

2) Camera

The camera is needed to take pictures in the form of videos that are processed through data.

3) HDMI Capture Card

The HDMI capture card is used to capture and record High Definition video sources on a desktop PC. This product will process HDMI input which can connect with all kinds of high-definition video equipment.

While the software needed is OBS Studio. OBS Studio or often called Open Broadcaster Software Studio is a software used to record video or broadcast live or live which is then connected to a website. OBS Studio is a free and open source video recording and live streaming application. Free means this application is free to download and use. Open source means that this application is equipped with its source code so that the application can contribute to development. OBS Studio is software that is specifically designed to facilitate the needs of those who are going to livestream.

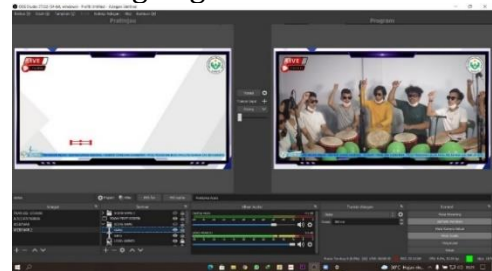


Figure 1. OBS Studio Software Display during Live Streaming

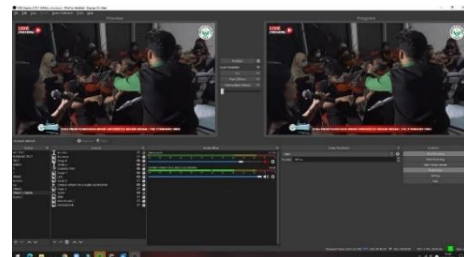


Figure 2. OBS Studio Software Display during Live Streaming



Figure 3. OBS Studio Software Display during Live Streaming

## 2. Organizing

Organizing can be interpreted as a grouping process people, tools and division of tasks and authorities so that an organization can achieve the expected goals. Organization is a forum for the cooperation of a group of people in order to achieve the goals that have been formulated together.

Organizing can be arranged and shown through the structure that has been designed. Virtual or Online Performing Arts Management Structure in Music Education Study Program State University of Medan can be explained through Figure 4 below:

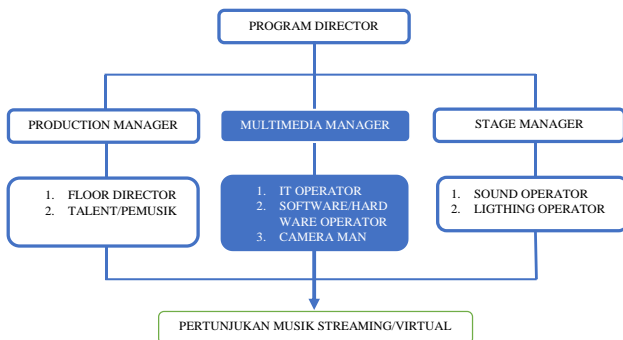


Figure 4. Virtual Music Performance Management Structure

The management structure in Virtual Shows has a smaller scope compared to Live Performances. The structure can be explained through the following division of tasks:

### a. Program Director

The program director is in charge of being in charge of the pre-production of the show to the production of the show.

### b. Production Manager

The production manager is responsible for the continuity of the production of the show that houses the Floor Director and Talent/musicians.

### c. Multimedia Manager

Multimedia manager is a task that is responsible for media management which oversees IT operators, Software and Hardware Operators, and Camera Man.

### d. Stage Manager

The Stage Manager is the person responsible for the equipment needs and

artistic needs needed and oversees the Sound Operator and Lighting Operator.

## 3. Actuating

Execution or movement is arousing and encourage all group members to will and trying hard to achieve goals sincerely and compatible with the planning and organizational efforts of leadership.

The implementation of Musical Performances through Live Streaming has been carried out 3 times. They are the Nusantara Tetabuhan Music Show, the Langkat Tamiang Rentak Show, and also the Orchestra Music Show.

