# Bandura's Observational Learning Model and General Motoric Ability About Learning Outcomes in Athletic Skills

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**Abstract:** This study aims to analyze the impact of Bandura's observational learning model based on performance assessment learning models and general motor skills on athletic skills learning outcomes. This study used an experimental design treatment by level 2x2. A simple random sampling technique was used with a total of 88 people. The data collection method used consisted of tests and documentation. A two-way analysis of variance was used to analyze the data. The results showed that the students' athletic skills learning outcomes that followed the Bandura observational learning model based on performance assessment were higher than students' conventional learning model. There was an interaction effect between the learning model and general motor skills on the student's athletic skills learning outcomes. The students' athletic skills learning outcomes who follow the Bandura observational learning model based on performance assessment were higher than the conventional learning model. The students with low general motor skills and the students' athletic skills learning outcomes that followed the Bandura observational learning model based on performance assessment were lower than the conventional learning model. Based on the research findings, it is recommended to improve the athletic skills learning outcomes with Bandura's observational learning model based on performance assessments appropriately and correctly.

**Keywords:** *Athletic skills learning outcomes, general motoric ability, learning model.*

## Introduction

Learning is one of the most important processes to produce human resources quality. Good learning is learning that gives students opportunities to learn independently in building and exploring their knowledge. Learning that activates students directly will provide students with experience, emotional and social development (Bressington et al., 2018; Kostiainen et al., 2018). The learning that provides learning experiences to students definitely has an impact on the learning result. The learning achievement here is the learning result. Learning outcomes will motivate students to be maintained and improve (Novianti et al., 2020). Learning outcomes are produced better when the learning provides learning simulation, the learning that gives opportunities to learn independently (Roh et al., 2020; van Alten et al., 2020). Therefore, it can be said that learning outcomes are used to measure student learning success as well as in athletic skills courses.

The athletics course is one of the courses with the purpose to form students to have skills, knowledge, and attitudes regarding the numbers that are included in athletic sport 1, and are expected to apply them in personal skills activities as well as for the teaching and learning benefits, as well as being able to absorb ideas - creative ideas in following the latest issues related to the physical education development progress in the world. The lecture contains various approaches being discussed, not only regarding the mastery of basic group movement skills number 1 but also exploring the level of knowledge, and theoretical and philosophical understanding. This course also examines the issues and problems encountered in the application of various models of up-to-date learning approaches as well as creative and aspirational in procuring modifications of learning media. Learning outcomes, especially practice in this course, are also determined by motoric skills.

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Carrying out movements in practical learning requires good physical readiness and support. Obtaining achievement is inseparable from physical readiness. It belongs to one of the indicators used to measure the athlete's readiness to exercise safely (Betsch et al., 2021). Physical readiness is observed from how athlete's physical condition. A physical condition is a form of unity consisting of other components that form a complete component (Dawud & Hariyanto, 2020; Nurhidayah & Satya, 2017). Physical conditions consist of several combinations of components including endurance, strength, agility, balance, accuracy, flexibility, reaction, coordination, and speed (Herpandika et al., 2019). Therefore, athletes from all sports must practice all components of their physical condition. This is because the physical condition is a unified composition that consists of several components that cannot be separated. Training achievements will be seen after carrying out tests that determine the quality of the physical condition of the athlete as expected or not (Herpandika et al., 2019). Based on this, it can be seen that physical condition is the basic requirement for athletes to achieve high performance. Of the physical components above, all of them have different functions, even supporting each other between components. However, in its function for mastering practical learning that requires skills (athletics), general motor skills become more important. General motor ability is a human capacity regarding to the physical ability to be able to conduct a movement (Hands et al., 2018).

