Effects of instructional materials in multimedia computer-assisted instruction in teaching folk dance

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ABSTRACT

This study aimed to determine the performance level of second year BPED students in teaching folk dance through multimedia computer-assisted instruction and demonstration methods. A quasi-experimental design was utilized. Sixty (60) students participated in the study with two intact heterogeneous classes. A validated researcher-made performance instrument was used to collect data. Descriptive statistics was utilized such as mean, standard deviation, and ANCOVA for the treatment of data. Findings in the pre-test revealed that the performance level of second-year BPED was "developing." After employing MCAI, the group obtained a "proficient" level of performance in the post-test. The performance level of second-year BPED in the pre-test was "developing." After employing the demonstration method, the group obtained a "proficient" performance level in the post-test. Students in demonstration method had significantly higher mean scores than those exposed to multimedia computer-assisted instruction. It can thus be concluded that the demonstration method is highly significant in enhancing the performance level of second-year BPED students in teaching folk dance. It was recommended among others that physical educators may conduct more studies related to the good quality of MCAI and may adopt the combination of MCAI and the demonstration methods in teaching folk dance.

Keyword: Teaching folk dance; instructional material; multimedia computer-assisted instruction; demonstration method; performance

INTRODUCTION

In today's digital world, there are various teaching methods one can use to learn folk dancing. It evolved from the traditional teaching method into learning through advance technology. The advancement of technology in teaching folk dance has helped many educators create instructional material that is more accessible, innovative, and interactive. Technology integration in the pedagogy of folk dance can be a great methodology to encourage students to learn optimally. Although many commercial packages are available and accessible online, these are frequently not in a language where students can understand and do not mostly caters to the learning objectives of the subject. The application of advanced technology has transformed the traditional methods of teaching folk dance.

One of the most common traditional methods used in teaching folk dance is when a teacher demonstrates folk dance steps while students observe and perform. The teacher does whatever the students are expected to do at the end of the lesson by showing them how to do it and explaining the step-by-step process. Videos and other

multimedia tools in teaching have come a very long way for more than five decades and provided unique benefits to the instructional process. It has resulted in instructional interaction between the student and the computer in a variety of contexts with or without the assistance of a teacher. Priskila (2018) made a study on interactive multimedia based on computer-assisted instruction and found out that it has high effectiveness in increasing the learning interest and learning outcomes of the students. Also, Shaoyan and Yunijan (2012) stated that multimedia technology could improve the quality of physical teaching and students' learning.

Studies on the use of technology in the field of teaching folk dance are still few. Researchers believe that to enhance traditional teaching methods with modern technological means may contribute to raising the interaction between the learner and the computer in a variety context with or without the assistance of a teacher (Lacker & Many, 1997). Therefore, the purpose of this study is to determine the level of performance of second-year BPED students in teaching folk dance through demonstration method and multimedia-computer assisted instruction. This study hopes to improve teaching and learning folk dance among second-year BPED students. Lastly, this serve as a baseline in enhancing instructional material in teaching the subject.

This study aimed to determine the level of performance of second-year BPED students in teaching folk dance through multimedia computer-assisted instruction and demonstration methods. Specifically, it sought to answer the following problems: (1) What is the level of performance of second-year BPED students in the pretest and posttest when taught using Multimedia Computer-Assisted Instruction?, (2) What is the level of performance of second-year BPED students in the pretest and posttest when taught using the Demonstration Method?, (3) Is there a significant difference between the performance of students exposed and not exposed to multimedia computer-assisted instruction and demonstration methods?.

This study anchors the concept of Ornstein (1990) that demonstration and the multimedia computer-assisted instruction can affect BPED students' knowledge in learning folk dance. He added that varied learning situations could improve the achievement better, and change the attitude of students. Also, it supports the Stimulus-Response (S-R) theory postulated by the behaviorist-psychologist that multimedia computer-assisted instruction and the demonstration methods can control one's behavior. Furthermore, it anchors on the constructivist theory of learning. It focuses on knowledge and learning that is influenced by the work of Piaget and Vygotsky (2007). According to the constructivist's point of view, learners are not passive recipients of knowledge; instead, they are activities constructors and re-constructors of their understanding. Constructivists view learning as creating new knowledge and deriving meanings by combining incoming information with what they already know.

