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Development of 'Digital Kultur Application' toward innovative and interactive education in cultural identity strengthening through socio-technology approach

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Abstract

This research employing qualitative method and data collection techniques of observation, in-depth interview, and literature study, selected five Gen-Z informants with purposive sample criteria to meet research objectives. Moreover, the interview results are linked to socio-technology and multimedia learning literature. The result of this research showed that Digital Kultur app still needs to be improved in terms of visuals, features, and usage, and the learning elements to be an innovative and interactive educational application. This can be done by adding a feature that recognizes sounds, tone patterns, and motions to be interpreted as certain cultural products that subsequently will be connected directly to certain information. In addition, to making it more interactive, the various sounds, tone patterns, and motions can be matched with favorite figures of each Gen-Z, such as animation characters or "K-Pop idols" thus becoming certain elaborate tone patterns and traditional motions, but with the sounds and visuals of their favorite figures. This offers innovation in more interactive multimedia learning for cultural education.

Keywords: Cultural education; Digital kultur; Multimedia learning; Socio-technology; Student

1 Introduction

Indonesia is the biggest archipelago country with diverse cultures, customs, and traditions as one of its key features. Having approximately 1,340 ethnic groups, 746 vernaculars, and a population of more than 262 million, Indonesia is considered to have a unique "cultural identity" [8]. Cultural identity can be defined as the cultural identity/personality of a nation that allows it to absorb and cultivate foreign culture in accordance with its own character and ability [3]. State Constitution of the Republic of Indonesia No. 32 Year 2009 explains that local wisdom is noble values that apply in the community among others to protect and cultivate the environment in a sustainable manner. Indonesia as a nation with cultural diversity always strive to preserve and advance each cultural component in it, including local wisdom. This is indicated in Law No. 5 Year 2017 on Cultural Advancement, which states that local wisdom as a part of the nation's culture must always be preserved and passed on to each generation [31].

Such cultural identity characteristics allow Indonesia to develop into an open nation that able to compete with the rapid change of globalization [23]. This rapid globalization flow creates problems and advantages of its own. On one hand, the diverse Indonesian culture gets worldwide recognition, but on the other hand, the cultural identity also experiences its own anxiety. In other words, the globalization of identity is also a threat to local or cultural identity[5].

In his book entitled *The Questions of Cultural Identity* (1996), Stuart Hall mentioned the theory of symbolic interactionism as a representative theory to explain identity matters. From the symbolic interactionism point of view,

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individual identity is formed only in interaction with other people. Everyone can still have their own individuality, but it is always related to a social context. What is called "cultural identity," in this definition, is a form of internalization of certain norms and values into groups of individuals [11].

However, that is the cultural identity definition in modern times. Hall continued his analysis by discussing identity problems in a postmodern sense. According to Hall, in a post-modern community, identity tends to be fragmented. People no longer have a single, unified conception of who they are. By contrast, identity becomes contradictory and unresolved. This identity fragmentation is, among other things, influenced by globalization. The ease and frequency of human mobility around the world and advancements in communication mean people are no longer stuck in identity development based on where they live. Instead, they can choose from a wide variety of identities. They can imitate the fashion, speech, values, and lifestyle of any group they like. The conclusion, for Hall, is that in the post-modern theory context, identity has decentred. Individuals can no longer find the core or centre of their identity based only on existing classes or nation-states [11].

This unresolved and decentred identity needs to be addressed in order to reaffirm the nation's cultural mental identity. One way to achieve this is through education. There is no doubt technology plays an important role in education in the digital era [6]. The development of technology such as cloud computing, augmented reality (AR), and 3D printing has paved the way for future education [9]. In this digital era, everything is about access, and education can be accessed anywhere and may cross borders, from local to global [30]. With the help of technology, the teaching and learning process is no longer confined to the classroom. In addition, learning activities become completely playful [14].

