

DEVELOPMENT OF A KNOWLEDGE MANAGEMENT SYSTEM FOR JAIPONG DANCE

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Abstract— Knowledge for culture is a concept of using information and communication technology to increase usability in the field of culture, especially in managing, documenting, and disseminating information and knowledge of cultural arts, especially Sundanese cultural arts, namely the art of Jaipong dance. For the art of Jaipong dance to be maintained, it is necessary to manage information and knowledge that utilizes the sophistication of information and communication technology toward the noble values of Jaipong dance. In that way, the art of Jaipong dance is passed on to each generation to maintain culture as self-identity and show the existence of Sundanese culture in the eyes of the nation and even the world. Knowledge Management Systems (KMS) is a solution that can be used to preserve the art of Jaipong dance in Indonesia by managing existing knowledge about the art of Jaipong dance. The research method uses an integrated knowledge system management cycle. There are three main stages: knowledge capture and creation, knowledge sharing and dissemination, and knowledge acquisition and application.

Meanwhile, for the formation of knowledge used in this study, the SECI Nonaka model was used. This research has successfully developed a web-based knowledge management system for Annisa Rumpaka's studio. The knowledge management system created is helpful for Jaipong dance experts, organizations, and the general public. The process of transferring information and knowledge about the movements in the Jaipong dance, what musical instruments are used in performances, fashion, and makeup can run properly and can preserve the art of Jaipong dance, which is one of the characteristics of dance in Indonesia. Become a learning material for every generation of Sundanese cultural arts.

Keywords: technology, Jaipong dance, knowledge, knowledge management systems.

Abstrak— Pengetahuan untuk kebudayaan merupakan suatu konsep pemanfaatan teknologi informasi dan komunikasi untuk meningkatkan daya guna dalam bidang kebudayaan, terutama dalam hal

pengelolaan, pendokumentasian, penyebarluasan informasi dan pengetahuan dari seni budaya khususnya seni budaya sunda yaitu seni tari Jaipong. Agar seni tari Jaipong tetap dipertahankan maka dibutuhkan pengelolaan informasi dan pengetahuan yang memanfaatkan kecanggihan teknologi informasi dan komunikasi terhadap nilai-nilai luhur dari seni tari Jaipong. Dengan cara itu pula seni tari Jaipong dapat diwariskan ke setiap generasi agar tetap mempertahankan budaya sebagai identitas diri dan menunjukkan eksistensi budaya sunda dimata nasional bahkan dunia. Knowledge Management Systems (KMS) menjadi solusi yang bisa dijadikan sebagai sarana untuk melestarikan seni tari Jaipong di Indonesia dengan cara mengelola pengetahuan-pengetahuan yang ada tentang berbagai hal mengenai seni tari Jaipong. Metode penelitian menggunakan siklus manajemen sistem pengetahuan terintegrasi. Terdapat 3 tahapan utama yaitu knowledge capture and/or creation, knowledge sharing and dissemination, dan knowledge acquisition and application. Sedangkan untuk pembentukan knowledge yang digunakan dalam penelitian ini adalah menggunakan model SECI Nonaka. Penelitian ini telah berhasil mengembangkan sistem manajemen pengetahuan berbasis web untuk digunakan oleh studio Annisa Rumpaka. Sistem manajemen pengetahuan yang telah dibuat bermanfaat bagi para pakar tari Jaipong, organisasi, dan masyarakat umum. Sehingga menjadi bahan pembelajaran bagi setiap generasi seni budaya sunda. Proses transfer informasi dan pengetahuan mengenai gerak-gerak dalam tari Jaipong, alat musik apa yang digunakan dalam pementasan, tata busana dan tata rias dapat berjalan dengan baik dan dapat melestarikan seni tari Jaipong yang merupakan salah satu ciri khas seni tari yang ada di Indonesia.

Kata Kunci: teknologi, tari Jaipong, pengetahuan, knowledge management systems.