Motor skills are more about skilled body coordination and the ability to regulate the body so that it produces smooth and timely movements (Van Hooren & De Ste Croix, 2020). General motor skills are the main supporting elements for humans to be able to run, jump, throw, kick, and various other movements, so concerning learning athletic skills, general motor skills are very important (Sutapa & Suharjana, 2019). To produce good motor skills, an innovative learning model is needed that can make students able to learn actively. Based on the experience acquired in carrying out the learning process for practical courses, various difficulties were found, especially in changing the behavior of the students, directing attention that focused on students, and developing positive emotional reactions for students, this had quite an impact on the quality of the students. Learning is carried out so that the learning outcomes will have a significant effect. This is most likely caused by the learning models application that is not able to accommodate all differences in students' physical and emotional abilities, in addition to other things, so according to the researchers, the need for improvements in this learning is the main thing, to improve quality graduates.

The current existing learning models are quite diverse, but one of the researchers' attention is the observational learning model from Albert Bandura. Based on the studies conducted, the observational learning model is essentially able to support students acquire information, skills, ideas, values, and ways of learning (Groenendijk et al., 2013). Observational learning is learning by observing other humans and then imitating them (Fryling et al., 2011). Learning through observation is learning through direct observation and imitation of the behavior observed. Observational learning is very important in the student learning stage development, students can learn to begin and then imitate what they see (Fagard et al., 2016). Learning through observation includes changes in behavior, thinking, and emotions from the observation of model behavior, besides that the results that can be obtained from learning through observation are teaching new behaviors and attitudes, encouraging existing behavior, changing inhibiting behavior, directing attention, and developing emotional reactions. Therefore, in observational learning, the learning process is divided into four important processes, namely: (1) Attention, (2) Retention, (3) Reproduction, and (4) Motivation. In conclusion, the learning model is used in the learning process.

Many research have been done on the use of the Bandura observational learning model. Previous research findings stated that the Bandura observational model had an effective and significant effect on learning outcomes of basic basketball techniques in terms of hand-eye coordination abilities (Dharmadi, 2013). Another study analyzed the effect of implementing the Bandura observational learning model on motivation and learning outcomes of Indonesia Jaya gymnastics (Mas et al., 2014). The results of this study indicate that the Bandura observational model has a simultaneous effect on motivation and learning outcomes of gymnastics. Similar research also shows that the Bandura observational model can improve physical education learning outcomes and students' kinesthetic intelligence (Yoda, 2020). The novelty of this study lies in the integration of performance assessment with the bandura observational model in learning. So that the treatment given does not only target the learning process, but also pays attention to learning assessment. This is important because process and assessment are integral part that cannot be separated in the implementation of learning.

Assessment is one kind of methods used by teachers to identify students' progress during the participating learning process and learning management that is carried out to create improvements in learning (Zhang, 2020). *Assessment* is needed to equip students with knowledge that can be used actively to solve problems or assignments given, the role of assessment is not only used as a learning tool to increase the students' value (Black & Wiliam, 2018; Leong et al., 2018). *Assessment* in the learning process is collaborated in order to produce conducive learning and support the process of learning. *Assessment* in learning can improve writing skills of students (Mak & Lee, 2014; Ranalli et al., 2018). *Assessment for Learning* (AfL) is one of the pedagogical approaches that can improve the learning process of students (DeLuca et al., 2012). Provide a chance for students to take a part in the evaluation process, either in the process of making or doing it that has an impact on improving the learning process (Lee & Coniam, 2013). One kind of assessments used is a performance assessment. Performance assessment allows students to apply their knowledge and skills in real tasks (Diartha et al., 2016). Performance assessment is a kind of authentic assessment that is appropriate and applied table in

the process of learning assessment (Kusumastuti et al., 2020; Srirahayu & Arty, 2018). Performance appraisal is a systematic description of a person or a group work related to strengths and weaknesses they have (Herawaty & Cahyadi, 2020). Performance assessment is an assessment that is more concerned with the process without compromising the results (Boy, 2019; Parmithi & Mahendra, 2021).

