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## Design Thinking in Digital Preservation of Mak Yong's Facial Expression Performance

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### Abstract

Throughout many years, Mak Yong's performance has been performed live. Mak Yong is the only performance in Malaysia that has been recognised by UNESCO and awarded the title "Masterpiece of Humanity's Oral and Intangible Heritage" in 2005. Undoubtedly, this type of performance has faced numerous challenges, particularly as a result of modernisation. As part of the digitisation phases, the Design Thinking process was proposed as a model for preserving Mak Yong's performance using digital technology. Design Thinking has been chosen for its non-linear and user-centered approach. Five stages comprise the Design Thinking model: Empathise, Define, Ideate, Prototype, and Test. The digitisation process in this study is still at nascent stages, thus it only focused on the facial expressions of Pak Yong character in Dewa Muda repertoire. The digitisation of Mak Yong's 3D character prototype using the Design Thinking offers a practical solution, which can also be applied into other areas such as animation and digital games.

**Keywords:** Design Thinking, Intangible Cultural Heritage, Digital Preservation

### Introduction

Cultural Heritage consists of both tangible and intangible artefacts. These heritage assets of a group or society were passed down from previous generations. The ICH, known as Intangible cultural heritage, is normally focused on non-physical heritage that must be preserved. ICH may be defined as per Article 2 of the Basic Text of the 2003 Convention for the Safeguarding of the (Intangible Cultural Heritage, 2020)

*The practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognise as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.*

Currently, there are a number of global studies focusing on the digital preservation of ICH. Using the Design Thinking model, this study on the digital preservation of Mak Yong from the

east coast of Peninsular Malaysia focused on facial expression performance. One of the benefits of adopting the Design Thinking model is that it is a non-linear process, allowing researchers and designers to incorporate inputs and feedback into the design process simultaneously, thereby adapting to an agile environment.

**Present Digital Preservation of ICH Models**

Using computers and related tools, humans are creating and sharing digital resources – information, creative expression, ideas, and knowledge encoded for computer processing - that they value and want to share with others over time as well as across space (Kurin,2004). Another reason using technologies to generate awareness or upgrade the knowledge and skills (Kapur,2018). Previously, several research focus on ICH has implemented high technologies such as MoCap purposely to record the traditional dance and expression data digitally, considering that the accuracy potential is significantly high to record and digitising human motions (Musa & Idris,2020; Mustafa & Idris, 2020). Therefore, the digitalisation of ICH is necessary and important nowadays as most human interaction uses digital devices and the internet.

There are also studies proposing a framework for preservation. For example, the figure below shows a framework of TUI for ICH towards traditional craftsmanship, containing several phases such as interpretation, prototype and evaluation (Aziz, 2017).

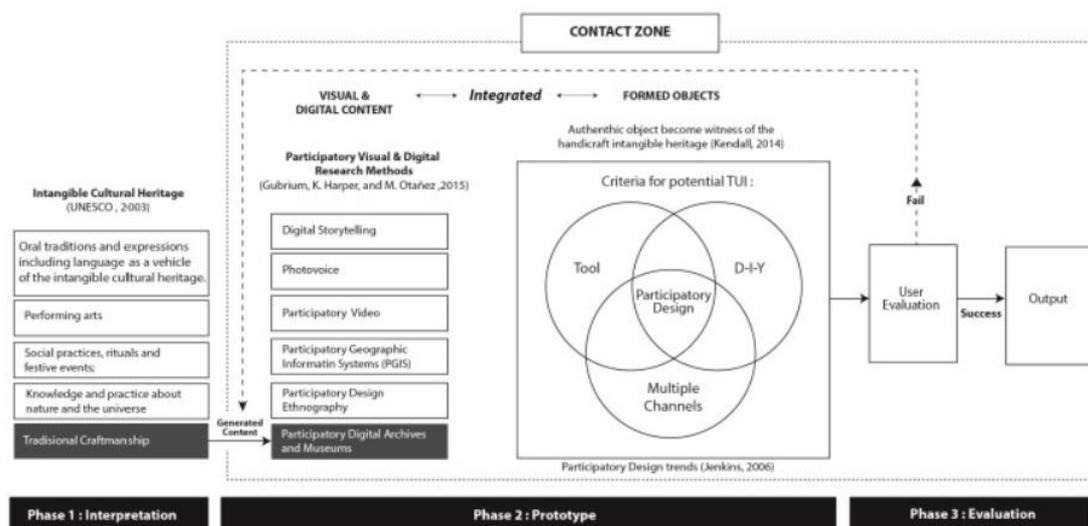


Figure 1. Framework of TUI (Traditional Craftsmanship category)(Aziz,2017)

Another study focuses on preserving, promoting, and expanding indigenous cultures' intangible heritage. It requires a three-phase strategy for digital preservation projects utilising mobile technologies, including 1) Documentation, 2) Translation into technology, and 3) A set of principles for the development of new mobile technologies (Papangelis, Chamberlain & Liang, 2016). This three-phase strategy's general framework was applied to a project envisioned to help China's Qiang ethnic group preserve its Kasidawen dance.