INTRODUCTION

Currently, the development of information technology (IT) is significant in an organization and cultural arts because the presence of IT in art and culture will help arts and culture be more accurate and faster in obtaining data and information (Undiana, 2018). Delivery of fast and accurate data is crucial in art and culture to become helpful knowledge for the general public who needs this knowledge. If the knowledge is managed effectively and efficiently, knowledge will be converted from the invisible to the very obvious through socialization, internalization, externalization, and combinations (Farnese et al., 2019). An organization or community that uses knowledge can collaborate well to be realized in practices involving all its members.

Knowledge for culture is the concept of using information and communication technology to increase efficiency in culture, especially in managing, documenting, and disseminating information and knowledge of cultural arts (Jonkers & Shahroudi, 2019). This concept was developed and implemented solely to improve and preserve culture as a form of the existence of the Indonesian nation, especially Sundanese cultural arts, namely the art of Jaipong dance.

Knowledge is an asset for every individual or group. Science and technology are created from personal knowledge, and then managed into a knowledge base to become an asset (Sabri & Alfifi, 2017). Individuals or groups will continue to exist and develop if they always use the information or experience to create competence. Therefore, it must be realized that knowledge is not a science that must be stored only but must also be developed to be helpful and create innovation. It can be recognized by collecting knowledge in a processing container called Knowledge Management (KM) to make it valid (Thimmappa et al., 2019).

Knowledge Management System (KMS) is currently developing rapidly, and the rapidly increasing use of technology. Knowledge management is a way of identifying, selecting, organizing, disseminating, and transferring critical information and skills to develop human resources' potential and expertise in the art of Jaipong dance. Several studies have implemented the Knowledge Management System concept into an application. In the (Setiawati, 2013) research, their objective is (1) Identity who/what sections are included/there are elements of knowledge workers, (2) to Identify the recruitment process and criteria for knowledge worker human resources, (3) to Identify the knowledge sharing process/process learning group teams, (4) Describing the transformation process to gain value-added knowledge/outputs into superior products, (5) Tracking the process of maintaining

sustainable quality standards in the process of becoming a world-class/global organization in the future.

In another study, Dewi et al. (Dewi et al., 2016) discuss how to implement knowledge management applications to empower SMEs in handling superior products and increasing the competitiveness of SMEs depending on the effectiveness of knowledge and technology management.

Meanwhile, another study discusses knowledge that can be divided into two types: explicit and tacit knowledge. The study stated that explicit knowledge was captured from various media related to the shoe production process, including order status reports, production reports, delivery order reports, and specifications. Meanwhile, tacit knowledge from experts related to the shoe production process includes knowledge about shoe production from ideas, experience, and expertise (Feta et al., 2019).

Wulantika also conducted other research regarding knowledge management, activity in an organization where knowledge is managed as an asset. In its strategy, there is a process of distributing the proper knowledge to the right HR in a fast time so that later HR can interact with each other. Share knowledge and apply their knowledge to each other in work activities to improve the organization's performance (Wulantika, 2017).

Knowledge Management System (KMS) is one way to foster a culture of sharing knowledge between individuals and organizations (Marini, 2016). Research by Akbar discusses that the Knowledge Management System (KMS) aims to improve the quality of existing human resources in an organization by improving communication between HR and increasing mastery by transferring knowledge (Akbar, 2018). One of the ways to transfer knowledge in a company is by developing a knowledge management system using a knowledge audit base with a knowledge management process as a company development standard (Ramdani, 2018). Implementing the concept of knowledge management that will be implemented in an organization will involve three components, including humans, processes, and technology (Cahyani & Anwar, 2016). The criteria that can help implement technology include place and time, namely, email, chat, presentation, and application. Strive for successful technology applications to use the ACKM concept and be implemented in universities (Vikasari, 2020).

The advantage of people who share knowledge is that they can respond to opportunities quickly and innovatively to learn the art of Jaipong dance successfully. In addition, problems in studying the art of Jaipong dance can be resolved

soon by exchanging knowledge between fellow experts and lovers of Jaipong dance to find the right solution.

