Systematic Literature Review: Puppet Implementation Digital Technology in Industry

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Abstract

The sign of the start of the industrial era 4.0 is the digitalization of information and the massive use of artificial intelligence in various sectors of human life, including the world of education. The art of wayang performance was recognized by UNESCO on November 7, 2003, as an outstanding work in the field of narrative stories and Indonesian cultural heritage. In today's modern era, the interest and concern of the younger generation towards wayang culture is currently minimal. Through digital technology, it is hoped that young people and future generations can continue to study wayang and can take the essence, noble values and philosophy contained therein without reducing the meaning even though it is in digital form. The purpose of this research is to conduct a Systematic Literature Review (SLR) on topics related to wayang related to digital-related implementations related to technology related to Industry 4.0. There are 140 journal articles used in the research. This SLR focuses on journal articles related to the 2012-2021 publication year because new research will be considered as actual research.

Keywords
Puppet, Implementation, Digital, Technology, Industry 4.0

1. Introduction
Currently, science and technology are developing rapidly in various aspects of human life. (Reflianto & Syamsuar, 2018), (Mubah, 2011), (Masiani, 2015), (Pereira & Russo, 2018), (Khambali, 2017), (Muna & Wa Muna, 2015), (Banowosari et al., 2013), (Adisel, 2019), (Agustiandra & Sabandi, 2019), (Ishak et al., 2019), (Fitrianah & Sucahyo, 2012), (Prihatmoko, 2016), (Purnama, 2011), (Agustiandra & Sabandi, 2019). The education sector is a sector that utilizes the development of information technology for learning development (Agustiandra & Sabandi, 2019), (Suprapto, 2019),139 (Muna & Wa Muna, 2015), (Fitrianah & Sucahyo, 2012), (Alit Wismaya et al., 2018). The sign of the start of the industrial era 4.0 is the massive digitization of information and the use of artificial intelligence (Artificial Intelligence) in various sectors of human life, including the world of education (Putrawangsa & Hasanah, 2018), (Sutana & Palguna, 2020), (Sutana & Palguna, 2020), (Rohida, 2018). Therefore, change of strategies for each stage will bring a comprehensive change within the organization (Talapatra & Uddin, 2019). The art of wayang performance was recognized by UNESCO on November 7, 2003, as an outstanding work in the field of narrative stories and Indonesian cultural heritage (Anis & Choiriah, 2019),(Pramono et al., 2019), (Pérez Silva et al., 2020) , (Riyanto & Mataram, 2018), (Whinarno & Arifin, 2019), (Prilosadoso et al., 2019), (Purwanto, 2018),

(Pramudiyanto et al., 2018),31 (Muhathir et al., 2021) , (Syahida et al., 2019), (Arifin, 2018), (Galuh Farah Rahma Yunita, 2020), (Lazuardi et al., 2020). There are still many stories built in wayang kulit shows that tell stories about the Ramayana and Mahabharata which were adopted from Hinduism in India (Pramono et al., 2019), (Purwanto, 2018), (Galuh Farah Rahma Yunita, 2020), (Eko, 2019), (Lazuardi et al., 2020), (Purnama, 2011), (Muhathir et al., 2021), (Wulansari & Zaini, 2010). The wayang art that developed in Java is not only considered a performing art, but wayang is an expression of community values that shape the cultural identity of a community (Wulansari & Zaini, 2010), (Anis & Choiriah, 2019), (Banowosari et al., 2013).), (Erdiana et al., 2020), (Sulaksono & Saddhono, 2018), (Pramudiyanto et al., 2018), (Whinarno & Arifin, 2019), (Mustafid et al., 2020), (Pramono et al. , 2019), (Muhathir et al., 2021), (Syahida et al., 2019), (Arifin, 2018), (Erandaru, 2013). In such a broad aspect, technology also affects cultural components such as wayang (Sutana & Palguna, 2020). Change in culture is greatly influenced by differences in socio-economic conditions between developed and developing countries (Talapatra & Uddin, 2019). In today's modern era, the interest and concern of the younger generation towards wayang culture is currently minimal (Devi & Maisaroh, 2017), (Purnama, 2011), (Pramono et al., 2019). Based on the description above, the author is interested in conducting a Systematic Literature Review (SLR) on topics related to wayang related to digital-related implementations related to technology related to Industry 4.0. There are 140 journal articles used in the research. This SLR focuses on journal articles related to the 2012-2021 publication year because new research will be considered as actual research.

