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VIRTUAL HOLOGRAM LEARNING AS A PUBLISHING MEDIA OF NUSANTARA CULTURE STUDY CASE: MABAYANG-BAYANG TRADITION IN SENGKIDING VILLAGE

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Abstract

Technology has developed and affect so many aspects of people's lives. The presence of increasingly rapid technology could be an effective medium to be use to distributing information. Virtual Hologram Learning is a technology product that is formed from the combination of two coherent light rays in microscopic form. Virtual Hologram Learning can be used as a medium of information for the people of the archipelago in terms of culture and use to preserve the culture of the archipelago. Bali is an island known as an island that has abundant cultural diversity has a unique cultures called Mebayang-Bayang Tradition from Sengkiding Village, Klungkung. Which is held every Pengrupukan (a day before Nyepi) involves the villagers pulling the cow bones. The method used in this study is a qualitative method which aims to understand the factors that influence the research subject (Sengkiding villager) want to carry out the tradition. The type of data used is primary data sourced from the results of direct observations from the informants who has understanding about this tradition. Furthermore, the data will be published through Virtual Hologram Learning as a form of publishing Nusantara culture.

Keywords: Virtual, Hologram, Publishing, Cult

1. Introduction

1.1 Background

In the current era of globalization, the development of technology and information is experiencing a significant increase. This development is marked by the discovery of various digital media technology sparks in the form of hardware and software (Bakas & Mikropoulos, 2003). The existence of information technology has become an inseparable part of people's lives. Even in today's digital era, technology will certainly be a full supporter of the process of developing a country. Technology has sparked new meanings that act as a medium for interaction and media transmission through digitalization. In the life of the Indonesian people, information technology is often used in various fields such as economics, education, social, politics, and culture. This is supported by the increasing pattern of life and the needs of the community that prioritize efficiency and ease of access to all forms of information.

As a country known for its cultural diversity and traditional customs, Indonesian culture will certainly be inserted the touch of today's technology. Along with the times, culture will also be influenced in various aspects of digitalization. Technology can also be used as a visualization medium as well as a engineering method device (Kurniati, Anshary, & Nurrahman, 2020). One form of technology in terms of culture is through the use of Virtual Hologram Learning media. Hologram is a type of three-dimensional projection of an object which is projected on a two-dimensional surface. Virtual Hologram Learning can be applied in various ways such as for learning, entertaining, recreation and others. Virtual Hologram Learning serves to present information in the form of audio and visual in a accurate, and interesting manner. In addition, holograms can also using various media such as glass prisms, fans, and fog (Devita, Wibowo, and Rahmania, 2020).

The use of Virtual Hologram Learning in the field of culture will encourage efficient and effective data transmission. The visualization produced by the hologram will create a real impression related to the object depicted. According to cultural studies, the depiction of a tradition of Indonesian society is also an object that can be applied through hologram technology. One of these traditions is the Mabayang-bayang Tradition found on the island of Bali. This tradition has grown and developed in the community of Pakraman Sengkiding Village, Aan Village, Banjarangkan District, Klungkung since the 1900s. The tradition, which is held on the eve of Nyepi, is carried out by pulling each other's bones, which are believed to bring happiness or joy to the village community.

In current developments, Virtual Hologram Learning can also be used as a medium for education and recreation. As a publication media, holograms can present an object related to the world of education such as cultural studies to art. The Mebayang-Bayang tradition is known as a characteristic of Balinese society, which is multicultural and full of philosophical meaning, so it would be interesting if this tradition was widely published in various circles. In Virtual Hologram Learning, the Shadowing Tradition will be used as a cultural object that will be shown to the public. Through holographic technology, this tradition will be displayed in real terms, both in terms of procession and implementation. The hologram projection display is also in the form of a three-dimensional shape so that the depiction of objects will be easier to visualize. As the main target, Virtual

Hologram Learning will be intended as a media for public education, both in public spaces such as museums, and in schools. With the existence of culture-based Virtual Hologram Learning, the combination of technology with traditional local wisdom can always be established without any form of gap between one field and another.

