A literature review: Augmented reality-based learning in Sundanese Siger Bridal Make-up

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Abstract. Augmented reality is a technology that is being developed and aimed at advancing and facilitating education. Technological progress, encouraging technology-based learning media needs to be studied first theoretically, before being applied to the learning process. This research is a literacy study, which sees augmented reality as supporting the Sundanese Siger Bridal Makeup course. The purpose of this research is to maximize the use of technology in the learning process and to see the effectiveness of augmented reality, especially in vocational learning. Also, this research is intended to analyse the extent to which technology is important as support in learning. The results of the study show that (a) Technology today is the main key in teaching and learning activities, (b) Augmented reality, is considered attractive so that it can increase the focus of students during the learning process, (c) selection of appropriate educational technology, in cosmetology Sundanese Siger bride, able to increase student understanding of the material being taught.

1. Introduction
In line with the path of the Industrial Revolution 4.0 Information and Communication Technology has developed and can be utilized to facilitate in various fields. Education is one of the fields that has quite a lot of benefits from the development of Information and Communication Technology. The increasingly widespread use of technology has an impact on both opening up opportunities and opportunities in the world of education. Not only that the era of the industrial revolution 4.0 presents a formidable challenge to Indonesia's education world. Fonna quoted from Jack Ma in the 2018 World Economic Forum annual meeting, education is a big challenge this century. If we don't change the way we educate and teach, in the next 30 years we will experience great difficulties [1].

Active and creative students are created from facilities and the role of educators who master the material and delivery strategies that are effective and optimal to increase the quality of learning. However, to achieve maximum results, many factors are still an obstacle. The constraints were also felt for the Jakarta State University Makeup School Education Study Program from the results of the study, the Sunda Siger Bridal Make-up Study was basic learning that must be understood by students in Makeup Education at Jakarta State University. However, many students think that this learning is quite difficult because, in addition to practice, it is necessary to explore several theories related to the standard and procedural modifications in the Siger Sundanese Wedding.
Digital devices in technical learning in schools can be used as new ways of effective interaction to provide ease of understanding for students [2]. Advances in technology, driving the speed of processing power and storage of technology-based devices increased significantly. Technology-based devices in the current era, have been able to connect various networks, communication, and interaction through the internet. The advantage of other technology tools is that they are equipped with various types of sensors and aquatic [3]. In the last few years, one of the technological devices that have been in the spotlight in the world of education is Augmented Reality (AR). AR is an innovative technological tool and can be used in a variety of environments and fields [4]. AR can be used for meeting user interfaces with virtual content anywhere, so AR users can change the context of their interactions with certain devices when doing their work in the real world [5].

The high need for technology to access dynamic, adaptive and personal information in real-time, especially in the field of education, can also be accommodated by Augmented Reality [6]. However, students’ responses and the role of augmented reality (AR) need to be seen whether they influence each other, especially in the field of education, which combines theoretical education with vocational or practice-based education. So far, the impact of the use of Augmented Reality in classrooms, has not been much studied. Thus, this literature study aims to see the effect of the use of Augmented Reality (AR) in the learning process of the Sundanese Siger Pengatin Make-Up theoretically.

2. Methods
This study uses a qualitative study of literacy studies. Literature studies analyze relevant studies about the learning process and Augmented Reality (AR). In this study, researchers provide a systematic literature review of papers and previous studies, then analyzed and provide evaluation conclusions of the importance of the use of Augmented Reality in an effective learning process especially in the field of education.

3. Results and discussions
The rapid economic growth of society today, resulting in the need for access to information that is dynamic, adaptive, and personal in real-time. Augmented Reality can provide speed in providing information and giving more meaning to life on certain objects. Augmented Reality, assessed as a new way of physical and digital interaction [6]. Augmented Reality (AR) is a direct display that combines virtual real-world images using 3D models or sounds. Augmented Reality can be used on mobile or tablet [7].

The development of teaching and learning tools in the world of technology education that is growing rapidly includes technology Augmented Reality (AR) which can project images of virtual objects into the real world directly (real-time). Augmented Reality is a breakthrough and innovation in the fields of multimedia and image processing [8]. Augmented Reality is a variation of the Environment or better known as Virtual Reality [9]. Another literacy study, summarized in this research literature, states that the Augmented Reality function in teaching and learning is as follows (see Table 1).

