

# The Implementation of Biological Learning Integrates The Local Wisdom of Mamanda Using The Role Playing Method on Student Learning Outcomes

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**Abstract**— Learning mastery the concept of gametogenesis to students majoring in biology education at the Faculty of Teacher Training and Education, University of Lambung Mangkurat less because the concept of gametogenesis is very abstract and requires a high level of understanding with high memorizing abilities. Based on this condition, it is necessary to apply the *Mamanda* learning model in the concept of gametogenesis. *Mamanda* is a traditional theater art originating from South Kalimantan. Biology learning integrates *mamanda* local wisdom using the role-playing method to make abstract concepts can be modeled concretely, and through the process of role-playing in *Mamanda* can facilitate mastery of the learning concept of gametogenesis. This study aims to determine the average learning outcomes and learning mastery of classical concepts of gametogenesis through biology learning integrated *Mamanda* local wisdom using the role playing method. This research is a quasi-experimental study with an unequal group design. The study sample was a total sample, namely, class A as the experimental class using the *Mamanda* learning model and class B as the control class using learning with group presentations. The results showed a significant difference in learning outcomes, with the average learning outcomes in class A with the *Mamanda* learning model of 84.45 while the student learning outcomes in the control class B with group presentation learning amounting to 72.37. Classical Mastery Learning in class A with the *Mamanda* learning model is 95.00% while classical mastery learning in the control class B with group presentation learning is 80.50%.

**Keywords**— learning; mamanda; role-playing; gametogenesis.

## I. INTRODUCTION

Gametogenesis is the first concept studied in embryology courses. The embryology course learns about embryonic or fetal development. Embryology courses are presented in semester 6 biology education courses. Gametogenesis is the process of forming gametes or sex cells. Mastery learning of gametogenesis concept to students in biology education department at Faculty of Teaching and Education Science Lambung Mangkurat University were less because gametogenesis concept is very abstract and needs a high level of understanding with high memorizing ability. In order for the learning gametogenesis concept be well mastered, and

with high learning outcomes, a learning model is needed that involves the activeness of all students and creates a deep impression for all students so that the gametogenesis concept easier to master and high learning outcomes. Abstract concepts must be taught more concretely, for example by modeling. The concept that is difficult to remember is taught by learning which creates a deep impression.

Mastery of student concepts will be better one of which is using local wisdom in the learning process [1]. One of the forms of local wisdom in South Kalimantan is *Mamanda*. *Mamanda* is theater art or traditional performances originating from South Kalimantan. The *Mamanda* show has a very high cultural value, besides being an entertainment medium, *Mamanda* also functions as an educational medium for the community. The term *Mamanda* is used because, in the play, players such as Chief Minister, Minister, and Prime Minister are called the “*Pamanda*” or “*Mamanda*” by the King. *Mamanda* etymologically consists of the word “*mama*” (“*mamarina*”) which means uncle in Banjar language and “*nda*” which means honorable. So, *Mamanda* means honorable uncle, e.i. “greeting” to an uncle who is respected in the kinship system or family. Historically, *Mamanda* was a badamuluk art brought by the group Abdoel Moeloek from Malacca to Banjarmasin from 1897. Formerly in South Kalimantan, Comedy Indra Bangsawan, led by Uncle Ibrahim Wangsa and his wife, Aunt Hawa. The intersection of local art in Banjar with Indra Bangsawan Comedy gave birth to a new art form called “*Ba Abdoel Moeloek*”/ “*Bada Muluk*” (Abdoel Moeloek theater performances). After adapting, the theater gave birth to a new theater called *Mamanda* which is known today [2].

*Mamanda* is a form of communication between humans, humans with nature and the environment. Communication in this shadow is not only present in the capacity for artistic creation as well as in drama, dance, and singing. *Mamanda* is not just art that is performed, but *Mamanda* describes the attitudes and behavior of people in the form of complete lifelines. *Mamanda* is a miniature soul and human behavior with all its functions and position [3]. *Mamanda* is related to religion, rules of character in family life [4].

As theater art, *Mamanda* is an art of role-playing, so it can be used as a role-playing learning model. The role-playing learning model is a method that involves interaction between two students or more about a topic or situation. Students perform roles according to their respective characters. They interact with each other to do open roles. This method can be used in practicing the contents of the new lesson. Students are given the opportunity to demonstrate a role so that they find possible problems to be faced in actual implementation. This method requires the teacher to look at the shortcomings of the role that students exhibit [5].

The advantages of role-playing learning models involve all students to be able to participate and have the opportunity to demonstrate their ability to interact, for example: (1) Students are free to make decisions and expressions in full, (2) role-playing is an easy discovery and can be used in situations and different times, (3) The teacher can evaluate the understanding of each student through observation during role-playing, (4) role-playing is a pleasant learning experience for children [6].

Role-playing is an effort to solve problems through demonstration, as well as steps for problem identification, analysis, characterization, and discussion. For this purpose, a number of students acted as actors and others as observers. An actor must be able to live the role he plays. Through the role, students interact with others who also bring certain roles according to the chosen theme [7].