In several previous studies, several links were found between the use of hologram technology and the local wisdom of the Indonesian people. Such is the case with the research conducted by Dirgahayu, Marlika, and Hesti (2019) with the title Rameng: Hologram Fairy Tales as a Learning Media for Inculcating Cultural Values in Fourth Grade Elementary School Students in Realizing the Industrial Revolution 4.0. This research focuses on the study of the use of holograms in local wisdom in the form of Indonesian fairy tales. The storytelling activity will be displayed through a two-dimensional hologram by elevating the cultural values of Bugis, namely Sipakalebbi, Sikapale, and Sipakatau so that children can imitate the noble actions presented by the two-dimensional hologram.

Furthermore, the research conducted by Dimas Aditya, Soni Ariatama, and Amar Ma'ruf (2020) with the title HISTOGRAM (History In Hologram): Fun Learning Media to Learn Ancient Relics of Indonesia is a research that also combines technological developments and local wisdom. This study aims to provide knowledge about ancient relics in Indonesia to the younger generation. In addition, this study also examines the application of three-dimensional modeling as a medium for learning history for the younger generation. This study uses the ADDIE development model. ADDIE model (Analysis, Design, Develop, Implement, Evaluate) by involving holography technology in the application of learning. Not only that, the use of holography is also an applicative and futuristic medium so that it is not only used in history lessons, but also in other learning. Teachers can modify pictures or videos according to the topic of the lesson. This holographic media can also be an alternative learning because it can increase students' motivation in seeing an object. In addition, the use of hologram technology can also generate critical ideas so that it can stimulate students' thinking power.

Based on several previous studies, the novelty of the ideas applied in this research is related to how the role of Virtual Hologram Learning in local wisdom, namely the Mabayang-Bayang Tradition. In this Virtual Hologram Learning, holography technology is focused not only as an educational medium, but also as an object publication media. Technology includes Balinese culture as a form of introducing Indonesian local wisdom so that it can gain public attention. Not only that, Virtual Hologram Learning can also be applied to public places such as museums, to other historical locations.

1.2 Research Question

Based on the background descriptions that have been presented, the formulation of the problem raised in this study is "What is the Role of Virtual Hologram Learning as a Media for Publication of Indonesian Culture in the Mabayang-Bayang Tradition, Sengkiding Traditional Village, Klungkung".

1.3 Purpose and Objectives

1.3.1 General Purpose

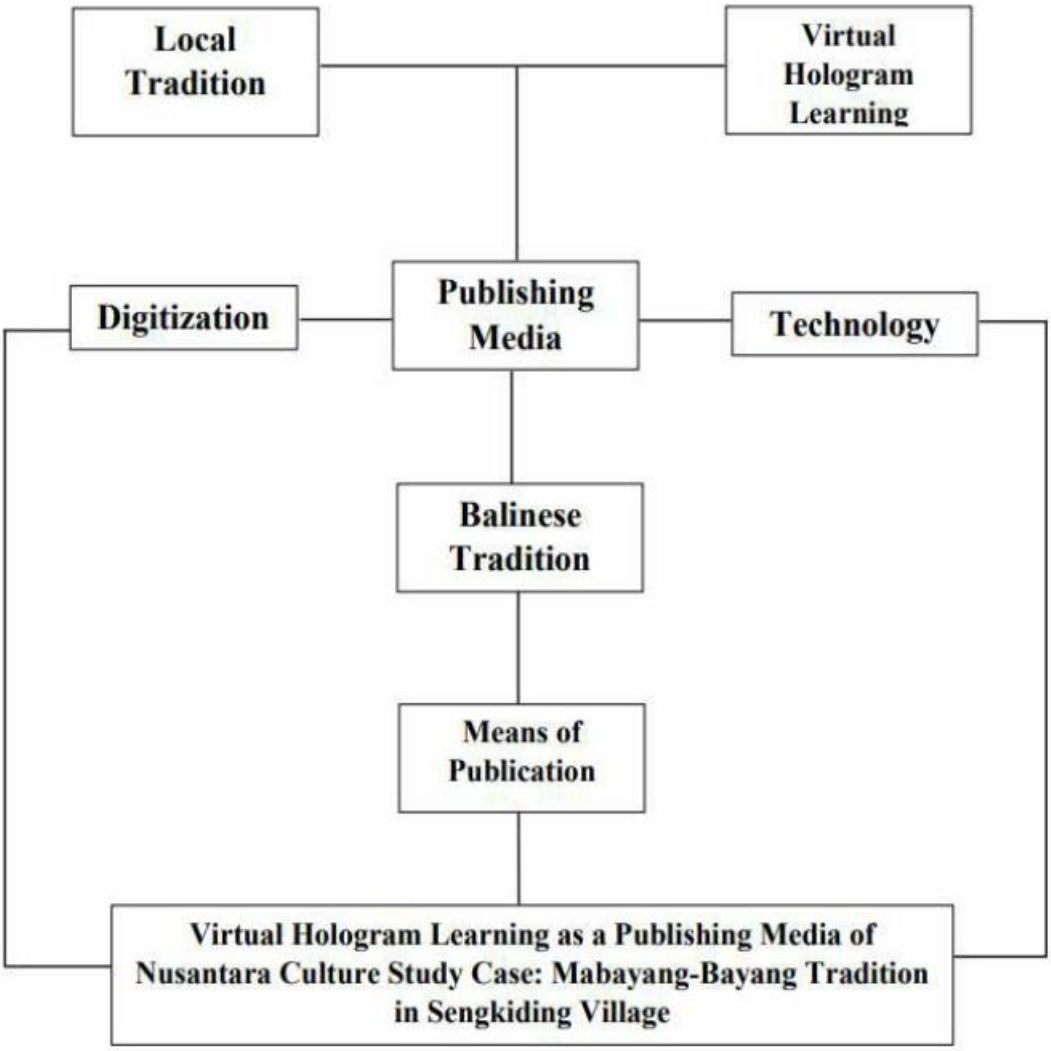
To find out how the role of holography technology, namely Virtual Hologram Learning, as a media for publication of Indonesian culture through technology and digitalization. Holography will be used as a supporting medium in introducing local wisdom, especially in Indonesian society.