1.1 Objectives
Based on the above background, the formulation of the problem is, 1. To find out the amount of literature that discusses the implementation of digital technology puppets in the industrial era 4.0, 2. To find out the methods applied in the effort to implement digital technology puppets in the industrial era 4.0.
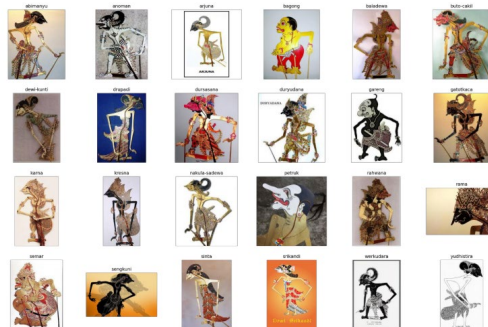
2. Literature Review

Puppet

Figure 1. Example of Wayang Dataset with Character 24 Classes (Mustafid et al., 2020)

In view, the term wayang kulit comes from 'hyang' which means 'God' and 'spirit' (Arifin 2018), (Purwanto 2018). This is in line with Mulyono in (Sutan1 and Palguna2 2020) according to him that wayang is a way to know oneself (humans). Wayang as a Javanese performing art is often interpreted as "shadow" or art that can be moved according to the play that is brought to life based on the content of the story (Erdiana et al. 2020). Wayang kulit also has the value of character education, the purpose of character education is to build the behavior of students who have knowledge, skills, attitudes and are noble and have competitiveness in the face of globalization (Pramudiyanto et al. 2018), (Arifin 2018).

3. Methods
This study uses the Systematic Literature Review method, (Talapatra et al., 2019) which is a way to identify, evaluate and interpret all available research that is relevant to a particular question in a research, topic area, or phenomenon of interest (Angreni and Prastyaningsih 2019), (Nyfantoro , Salim, and Mirmani 2020). a systematic literature review should be carried out systematically in following a methodological approach, explicit in explaining the procedure by which it was carried out, comprehensive in scope including all relevant material, and therefore reproducible by others who would follow the same approach in reviewing the topic (Fink, 2005). Systematic

literature review (SLR) is a review method that is currently widely used by researchers and academics in reviewing scientific literature (Yemen et al. 2019). The research method used in this study is a Systematic Literature Review which is a way to identify, evaluate and interpret all available research that is relevant to a particular question in a research, topic area, or phenomenon of interest (Angreni & Prastyaningsih, 2019), (Nyfantoro et al., 2020), (Sarjono et al., 2020),(Talapatra et al., 2019). the method of systematic literature review, namely a systematic review using strict and explicit criteria to identify, evaluate, and synthesize certain topics of critical literature systematic literature review related to meta-analysis, which summarizes the body of literature into one paper. comprehensive. According to Fink in (Okoli & Schabram, 2012) a systematic literature review should be carried out systematically in following a methodological approach, explicit in explaining the procedure by which it was carried out, comprehensive coverage including all relevant material, and therefore reproducible by others who would follow the same approach in reviewing the topic.

Search Strategy: The research literature search strategy uses keywords and uses the inclusion and inclusion criteria that have been set at the time of planning the literature search (Nyfantoro et al., 2020). Literature Source: In this study we refer to secondary data sources published by journals. The main database obtained from articles is generally sourced from journals indexed by Google Scholar (Google Scholar) through the Google Chrome web browser. Google Scholar (Google Scholar) is a service that allows users to search for academic materials in the form of text in various publication formats (Albantani, 2016).
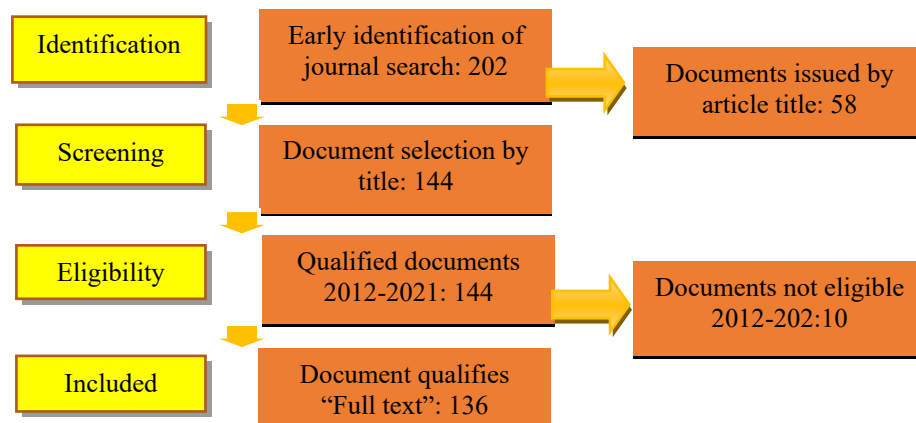