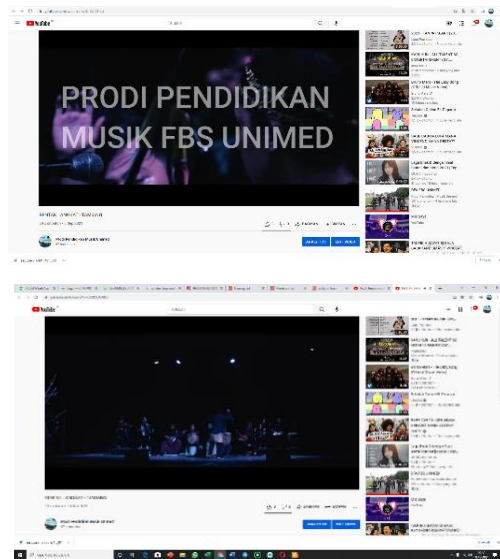


Figure 5. Tamiang Langkat Rentak Virtual Show



Figure 6. Kenduri Tetabuhan Nusantara Live Streaming Show

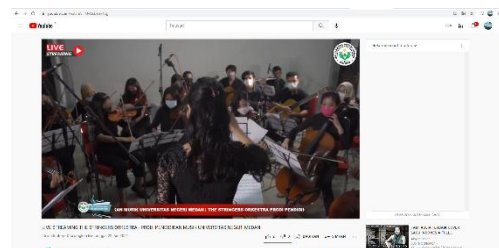


Figure 7. Live Streaming of Orchestra

#### 4. Monitoring

Supervision is an activity carried out by the person in charge in order to ensure that the activities carried out according to the plan has been determined. The existence of this supervision is intended to know the obstacles, mistakes and failures so that a solution can be found immediately. Production Supervision carried out by the Program Director, namely by seeing directly from the Rehearsel process with musical performances.

### B. Method of Application of Open Broadcaster Software Studio on Musical Performances Through Live Streaming in Music Education Study Program, State University of Medan

To find out the methods and steps that must be taken in implementing OBS Studio software as a medium for the virtual musical performance process, superior human resources are needed as operators in handling the performance process through live streaming. IT Operators play an important role in operating the show in virtual form through the Youtube platform.

#### 1. Input and Output Method

The process of implementing OBS Studio software on Musical Performances via Live Streaming can be explained in the following chart:

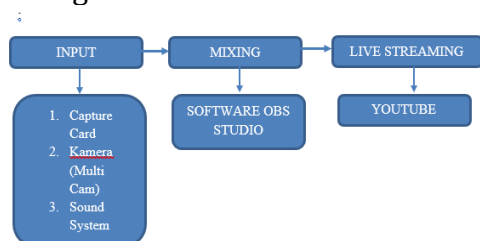


Figure 8. Live Streaming Method Chart

The method of drawing equipment from the application of OBS Studio software on Musical Performances via Live Streaming can be explained in the following plot:

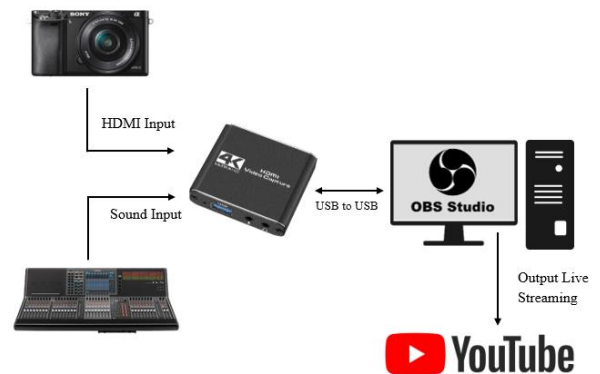


Figure 9. Live Streaming Method Flow

### 2. Live Streaming Music Performance Method using OBS Studio Software

#### a. Determine the settings and design layout

The setting and design layout in the OBS system is needed as a display when the live streaming process takes place.

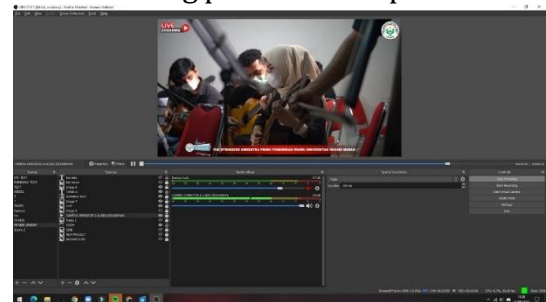


Figure 10. Setting and design layout for orchestral music performances

#### b. Selecting Capture Card

Capture card is required as a hardware place to unite, capture and record High Definition video sources on desktop PCs. This product will process HDMI input which can be connected.