Table 1. Uses of augmented reality in learning make-up.

| The essence of the theoretical study of the urgency of Augmented Reality in the teaching and learning process of Sundanese Siger bridal make up |
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| • Augmented Reality can be used as a single medium in learning Sundanese siger bridal make-up and can also be assisted with other learning media. |
| • Adding the treasury of teaching materials so that students are not only fixated on the modules provided. |
| • Augmented Reality teaching materials become a solution of the limited time lecturers to teach in the classroom. |
| • Fostering student motivation to learn independently. |
| • Learning innovations that are interesting, creative and innovative to support the learning process. |
Several studies have shown varying results from the use of Augmented Reality. Augmented Reality improves communication and interaction between students and lecturers. The AR display model also provides effective support to improve communication and interaction during lectures. The use of AR also helps improve lecture effectiveness, because additional examples and explanations will only be delivered when needed [10]. Broadly speaking, Augmented Reality as a technology that can create significant changes in education to be in line with the needs of students, teachers, and society [11]. Other general benefits of Augmented Reality are increased content understanding, easier learning to remember in the long run, increased student motivation and higher interaction [12].

Augmented Reality by definition of its usefulness, can also be translated as a newer system technology in which virtual objects are added to the real world in time. AR can be considered the same as real objects that are being studied with a high degree of concordance between user expectations and interactions within AR [13]. In terms of other functions, states that in general Augmented Reality is widely used in various fields, one of which is education. In the field of education, Augmented Reality is used as an interactive learning media to be more creative, interesting and innovative. Augmented Reality technology can be applied in human anatomy learning systems [14].

4. Conclusion
An important difference between research that has been done in analyzing Augmented Reality in the learning process, states that Augmented Reality can increase interest and interaction between educators and students, but some other articles mention that the functioning of Augmented Reality in the field of education, still needs further investigation. In addition to Augmented Reality, other literature studies offer other online-based learning media that can also build interactions and motivate students during the teaching and learning process to stay focused.

The advantages of Augmented Reality applied to Siger Bridal Makeup courses from other learning media are easy to understand visually, especially related to the details of make-up, as well as the trinkets on the traditional Sundanese Siger bridal attire that can be seen directly. This literacy study research is a new study that found that Augmented Reality (AR) is important in the vocational learning process of governance, where students will be more interested in participating in learning and have an impact on the high absorption of material presented. Broadly speaking, the literature review in this study strengthens previous research, which states that Augmented Reality, effectively used in the teaching and learning process.

References
[1] Fonna N 2019 Pengembangan Revolusi Industri 4.0 dalam Berbagai Bidang (Jakarta: GUEPEDIA)
[2] Bradford Networks 2013 The impact of BYOD in education (Manchester: Author Cambridge)
[3] Lampropoulos G, Siakas K and Anastasiadis T 2019 Internet of things in the context of industry 4.0: An overview International Journal of Entrepreneurial Knowledge 7(1) 4-19
[4] Enyedy N, Danish J A and DeLiema D 2015 Constructing liminal blends in a collaborative augmented-reality learning environment International Journal of Computer-Supported Collaborative Learning 10(1) 7-34
[5] Wang I, Smith J and Ruiz J 2019 Exploring virtual agents for augmented reality In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems 1-12
[6] Lampropoulos G, Keramopoulos E and Diamantaras K 2020 Enhancing the functionality of augmented reality using deep learning, semantic web and knowledge graphs: A review Visual Informatics
[7] Unal M, Bostanci E and Sertalp E 2020 Distant augmented reality: Bringing a new dimension to user experience using drones Digital Applications in Archaeology and Cultural Heritage e00140
[8] Arifitama B 2017 Panduan Mudah Membuat Augmented Reality (Yogyakarta: Penerbit Andi)
[9] Azuma R T 1997 A survey of augmented reality Presence: Teleoperators & Virtual Environments 6(4) 355-385

[10] Zarraonandia T, Aedo I, Díaz P and Montero A 2013 An augmented lecture feedback system to support learner and teacher communication British Journal of Educational Technology 44(4) 616-628

[11] Kiryakova G, Angelova N and Yordanova L 2018 The potential of augmented reality to transform education into smart education TEM Journal 7(3) 556

[12] Radu I 2014 Augmented reality in education: a meta-review and cross-media analysis Personal and Ubiquitous Computing 18(6) 1533-1543

[13] Cipresso P, Giglioli I A C, Raya M A and Riva G 2018 The past, present, and future of virtual and augmented reality research: a network and cluster analysis of the literature Frontiers in psychology 9 2086

[14] Indrawaty Y, Ichawan M and Putra W 2013 Media Pembelajaran Interaktif Pengenalan Anatomi Manusia Menggunakan Metode Augmented Reality (AR) Jurnal Itena Library 4 4