Jaipong dance is a new genre in Sundanese dance by Gugum Gumbira. Jaipongan dance reconstructs a performance that has long been extinct due to changing times. The women in the Jaipongan show are no longer shy about bending their bodies, swaying their hips, and glancing their eyes at the audience. One thing was avoided in women's dance works in the early 1950s to 1980s, such as Tjetje Somantri, Nugraha Sudiredja, and others. Jaipongan appears in the community as a work of 'modern products.' The modern product in question is that almost all background aspects are detected, such as the characters' origins, time, process, and choreography results, including recording the accompanying music. In contrast to other traditional arts, most of which are past products, things are sometimes very vague. Only through tenacity and long accurate research are descriptive data and analysis obtained, which are not necessarily correct.

Gugum's Jaipongan comes through a long journey with various steps of action and contemplation. This cultural event is an evolution because it lasted relatively short but raised the image of Sundanese art and culture nationally after the dances by Tjetje Symantec. However, previously it was a reconstruction process.

Based on the results of observations and interviews conducted, some obstacles are felt by dance lovers in learning the art of jaipong dance, namely the number of jaipong dance experts who have moved their domicile, the distance from which the dancers live, experts with studio locations. In addition, experts in Jaipong dance have passed away, causing the loss of knowledge from experienced experts before knowledge is appropriately stored and documented. As a result, people who love the art of jaipong dance have difficulty learning various essential aspects of jaipong dance, such as compound dance movements, dance meanings, dance functions, musical accompaniment, makeup, and fashion to the types of performances that need to be correctly processed and documented to obtain accurate knowledge, and valuable for people who will learn. Dance lovers also experience difficulties learning about all aspects of the setting, such as the characters' origin, time, process, and choreography results, including recording the accompanying music.

Unmanaged documents and an inefficient knowledge transfer process will make it difficult for dance lovers who want to learn and continue the existing Jaipong dance culture from previous experts. Furthermore, this causes frequent errors

due to a lack of understanding of the dance movement process, so many misperceptions and movement errors exist. In addition, there are no learning process facilities and problem handling facilities available for jaipong dance lovers. Therefore, for the art of jaipong dance to be maintained, it is necessary to manage, document, and disseminate information and knowledge that utilizes the sophistication of information and communication technology for the noble values of jaipong dance. Knowledge of the art of Jaipong dance is processed and documented through the Knowledge Management System for Jaipong Dance. Thus, the art of Jaipong dance is handed down from generation to generation to preserve Sundanese culture as a form of self-identity and to demonstrate the presence of Sundanese culture to national and international audiences.

The knowledge management system for Jaipong dance is further developed with the concept of transferring tacit knowledge, which is the knowledge that is personal, specific, and generally difficult to formalize and communicate to other parties into explicit knowledge, namely knowledge that has been formulated, presented in written form such as regulations, books, -literature books. This explicit knowledge is manifested in well-managed documents using information and communication technology. The documented knowledge can be used as learning material for each generation so that the information and knowledge transfer process can run well.

Based on the background described, this research aims to develop a web-based knowledge management system for Jaipong dance for use by the Annisa Rumpaka studio, and the SECI Model is used in the stage of analyzing the information and data needs of each process.

MATERIALS AND METHODS

This study uses four approaches in the knowledge management life cycle, including Meyer and Zack (1996), Bukowitz and William (2000), McElroy (2003), and Wiig (1993). An integrated knowledge system management cycle can be formed based on the four previous Knowledge System Management Cycle Approaches (Dalkir, 2020). There are three main stages, as shown in Figure 2. As for the formation of knowledge used in this study, the SECI Nonaka model was used. Nonaka made a formulation known as SECI or knowledge spiral. The concept is that the life cycle goes through a process and, when described, will be in the form of a spiral; this process is called Socialization-Externalization-Combination-Internalization (Nonaka & Takeuchi, 1997). Figure 1 illustrates the process of knowledge formation

according to Nonaka and how knowledge transfer occurs.