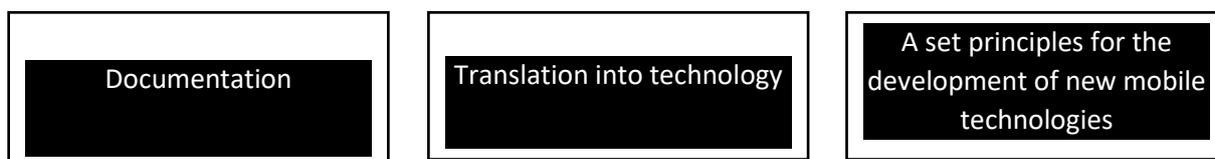


Figure 2. Three Phase strategy in Kasidawen dance

## Design Thinking Method

As in Malaysia, one of the ICH recognised by UNESCO is Mak Yong, which is popular in Kelantan and can be found in several other states, including Terengganu and Kedah. The performance is a combination of dance and theatre, and the repertoire focuses primarily on courtiers and folk tales. Currently, research is being conducted on Mak Yong in areas such as management, repertoire, costumes, dances, and songs in Mak Yong performances. Consequently, the purpose of this paper is to propose the design thinking method to be utilised in the preservation of ICH with a focus on Mak Yong's facial expression.

Design Thinking is a method or process that combines a creative thought process with an industrial application. It employs the designer's sensibilities and methods to match people's needs with what is technologically feasible and what a viable business strategy is so that it can be converted into customer value and market opportunity (Brown, 2008). You and Hands (2019) report that, since the 21st century, there have been numerous variations of the Design Thinking process, with varying numbers of stages ranging from three to seven, based on the same principles as Simon's 1969 model.

In the Design Thinking structure, this non-linear process has five stages: empathise, define, ideate, prototype and test.

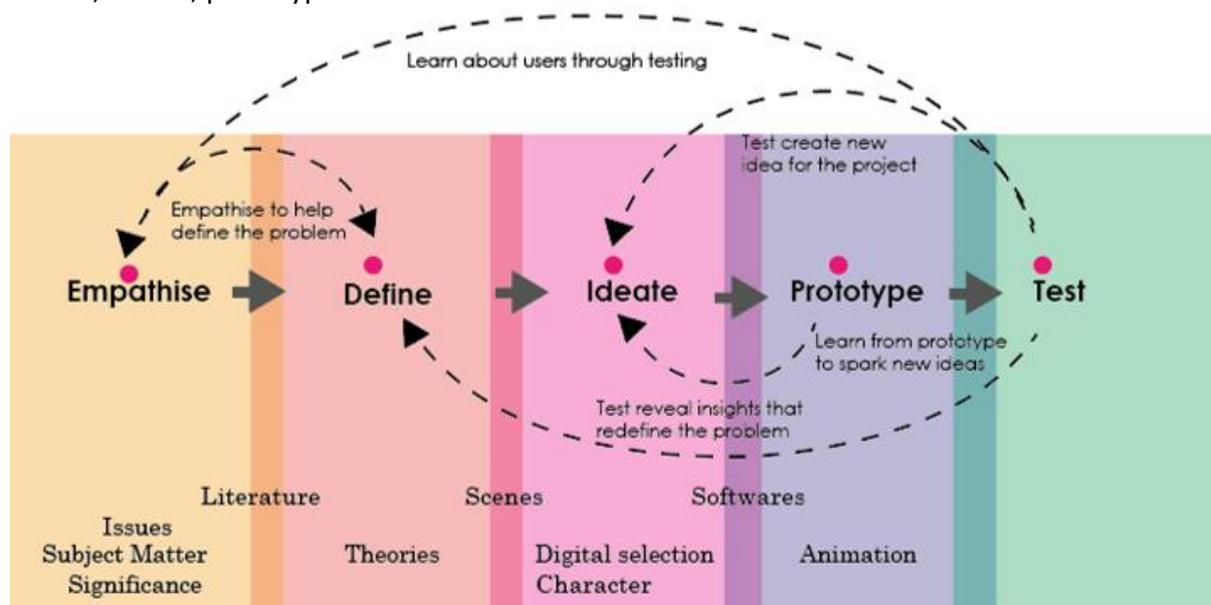


Figure 3. Design Thinking from Dam and Teo Yu Siang (2017) adapted in research.

## How to make Design Thinking as part of Digital Preservation of ICH - Mak Yong

Unlike industries, the preservation of cultural heritage may adopt this non-linear process as a potential method. Some stages can jump back and forth without having to resume from the first stage. The discipline starts with the empathise stage.

