Music Technology:

Study of Digital Music Creative Process Training Results on Traditional Artists

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Abstract—**The existence of an artist cannot be separated from the work he makes, but these works will be recognized and can only be enjoyed by showing them to the public or the general public. In the midst of rapid technology and the Covid 19 pandemic, a new habit has emerged in performing arts through digital media. The purpose of this paper is to study the results of training activities on the use of the Contacts 6 application for music artists to have the ability to utilize technology as an alternative media for creating music. The data was collected through unstructured interviews and observations of the training activities of the Contact Application 6 of the artists who were the trainees. The results of the study show that the vocational training program carried out on artists by utilizing the Kontakt 6 application technology is able to provide knowledge and skills to turn music from musical instruments and Sundanese music parameters into a more global music format known as "think locally act globally". The focus of the abilities trained in the activity is the ability to create works and the ability to publish these works either directly or through digital performances. This training program is very important to carry out to prepare the knowledge and skills of artists in the global competition in the music world in the future, especially in the current Covid 19 Pandemic era.**

Keywords—technology, digital music, traditional artists

I. INTRODUCTION

Globalization has an influence on various life arrangements in society [1–4]. The development of increasingly sophisticated and modern technological media is able to influence the cultural patterns carried out by society [5]. Media technology as a sign of global cultural products is able to become an inseparable part of human activities in the world [6–9]. Various daily activities that are usually not assisted by technological media have become a habit and dependence in carrying out various activities [10,11].

The tendency of individual habits to use electronic and digital technology media can have an influence on the way a person works in completing their work [12]. This phenomenon has become a global phenomenon that cannot be avoided by every individual in the world. One example is when human daily activities cannot be separated from cellular communication devices and television entertainment media [13]. In the Pandemic era, people mostly worked at home through electronic media, computers, cellphones and other technology media [14,15]. This condition shows a symptom of a cultural transition from a traditional cultural way of thinking to a global cultural way of thinking which is marked by the development of increasingly sophisticated and modern science and knowledge.

Music is a cultural product created by humans [16]. Its existence is able to become a medium for one's expression in expressing all the emotions, souls and feelings which are manifested through the language of sound. Music has the power of universal language. People are able to know and learn the culture of a nation through the art of music. The values of local wisdom that exist in a musical work (traditional music) become the basis for the behavior of a community in doing various good things in its daily activities.

A musical work that is born in the midst of society will involve various layers of individuals in it such as artists, music lovers, and society in general. The elements of the actors of the art each have different roles, one of which is a music artist. In this case the musical artist in question is a creator (composer) and a music player. These two elements have an important role in realizing a musical work that is finally published or shown to music lovers and the wider community. It's just that the method used by music artists to express their work can be done in two ways, namely through conventional technology or modern technology approaches. These two ways can be done by a music artist depending on the goals and readiness of the human resources of the music artist

The development of modern technology in the world of music has been developing for a relatively long time and has been carried out in several countries in the world [17-19]. Music technology can function as a medium for playing music and creating musical works. These two trends in the use of technological media have been carried out by music artists in the world. It's just that not all of the factors in the competency of music artists are able to keep up with the development of music technology that can be used as a medium of expression.

Various technology-based music applications and digital music are growing rapidly in society. Its existence is able to change the way music artists think from traditional to modern ways of thinking. This condition sometimes gives positive and negative stereotypical attitudes from some music artists in the world. A music game that should be done by many music players through the sophistication of music technology is only enough to be played by one person as a music player. But behind that, through music technology helps music artists in the world in designing and creating the musical works they create.

The purpose of this study is to see the training program implemented in West Bandung Regency as an effort to provide knowledge and skills to music artists how to play and create music through digital music technology [20–22] based on the Contact 6 application.

II. METHODS

This study was conducted in a training program for the use of the Contact 6 Application for traditional artists in West Bandung Regency. This entire article is based on the results of workshops and training conducted on Pamenca and Kendangers artists in West Bandung Regency. The training includes 1) how to make musical compositions using patterns and materials from traditional music, 2) how to document and publish the musical compositions into digital data through the KONTAKT application 6. This research data was obtained from the results obtained from interviews with training participants and traditional music artists who are members of this training program. The training participants were 34 people, all of whom are members of the Pamenca and Kendangers community of artists in West Bandung Regency.