Figure 2. Systematic Literatur Review (Nyfantoro et al., 2020)

Inclusion and Enclusion criteria:

Table 1. Inclusion and Enclusion

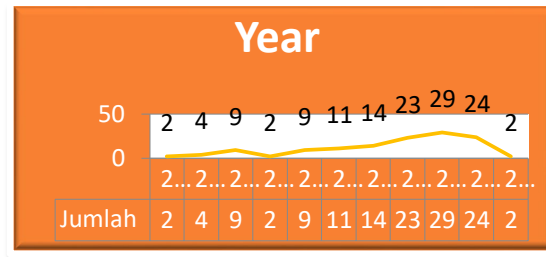| Inclusion	Enclusion
• Literature in the form of full-text journal articles • Literature in the form of full-text journal articles • Journal articles discussing Systematic Literature Review (SLR) or Wayang Implementation or Digital Technology or Industry 4.0 • Literature in Indonesian and English	• Literature in the form of incomplete journal articles • Literature with year published • The literature does not discuss Systematic Literature Review (SLR) or Wayang Implementation or Digital Technology or Industry 4.0 • before 2011

4. Results and Discussion

Figure 3. Literature Analysis by Year

Based on the analysis of the year of the study, the literature search conducted through inclusion and exclusion criteria, there were 135 journals that were relevant to the research. The highest relevant literature is in 2019, there are 29 literatures. And the lowest is in 2011, 2014, and 2021, there are 2 literatures.

Figure 4. Literature Analysis by Author

Based on the analysis of the research authors, the literature search conducted through inclusion and exclusion criteria contained 135 journals that were relevant to the research. Nugraha, Agus Ramdani are the most active writers seen from the relevant publications, there are 3 literatures.

Figure 5. Literature Analysis by Name of Journal

Based on the analysis of research publication journals, literature searches conducted through inclusion and exclusion criteria, there were 135 journals that were relevant to the research. Procedia manufacturing is the most published journal, namely 4 literatures, and at national seminars there are 3 literatures.
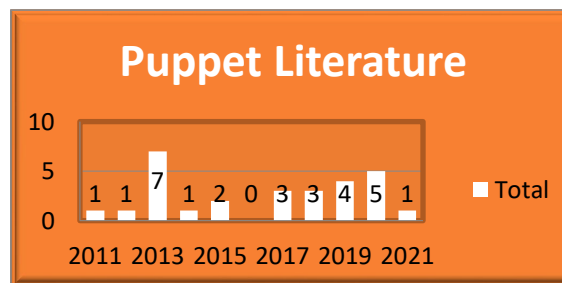
5. Discussion

Figure 6. Literature Analysis by Name of Puppet Literature

• RQ 1: How many literature studies discuss the implementation of digital technology puppets in the industrial era 4.0? From the results of the literature search, there are 28 literatures related to the implementation of digital technology puppets in the industrial era 4.0. The highest relevant literature was found in 2013 as many as 7 literatures.• RQ 2: What are the methods applied in the effort to implement digital technology puppets in the industrial era 4.0? From the results of a literature search, there are 28 literatures related to the implementation of digital technology puppets in the industrial era 4.0, including in: Relevant Literature on Puppet Implementation Digital Technology in the Industry 4.0 era

6. Conclusion

From the results of the literature search, there are 28 literatures related to the implementation of digital technology puppets in the industrial era 4.0. The highest relevant literature was found in 2013 as many as 7 literatures, including: using Augmented Reality media, Android-Based Smartphones, Story Audio Media, 360° Video and Virtual Reality Technology, Android Platform, TV Media, Via Kinect, Multimedia-Based, Games Digital, Using SVM Method and GLCM Feature Extraction, Web-Based Using MYSQL, Backpropagation Algorithm, Dataset Classification, Digital Wayang, based on information and technology, Android-Based Side Scroller Game, Talking Stick Method, Neuro Fuzzy, Learning Media Applications. Further research needs to be performed to examine the issue more closely (Talapatra et al., 2018).

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