The Effectiveness of Interactive Multimedia Based on Universal Design for Learning to Improve Traditional Dance Skills in Deaf Students

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Abstract. This study aims to increase the effectiveness of using interactive multimedia based on universal learning design to improve traditional dance skills in deaf students. This research design uses a quantitative research approach. The research design used a one-group pre-test-post-test design. The population of this study was all deaf students (20 students) in SMPLB in SLB Salatiga City. The sampling technique used is saturated sampling. Data collection techniques using tests. Data analysis used non-parametric statistical analysis from Wilcoxon.The results showed that the Wilcoxon signed test results obtained a Z value of -3.929 and an asymp sig value. (2-tailed) 0.000 is less than the 5% (0.05) alpha level. These results prove that there is a difference in the average income before and after the use of interactive multimedia based on universal learning designs to improve traditional dance skills in deaf students. It is concluded that the use of interactive multimedia based on universal design for learning has significant effectiveness in significantly improving traditional dance skills in deaf students.

Keywords: interactive multimedia, universal learning design, deaf students, a traditional dance.

1   Introduction

Deaf students have problems with language and communication. Learning interactions are based on the quality of language and communication interactions between teachers and students. The interaction of dance learning for deaf students is not easy because it has language and communication barriers. Deaf students who have partial or complete hearing loss, require special education services. Teachers as educators must be able to do various ways of communication that include gestures, gestures, and writing. Deaf students use their eyes in capturing communication by looking at the movement of the

lips. Deaf students are children who have a disability in terms of hearing Somantri S., (2005). Basically, the intelligence of deaf children is the same as normal children. They have the same achievements as other normal children. If there are deaf students whose achievement is low, it is not because of their deafness. Deaf students need the right media to take dance lessons, with the right media it is hoped that deaf students will be more receptive to learning. In the intelligence of deaf students, motor skills and vision look stronger.

Dance is an expression of the human soul which is shown through beautiful and rhythmic movements (Soedarsono, 1986). In dancing, a balance is needed between elements of motion, tempo, and rhythm. These elements are combined so that they can express something you want to express into a beautiful movement that can be enjoyed by the audience. Dance is a part of a culture that needs to be preserved in order to remain one of Indonesia's cultural treasures. The basic substance in dance is motion, while motion in dance is a conscious movement because it has a harmony between motion, rhythm, and tempo.

Dance learning always adapts to students' circumstances, student abilities, stages of students' mental development, as well as their daily living environment. In the early stages of dance lessons, activities are focused on: 1) Learning to move the limbs; 2) learning to use their movements as a result of expressing imagination; 3) Learning to use their movements as a medium to express their experiences and habits in everyday life in the world of play and the like. According to Lani, B, and Cecilia, S. (2000), someone who is poor in language will indirectly affect motor development. Language in this case serves as a regulator of motion. Many movements can be taught through imitation, but to further perfect certain movements, verbal instructions are needed, such as in aspects of pressure, acceleration, rhythmic motion, two-handed coordination, accuracy, and so on. In young children, this verbal component plays a very important role in honing motor skills. Motor/motion is a process that involves part or all parts of the body in a single unit that produces static motion in place and moves dynamically from one place to another. used or exploited by students. To improve their quality of life. Often the motor is distinguished between fine motor and gross motor. Fine motor skills are small movements that involve few muscles, while gross motor skills are movements that involve large movements of muscles throughout the body.

Traditional dance is a procedure that is carried out from generation to generation and applies to certain ethnic groups. This traditional dance is performed by generations. Because it is carried out from generation to generation and continues, it creates binding rules. According to Munaisah (in Nadjamuddin, L. 1983: 13). Traditional dance is a dance that has great value, is noble, high quality bound to a certain movement pattern, and contains very strong philosophical, symbolic, religious, and traditional values. This dance grows and develops in a certain community group which is an identity in the culture of the community. " (Sumaryono, Endo Suanda, 2006: 54). In its development, classical traditional dance grows and develops in a certain community group that has special characteristics that indicate the origin of a particular area such as movement, arias, clothing, and musical accompaniment. The beauty of traditional dance has proven to transcend regional boundaries. Types of dance based on its function, dance is divided

into three types, namely ceremonial dance, social or entertainment dance, and performance dance. The subject matter of traditional dance in this study is Javanese traditional dance for learning for deaf students.