RESEARCH METHODS

Research Design
This study used the quasi-experimental pretest-posttest group design to determine the level of performance of second-year BPED students in teaching folk dance using multimedia computer-assisted instruction and demonstration methods. This design used two intact classes, which randomly assigns the experimental group or the control group. The pre-test was given before the conduct of the lesson to both groups. The experimental group were taught using multimedia computer-assisted instruction while the control group taught using the demonstration method. The researcher gave a

posttest to both groups after the conduct of the lessons.

Research Setting

This study was conducted to second-year BPED students who are officially enrolled in BPED 13 subject with the course title International Dances and Other Forms during the first semester of the school year 2019-2020 at Bukidnon State University, Malaybalay City, Bukidnon. The University offers varied undergraduate and graduate programs of academic excellence along with diverse opportunities. Students participate in relevant internships at local and international levels, field experiences, community services, and leadership development.

(OMIT: They have Graduate School, College of Law, College of Education, College of Business, College of Arts and Sciences, College of Nursing, and lastly, College Social Development and Technology.)

The Physical Education Department of the College of Education commits to provide a quality education through lifelong learning and a holistic foundation for physical literacy. Its primary goal is to provide the students with a broad and coherent understanding of P.E as a discipline and as a specialization. The program outcomes of the department are disciplinal knowledge, movement competency and proficiency, curriculum and program planning, implementation, monitoring and evaluation, professional accountability and responsibility, and communication. Thus, the utilization of information, media, and technology in pedagogy is essential for lifelong learning.

Participants of the Study and Sampling Procedure

The participants of this study were the second year BPED students enrolled in BPED 13 subject for the second semester of the school year 2019-2020. There were 60 BPED students in two sections. These respondents belong to two intact heterogeneous classes. One section, which is randomly assigned as the experimental group consists of 30 students and another 30 students assigned to the control group.

Table 1. *Distribution of Subjects as to Type of Group*

Type of Group	Population	Sample
Class A	30	30
Class B	30	30

Research Instrument

The research instrument used in the data gathering was a researcher-made academic performance test. Performance Test. This research instrument was a multiple-choice test made by the researcher. In the development of the test, the researcher prepared a table of specification (TOS) as the basis for the formulation of questions. There were twenty-five item questions for both the control group and experimental group which were checked and validated by the P.E expert instructor. Consequently, the test was tried out to 30 second-year P.E students of Bukidnon State University and was subjected to item analysis using Item Analyzer (U-L Index Method) to determine whether to retain or reject a test question based on two ranges. Taken were items with difficulty indices within less than 0.3 discrimination indices within greater than or equal to 0.3.

Research Ethics

The researcher strictly followed the protocol before the conduct of the study. Permission from the Chairperson of Physical Education and the Dean of the College of Education will be secured. The researcher presented the approved letter to the institution where the study conducted. Upon approval by the chairperson, the

researcher conducted the study. Both classes were handled and taught by the researcher. The researcher based the schedule of the conduct of the study to the approved scheduled by the chairperson of the Department. Before the conduct of the lesson, the researcher conducted an orientation. It followed by administering a pretest to both classes. The conduct of the lesson followed the same topics for both groups. However, during the presentation of the lesson, the first group used multimedia-computer assisted-instruction. On the other hand, the second group used demonstration methods. After all the topics were covered, the posttest was given to both groups to assess how much the students learn from the two methods used. The posttest was similar to the pretest. The result of the posttest was recorded and compared with the result of the pretest to see if students have improvements in their scores. Open-ended questions were given to the group to obtain information about their learning experiences in the conduct of the activity.

Methods of Data Analysis

In the researcher-made academic performance test, every correct answer gives one (1) point, and the perfect score is twenty-five (25). A range sets to assign the corresponding achievement level to the scores obtained by the students in the pretest and posttest.

Score Range	Qualifying Description	Qualifying Statements
21-25	Advanced	Exceeds the core requirements in terms of knowledge, skills and understandings in folk dance and can transfer them automatically and flexibly through authentic performance tasks.
16-20	Proficient	Developed the fundamental knowledge, skills and core understandings in folk dance and can transfer them independently through authentic performance tasks.
11-15	Approaching Proficient	Developed the fundamental knowledge and skills and core understandings in folk dance and can transfer these understandings through authentic performance tasks.
6-10	Developing	Possesses the minimum knowledge and skills and core understanding in folk dance but needs help throughout the performance of authentic tasks
0-5	Beginning	Possesses the no knowledge and skill and core understanding in folk dance and needs help throughout the performance of authentic tasks

Statistical Techniques

For an accurate interpretation of data, the researcher study used the following statistical tools. Mean and Standard Deviation. These used to answer problems one and two to describe the mean average of the respondent's scores to know if there is progress and the difference between respondent's pretest and posttest both from the experimental group and control group.