The SECI model (Nonaka and Takeuchi)

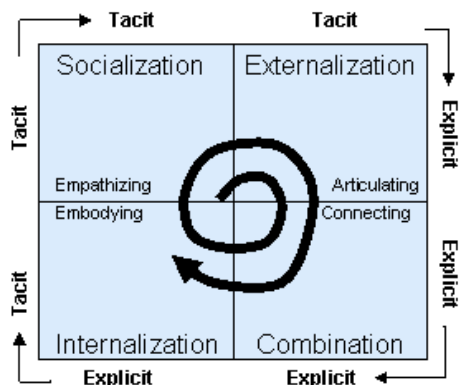


Figure 1. SECI Model

The SECI model cycle consists of four process stages, namely:

a. Socialization Process (Tacit to Tacit)

This process converts tacit knowledge into other tacit knowledge. For example, learn from others who are more experienced. This process makes our knowledge grow and is essential for self-improvement. This process will later revolve around the externalization process. The more successful we are in experiencing the new tacit knowledge process, the more explicit knowledge we can produce in the externalization process.

b. Externalization Process (Tacit to Explicit)

At this stage, the process changes our tacit knowledge into explicit knowledge. It can be obtained by writing down the know-how and experience we get in writing articles or even from books. The writings will be beneficial for others who are in need. The most effective way to do the externalization process is through dialogue.

c. Combination Process (Explicit to Explicit)

The combination process utilizes existing explicit knowledge and then implements it into other explicit knowledge. This process helps improve skills and self-productivity. Through this process, it is also possible to combine existing explicit knowledge into new, more useful explicit knowledge.

d. Internalization Process (Explicit to Tacit)

Another language is learning by doing. This process changes explicit knowledge as inspiration for tacit knowledge. With references from existing manual books, I started to work, finding new experiences, understandings, and know-how I did not get from the book. It can be said that this process has been carried out of the four existing processes.

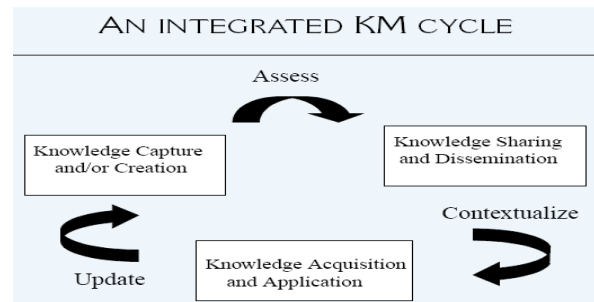


Figure 2. An Integrated KM Cycle

Knowledge Capture and/or Creation

The stage of capturing knowledge is done by conducting a literature study captured from source documents related to the art of jaipong dance. Observation by observing, recording, and translating the problem-solving process related to the art of Jaipong dance. Moreover, conduct interviews to capture knowledge from experts' minds about the art of jaipong dance. At the time of capturing knowledge, knowledge is divided into:

a. Socialization Process (Tacit to Tacit)

The tacit knowledge possessed by experts regarding the art of jaipong dance is captured, and discussions occur between experts and knowledge developers.

b. Externalization Process (Tacit to Explicit)

The tacit knowledge of the art of Jaipong dance and the experiences captured by our experts is made in the form of writings, articles, or documents.

c. Combination Process (Explicit to Explicit)

The source of knowledge on the art of Jaipong dance is taken from the book *Dance in Tatar Sunda* by Endang Caturwati and then made in the form of explicit knowledge, writing, or documents.

d. Internalization Process (Explicit to Tacit)

The source of knowledge of the art of jaipong dance is taken from the book *Dance in the Sundanese* by Endang Caturwati and then discussed with experts.