For deaf students, dance learning serves to develop various aspects, namely gross motion, and fine motion, as well as instilling the values of beauty, harmony, harmony, patience, flexibility, accuracy, accuracy, taste sensitivity, emotional regulation, self-control, and cohesiveness. These values can be useful in everyday life, especially in their personal development, which is to become more confident, courageous, creative, cheerful, and united. Dance can not be separated from accompaniment. For students who do not have hearing impairments, it is not difficult to adjust movements with the accompaniment, but for deaf students who cannot hear it is not an easy thing to learn the art of dance. This does not mean that deaf students cannot learn the art of dance. They can still learn the art of dance according to their circumstances. Deaf students have very basic needs, namely facial skills, voice skills, and demonstrations (Subagya, 2020). These three things are realized through the principles of universal design-based learning.

Universal-based learning (UDL) is designed to be used by students with special needs with various barriers (Maya, Cecelia & Sean; 2014). The main principles in UDL include 3 (three) things, namely 1) multi-representational means - using various methods to convey information, providing various supporting means; 2) multiple modes of action and expression - giving students creative methods to act skillfully and demonstrating what they know; 3) multiple ways of engagement – capitalizing on student interests by offering a choice of content and tools; encouraging students with a variety of challenges that can be adapted (Rose & Mayer, 2002). The design of the presentation of teaching materials makes the content accessible to students from various backgrounds, students perceptions, and their characters. In this study, deaf students. The material in this UDL includes language/text, expressions, symbols, video, audio, and signs that are presented in a single unit. Sears et al. (2014) and Marino et al. (2014), using video, audio, symbols, video games, and print-based texts can prove that students are easier to understand, access material, and can solve problems from the material taught by the teacher. Multimedia facilitates active student involvement and encourages all learners as well as the provision of flexible alternative materials by the curriculum (Rose & Meyer, 2002). Actions and _ Expressions are facilitated through various alternatives, namely writing, speech, gestures, and total communication.

To learn the art of dance for deaf students, special techniques are needed to make it easier to learn and improve learning achievement in dance subjects. Traditional dance learning media along with the times require continuous innovation. In the era of the industrial revolution 4.0 in the world of education, the demands for digital literacy competencies have been given starting from basic education to higher education. One form of digital literacy in traditional dance learning is the use of interactive multimedia for deaf students.

A multimedia is a tool used to send messages and information (Antonius & Roswanto 2006). Multimedia is a computer-based tool that is presented in the form of combining text, sound, images, and animations that are connected to an internet connection so that users can interact, navigate and communicate (Hofstetter, 2001). To

convey a message and information, through electronic media such as computers and other electronic devices. According to Benardo P. (2011), an interactive multimedia is a tool that can create dynamic and interactive presentations that combine text, graphics, animation, audio, and video images. Furthermore, Benardo (2011), explained that interactive multimedia is the use of computers by combining text, graphics, and video animations that are connected via links that can be used by students to interact, be creative and be able to express opinions. Based on existing research, the author wants to develop an interactive multimedia product to make it easier for deaf students to learn the art of dance. Hakim, L., M. (2020), in his research shows that the use of interactive multimedia is effective for Islamic religious learning for students with special needs.

Based on the above conditions, appropriate learning media is needed that can be accepted by deaf students so that the dance material taught can be more easily absorbed and implemented so that learning outcomes can be maximized by using UDL-based interactive multimedia.

2   Methodology

This study uses a quantitative research approach. The research design used a *one-group pre-test-post-test design*. The population of this study was all deaf students (20 students) in secondary schools in SLB Salatiga City. The sampling technique used was saturated sampling, namely for all deaf SMPLB students in Salatiga City. There are 3 (three) special schools in Salatiga City and all three have an education unit at the level of SMPLB. Data collection techniques using tests. Data analysis used non-parametric statistical analysis from Wilcoxon.

3   Results And Discussion

3.1   Results

Respondents consisted of 1 student of SMPLB Bina Putra, 5 students of SMPLB Wantuwirawan, and 14 students of SMPLB Negeri Salatiga. The average pre-test score for 20 students was 7,6 or the final score was 31.4, while the average post-test score (17.25) or the final score was 71.28. The following is a descriptive analysis of the pre and post-test.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	means	Std. Deviation

PRETTY	20	5.00	12.00	7.6000	2.13739
POST-TEST	20	11.00	21.00	17,2500	2.69258
Valid N (listwise)	20				