1.3.2 Specific Purpose

The specific purpose of the research is to find out how the role and application of Virtual Hologram Learning technology is as a publication medium for the Shadowing Tradition in the community of Sengkiding Traditional Village, Klungkung, Bali. This study will also explain how the influence of technology in supporting the development of local wisdom of the archipelago, especially in the study of community traditions.

2. Literature Review

2.1 Framework for Thinking



In the framework chart above, theretwo things that are the main supports for this idea, namely in the form of local wisdom and hologram learning. In this idea, wisdom becomes the main subject of discussion is the Mabayang-bayang. Tradition in the Sengkiding Traditional Village, Klungkung Regency. Local wisdom is defined as everything that grows and develops in a particular society. Based that statement, local wisdom may be enjoyed not onnly by the local community, but also by the public who come from various areas. In order to address this, the role of technology does not escape this idea. In this idea, the technology associated in the form of Hologram Learning that is often. known in today's digital era. It becomes a media that connect local wisdom and technology.

Even more deeper, hologram learning and local wisdom is act as a publication medium for a particular tradition. From the perspective of publication, this virtual hologram learning presents an image or a three-dimensional object from a local wisdom, which in this idea takes the Mabayang-Bayang Tradition. Virtual Hologram Learning will be a medium for publishing local wisdom for public national or international scale. Not only as a means of publication, Virtual Hologram Learning is now one of the implementations of digitalization adaptation in the socio-cultural field.

Culture and traditions in the archipelago as well as on Bali island has their own charm and uniqueness. The Mabayang -bayang tradition which is located in Sengkiding Village, Klungkung Regency is the main local wisdom that will be published through Virtual Hologram Learning technology. This local wisdom design will be published to the public through the placement of holography in public facilities such as schools, city parks, historical museums, etc. With the existence of creative and innovative publications, the community will be more interested in the local wisdom in the archipelago. Thus, the local wisdom of the Mabayang-bayang Tradition can be increasingly recognized by the public along with the development of today's technology.

2.2 Theoretical Framework

2.2.1 Theory of Diffusion of Innovation

Theory of Diffusion of Innovation proposed by Everett Rogers (1962), is the suitable and relevant theory to be used in this innovation, explains the new level of technology is developing so that it can be adopted into various contexts. It is related to VHL (Virtual Hologram Learning) as a publishing medium, an archipelago tradition that few people know about.