III. RESULTS AND DISCUSSION

A. *Various Artists' Polemics in a Framework for Local Government Policy*

West Bandung Regency is part of the territory of West Java Province which definitively becomes a Level II Region based on Law Number 12 of 2007 concerning the Establishment of West Bandung Regency in West Java Province. West Bandung Regency is divided into 16 administrative sub-districts, namely Lembang, Parongpong, Cisarua, Cikalongwetan, Cipeundeuy, Ngamprah, Cipatat, Padalarang, Batujajar, Cihampelas, Cililin, Cipongkor, Rongga, Sindangkerta, Gununghalu and Saguling.

The West Bandung Regency area which stretches from Lembang to Gununghalu is an important tourism and agricultural area in the Greater Bandung area. Most of the tourist attractions that hit in Bandung Raya are in West Bandung Regency (KBB). Almost some people in Indonesia have heard of the name Lembang, a sub-district in the KBB area that has many exotic tourist attractions.

Ironically, people do not recognize art and the potential for art tourism in West Bandung Regency. The existence of art and artists as well as art tourism in KBB is closed by the charm of natural tourism. Even though the potential of art and art tourism in KBB is no less interesting than natural tourism.

One of the contributing factors is the awareness of the artists in developing this art in today's digital era. Traditional thinking produces thoughts that are anti-modernization, anti-technology and so on. For this reason, an effort is needed to open the minds of artists in utilizing technology as a form of cultural activities and cultural publications.

In understanding culture, especially in the field of traditional arts, this is related to the awareness of the importance of understanding the wisdom of local culture as a basis in determining the various future thoughts of the user community, art includes cultural manifestations and also how to communicate in conveying cultural knowledge [23]. Furthermore, it is stated that every society has a unique culture and cultural expression, the variety of creative art products reflects human creativity both traditionally and today. Awareness and knowledge of cultural and artistic practices will strengthen the identity and values of individuals belonging to certain cultural groups, and in turn will contribute to the protection, preservation and dissemination of cultural diversity, one of which is art.

Based on this, academics in collaboration with the local government have made various efforts, one of which is by conducting training in making music compositions through computer applications for Pamenca and rampak kendang artists, these artists have been accommodated by their respective communities. For the pamenca they have an organization in the form of the Pamenca and Kendangers community. Coaching and developing the potential of artists are carried out so that they get a place and become a part of tourism in West Bandung Regency and of course can provide additional income for them in the form of finance, and in the end have an impact on improving the welfare of the community.

In the end, it is hoped that this effort can contribute to the existence or existence of artists in KBB, and they can be recognized both nationally and internationally. Their existence is not only in live performances. But it can be enjoyed in digital media such as YouTube and others. Before the training and workshop process took place, the bucket speakers had a discussion and question and answer about the wishes, hopes and understanding of the artists regarding the composition of music and the use of technology in making a database of their works, from the results of the discussion, the resource persons provided introductory material as material for artists in facing the training process that will be carried out.

From the discussion results obtained data that the needs of the artists include; 1) availability of computer facilities, 2) lack of ability to operate music software via computer, 3) knowledge of publishing musical works via the internet and social media, 4) knowledge of music composition techniques.

B. Process of Training Activities

The results of this discussion are used as a basis for resource persons in preparing training materials for Pamenca artists and Kendang artists. So, it was agreed to provide the ability, knowledge and skills in using the CONTACT 6 application.

KONTAKT 6 is a sampling product from Native Instrument whose features are very open, in addition to the standard features of other sampler products. It has many scripting features that open up many other possibilities in developing virtual instruments.

Currently virtual instrument products based on the sampler KONTAKT are not only used as instruments but can be used as audio design software (sound design) and artificial intelligence development (artificial intelligence). In fact, from some virtual products, the instrument can be used as machine learning.

Various virtual instrument products based on the KONTAKT sampler generally lead to "non-synthetic" forms of instrument creation. Because in the development of electronic music previously produced many forms of digital instruments with "synthetic" sound characters such as synthesizers. However, some acoustic instruments which are organic in nature, are still difficult to be properly translated into this synthesizer system.