Consequently, educators are faced with the challenge of adapting to a teaching style that accommodates a new generation of learners. This new generation of learners has different learning expectations, styles, and needs in learning compared to previous students. Generation Z (Gen-Z) is the latest generation of learners who were mostly born between 1995 and 2010 [20]. The uniqueness of Gen-Z lies in the period of their birth, which was around the emergence of graphical web, which was the progenitor of today's internet including early direct contact with sophisticated gadgets and cloud computing [12]. This means Gen-Z is a digital technology literate generation and prefers to communicate through social media rather than direct contact with other people. They are the first generation that has been connected globally through the internet from the start, which they have been familiar with even as toddlers. These unique characteristics make Gen-Z have diverse needs to be able to concentrate when learning. Gen-Z, in general, needs quick delivery with complex graphics. They are more kinesthetics and rely on first-hand experience. Therefore Gen-Z is more inclined to learn through action than through reading text.

According to Sadiyoko in 2017 [24], this unique way of learning makes Gen-Z tend to have a short attention span. They easily become bored with intense learning activities and are easily distracted by other things. That is why, for Gen-Z, resources should be delivered in small "bites". This is also called "bite-sized learning." Gen-Z will learn things more effectively if they are given the chance to solve problems and find solutions through trial and error. Gen-Z also usually works in small teams or groups. Creativity, collaboration, flexibility, and personalization are other characteristics that are also key in learning for Gen-Z [19]. This research is a part of an effort to develop an app called Digital Kultur. Digital Kultur is an innovation in the form of an app that is made for organizing various cultural festivals in Indonesia. Using live performance digital technology with recording and live streaming systems, Digital Kultur is designed and made to provide ease and convenience to the participants, as well as to save time and energy for better performance. The Digital Kultur app, in terms of its vision, is designed to resolve the problem between cultural identity and the effects of globalization that caused it to become unresolved and decentred through an integrated system for organizing cultural festivals. Through Digital Kultur, the audience all over the world can witness various Indonesian cultures that are displayed in festival format. Therefore, globalization makes these presentations enjoyable with maximum accessibility, without having to worry about the cultural identity itself.

However, Digital Kultur vision of strengthening cultural identity cannot be considered optimal without involving the element of education in it. This education will be directed specifically at Gen-Z as a digital literate generation that need a lot of resources about Indonesia's cultural wealth. This means, the Digital Kultur app is also designed to be an innovative and interactive education platform to make Gen-Z even more interested in local culture. The author considers this as even more crucial in strengthening cultural identity, rather than stopping at Digital Kultur's function as an integrated platform for organizing cultural festivals. That is why, this research is conducted to develop Digital Kultur's function toward more sophisticated purposes, not just to reduce the tension between cultural identity and globalization effect, but also to in still awareness of local values to the latest generation. To support this research development, a socio-technology approach is needed as a framework in which the relationship between technology and culture can be explained.

Also, Digital Kultur's vision of strengthening cultural identity cannot be considered optimal without involving the element of education in it. This education will be directed specifically at Gen-Z as a digital literate generation that needs a lot of resources about Indonesia's cultural wealth. This means that the Digital Kultur app is also designed to be an innovative and interactive education platform in order to make Gen-Z even more interested in local culture. The author considers this as even more crucial in strengthening cultural identity, rather than stopping at Digital Kultur's function as an integrated platform for organizing cultural festivals. That is why this research is being conducted to advance Digital Kultur's function toward more sophisticated purposes, not only to reduce the tension between cultural identity and the effects of globalization, but also to instill awareness of local values in the next generation.

The literature review in this article will be complemented by three concepts, namely socio-technology, multimedia learning, and about the Digital Kultur app itself.

1.1 Socio-technology

Socio-technology is a discipline that studies methods for maintaining, improving, developing, or replacing established social systems (such as factories, hospitals, and schools) and the processes within them (such as manufacturing, health care, and education administration) and designing or re-designing social systems and the processes within them to address social issues (such as unemployment, epidemics, and crime) [7,25]. Experts in socio-technology address issues such as pollution, population growth, famine, unemployment, waste, poor health, illiteracy, violence, and corruption [7]. It should be noted that socio-technology experts do not deal with practical actions; instead, they research social issues and make recommendations for solutions [7]. Socio-technology explores how to address various social systems, or to be exact, sociotechnical systems, defined as a tool that is designed as a technology to resolve problems involving humans and their social relations [7].