One-way Analysis of Covariance (ANCOVA). This instrument was used to answer problem three to determine the significant difference between the performance of students exposed in multimedia computer-assisted instruction and demonstration methods.

RESEARCH RESULT

Problem 1: What is the level of performance of the second-year BPED students in the pretest and posttest when taught using multimedia computer-assisted instruction?

Table 2. Performance Test Scores of Second Year BPED Students taught in Multimedia Computer-Assisted Instruction Method

Score	Description	Experimental Group			
		Pre-test		Post-test	
		f	%	f	%
21-25	Advanced	0	0	4	13
16-20	Proficient	0	0	14	47
11-15	Approaching Proficient	6	20	11	37
6-10	Developing	23	77	1	3
0-5	Beginning	1	3	0	0
(No of students) Total		30	100	30	100
Mean		8.83		16.83	
Std. Deviation		2.09		3.51	
Performance Level		Developing		Proficient	

Legend: f- frequency   %- percentage

Table 2 presents the level of performance of the second-year BPED students in the pre-test and post-test taught using multimedia computer-assisted instruction. It reveals that the level of performance of the second-year BPED students in the pre-test is "developing" with a mean score of 8.83 (2.09). It confirms that at this level, they have possessed the minimum knowledge and skills and core understanding in folk dance but needs help throughout the performance of authentic tasks. This implies that students at this level have the same ability considering their performance before the conduct of the study.

The Table shows that the post-test mean score obtained by the students is 16.83 (3.51), is described as a "proficient" level of performance. It indicates that they have developed the fundamental knowledge, skills, and core understandings in folk dance and can transfer them independently through authentic performance tasks. This implies that the students obtained a higher level of performance after the intervention was employed.

Both test score show that the post-test mean score of 16.83 (3.51) was higher than the pre-test mean score of 8.83 (2.09). It confirmed that multimedia computer-assisted instruction is an effective method in improving students' performance in teaching folk dance. This supports the claim of Priskila (2018) that multimedia computer-assisted instruction has a bigger impact on the increase of the students' learning interest and outcome. Furthermore, it can be used as a learning approach in the classroom to make student learning outcome effective.

The students in the experimental group with multimedia computer-assisted instruction liked the idea of how the use of multimedia enhances both the teaching and learning in class. They like to have multimedia computer-assisted instruction as a method in teaching folk dance because it helped them understand the description of the dance terms and steps. Also, they can play the video in slow motion, replay, and analyze how the steps are being done. It helped them learn the steps effortlessly, they added. Moniem (2014) asserts that multimedia technology can slow, freeze, and magnify videos

and pictures, which make it simple to explain hard and new learning actions with exact action presentation.

On the other hand, the second year BPED students taught using multimedia computer-assisted instruction obtained a "developing" level of performance in their pre-test. After being given the treatment in the form of multimedia computer-assisted instruction, they obtained a "proficient" level of performance in their post-test, which confirmed that they have developed the fundamental knowledge and skills and core understandings in folk dance and can transfer them independently through authentic performance tasks. This result infers the study of Sezer and Albay (2018) on the students' positive response, pointing out that multimedia computer-assisted instruction is a much better method in improving the learning outcomes of the students.

Furthermore, multimedia computer-assisted instruction contributed to the increment in the level of performance of the second year BPED students in learning folk dances. Multimedia learning principles and computer-assisted instruction helped establish an effective teaching and learning process (Winter, 2016).

Problem 2: What is the level of performance of the second-year BPED students in the pre-test and post-test when taught using the demonstration methods?