Virtual Hologram Learning is based on the Greek language which consist of the words holos and gram. Holos which means to see the whole while gram means to write. According to Dennis Gabor Hologram is a holographic technology tool that is formed from the combination of two coherent and microscopic light rays (Jaya & Lu'um, 2010). Virtual Hologram Learning is also a repository of information that can provide realistic information almost in accordance with the real results. In Dennis Gabor's quote, Virtual Hologram Learning has several advantages, namely:

a) It can display information in three dimensions so that information is covered perfectly
b) is able to combined information with holographic elements

c) can be a summary recording of an object when a change occurs time (Hendra Jaya). With this holography technology, it can help the public to get information about the traditions that exist in the archipelago such as the Mabayang-bayang tradition in Sengkiding Village which is displayed in real terms or three-dimensional (3D). From technology, people can also learn and know that holography technology is very sophisticated and useful for general knowledge.

2.2.2 Medium Theory

Medium Theory by Crowley & Mitchell 1994, is used because this theory explains how the media can be an influence in the delivery of information both physically and psychologically (Meyrowitz, 1994). Related to this theory, Virtual Holograms can provide information to the public, both physically and psychologically. Information that will be displayed is in the form of traditions that exist in the archipelago, a small example of which is the tradition of shadowing. The combination of Virtual Hologram Learning with the culture of the archipelago in Indonesia can give a positive impact such like people can learn or find out new things, whether it's about technology or a tradition that is broadcast on Virtual Hologram Learning, traditions that are still rarely reached by tourists and local residents can develop and be able to disseminate so that the traditions of the archipelago are not extinguished or remain sustainable, it can arouse curiosity and can enliven historical places in the archipelago so that history can run well and it can bring foreign and local tourists into the country so as to increase tourism and can introduce the traditions of the archipelago to the international scope in the community, government or even the country. This Medium Theory can help the public to capture the information displayed in the Virtual Hologram Learning so that the information conveyed is suitable in the target and minimizes misunderstandings in conveying information about Virtual Hologram Learning which displays the Mebayang-bayang tradition with the aim of adding knowledge, insight, and providing novelty to technology or traditions that exist in the archipelago.

2.2.3 Participation Culture Theory

The last theory used in this innovation is Participatory Media Culture which was discovered by Henry Jenkins 2009 (Kurzawa, 2017). This theory is used because it explains the breakdown in which new media culture can offer an audience so that they can jointly take on the role of either media consumers or media producers. Jenkins said that the Participatory Media Culture theory is able to move people creatively to respond to media content by creating their own culture as a form of deciphering and getting meaning in the media or existing messages. Based on the theory by Henry Jenkins, Virtual Hologram Learning can be a new medium for delivering a tradition or culture of the archipelago that can be accepted by both local and international communities. This theory is expected to be the basis for someone to be creative and innovative in accepting this holography technology which is combined with the traditions of the archipelago, besides that Virtual Hologram Learning will be displayed or placed in places where many visitors like

history or culture such as museums so that this theory can help many people. This innovation was innovated to get the community's response and to encourage the community to contribute and find the true meaning of Virtual Hologram Learning media as publishing the Mabayang-bayang Tradition in Sengkiding Village.

3. Research Methods

3.1 Types of Research

This study uses qualitative research methods that aim to understand the phenomena experienced by research subjects related to the behavior, attitudes, motivations, perceptions and actions of the subject (Moleong, 2007:6). The qualitative research methods will be carried out in order to determine the factors that influenced the Sengkiding villagers to carry out the tradition. As this research is a descriptive research, the results of observations can be presented in a more structured and detailed manner.

3.2 Research Location

This research was conducted in Pakraman Sengkiding Village, Banjarangkan District, Klungkung. The location was choosen based on the results of observing the local environment which became the forerunner to the birth of the Mabayang-bayang ritual which will be the subject of discussion in this study.

3.3 Types and Sources of Data

3.3.1 Data Type

The data in this study is qualitative, data in the form of verbal and descriptive information about an object under study. The presentation of qualitative data is conveyed in the form of a description through a brief and comprehensive interpretation to clarify the delivery of information related to the results of research data acquisition.

3.3.2. Data Source

The primary data sources in this study was direct observation and interviews. While the secondary data sources were the results of literature studies through various books, journals, scientific articles covering the scope of digitization and the Mabayang-bayang tradition.

3.4 Determination of Informants

The main informants in this study were village officials who had a deepunderstanding of the Mabayang-bayang tradition. In addition to the main informants, additional informants in this study also targeted local people who had participated in the implementation of the tradition. The determination of the main informants and additional informants in this study has been adjusted to the needs of the data in the study.