In this research, a socio-technology approach was used to provide a framework within which the Digital Kultur app was designed to address social issues, in this case related to cultural identity. While cultural identity is not a social problem comparable to pollution, population explosion, famine, and so on, it will, if it is left in crisis, lead to communities' inability to deal with globalization, and thus to more concrete social problems [1]. For that reason, Digital Kultur seeks to resolve problems and offer solutions through the utilization of digital technology that will have an impact not only in the short term through an integrated system for organizing cultural festivals, but also eventually through innovative and interactive education based on digital apps, especially for Gen-Z.

1.2 Multimedia Learning

Technological development in education plays an essential role in Education 4.0 implementation. Technology can help to support the teaching and learning process because learners can study all the information at anytime and anywhere, including while remaining active in the process [17, 22]. With the development of ICT, transformational change in education 4.0 can be achieved and continued to improve learning quality [2]. The use of multimedia learning allows them to be actively involved in the learning process through a combination of education and entertainment that contributes to a new learning concept called edutainment [27]. The use of multimedia in e-learning can stimulate learners' thinking processes, create a pleasant teaching atmosphere, and improve reading ability among students [13]. In addition, the use of multimedia can also develop students character and increase their interest in learning, which leads to an improvement in their academic results [29].

To further emphasize the uniqueness of multimedia learning, it is important to differentiate it from the conventional classroom learning model. In such a learning model, the teaching and learning process are centred on the teacher and are usually supported by learning media such as chalk, blackboard, and teaching resources in printed form. The teacher plays a significant role in controlling the entire learning process and is responsible for the materials taught. In general, learners in a conventional class are more passive and wait for explanations from their teacher. As a result, intense discussions rarely occur in a conventional learning activity [4]. This conventional learning style has difficulties in stimulating students' thinking skills and has an impact on their character development [18]. They tend to observe to note something down rather than get involved in the learning process. The use of technology in the teaching and learning process has proven to improve self-achievement and the intrinsic and extrinsic motivation of the students in the classroom [5, 6, 28]. Multimedia based on active learning can develop the cognitive process and improve students' capacity to absorb and assimilate knowledge [14,15]. In this research, studies on multimedia learning are needed to develop the Digital Kultur app, not only as a platform to facilitate cultural festival organizing but may also lead to an application for facilitating innovative and interactive learning, especially in relation to cultural themes.

1.3 Digital Kultur

The Digital Kultur app was initiated by KK Ilmu Kemanusiaan FSRD-ITB in 2018 and has received Copyright Number 000117776. Digital Kultur which is accessible through the website digitalkultur.id, is billed as "Indonesia's first digital culture festival organizing site". Several activities that have been organized through this app include Festival Folklor Indonesia 2018 for SMA/SMK level for all Bandung Raya and Festival Vokal Solo 2020 for SD/SMP/SMA level. According to its regulations, participants are required to register through digitalkultur.id and upload an audition video on the page with a live recording system. Digital Kultur allows cultural festivals to be organized without face-to-face meetings. This means that Digital Kultur saves effort, time, and money while still maintaining the essentials of a culture festival. The flowchart for participants to register into the application can be seen in Figure 1:

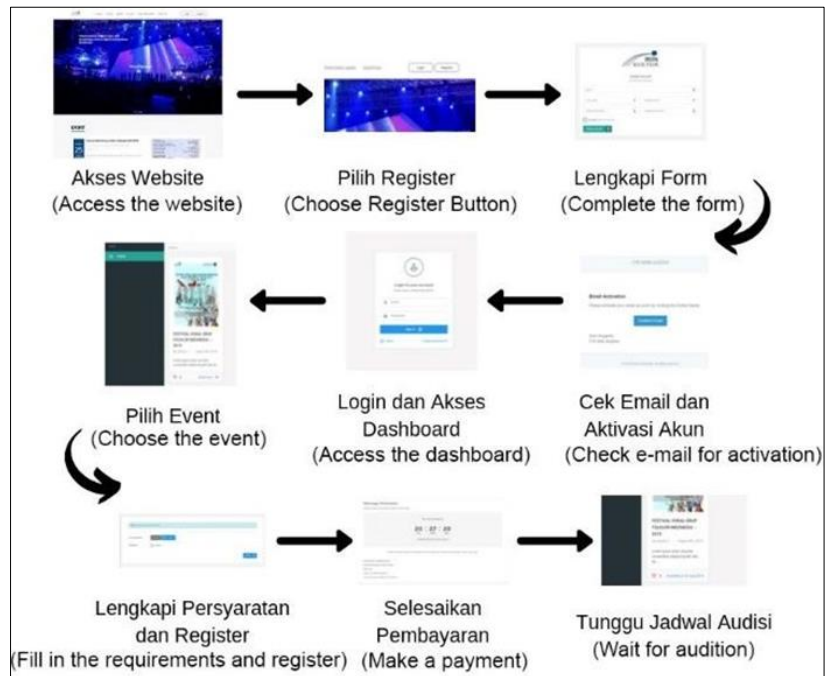


Figure 1 Flowchart on Register Process into the Festival

The picture when participants record their performance and has submitted his/her performance to the app can be seen in figure 2 and 3 below:



Figure 2 Participants Recording Process

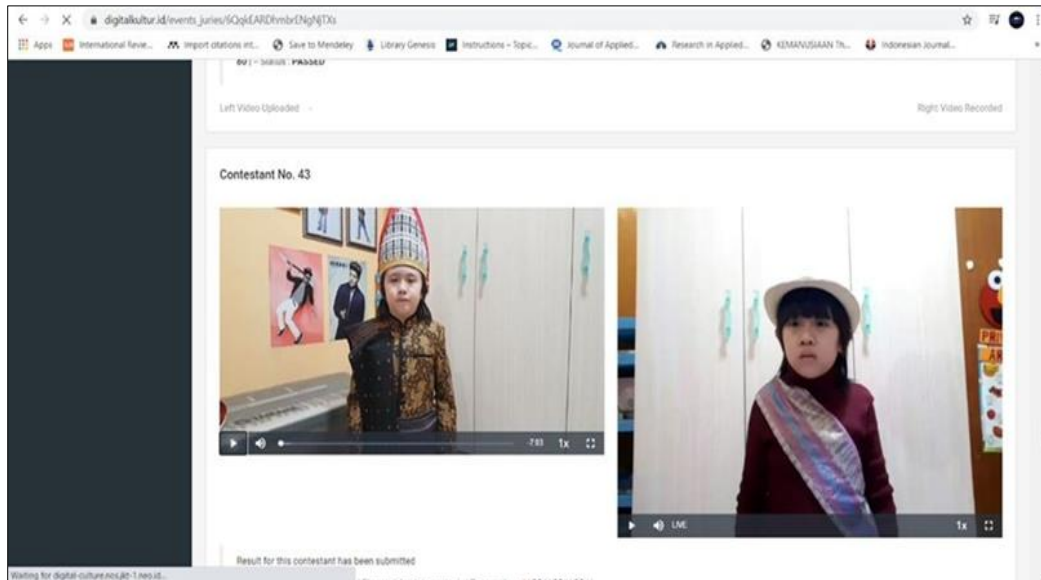


Figure 3 Participants Views on Digital Kultur Application

Even though this application is still in the development stage, Digital Kultur is expected to become not only a medium for organizing musical performances in the digital era, but also a vehicle for the development of local wisdom-based music education to be subsequently integrated with learning materials based on folk songs or folklore. This is so that the concept of the passing down and transmission of knowledge with roots in the local culture as a cultural identity can be accessed more widely through digital media platforms.

2 Methodology

This research is qualitative research using an interaction design approach. Interaction design is a design process that is based on communication with the users to create a product that can meet the needs of the users optimally [30]. Optimal here is defined as simple to learn, effective to use, and user-friendly. The forms of interaction, among others, are as follows [23]: (1) gathering inputs, ideas, and feedback from users based on their feelings and experiences; (2) observing and considering who will use the interaction; (3) determining how they will use it; and (4) determining the users' activities.

Interaction designers need knowledge of the users, technology, and the interactions between the two to create an effective user experience. From the human side, the things that need to be known are related to the work of emotions, aesthetics, interests, narrative techniques, business, technical rights, manufacturing, and marketing. On the digital platform, usability, and user experience aspects play an important role. The usability aspect is focused on pragmatic aspects such as the ease of use of the platform itself, while the user experience is subjective in nature, such as user emotions and the success of the stimulation process when interacting with the platform [21]. If both aspects are not optimal, the users will spend their time trying to understand how to use it and they will be distracted from the content [21].