#### c. Copy Code Live Streaming on Youtube

Enter the Youtube channel that will be presented, then click the Plus button > Live Streaming in the upper right corner. Then the windows display will enter the live streaming menu. Then copy the live streaming code, as shown below.

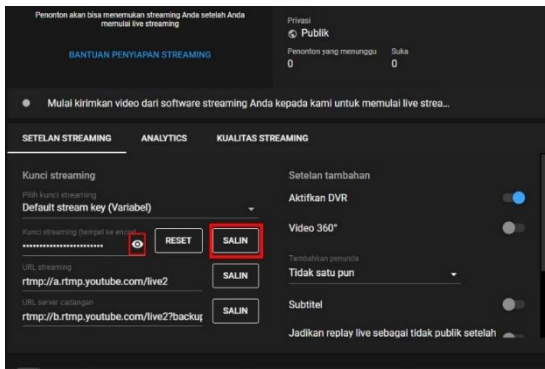


Figure 11. Code Live Streaming Youtube

d. Paste Code Live Streaming to OBS system

Open the OBS software, then go to the Settings menu>Stream>Service>Youtube, if you have clicked OK and click Start Streaming which is above the Settings menu as shown below:

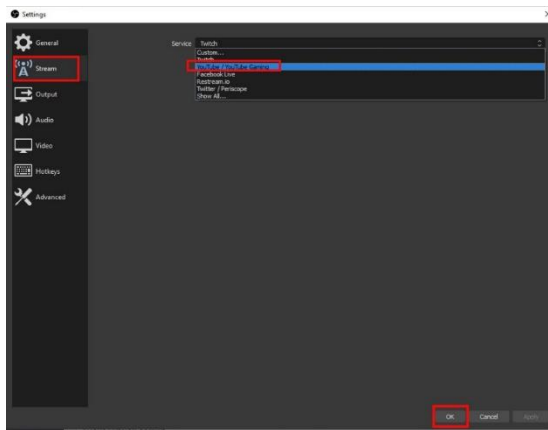


Figure 12. Stream OBS

e. Start Streaming

After the above steps are carried out, the operator just clicks "Start Streaming" in the lower right corner to start Live Streaming.

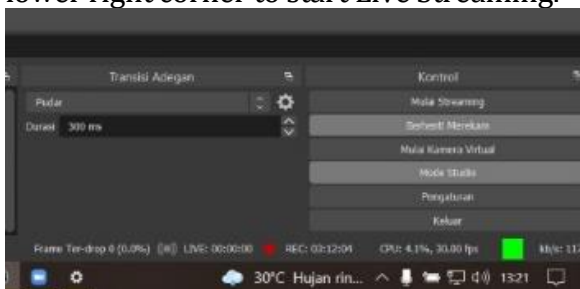


Figure 13. Start live streaming

**CONCLUSION**

The management of performing arts in Karya Musik performances through Live Streaming starts from the planning, organizing, actualing, and controlling stages. A show can be managed well if it has

a good management system too. By having a good management system, the performance of the musical works will be able to achieve greater goals, targets, or outputs. Planning begins with preparing Human Resources and preparing hardware and software. The organization consists of the Program Director as the person in charge, Production manager who oversees the Floor Director and Talent/musicians, Multimedia manager who oversees IT operators, Software and Hardware Operators, and Camera Man, and Stage Manager who oversees Sound Operators and Lighting Operators. The implementation of Musical Performances through Live Streaming has been carried out 3 times. They are the Nusantara Tetabuhan Music Show, the Langkat Tamiang Rentak Show, and also the Orchestra Music Show. the methods and steps taken in implementing the OBS Studio software as a medium for the virtual musical performance process include input and output methods and using OBS Studio Software. The Method of Performing Live Streaming Music Works using OBS Studio Software begins with determining the settings and design layout, selecting Capture Card, Copy Code Live Streaming on Youtube, Paste Code Live Streaming to the OBS system, and Start Streaming.

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