

# DAW (DIGITAL AUDIO WORKSTATION) TECHNOLOGY IN THE MUSIC OF WEST JAVA TRADITIONAL THEATRE

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## Abstrak

Teknologi aplikasi musik saat ini makin berkembang pesat dan hampir mampu mengakomodasi berbagai karakter instrumen yang terdapat dalam musik gamelan. Penyesuaian kebiasaan dalam memproduksi musik gamelan secara tradisional ke dalam bentuk kerja digital dan virtual menjadi tantangan tersendiri. Tulisan ini bertujuan menunjukkan proses digitalisasi gamelan untuk pertunjukan teater tradisional “Tukang Asahan” dengan sistem kerja DAW (Digital Audio Workstation). DAW merupakan perangkat aplikasi berbasis software yang digunakan untuk merekam dan mengedit bunyi yang hasilnya berupa file-file audio (Elektronik/Synthesizer, WAV, MP3, AIFF, PCM dan sebagainya) yang dapat disimpan di media penyimpanan (hard disk, SSD atau external drive, dan sebagainya). File-file ini yang kemudian diolah melalui DAW menjadi sebuah komposisi/sequence atau aransemen musik beserta sound effect-nya. Sistem ini memungkinkan pemusik pengguna teknologi ini merekam atau mengolah suara sekaligus juga mengkomposisi. Implementasi dari gamelan DAW (Digital Audio Workstation station) ini diterapkan pada produksi pertunjukan Teater Daerah Jawa Barat. Teater tradisional Jawa Barat tidak dapat dilepaskan dari musik karawitan. Pertunjukan “Tukang Asahan” mengandung tiga genre teater tradisional Jawa Barat, yaitu: Sandiwara Sunda, longer dan Gending Karesmen. “Tukang Asahan” tidak dapat dihadirkan tanpa nyanyian dan musik gamelan. Digitalisasi musik melepaskan ketergantungan teater daerah pada perangkat utuh gamelan dan nayaganya yang merupakan kendala di masa pandemic Covid-19.

Kata kunci: teater tradisional, digitalisasi, musik gamelan, DAW

## Abstract

Music application technology is currently growing rapidly and is almost able to accommodate various instrument characters contained in gamelan music. Adjusting the habits of producing traditional gamelan music into digital and virtual work forms is getting more challenging. This paper aims to demonstrate the process of gamelan digitalization for traditional theatre performance “Tukang Asahan” with DAW (Digital Audio Workstation) work system. DAW is a software-based application device that is used to record and edit sound, which results in audio files (Electronics / Synthesizer, WAV, MP3, AIFF, PCM and so on) that can be stored on storage media (hard disk, SSD or external drive, etc). These files are then processed through DAW into a composition/sequence or music arrangement along with the sound effects. This system allows musicians using this technology to record or process sound as well as compose. The implementation of DAW (Digital Audio Workstation station) gamelan is applied to the production of West Java Traditional Theater performance. West Java traditional theater cannot be separated from karawitan music. “Tukang Asahan” performance contains three traditional West Java theater genres, namely: Sundanese Sandiwara, Longer and Gending Karesmen. “Tukang Asahan” cannot be presented without songs and gamelan music. Digitalization of this gamelan music solves the dependence of traditional theatre on thorough gamelan instruments and their players which is an obstacle during the Covid-19 pandemic.

Keywords: traditional theatre, digitalization, gamelan music, DAW

## INTRODUCTION

The development of music industry technology is currently very fast. Creative space for creators in the field of Digital Music can reach anywhere. Along with that, various kinds of midi controller hardware products that support the DAW (Digital Audio Work Station) application are able to do their job as a replacement for existing musical instruments, in the form of a controller or midi controller that is tapped or hit like playing percussion or drums, blown like a musical instrument or blown, swiped, pressed like a piano. The various midi controller products made it easier for composers to make arrangements.

This midi controller helps playing the instrument virtually, so that music creators feel familiar. There is even a midi controller product that is very flexible in playing various kinds of virtual instrument characters as well as the traditional musical instruments. Gradually, the characters in which regarding the uniqueness of the sound of these instruments begin to be represented. The further steps are to improve the mastery and sensitivity of these digital music actors in traditional music.

Midi controller device and DAW application are then used by the researcher to solve the problems in the performance for the final semester exam of the Traditional Theater III course at ISBI Bandung Theater study program. The researcher uses DAW (Digital Audio Workstation) system in the process of performing the final semester exams of Traditional Theater III. Without using this application, each process of the course requires a complete set of gamelan and their gamelan musicians. This is not easy to do because it costs a lot.

## RESULT AND DISCUSSION

### 1.1 Digital Audio Workstation Technology

DAW (Digital Audio Workstation) is a music production software which is used to record and edit sound in the form of audio files. The audio files are stored on a computer hardware device or an external drive. Examples of DAW applications are Audacity, GarageBand, Pro Tools, Logic, and Cubase [2] (Walzer, 2016: 25).