Knowledge Sharing and Dissemination

Knowledge sharing is a process of communicating explicit and tacit knowledge to others (Murmanto et al., 2017). There are two sub-processes of knowledge sharing: socialization and exchange (Fernandez & Gudi, 2008). Socialization is finding new knowledge, and face-to-face meetings take longer to debate and solve a problem. In the knowledge-sharing process, socialization can be done with face-to-face meetings, including a question and answer session between the giver and recipient of knowledge. In contrast to socialization, exchange focuses on sharing explicit knowledge in documents for information transfer and explaining that discussions and conversations with group colleagues can facilitate knowledge sharing by

providing explanations from group members regarding their knowledge to other group members.

Knowledge Acquisition and Application

Knowledge acquisition is a process of accumulation, transfer, and expertise in solving problems from knowledge sources into computer programs or can be interpreted by integrating new information into knowledge systems.

RESULTS AND DISCUSSION

Based on the identification, observation, and analysis of the problems described in the research background, using the Knowledge Management life system cycle approach produces three main stages. These results will be discussed further.

Knowledge Capture and/or Creation

At the stage of capturing knowledge, it is done by conducting a literature study of the Sundanese dance books and documents related to the art of jaipong dance, observing, recording, and translating the processes in the various movements of jaipong dance that exist in the art of jaipong dance. In addition, we are observing, taking notes, and recording foot movements, hand movements, eye glances, head movements, and body movements demonstrated by experts, music used, makeup, and fashion as support in jaipong dance performances.

Some of the things that were done supported solving problems related to the art of jaipong dance and conducting interviews with Anita Geovani, S.Pd. She is an art teacher at a vocational high school and a trainer for several types of dance at the West Java Pavilion in Taman Mini, Indonesia Indah. Moreover, we also conducted interviews with representatives of the Annisa Rumpaka art studio. Based on the results of the study of literature, observations, and interviews, it was found that the source of knowledge came from:

1. The book with title "Tari in the Sundanese Tatar" by Endang Caturwati;
2. Documents related to makeup and fashion;
3. Document of various movements that exist in the art of jaipong dance;
4. Experience, innovation, and expertise gained from experts who are members of dance coaches at the West Java Pavilion, Taman Mini Indonesia Indah, and experts at the Annisa Rumpaka art studio, including experts in the field of movement in fashion, experts in makeup, and music experts. Dance accompaniment is related to completing the formation of knowledge of the art of jaipong dance.

Based on the sources of knowledge above, knowledge is then grouped into:

- a. Socialization Process (Tacit to Tacit)

Capturing tacit to tacit knowledge is done by discussing the Jaipong dance. The discussion results are then entered into the application on the discussion forum menu, where the discussion forum will facilitate users to share knowledge.

- b. Externalization Process (Tacit to Explicit)

Capturing tacit to explicit knowledge is done by attending a Jaipong dance event or event where we capture new knowledge and then create it in an article.

- c. Combination Process (Explicit to Explicit)

Explicit to explicit knowledge is captured from the book Dance in the Sundanese Tatar, which is related to the history of Jaipong dance, Jaipong dance movements, makeup, and clothing of Jaipong dance and then made in the form of documents of knowledge of Jaipong dance.

- d. Internalization Process (Explicit to Tacit)

Explicit knowledge was captured from the book Dance in Sundanese Tatar then Endang Caturwati's work was discussed and discussed with experts.

Knowledge Sharing and Dissemination

Sharing and disseminating knowledge can be applied through direct interaction with someone with expertise in their field, such as discussions, meetings, training, mentoring programs, and much more to spread knowledge. However, in developing a knowledge management system for the art of Jaipong dance, knowledge is disseminated in written form and published online for everyone who has access to it to enjoy.

Moreover, if you want to share knowledge in two directions, you can use the knowledge-sharing facility found in online discussion forums that experts and users can use. With discussion forums, you can get explanations of ideas, insights, solutions, and experiences (in other words, knowledge) from one person to another and even to many people.

Knowledge Acquisition and Application

Acquiring knowledge is accumulating, transferring, and transforming expertise in solving problems from knowledge sources into computer programs. The knowledge engineer tries to absorb knowledge and then transfer it to the knowledge base in this stage. Knowledge obtained from experts is equipped with books, databases, reports, and user experiences. After the sources of knowledge about the art of jaipong dance are collected from several experts, the origins of knowledge are applied to a computer program using the PHP programming

language and MySQL database to manage knowledge about the art of jaipong dance.