3.5 Data Collection Techniques
3.5.1. Observation

The data was collected by doing the observation method was carried out by observing, recording, and learning from sources related to the Mabayang tradition.

3.5.2. Interview

In this study, the researchers conducted unstructured in-depth interviews with the traditional village chief of Sengkiding village and the local community regarding the Mabayang-bayang tradition. Data collection through interview was chosen because each question can be developed further, so that the information obtained is detailed and the possibility of misunderstanding or doubt can be minimized. To get accurate interview results, the researcher seek to establish comfortable communication during the interview so that the interviewees can openly and freely express their opinions.

3.6 Data Analysis Techniques

The data analysis technique used is descriptive analytic technique, namely the elaboration of the data that has been collected in the form of field notes, interviews, and observations that aim to provide an understanding of the subject matter observed (Sudarto, 1997). According to Miles and Huberman, analytical techniques can be described into three main lines, namely data reduction, data presentation, and drawing conclusions.

a) Data reduction is defined as a process of selecting, focusing on simplifying, abstracting, and transforming data obtained based on observations. The reduction stage can be done by collecting related data or information and then sorting out irrelevant data so that verified data will be produced with observations in the field.
b) The second stage is the presentation of the data, namely the description or description of all data information that is structured in a structured manner so that can lead to drawing conclusions related to research results. Presentation of qualitative data can be presented in the form of narrative text, so that all forms of data and information obtained can be integrated and easy to understand.
c) After going through the two previous stages, drawing conclusions or verification is the last stage in the implementation of qualitative research data analysis. In drawing conclusions, it is also necessary to verify the source, both in terms of meaning and the truth of the conclusions obtained based on observations.

4. Results and Discussion

4.1 Discussion

In the era of modernization, the development of technological media is increasingly advanced, making it easier for people to browse, see, and get things that are around the world. Advances in technological media that are developing now

can be in the form of cellphones, laptops, TV, and so on. The existence of media technology can help people to work, learn, give or receive information, and access the unreachable more easily.

The pandemic situation that prohibit people to travel makes humans cannot be separated from technology because humans may get things easily such as shopping, looking for entertainment, as well as circulating information.

Virtual Hologram Learning has many advantages in conveying information. This holography technology has various advantages, for example, it can display an information object in the form of a three dimensions so that the information looks real and realistic from people who see objects displayed in Virtual Hologram Learning. Quoted from the journal Holographic Technology Virtual Hologram Learning has a uniqueness that makes it even more amazing in delivering information, the uniqueness is

a) The light that reaches our eyes comes from the reconstructed image of a hologram that is the same as the original object but has a size that is sometimes different from the original. A person viewing a hologram image can see depth, parallax, and different perspectives as they would on a schematic of an actual object.
b) A hologram of a scattered object can be reconstructed from small parts of the hologram, in other words if a hologram is broken into pieces, the individual parts can be used to reproduce the entire image. However, shrinking the size of the hologram can cause a decrease in image perspective, resolution, and image brightness.
c) From a hologram can be reconstructed into two types of images, usually real images (pseudoscopic) and virtual images (orthoscopic).
d) A hologram tube can provide a 360-degree view of the object.

Indonesia is a diverse country with its traditions and culture, but there are still many people who do not know the culture or traditions of the archipelago. For example, in Bali Island culture is one of the tradition hat has been known by local and international people, but it is possible that there is Balinese culture. which is only known by a handful of local people even the majority of Balinese people do not know about this culture. The lack of knowledge related to culture on the island of Bali and the lack of cultural promotion activities make people unfamiliar with this culture.