Therefore, the quality of the virtual instrument product based on KONTAKT is very much determined by the quality of the sampled instrument (recorded through a digital system), the acoustic quality where the instrument is sampled, and the quality of the microphone used when recording the instrument. For example, the spitfire audio product, Symphonic Strings, is shown in figure 1.

Fig. 1.   Symphonic strings-violins 1 core techioques.

In the virtual instrument product above, the various features available in the sampler CONTACT can be expanded as widely as possible. Through certain designs and scripting, string sounds can be presented in various ways based on their articulation. Likewise, with various other parameters such as parameters for adjusting dynamics, expression, vibrato, envelope and so on. In addition, the sound character can be adjusted according to the direction and where the microphone is placed, so that the listener / user can choose the best sound from the acoustic side where he wants to hear. And this feature is one of the results of artificial intelligence (artificial intelligence).

The second example, is a Sonokinetic product. This product focuses on the effectiveness and efficiency of creating music via computer. Besides this product also has a good sound quality acoustically, its various features build intelligence and can be used as a learning machine, especially in the field of music orchestration, please see figure 2.
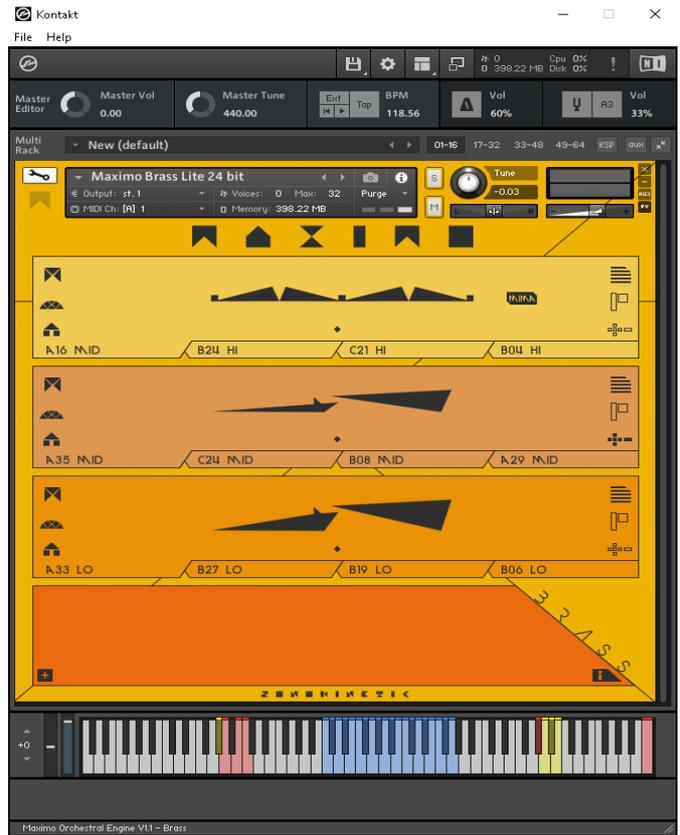

Fig. 2.   Sonolinetic maximo-brass lite 24bit

Besides that, it also has features that give us as users many choices to process and manage all the textural sound materials. In addition to the shape of the sound texture which can be illustrated visually (which helps the user's sound image), there is also detailed information about how all the sound elements are written in notation. see the figure 3.
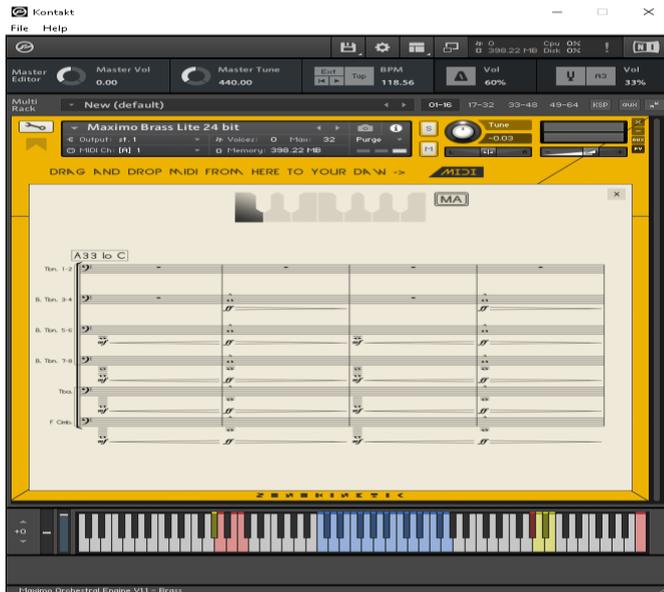
Fig. 3. Notation visualization feature on sonokinetic maximo.