In a nutshell, the main purpose of this research was to analyze the learning models' impact and athletic skills learning outcomes and general motor skills for students majoring in Physical Education. The implementation of Bandura's observational learning model based on performance assessment is thought to be able to contribute to alternative solutions to physical education and sports learning problems, especially in improving student athletic skills learning outcomes. Because Bandura's observational learning model based on performance assessment is a learning process that begins with an observation of a model. By observing, students will get a clear and accurate picture of the motion concept to be carried out. Direct observation becomes a process of remembering. Thus, it is very useful in carrying out the movement to be carried out, while the model's direct function is reinforcing because the model comes from someone who is an expert, even a professional athlete in the field being taught, such as athletic athletes. Armed with a memory that is strengthened by a role model, it is possible for students to be more focused, interested, fully concentrated, and highly enthusiastic about learning.

## Methodology

### Research Design

A quasi-experimental research design is used in this study. The design of this study is a nonequivalent post-test-only control group design. The experimental group was treated with the Bandura's observational learning model based on performance assessment. Meanwhile, the control group was treated without Bandura observational learning model based on performance assessment. Both the control group and the experimental group were given a post-test to establish the difference in learning outcomes between the control group and the experimental group that was given different treatments. The research design is presented in Figure 1.
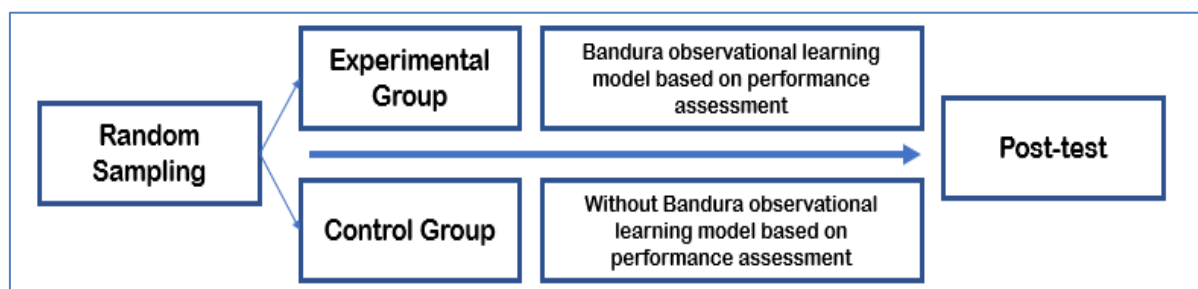


*Figure 1. Research Design*

The treatment given in this study is the Bandura's observational learning model based on performance assessment. Bandura's observational learning model is integrated with performance assessment. The learning process is carried out by following the syntax of the Bandura's observational learning model. Then, the learning assessment is carried out using performance assessment. The learning steps carried out in the learning process are presented in Table 1.

*Table 1. Sample Demographic*

| Syntax | Learning Activities |
| --- | --- |
| Attention | The lecturer demonstrates movements/activities to students. Students pay attention to the movements/activities demonstrated/exemplified by the lecturer. |
| Retention | Students process information and store it in memory so that the information can be reused. |
| Production | Students actualize/re-demonstrate the movements/activities that have been exemplified by the lecturer. |
| Motivation | Lecturers provide feedback and motivation to students. |
| Evaluation | Lecturers provide learning assessments using performance assessments. |

The treatment is carried out in one learning cycle to achieve one basic competency. The treatment is focused on athletic learning materials in the Department of Physical Education, Faculty of Sport and Health, Ganesha University of Education.

### Sample and Data Collection

This research was conducted during the first semester of the Department of Physical Education, Faculty of Sport and Health, Ganesha University of Education. Involving a sample of 88 people taken by simple random sampling technique. The demographics of the sample involved in this study are presented in Table 2.