The presence of a Virtual Hologram Learning functions for local and international communities that are intended to be able to find out information about a culture that exists in a certain area and of course it is still untouched by many people. -people to come to various places, Virtual Hologram Learning can be a repository of information or information media for tourists who have not been able to visit the place directly. This Virtual Hologram Learning will display information in the form of three dimensions, which includes a description of the tradition, how the tradition is carried out, and the appearance of a tradition itself, so that people will be more familiar with the culture and traditions that exist in all regions and can obtain information. or more knowledge of technology media, namely Virtual Hologram Learning . The combination of Virtual Hologram Learning with archipelago traditions such as the Meshadow-shadowing tradition can have an impact on the village environment, residents, and the country at the same time. Impact that can be obtained can be in the form of:

a) People can learn or find out new things, whether it's about technology or a tradition that is broadcast on Virtual Hologram Learning
b) Traditions that are still rarely reached by tourists and local residents can develop and be able to disseminate so that the traditions of the archipelago are not extinguished or remain sustainable.
c) Can arouse curiosity and can enliven historical places in the archipelago so that history can run well
d) Can bring foreign and local tourists into the country so as to increase tourism and can introduce the traditions of the archipelago to the international scope.

To make it easier for people who will use Virtual Hologram Learning , this technology must be placed in a place that can reach many people at the same time. The place is a museum, because the museum is a place that provides a million information about things such as, history, culture, tragedy, and much more. Museums are also places that are targeted by people who want to know a lot of things so that museums are suitable as a place to market a tradition that is not yet well known to people by using Virtual Hologram Learning media.

Through Virtual Hologram Learning, it can make it easier to disseminate a culture, for example shadow culture or other cultures that are not yet known by the public, so that the culture can be known by local and international tourists because this hologram technology is placed in a place that has a lot of visitors and can attract a lot of people. people's attention and by presenting a culture through holograms in a three-dimensional style. In addition, dissemination through Virtual Hologram Learning can have a positive impact or can provide support and progress for the cultures that exist in the archipelago.

4.2. Video Tradition in the Form of Documentary Films

Documentary films are films that present a reality based on objective facts and have essential and existential values that involve real situations as well as environmental life. Generally, the content raises various issues related to human life such as social, humanitarian, cultural, and political issues. The main role of documentaries is to be documentation. One of them is a cultural documentary film which has a mission to document existing cultures and record as well as being visual evidence that the existence of culture is real.

As previously explained, the Mebayang-Bayang tradition will be the sample in this study, therefore some of the elements presented will certainly be related to the tradition. The things that will be raised in the documentary are about the origins of the Mebayang-Bayang tradition, the history of its development, its philosophical meaning, uniqueness, and its sacredness. The contents are not only highlights when the tradition is goes, but also mixed with the presentation of expert sources who have knowledge about the Mebayang-Bayang tradition, for example, a historians, cultural experts, or local traditional practitioners. This is intended so that people who see this film will not only get a realistic picture about how the tradition goes but also implementation of the tradition but also increase their understanding of the Mebayang-Bayang tradition . Base on that concept, this research proposes the idea of making a documentary film related to the traditions of the archipelago which will later be shown and promoted through virtual hologram learning.

4.3. Data Storage Media

If this innovation is actually implemented in real terms, the documentary film produced will not be the only one. Indonesia has so many cultures and traditions, of course, a large capacity storage media is needed. That's why *Holographic Versatile Disc* (HVD) is a great choice for use. HVD is a volumetric approach that not only uses the surface of the medium but also uses the volume of the medium to write data. The technique used in the application of HVD is called Collinear Holography, which use red and green laser beams collide in a single *block.*

HVD itself has many advantages over conventional storage technologies. HVD can store up to 3.9 terabytes (TB) of data, which is 80 times more than double layer *blueray* and the equivalent of 800 single layer DVDs. Another advantage is the data transfer speed is extraordinary, which is 1 gigabyte per second. The HVD can also retrieve up to 60,000 bits of data in a single laser shot and on a single holographic page. These advantages are of course very useful in implementing this innovation if it is actually implemented.

4.4. Innovation Publicity Strategy

Every time a new innovation appears, publicity is needed to introduce it to a wide audience. There are various types of publicity that can be used, one of which is through exhibitions. According to Leorensi (2010: 22), exhibitions are all activities that aim to convey or communicate a product to the target market, provide information about its features, uses, and most importantly about its existence to change attitudes or to encourage people to buy it. Based on this, exhibitions can be a good promotional media to introduce research innovations, namely virtual hologram learning . The invited figures are those who have a certain status in the area where the exhibition is being held, policy makers, cultural experts, historians, traditional leaders, media crews, and the general public. The exhibition will explain everything related to this research innovation. Such as the background of its manufacture, the systematic use, the elements, to the promised impact and benefits when buying it. Through invited media figures, it is also one of the publicity strategies to introduce this innovation to people who cannot attend in person and at the same time disseminate it to remote areas of the country.