Through this notation visualization feature, users can learn orchestration in the form of a score, namely how each sound event is notated.

In the implementation of this activity, the virtual instrument product is used as a trigger for the musical creativity development of the Kendang Sundanese artists because generally the participants are drum players. The following is an example of a virtual product based on the CONTACT based drum. Please see the figure 4.

Fig. 4. Vitual kendang on KONTAKT 6.

In the Virtual Instrument product above, there is a wide variety of articulations of the sound of the jaipong drums and various mincid patterns that are packaged based on the KONTAKT drum machine feature. Through this virtual

instrument, it can be used in building awareness of the various characteristics of the jaipong drums so that the participants are more open to the richness of the sounds and patterns of playing the drums. From this, the first effort was made to arouse the enthusiasm of the participants in developing musical creativity, especially music using the drums instrument. However, the process requires steps to be taken so that the process runs smoothly.

In the implementation of this activity, there are several steps taken to develop musical creations using the KONTAKT sampler. This will be described as follows.

- Recording musical works created by two art communities, namely the rampak drums community and the pencak music community. From the two works, evaluation and discussion of compositional aspects were carried out for the purpose of producing more creative musical ideas.

- The results of the evaluation and discussion were found, and it was agreed that in developing the creativity potential of the two communities, the problems were limited to two things, namely the problem of the form and structure of the composition and creating collaborative work between the two ideas, namely the concept of the game rampak drums based on jaipong drums and games. drums penca.

- In finding a solution to the above problems, the software sampler CONTACT 6 is used so that all elements of music as musical ideas can be recycled, tested, combined and so on.

- The data recorded in the initial activities, edited by cutting audio clips in various phrases into musical sentence fragments.

- From the musical sentence fractions, one by one input into the sampler CONTACT 6 for mapping so that it is easy to manage.

- After the mapping arrangement is complete, one by one is played to be analyzed again and all musical events are identified.

- Through a data collection of audio clips programmed in the sampler CONTACT 6, the participants who are involved collaborate and discuss to find the form and structure of music with a better dramaturgy concept.

- The results of the discussion and collaboration were tested by re-recording with the DAW system until reaching an agreement.

- The musical data on the DAW system is finally used as a guide so that it can be played over and over again in the process of learning the musical work.

- After the participants mastered it, they presented it at the end of the event

From the various steps mentioned above, there are various abilities that are trained to the participants, namely various abilities in making music compositions and in developing and creating audio data in the form of digital music. These various parameters can be seen in the table 1.

TABLE I.   PARAMETERS OF MUSICALITY ABILITY IN DIGITAL MUSIC TRAINING

No	Aspects that are developed		
	Musical parameters (musicality)	*Operation of Music applications on multimedia computers*	*Information*
1	Composition technique Metric and time taste	Knowledge and practice of making Digital music	
2	Polymmetric Technique	Recording tecnic	Record audio sampling
3	Interlocking technique	Digital recording	Make music with technique tracks
4	Color sound processing		Placement of the composition based on the character and sound color of the musical instruments
5	Dynamics and expressions related to Engineering		Accentuation, tempo, loud and soft sounds, etc.

IV. CONCLUSION

The development of the world of technology in music must be positively prepared. Its existence must be used as a medium to express all the results of creativity and its works through various applications of music technology that are currently developing. This training program provides experiential knowledge and skills in creating and expressing the art of music through the KONTAK 6 application. Through the KONTAKT 6 music application, the work of making music creations can be done in a shorter time than conventional methods. Human weakness due to memory limitations in looking for musical inspiration / ideas, can be recorded, repeated, recorded precisely through this sampler feature.

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