The ability to empathise is central to the human-centred design process. In the context of digital preservation and subject matter, researchers must understand humans. Several questions may arise, such as how it was presented, its physical or emotional appearance, or its ability to survive in society. Therefore, in order to solve the preservation issue and combine it with technology, researchers must gain the empathy of those directly or indirectly involved with the topic. The researcher will employ the methods of 1) observation, 2) engagement, and 3) watching and listening. The approaches are watching the live performance, making a network with the performer, interviewing with experts or at least joining the Mak Yong workshop or performance to understand well of the performance. Besides traditional Mak

Yong, there are various of fusion and contemporary Mak Yong performance (Figure 4). Nowadays, many sources, such as Mak Yong theatre, songs or reading items, can be found on the internet.



Figure 4. Mak Yong music integrated with Japanese dance in ASWARA

The **Define** stage occurs after the empathy stage. In this instance, empathy aids in defining the problem of subject matter preservation. The researcher is aware that Mak Yong's performance contains numerous controversial issues for this purpose. The researcher determined that it pertains to Mak Yong's originality, performers, religious concerns, and COVID-19. However, among all problems, the researcher discovered that originality and digital impact are the most significant. The researcher needs to define the exact problem of the subject matter- ICH itself. Consequently, numerous studies have been conducted using performance, primary, and secondary data.

The third level is **Ideate**. Based on the problem, several potential ideas or solutions are generated at this stage. A researcher may produce various types of ideas. As shown in figure 1, the stages of Prototype and Test can revert to the Ideate stage if the test is unsuccessful or the prototype needs improvement. At this stage, the concept is to convert traditional Mak Yong performances into a potential digital medium. The Mak Yong performance has been split into several categories, and the researcher decided to focus on the *Pak Yong* facial expression towards his own character in the repertoire of *Dewa Muda*.



Figure 5. Above are series of images or frames of the facial expression of an expert performer

The following is the **Prototype**. Once the ideas have been finalised, pre-production will commence until data is gathered through interviews and focus groups. This phase's objective is to create stimuli in the form of video animation. All converted data will be utilised as stimuli in the data collection methods from participants. As this is a non-linear process, there is a possibility that this stage will frequently repeat itself.

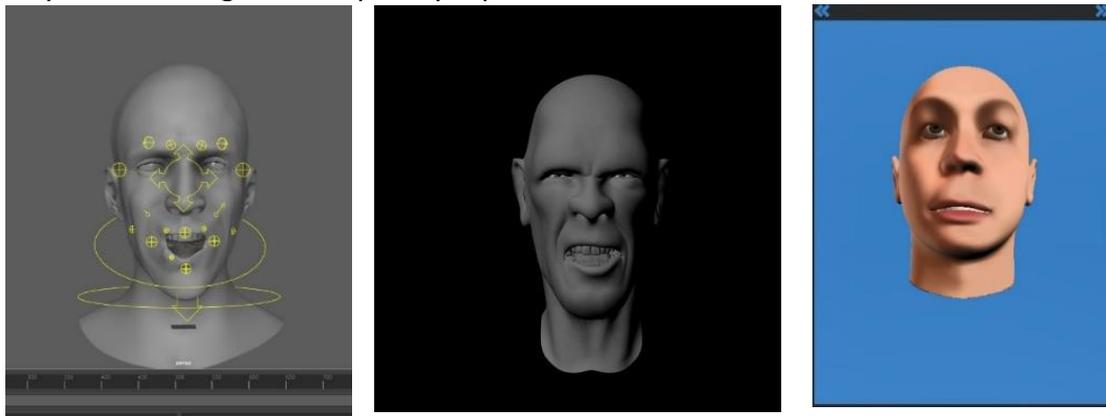


Figure 6: Rejected 3D existing models to be used in research



Figure 7. Animation expression ( 3D model modified from Ray character rig by CGTarian Online School )

Lastly, there is the Test phase. Essentially, ideas or stimuli are evaluated, and user feedback is gathered. During this phase, the researcher will test the animation and receive feedback from traditional performance and animation specialists. The next test involves presenting the stimuli to the research participant of interest. In the research, two categories are identified. The first category comprises experts, including several Mak Yong and theatre performance specialists, and the second category comprises novices, with two groups of students from art backgrounds participating in focus group discussions. The following paper will discuss the results of the interview and discussion.

## Conclusion

This paper has demonstrated that Design Thinking could be applied to the digital preservation process of Mak Yong performance. The process of digital cultural preservation goes beyond the realm of conventional research method such as qualitative and quantitative, as it also requires a more robust model as part of the development process. The prototype-stage 3D animation can be viewed as a viable technique in the development process for simulating local or traditional performance in new media such as animation, virtual reality, and digital games. Thus, Design Thinking can be utilised as a development model that promotes a practical solution when it comes to digitally preserving cultural heritage, which may include both tangible and intangible.

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