Another aspect that needs to be considered in the success of a platform is the visual and interface aspects. The consideration of this visual and interface principle is just as important as the function and usage aspect of a platform [10]. A user interface is a part of an information system that needs user interaction to produce input and output [10, 26]. In other words, on a digital platform, the experience factor is something important to make the platform more enjoyable and satisfying for the users [16]. In addition, to achieve optimal usability, user experience, visual, and user interface, an accurate methodology is required, which in this case is participatory design (PD). PD is a design methodology in which the users or prospective users participate as co-designers in a design process that allows the improvement of end results that represent the values of future users.

The data collection technique in this research was observation and in-depth interviews with informants who were selected through purposive sample criteria. The purposive sample criteria applied to get research informants were as follows: (1) belonged to the Gen-Z generation (born between 1995 and 2010); (2) spent more than four hours per day on the internet; and (3) had used the internet for at least five years. However, these criteria still belonged to the general

criteria as the initial selection stage. More specific criteria to be applied were their diligence with the Digital Kultur app. The diligence was indicated by their willingness to register as members, both for the purpose of conducting intense observation and registering as festival participants. On this basis, five informants were recruited with the following profiles (names were disguised by mutual agreement with the informants):

Table 1 Informants' personal and interest backgrounds

Informant	Background
Case ID #1	Born in 1995, actively access the internet, has been involved in one of the festivals facilitated by Digital Kultur.
Case ID #2	Born in 2000, actively access the internet, has registered in Digital Kultur app but never explored further.
Case ID #3	Born in 2004, actively access the internet, has never registered in Digital Kultur app but is willing to do it.
Case ID #4	Born in 2008, actively access the internet, has been involved in one of the festivals facilitated by Digital Kultur although registered with parent's help.
Case ID #5	Born in 2010, actively access the internet, regularly use multimedia learning, has never registered in Digital Kultur app but is willing to do it.

Interviews were to be conducted online via Zoom with a duration of approximately sixty minutes each. The interview might be conducted more than once if necessary. The researchers required that a parent or a guardian be present during the interview process for informants under 17 years old. The interview guide would be directed at the research objectives, i.e., regarding informants' views on the case of use of the Digital Kultur app, the information in it, and its connection with culture-themed education. The interview results would then be codified through a thematic analysis technique to be subsequently linked with literature studies containing investigations on socio-technology and multimedia learning. The overall conclusion of this research would become an important recommendation for the development of the Digital Kultur app in the future.

3 Results and discussion

The result and discussion of this research would be divided into three sections: result and discussion about visual appearance, features, and usage, and learning elements. In terms of visuals, the interview result showed several thematic points below:

Table 2 Informants' interview results on visual elements

Informant	Significant Statement
Case ID #1	"The visual is ok but lacks association with culture."
Case ID #2	"The appearance is pleasant to look at, except that it is unclear what the significance of the Voice of Baceprot (Indonesian band) photo is on the front page."
Case ID #3	"Nice visual, but it can be used for any festival and not just cultural festival. It can also be used for poetry reading, film, and music festivals in general."
Case ID #4	"I have participated in a festival via Digital Kultur. It was practical, no need to move locations. But the cultural nuance is a bit lacking, at least from the appearance of the website."
Case ID #5	"Interesting app, playful, convenient user interface, but it is unclear where the cultural side is other than several cultural festival announcements in it."

Digital Kultur is already sufficient as a festival organizing platform, but it does not have any special differentiator to be considered as a platform for facilitating culture-themed festivals. This means that any festival can be organized via Digital Kultur, and therefore its uniqueness is questionable.