Table 3. Performance Test Scores of Second-Year BPED Students taught
in the Demonstration Methods

Score Range	Performance Level	Control Group			
		Pre-test		Post-test	
		F	%	f	%
21-25	Advanced	0	0	13	43
16-20	Proficient	0	0	16	54
11-15	Approaching Proficient	8	27	1	3
6-10	Developing	17	56	0	0
0-5	Beginning	5	17	0	0
(No of students) Total		30	100	30	100
Mean		8.53		19.43	
Std. Deviation		2.46		2.54	
Performance Level		Developing		Proficient	

Legend: f- frequency   %- percentage

Table 3 presents the level of performance of second-year BPED students in pre-test and post-test taught using demonstration method. The findings reveal that the level of performance of second-year BPED students in the pre-test is "developing" with a mean score of 8.53 (2.46). This indicates that they have possessed the minimum knowledge and skills and core understanding in folk dance but need help throughout the performance of authentic tasks. This implies that students at this level have prior knowledge of the subject, considering that they have undergone P.E 3, which is pre-requisite to the subject taught; however, there is still a need for them to be exposed using the demonstration method.

On the other hand, the post-test mean score of students is 19.43 (2.54), which is a "proficient" level of performance. This indicates that they have developed the fundamental knowledge and skills and core understandings in folk dance and can transfer them independently through authentic performance tasks. This implies that they are capable of their acquired knowledge and skill, thus, allowing them to apply in real situations.

These findings show that the post-test mean score of 19.43 (2.54) was higher than

the pre-test mean score of 8.53 (2.46). The students have improved their level of performance after using the demonstration methods. This finding agrees with Ichsan and Mulyani (2018), who found out that students achieved higher scores at the time after being given treatment in the form of demonstration method. It implies that students have understood the content in a manner that they can perform the task independently.

Although the demonstration method has used for so many years in subjects that require skill demonstration, students still find the method operative and beneficial.

The second-year BPED students taught using the demonstration method obtained a "developing" level of performance in their pre-test. After being given the treatment in the form of multimedia computer-assisted instruction, they obtained a "proficient" level of performance in their post-test, which confirmed that they have developed the fundamental knowledge and skills and core understandings in folk dance and can transfer them independently through authentic performance tasks. Therefore, the demonstration method is an effective method to use in skill-related subjects such as folk dance. Thus, it contributes to the improvement of the performance of the second year BPED students in teaching and learning folk dance. It increases students' interest and understanding and consequently promoting a high achievement rate (Daluba 2013).

Problem 3: Is there a significant difference between the performance of students exposed and not exposed to multimedia computer-assisted instruction and demonstration methods?

Table 4. One-way ANCOVA comparing Performance Test Scores of Second-Year BPED Students Exposed and Not Exposed to Multimedia Computer-Assisted Instruction and Demonstration Method

Source of Variation	Type III Sum of Squares	df	Mean Score	F-Value	p-value	Remark
Corrected Model	188.86	2	94.33	11.73	.000	Significant
Intercept	679.77	1	679.77	84.55	.000	
Pretest	87.26	1	87.26	10.85	.002	
Group	118.87	1	113.87	14.16	.000	
Error	458.28	57	8.04			
Total	20376.00	60				
Corrected Total	646.93	59				

a. R Squared= .292 (Adjusted R Squared = .267)
b. Computed using alpha = .05

Table 4 presents the significant difference between the performance of students exposed and not exposed to multimedia computer-assisted instruction and the demonstration methods.

DISCUSSION

Based on the findings of the study, as shown in the Table, the computed p-value (0.000) of the pretest is lesser than the significance standard set in the study at 0.05. This reveals that there is a statistically significant difference in the performance of second-year BPED students exposed and not exposed to multimedia computer-assisted instruction and the demonstration methods. Hence, the null hypothesis, which states that there is no significant difference between the performance of students exposed and not exposed to multimedia computer-assisted instruction and the demonstration

methods, is reject. The present findings are parallel to the study conducted by Davi et al. (2019) on the comparison of the effectiveness of video-assisted teaching programs and traditional demonstration, which revealed that the performance skills of students taught in traditional demonstration, obtained higher mean score of 55.13 than video-assisted teaching program. The result shows that students learn more effectively using the demonstration method.

Another study from Wiswason and Jobby (2017) show that students scored statistically (p-value 0.047) better marks in the traditional demonstration method than in the visual aided method.

As seen in the Table, although both methods were equally effective in enhancing the performance level of the students, the demonstration method scored much better than multimedia computer-assisted instruction on their post-test results. The use of multimedia computer-assisted instruction has a lesser improvement in the performance of the students. Based on the interview, they struggle to cope up with their requirements on the other subject. Also, they admitted that they failed to watch and study the video. This is an evident implication that the physical state of the students was also one of the factors for not responding to the task. According to Druker (2017), countless lessons, stress, and anxiety are the factors why students fail to complete the tasks.