Studying and being directly involved in the traditional art production process by digitizing gamelan allows art production to be very flexible. Music references, dances and songs produced by the DAW application can produce MP3, Wav audio formats, which can be accessed via smartphones or music/song players in digital format. The era facing the current generation is the era of electronic reproduction, where we can easily find various information we need. "Culture comes to us through screens, videos, radio and so on. Artifacts and cultural meanings from different historical periods and geographic locations can mix together and face each other. Therefore, while the values and meanings attached to places remain significant, the network in which people are involved extends far beyond the boundaries of their physical location". [1] (Barker, 2008: 299).

DAW system in traditional theater music is an alternative choice in meeting the needs of today's traditional theater music. DAW in the presentation of regional theater performances can be performed live or into a composition in the form of a minus one when the music is accompanied by the song being sung. When DAW position is made live, it must provide various controllers which will be played by the musicians or *nayaga* as a substitute for gamelan. However, this option became inef-



Fig. 1. Laptop, desktop multimedia computer (Private Collection, 2020)

fective. In traditional theater performances, the musical response is very strong, especially in the comedian genre such as Longser, so in the presentation it is necessary to prepare a MIDI controller.

Music application technology or Digital Audio Workstation (DAW) is supported by inexpensive computer or laptop hardware specifications. Computer recording technology is not as complicated as one might imagine. The recording computer with the DAW application is almost the same as what is required in the mid-range gaming computer specifications. In addition, because DAW application is related to audio, it is recommended to use a standard Soundcard and active speaker.

The process of DAW in Traditional Theater Music goes through several stages. The phases for digitalizing gamelan through DAW application are as follows:

**A. Sampling**

This stage is the recording of the notes or *titilaras* contained in the gamelan, which consists of



Fig. 2. Portable Sound recorder.



Fig. 3. Tools and Sampling Scheme/ Gamelan Recording



Fig. 4. Gamelan Recording Process.

the titles of Pelog and Salendro. Meanwhile, the sampled gamelan instruments are based on the needs of the Traditional Theater Music.

Sound Recorder is a recording device that can be used in Sampling or recording *titilaras* gamelan, then transferred to a computer for editing and being applied into DAW.

Laptops or desktops are used to manage the recording so that it can be controlled and managed for the strength of the input and input distortion. The tools which are used are: Microphone, Soundcard, Laptop / PC (media recorder), Active Speaker Output Control and Headphones.

The recording process is not enough to conducted once or twice. Generally, the process is repeated many times to correct the gamelan instrument. If the sound produced is distorted, usually the interference occurs in the fixing nails. When the blades of the gamelan come into contact, it can produce unwanted sounds, especially in the gamelan *peking*, *hinci*, *demung* and *selentem*.



Fig. 5. Sound editor logix Pro X. The tool of sound editor in this Logix Pro X uses standard editing tools.

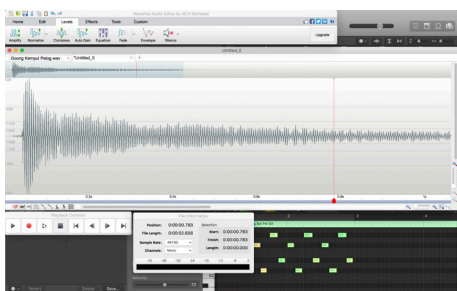


Fig. 6. Sound editor Wave pad Audio Editor.

**B. Normalizer**

Editing of recordings to achieve the desired sound quality is done by correcting and editing them, including:

1. Eliminating recorded voices or noise that interfere or distort from the original gamelan sound.
2. Stabilizing the level of strength or performance of the signal recorded from the sound. Finally, finalize the file form, wave form audio or file that is compatible with the software used. This process produces a collection of Gamelan Sound Fonts.

This application is to process sound files with features that which are complete enough to meet the needs of editing / repairing audio files.



Fig. 7. Mapping sound file on Instrumen Logox Pro X Software

**C. Custom Instrument.**

Placing gamelan file sampling on the DAWS application music platform.

Figure 7 shows an instrument software to map the placement of a gamelan instrument tone on a virtual piano.

**D. Plug in VSTI (Virtual Studio Technology Instrument).**

Logos or images after the gamelan instruments are mapped are then stored in/save in the Logix Pro instrument collection.

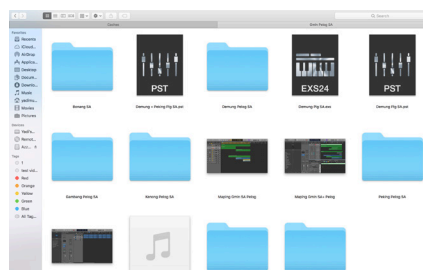


Fig. 8. Image Plug in Gamelan Instrument Logix Pro X.