Biology learning material which is mostly concerned with the concept of certain body function processes including gametogenesis, it is a concept that is very abstract and needs a high level of understanding with high ability to memorize. This causes a low mastery learning of the gametogenesis concept. It is necessary to do a biological learning process integrating the local wisdom of *Mamanda* using the role-playing method to overcome the low mastery of the concept of gametogenesis. many previous studies stated that integrating local wisdom in the learning process can improve student learning outcomes so that it is effective in being used in learning [8]. This study aims to determine the average learning outcomes and mastery learning of students using biological learning integrated *Mamanda* local wisdom using the role-playing method in the concept of gametogenesis.

## II. METHOD

This research is quasi-experimental research with the non-equivalent group design. The research sample is a total sample of the entire population divided into two classes, class A consisting of 39 students as the experimental class using biological learning integrated *mamanda* local wisdom using the role-playing method, and class B consisting of 38 students as a control class, using the cooperative learning model of the learning together type with group presentations.

In the experimental class, the steps of the activity carried out:

- Students are directed to make the *Mamanda* text and the distribution of players adjusted based on the concept of gametogenesis with twice the *Mamanda* according to the subconcept of gametogenesis, e.i. sub

concepts of spermatogenesis and the concept of oogenesis, to be ready for performance. All students were involved as players,

- Students were directed to make staging decorations until they finished decorating for the show,
- The *Mamanda* staging was carried out with a storyline adapted based on the concept of gametogenesis. There are two *Mamanda* performances according to two sub-concepts, e.i. sub concepts of spermatogenesis and subconcepts of oogenesis,
- Class discussion about *Mamanda* staging in connection with the concept of gametogenesis,
- Assessment of student learning outcomes in the concept of gametogenesis using biology learning integrating *Mamanda's* local wisdom using the role-playing method.

In the control class, the activities carried out consisted of:

- Students divided into 8 groups consisting of 4-5 students. Groups I, III, V, and IV present the concept of spermiogenesis, while groups II, IV, VI, and VIII make presentations on Oogenesis,
- Each concept of spermatogenesis and oogenesis is presented by representatives of groups determined randomly.
- Class discussion about presentation material about the concept of gametogenesis,
- Assessment of student learning outcomes in the concept of gametogenesis using group presentation learning.

Test the hypothesis in this study using the t-test with a level of confidence  $\alpha = 0.05$ . Individual mastery learning is achieved if at least students get a learning outcome score of 77.5, while mastery of classical learning is achieved if at least 80% of all students achieve individual mastery learning.

## III. RESULT AND DISCUSSION

The experimental class (class A) using biological learning integrated *Mamanda* local wisdom using the role-playing method, and the control class (class B), using the cooperative learning model of the learning together type with group presentations. Learning outcomes of biology students in the Gametogenesis concept are presented in Table 1.

TABLE I. AVERAGE LEARNING OUTCOMES OF BIOLOGY STUDENTS IN THE GAMETOGENESIS CONCEPT

Class	Learning Outcomes		
	Pre-test	Post-test	Classical Mastery Learning
Experimental	45.32	84.45	95.00%
Control	43.53	72.37	80.50 %

Based on the results of the research and statistical analysis with the t-test at  $\alpha = 0.05$ , there is a difference in the average learning outcomes between the experimental class (class A)

using biological learning integrated *Mamanda* local wisdom using the role-playing method, and the control class (class B) , using the cooperative learning model of the learning together type with group presentations. The average class, A learning outcome, is 84.45, and The average class B learning outcomes are 72.37. The average class A learning outcomes are much higher than the average class B learning outcomes. Class, A classical mastery learning is also higher, which is 95.00% compared to class B with classical mastery learning of 80.50%.

Integrated biology learning *Mamanda* local wisdom uses role-playing methods, there are several reinforcements in the learning process, namely (1) Listening to lecturers' explanations about the concept of short gametogenesis; (2) Reviewing the concept of gametogenesis from a textbook. (3) pouring the concept of gametogenesis into the script to be played; (4) Playing Gametogenesis in accordance with the manuscript that has been made; (5) Discuss the results of role play in biology learning integrated *Mamanda's* local wisdom in the concept of gametogenesis. These five reinforcements caused students to learn the concept of gametogenesis repeatedly so as to facilitate understanding and mastery of concepts. This is in accordance with the opinion stating that role-playing learning models can give a strong and long-lasting impression in student memory learning [8]. Besides, learning integrated local wisdom makes students become motivated in learning, easy to understand the material so that the mastery of student material becomes better than before.

Biology learning that integrates *Mamanda* local wisdom by using the role-playing method is a learning model that is fun and not boring, so it can increase the attention, interest, and motivation of students to learn. This, of course, will support the learning process that will affect high student learning outcomes.

#### IV. CONCLUSION

Student learning outcomes on the gametogenesis concept using Biology learning that integrates *Mamanda* local wisdom by using the role-playing method with an average score of 84.45. Student learning outcomes on the concept of gametogenesis using group presentation learning with an average score of 72.37. Student learning outcomes on the gametogenesis concept using Biology learning that integrates *Mamanda* local wisdom by using the role-playing method are higher than the learning outcomes of students using group presentation learning. Student classical mastery learning on the gametogenesis concept using the *Mamanda* learning model was also higher with 95.00% classical mastery learning than the group presentation learning with 80.50% classical mastery learning.

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