Furthermore, the quality of the multimedia computer-assisted instruction lacks the proper selection of the font size of the text and instructional text. The font size of the text was hard to read, and the instructional text was too long. This conforms to the study of Yoo and Woo (2010) on their revisions of the quality of multimedia.

A study conducted by Priskila et al. (2018) interactive multimedia based on computer-assisted instruction emphasized that multimedia products must have a good quality of the following criteria: language, material, learning design, and media. This means that the experts must validate the materials according to the set criteria in order to have a good quality of the material.

As per observation, the students can easily understand and follow the steps directly as the teacher directs them the steps. As they perform the figures, the students were very attentive and participative in the class. Thus, they were very much engaged and interested in learning the steps. This means that that demonstration method provides student's opportunity to engage in self-directed learning at a pace that suits them. Furthermore, it allows them to act upon the ideas behind the image, demonstrated and analyzed by the teacher. This finding agrees with Ichsan and Mulyan (2018), who emphasized that teachers employing the demonstration methods provide explicit direction, and the students can grasp the intentions conveyed by the teacher easier.

Moreover, based on the interview, participant 4 stressed that,

"The demonstration method allowed me to observe and perform the steps accurately. It enabled me to familiarize, memorize, and identify the dance steps. I am the kind of learner who prefers visual participation."

Another participant added that,

"Demonstration method helped a lot for it enables me to learn the steps quickly. Having someone in front giving instructions and performing the steps caters my needs the most, for it helped me remember and understand the steps."

This illustration simply directs Howard Gardner's theory of multiple intelligences. A teacher should address students' diverse learning styles in the classroom setting. Students can easily register the concept if they can see how the steps are being done. Furthermore, it enables them to evoke the "wow" experience (Gardner, 1978).

Consequently, it can increase their curiosity and enhance their reasoning ability.

Nonetheless, the demonstration method is an effective method to clarify instructions since students can personally hear and see how the movements are being done. According to Basher et al. (2017), as cited by Ichsan and Mulyan (2018), the demonstration method has a positive impact on enhancing cooperation among students and their understanding. This is usually accompanied by other methods such as questioning and answering, which is geared to make the students more active and attentive to the competencies being presented.

Furthermore, the group that was exposed to the demonstration method obtained a p-value of 0.092, which is lesser than the significance standard set in the study at 0.05. This means that there is a significant difference in the performance of students exposed to multimedia computer-assisted instruction and demonstration methods. Therefore, the demonstration method is highly significant in enhancing the level of performance of second-year BPED students in teaching folk dance.

CONCLUSION

From the findings of the study, the following conclusions are drawn: The level of performance of second-year BPED students in the pre-test is "developing," which means that they have possessed the minimum knowledge and skills and core understanding in folk dance but needs help throughout the performance of authentic tasks. After they are exposed to multimedia computer-assisted instruction, their level of performance post-test is "proficient," which reveals that they have developed the fundamental knowledge and skills and core understandings in folk dance and can transfer them independently through authentic performance tasks. It confirms that multimedia computer-assisted instruction is an effective method in improving students' performance in teaching folk dance. The level of performance of second-year BPED students in the pre-test is "developing," which means that they have possessed the minimum knowledge and skills and core understanding in folk dance but needs help throughout the performance of authentic tasks. After they are exposed to the demonstration method, their level of performance in the post-test is "proficient", which reveals that they have developed the fundamental knowledge and skills and core understandings in folk dance and can transfer them independently through authentic performance tasks. It reveals that the students improve their level of performance after they are exposed to the demonstration method. There is a statistically significant difference in the performance of second-year BPED students exposed and not exposed to multimedia computer-assisted instruction and the demonstration methods. Therefore, the demonstration method is highly significant in enhancing the level of performance of second-year BPED students in teaching folk dance.

From the findings and conclusions of the study, the following recommendations are formulated: (1) Bukidnon State University may organize seminars and training for all P.E instructors in the making of instructional materials using both methods to enhance teaching strategies. (2) The physical education instructors may conduct more studies related to the good quality of multimedia computer-assisted instruction. Also, they may conduct further studies related to the impact of the demonstration method in improving creative thinking skills. Furthermore, they may adopt the combination of multimedia computer-assisted instruction and the demonstration methods in subjects related to skill demonstration to enhance the performance of the second-year BPED students.

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