Although the innovations in this study still prototype, the actual impact of their implementation can be seen. From a cultural perspective, the impact is that Indonesian culture is increasingly recognized by a wide audience, especially culture that is not widely publicized. Meanwhile, in terms of education, people's understanding of the culture of the archipelago is getting higher because apart from being intended for promotion, the documentary film shown through this virtual hologram can also be used as a learning medium, plus the presentation through interesting media makes it not boring. From an economic perspective, it will also have an impact, namely an increase in the country's foreign exchange. This is because with the current promotional media and clear exposure by the documentary films, many tourists will be interested in visiting places of traditions that are broadcast live. This interest will have a positive impact on Indonesian tourism which will indirectly improve the country's economy. Basically, preserving and

leveraging culture can be an effective means of boosting the economy

5. Conclusions and Recommendations

The evolution of the times is a factor in the growth of cultural digitization. One form is the use of virtual hologram learning media, which is a three-dimensional projection of an object projected on a two-dimensional surface.The use of Virtual Hologram Learning in the field of culture will encourage efficient and effective data transmission. The existence of the Meshadow-Bayang tradition originating from Bali can be one of the many cultures that can be published through holograms, later this tradition will be shown clearly both in terms of procession and implementation. With the culture-based Virtual Hologram Learning, the combination of technology with traditional local wisdom can always be established without any form of gap between one field and another.

The form of the video that will be shown in this hologram in the form of a documentary film on Indonesian culture. Its contents refer more to the history of tradition, the philosophy of meaning, as well as its sacredness. If in The future this innovation is implemented in real terms, it will require large capacity storage media. So, the best utensil to use is HVD (Holographic Versatile Disc). To realize this innovation, it is necessary to introduce it to a wide audience. There are many kinds of publicity,but for our publicity, the best way to publish our innovation is by holding an exhibition. There will be a lot of people attended the exhibition also makes it easier as well as a superior strategy in launching this innovation.

In the future, virtual hologram learning innovation can be a stepping stone in advancing and preserving the culture of the archipelago which is increasingly being eroded by globalization. However, to achieve these goals requires effort that is not easy. Before achieving the success, there is always a dark spot that will frame it, for example a challenge. Challenges are always an inseparable part of the journey. If you can go through these obstacles, surely the results obtained will feel very satisfying. Strong support is needed from all groups of society in seeking the realization of this innovation. Because unity is always better than alone.

Bibliography

Books

David Crowley, David Mitchell, eds. 1994. *Communication Theory Today*. Polity Press.

Journals

Ambar. 2017. "Teori Komunikasi Media Baru Menurut Para Ahli – Pengertian dan Karakteristiknya.". Accessed on 18 June 2022.

Asmin, Ferdinal. 2018. "Budaya dan Pembangunan Ekonomi: Sebuah Kajian terhadap Artikel Chavoshbashi dan Kawan-Kawan." *Jurnal Studi Komunikasi* 2(2):190-212.

Gurumurthy, Sasikumar. 2011. "Disk Serbaguna Holografik Komputasi Digital". *Research Gate* 1:1-4.

Hendra, J. Lu'mu. 2010. "Teknologi Holografi Untuk Pembelajaran Virtual Pada Sekolah Menengah Kejuruan." *Jurnal Elektronika Telekomunikasi & Komputer* 5(1):783-791.

Jaya, Hendra. 2010. "Teknologi Holografi Untuk Pembelajaran Virtual Pada Sekolah Menengah Kejuruan." *JETC* 5(1):783-790.

M. Echsanullah, Anna Wulandari. 2018. "Pameran, Personal Selling Dan Iklan Media Online Dalam Mendorong Penjualan Property." *Jurnal Pengembangan Wiraswasta* 20(3).

Petterson, Sven-Goran. 1989. Media penyimpanan Holography. 95.

Rianto, JM dan Herriyanto, M. (2015) Publisitas Melalui Pameran Terhadap Tingkat Penjualan Sepeda Motor, Kasus Pada Sepeda Motor Kawasaki

Soenarjo, Hady. 2015. "Perancangan Model 3d Holographic Reflection Dan Penerapannya Pada Karya Visual Motion Graphic." *Jurnal Desain* 2(2):69-74.