The knowledge management system that has been designed displays the latest information and knowledge about the art of Jaipong dance, some of which are as follows:

a. Struktur Navigasi Web KMS Tari Jaipong

The navigation structure of the Jaipong dance Knowledge Management System website can be seen in Figure 3.

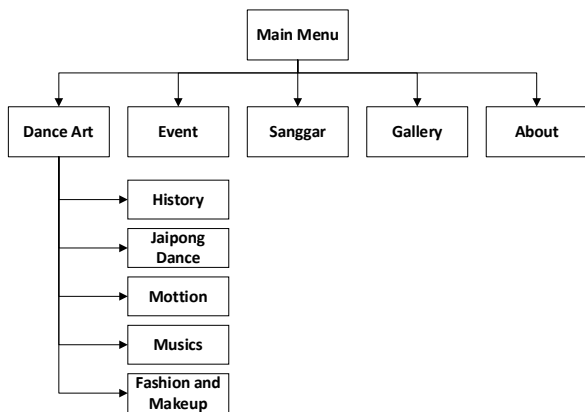


Figure 3. Web Navigation Structure

Dance

This page contains basic dance knowledge, historical details, jaipong dance, movement, music, clothing, and makeup.

Events

This page contains information about events, news, and knowledge about the Jaipong dance with a posting model that is expected to exchange information and knowledge.

Sanggar

This page contains information about the Annisa Rumpaka art studio and its location.

Gallery

This page contains a collection of photos and videos about the Jaipong dance.

About

This page contains information on the purpose and use of this website and team profiles.

b. Jaipong Dance KMS Web Interface

The designed dance of the Jaipong Knowledge Management System website interface consists of several menus described in the web navigation structure. The main menu can be seen in Figure 4.



Figure 4. Main Menu

The following menu is Seni Tari; this dance page contains knowledge about dance basics and historical information, jaipong dance, how to move, music, clothing, and makeup for jaipong dance, an interface regarding the history of jaipong dance is in Figure 5.



Figure 5. History Menu

Details of knowledge about musical instruments that can be used for the art of jaipong dance and dance accompaniment can be seen in Figure 6. When the image of a musical instrument is clicked, it will display knowledge about musical instruments and how to use them can also be known.



Figure 6. Music Menu

The following menu that becomes a sub-menu of the dance menu is Jaipong dance, providing

tacit and explicit knowledge from experts regarding the meaning of dance, dance functions, and others. We can see the interface page in Figure 7.



Figure 7. Jaipong Dance Menu

The motion menu interfaces page displays knowledge about the movement patterns of the jaipong dance and various dance patterns movements. Details of knowledge of jaipong dance movements are discussed in this motion menu, as shown in Figure 8.

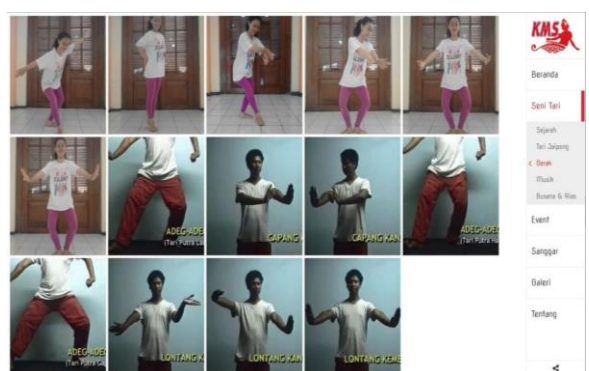


Figure 8. Jaipong Dance Movement Menu

The following is the last submenu of the dance menu, namely the fashion and makeup menu. The menu in Figure 9 discusses detailed knowledge of how to make up and dress up to the type of stage for female and male dancers in the art of jaipong dance.