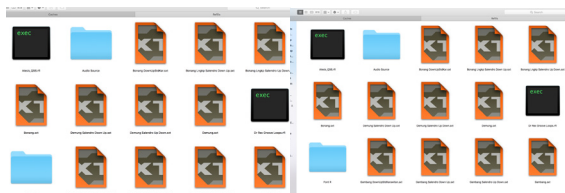


Fig. 9. Image Plug in Gamelan Customized Instrument Reason 5.

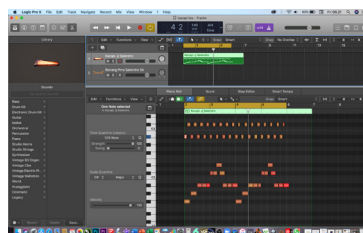


Fig. 10. The figure of gamelan instrument on view piano roll Logix Pro X

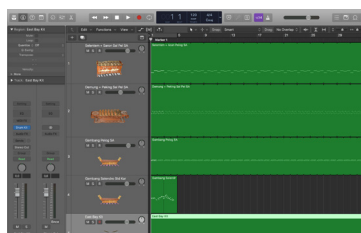


Fig. 11. Model Sequencer gamelan composition Logix Pro X



Fig. 12. Customized Instrumen/mapping Kecapi on Reason 5.

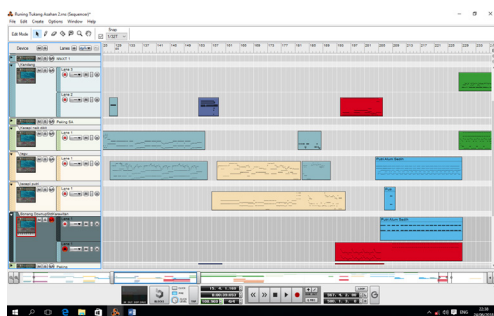


Fig. 13. Model Sequencer gamelan composition on Reason 5.

The logo or image after the gamelan instrument is mapped is then stored on / saved in the instrument collection in the DAW Reason 5 application.

A series of virtual gamelan instruments from all a composition are produced in a song or a composition. The gamelan instrument icon or image can also be customized and engineered by placing the gamelan instrument image in PNG or JPG format, so that it can be seen when virtual gamelan is on the sequencer track.

Mapping sound files in Reason 5 Instrument Software. This image shows the instrument software, to map the placement of gamelan instrument tones on the virtual piano contained in Reason 5.

A series of virtual gamelan instruments from a composition produced in a song or a composition. In Reason 5 there is no button to place a virtual gamelan image or logo. So what we can do is rename the virtual instrument with the names of the gamelan.



Fig. 14. Midi controller.

## 1.2. DAW in Traditional Theatre Performance

Musicians applying DAW in traditional theatres work together with theatre or dance music engineers in general. The first thing to do is make a roundup or analyze the script to be produced. Next, to arrange the music in dance. It is necessary to know the flow of the dance. Thus, it can be seen the musical needs contained in the script or dance accompaniment.

If the script analysis or the dance pattern is known, the next step is to create a music composition that is done on the DAW Sequencer.

Traditional theatre performances are always accompanied by musical instruments in response to scenes that are either illustrative in nature or that emphasize the ongoing scene. Thus an instrument controller is needed that can be used using a MIDI controller.

The midi controller used by the writer in producing music is also used in filling the music of the traditional wheater when the show is in progress.

The period of the pandemic Covid 19 had a huge impact on the activities of the performing artists. The art production that they usually do has to stop or should be changed according to the current conditions. Production and performance processes cannot be carried out as usual. The use of music using the DAW application is very relevant.

In ongoing productions using this system, practice sessions and musical arrangements can be held separately.

The results of a series of music that have been made can be converted into mp3 or wav files that can be run on smartphones or other music players in the form of an mp3 player. Thus, these music files can be easily shared with performers, singers and dancers to be practiced in their respective places. Live meetings for training and large gatherings can be minimized.

In addition, music using DAW can significantly reduce the number of musicians. In fact musicians that are generally required in large numbers. Music produced with the DAW system is sufficient to be represented by a music composer or composer accompanied by an expert in the field of digital music, especially if the composer also masters the field of DM (Digital Music).

## CONCLUSION

Traditional Theater Music using DAW application saves much more in the production of a traditional theater show. The physical gamelan as well as the gamelan musicians can be represented by DAW system. Number of practice meetings can be conducted in each home. The actual meeting can be held if the production enters the rehearsal stage. When the performance is to present musicians and their gamelan, we already have the composition and flow of music that we have created. The players, dancers as well as sinden or singers have practiced with this music. The musicians can follow what has been arranged before. Thus, time effectiveness can be maximized. A complete set of gamelan which is replaced with a digital gamelan system DAW does not reduce the value and integrity of the Traditional Theater, as long as the music presented is not distant and still uses Sundanese

Karawitan as an identity of the West Java Regional Theater.

## REFERENCES

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- [2] Walzer, D.A. 2016. Software-Based Scoring and Sound Design. *Music Educators Journal* September 2016. DOI: 10.1177/0027432116653449. <http://mej.sagepub.com>