Meanwhile, regarding features and usage, the interviews with the informants have brought up some thematic points below:

Table 3 Significant statements based on thematic points of the informants

Informant	Significant Statement
Case ID #1	“Interesting and has a breakthrough, but in some aspects, the video features are still similar to the established one like YouTube.”
Case ID #2	“Good and practical but hasn’t shown any differences from features of other apps that have been used before by netizens.”
Case ID #3	“Digital Kultur is interesting! Looking at the future, what can be developed to make this app has a strong festival nuance? Is it possible to have a sponsor logo feature? Or maybe it should be open not only for participants, but also for organizers who want to create festivals in a more practical manner.”
Case ID #4	“Good idea to make festival organizing easier, but so far we just send videos to organizers’ e-mail without any problem.”
Case ID #5	“For live recording feature, we are more comfortable with GarageBand, and the result can be edited. Digital Kultur is good, but still needs improvement to compete with other apps that have already been used widely.”

From the thematic analysis of the interview results, Digital Kultur can already be considered as a festival organizing platform, but its features or usage can still not be differentiated from other apps that are already established, such as YouTube or GarageBand, except in terms of its ability to put all features into an integrated platform. However, the informants still argued that festivals are already commonly organized simply by sending videos via e-mail without the need for an integrated platform, and therefore, the features in Digital Kultur cannot be considered as something superior or novel. Lastly, regarding the learning element, the informants gave the following answers, which after thematic analysis, produced the significant statements below:

Table 4 Significant responses based on thematic points

Informant	Significant Statement
Case ID #1	“For festivals it is already good, but it cannot be considered as an education platform because there is not enough information other than news about festivals facilitated by Digital Kultur.”
Case ID #2	“There should be some kind of information that is more complete about dances or songs in it. Maybe it needs to be linked to other sites.”
Case ID #3	“Cannot be considered as an education platform because it cannot be used for learning in general.”
Case ID #4	“In order to be considered as an education platform it still needs a lot of improvement in terms of information so that it can be used for teaching and learning activities.”
Case ID #5	“I will be happier if this application can be used interactively, for example by including favorite idols or animations who sing and dance local culture products.”

Digital Kultur can also not be considered to have met the requirements to become an educational platform because it does not present sufficient information and insight about culture in general. For now, Digital Kultur only contains specific information about certain festivals that is useful only for those who are involved. This means the app needs to present certain information that is useful for those who don’t participate in the festivals, for example, about certain traditional dances or songs, which is more complete than simply the names. However, providing only this information would not be enough because the Gen-Z informants also need more interactions to make them more interested in cultural themes.

4 Conclusion

Based on the research on the informants who were selected based on purposive sample criteria with an interactive design approach framework supported by literature on socio-technology and multimedia learning, several points have been made for the development of the Digital Kultur app as follows. Through input about the visual, Digital Kultur needs to revamp its appearance so that it can be immediately recognized as a culture-themed platform, by incorporating elements that are widely accepted as "culture", especially "traditional culture" (instead of "urban culture"). Through input about features and usage, Digital Kultur will improve its features so that they have more differentiation, such as through an open call system, so that everyone can become not only a festival participant but also a festival organizer, and everything can be done with a few simple steps. In the future, in the Digital Kultur, will be added features to conduct marketing activities and upload proposals to sponsors, with various spaces available for ads or sponsor logos, which allows any online festival to obtain external funding. The researchers will develop the Digital Kultur app toward more innovative and interactive education. For example, by adding features to recognize sounds, tone patterns, and motions, they can be immediately read as a certain cultural product, which will be subsequently linked directly to certain information about the cultural product. Furthermore, to make it more interactive, the various sounds, tone patterns, and motions can be matched with each Gen-Z's favorite figures, such as animation characters or "K-Pop idols," resulting in certain elaborate tone patterns and traditional motions, but with the sounds and visuals of their favorite figures. This is considered an innovation in multimedia learning for more interactive cultural education. In the socio-technology framework, Digital Kultur is faced with problems of cultural identity and how technology can be a solution. While cultural identity is not a concrete problem like pollution, population explosion, unemployment, and many others, as is commonly brought up by socio-technology experts, the cultural identity crisis will indirectly lead to the alienation of people in the face of globalization that continues to offer openness without necessarily solving access and equality problems.

Compliance with ethical standards

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Disclosure of conflict of interest

To uphold transparency and research integrity, we verify that none of our relationships have impacted the design, conduct, or reporting of this research. We maintain that by disclosing these potential conflicts of interest, readers can more effectively assess the presented findings in this manuscript.

Statement of informed consent

All individual participants included in the study have given informed consent.

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