Table 2. Rank

		N	Rating Average	Number of Ranks
POSTTEST– Pks or other than RETETS	Negative Rating	0 [a]	.00	.00
	Positive Rating	20 [b]	10.50	210.00
	Tie	0 [c]		
	Total	20		

a . POSTTEST < PRETES
b. POSTTEST > PRETES
c. POSTTEST = PRETES

deaf students, indicating that there was no decrease in the pre-test and post-test scores. Positive ratings or positive differences in pre-test and post-test scores using MMI on a universal basis for deaf students N=20, indicating that there is an average rank of 10.5, while the number of rankings is 210. The association shows that between 20 respondents between pre and post-test does not exist or zero (0), which has the same score or value

Table 3. Test Statistics [a]

	POSTTEST - PRETES
Z	-3,929 [b]
sour. Signature. (2-tail)	.000

a . Wilcoxon Marked Rating Test
b. Based on negative ratings.

Based on the el tab above that asymp.sig (2-tailed) has a value of 0.00 which is smaller than <0.05 and even 0.01, it can be concluded that there is a very significant effect on the use of UDL-based MMI to improve dancing skills. traditional students with disabilities at SMPLB Salatiga. Thus, for the purposes of this study, it can be said that the use of UDL-based MMI is very effective in improving traditional dance skills in deaf students of Special Junior High School in Salatiga.

4   Discussion

Traditional dance is a blend of movement, culture, and art. Movement is closely related to motor skills. Today, more and more researchers are suggesting a holistic approach to motor skill learning; an approach that will jointly involve motor and cognitive parameters (Lavender, 1996; Warburton 2004; Smith & Autard, J., 2003; Koutsouba, & Giosos, 2006; Antoniou, Apostolakis, Anastasiades, & Karipidis, 2009). Truly creative learning is related to motor skills paving the way for innovation (Dania, A. et al., 2011).

Developments that lead to the use of technology to support learning so that students have interactive whole-body experiences, motion capture, and virtual and augmented reality (Rahab, K. Kasomoulis, A. Katifori, V., 2016). In research, the use of digital tools for use in art education serves as a developmental enhancement. The digital arts curriculum can serve as a powerful advocacy tool (Schukei, A., 2019). The development of science and technology will provide a broad reference to the development of dance. According to the information, the current dance is not able to fulfill beauty. Several groups of dance artists around the world finding new technology so that they can enjoy the art of dance in a new atmosphere (Wu, H. and Leng, Y, 2022). Teachers will be more motivated to create more creative dance lessons than traditional dance lessons.

Sari, H., et al. (2018) In arts and culture subjects, interactive multimedia and mobile learning are effective efforts to improve student learning outcomes. This supports research that the use of interactive multimedia as a form of the latest technology provides improvements in traditional dance skills for deaf students. By applying multimedia technology, it will have a positive impact on the learning of college dance sports, namely by the curiosity and motivation of students. (Guang, B., Jing, J., & Fu, Z. 2011).

Studying the art of traditional dance requires the coordination of various types of knowledge. This requires intuitive synthesis and bodily exercise and requires an explicit conceptual understanding of the philosophical meanings embodied in traditional types of dance. Coordination of moving experiences with moving visual effects will always be needed (Fournier, 2003). The research in this study presents the coordination of all aspects of traditional dance with the characteristics of deaf students in one MMI. The results of the study prove that the use of MMI can increase significantly to improve traditional dance skills for deaf students. This increase was indicated by the results of the pre-test (76) and post-test (172.50) scores or an increase of 44%. The results of this study are supported by the research of Herlinah, Kusnadi, Supriyadi, H., Nugraha, H. (tth) that the use of interactive dance multimedia learning in learning the Sancaya Kusumawicitra dance for students of the Faculty of Language and Letters of UNY can achieve an average score of 91. Similar research supports the results of research conducted by the author. Ketiasih (2009), Learning the basic movements of Balinese dance including agem , away and tangkep, can be easily done at home using interactive multimedia technology. According to Gerlach and Elly. (1980), to be able to improve learning outcomes in the process, do learning with materials and tools that can be used.

The limitation of this study is that the subject is too small, only within the scope of the city of Salatiga, and only refers to traditional Javanese dances. His small hope can inspire more in-depth research.

5   Conclusion

Traditional dance learning for deaf students serves to improve personal quality as a provision for the next life. Due to the limitations experienced by deaf students, a method that is appropriate to its characteristics is needed to facilitate each learning process. The results of the study prove that the use of interactive multimedia based on universal design for learning can effectively improve the traditional dance skills of deaf students significantly.

6   Acknowledgments

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