Figure 9. Fashion & Makeup Menu

The event menu displays information and knowledge about events that have been held and

events that will be held. Details of the event regarding the art of dance, especially the art of Jaipong dance, can be seen on this menu, as shown in Figure 10.



Figure 10. Event Menu

The studio menu displays information about Annisa Rumpaka's art studio. Details about what activities are held at Annisa Rumpaka's art studio will be informed on the menu of this studio which can be seen in Figure 11.

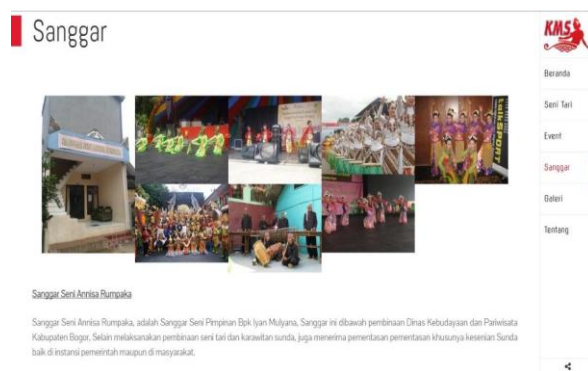


Figure 11. Sanggar Menu

The menu on the Jaipong dance KMS displays the knowledge the Jaipong dance experts possessed, as shown in Figure 12. Each expert has an expert in the Jaipong dance art regarding dance movements, makeup, and fashion, the use of musical instruments, , musical arrangements, and others.

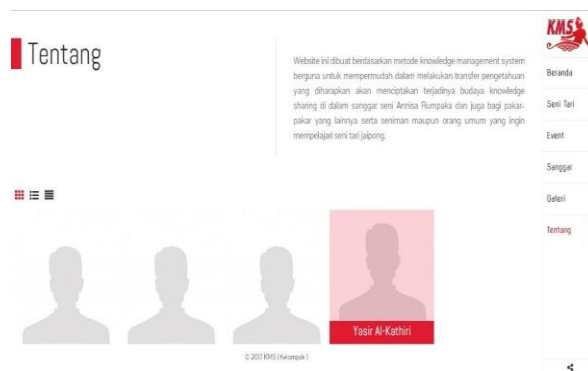


Figure 12. About Menu

In addition to the Jaipong dance KMS web, in Figure 13, a group on social media, Facebook, is also created to expand knowledge transfer between fellow Jaipong dance performers.



Figure 13. Facebook social media

CONCLUSION

Based on the results of observations and interviews that have been carried out, some obstacles are felt by dance lovers in learning the art of Jaipong dance, namely the number of Jaipong dance experts who have moved their domicile, the distance from which the dancers live experts with studio locations. In addition, experts in Jaipong dance have passed away, causing the loss of knowledge from experienced experts before knowledge is stored correctly and documented. As a result, people who love the art of Jaipong dance have difficulty learning various fundamental aspects of Jaipong dance, such as compound dance movements, dance meanings, dance functions, musical accompaniment, makeup, and fashion to the types of performances. This research aims to develop a web-based knowledge management system for Jaipong dance for the Annisa Rumpaka studio. The SECI Model analyses each process's information and data needs. In this study, the output produced is a web-based knowledge management system, helping other experts, artists, and the general public who want to learn the art of Jaipong dance. This application captures knowledge from each expert and can be appropriately managed according to the expected results. In addition, innovation and development of the art of Jaipong dance in an organization or individual can be better. Because with the knowledge management life cycle, all knowledge can be appropriately archived and accessed by all parties, namely experts, artists, and the general public who want to learn about the art of jaipong dance. Experts, individuals, and groups of Jaipong dance lovers, also need to cultivate knowledge sharing and make explicit all the Annisa Rumpaka art studio's tacit knowledge dan as users can perform data processing in the application. In

addition, it creates a culture of knowledge sharing regarding the art of Jaipong dance between functionaries to optimize the performance of functionaries in transferring knowledge with the discussion forum facility in the application.

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