*Table 2. Sample Demographic*

| No. | Aspect | Amount |
|---|---|---|
| 1 | **Gender** | |
| | Male | 65 |
| | Female | 23 |
| 2 | **Age** | |
| | 17 | 13 |
| | 18 | 51 |
| | 19 | 24 |
| 3 | **General Motoric Ability Experiences** | |
| | High | 47 |
| | Low | 41 |

The process of collecting data in this study used a test with instruments in the form of a test of athletic skills learning outcomes. The test instrument was designed and consisted of 20 questions. Instruments used in this study have been tested for validity and reliability. Test the validity of the instrument about the learning outcomes of athletic skills was carried out using the CVR/CVI formula. CVR/CVI provides assurance that an instrument measures the content area it is expected to measure. One way of achieving content validity involves a panel of subject matter experts considering the importance of individual items within an instrument (Ayre & Scally, 2014; Lawshe, 1975). The results of the CVR calculation for each instrument item are 1.00 for the test instrument for athletic skills learning outcomes. Based on the results of the CVR calculation, a CVI value of 1.00 was obtained for the test instrument for athletic skills learning outcomes. These results indicate that the instrument is declared valid based on the results of the validation provisions in the CVR/CVI formula. The reliability test used the Alpha Coefficient formula with the acquisition of 0.852 for the test instrument for athletic skills learning outcomes. Thus, the reliability of the instrument includes high criteria.

*Analyzing of Data*

The descriptive analysis and the post-test data were analyzed and processed with SPSS 26.0 for Windows. Statistical tests were carried out to find the mean value. Meanwhile, for inferential analysis, the inferential statistics were analyzed using the ANOVA 2x2 test for post-test data. Before the ANOVA 2x2 test, the prerequisite analysis test was performed, it is namely the normality test with Kolmogrof-Smirnov, and the homogeneity test. The ANOVA 2x2 test and prerequisite analysis test were conducted using SPSS 25.0 for Windows.

## Result

The results showed that Bandura's observational learning model-based performance assessment implementation could increase the learning outcomes of students, which can be observed from the average score of each group's value differences. The average score of student athletic skills learning outcomes who followed Bandura's performance assessment-based observational learning model was 51,045. Meanwhile, the average score of the learning result of the athletic for students who followed conventional learning is 49,182. In both groups, it can be seen that in the group of high general motor skills of students, the learning outcomes of athletic skills of students who followed Bandura's observational learning model based on performance assessment were 53,455, and the results of learning athletic skills in the group of students in conventional learning model were 47,955. Between the two groups, students with low general motor skills and students who follow Bandura's observational learning model. Badura's observational learning model based on performance assessment was 48,636, and the learning outcomes of students' athletic skills who followed the conventional learning model are 50,409. Thus, it can be interpreted that implementation of Bandura's observational learning model based on performance assessment can improve outcomes of learning. After analyzing the next test is the two-way ANOVA test. The ANOVA results can be seen in Table 3.

*Table 3. F-test Statistics Results about A, A*B Towards the Athletic Learning Outcomes*

| Source of Variant | JK | db | RJK | $F_h$ | Sig. | $F_{tab}$ 5% | Description |
|---|---|---|---|---|---|---|---|
| Corrected Model | 398045 | 3 | 132682 | 31061 | 0.000 | | |
| Intercept | 221001136 | 1 | 221001136 | 51740000 | 0.000 | | |
| A | 76409 | 1 | 76409 | 17888 | 0.000 | 34394 | Significant |
| B | 30727 | 1 | 30727 | 7193 | 0.009 | 34394 | Significant |
| A * B | 290909 | 1 | 290909 | 68102 | 0.000 | 34394 | Significant |
| Error | 358818 | 84 | 4272 | | | | |
| Total | 221758000 | 88 | | | | | |
| Corrected Total | 756864 | 87 | | | | | |

## Discussion

Based on the results of the analysis show the statistical value of the F-test, in row A, it can be seen that the value of Fcount = 17.888 is bigger than Ftable = 3.94. Thus, H0 is rejected, which means learning outcomes of students' athletic skills that follow Bandura's observational learning model based on performance assessment is higher than students who follow the conventional learning model. From the outcomes of the analysis, it describes that the statistical value of the F-Test is in Table 3, row A*B obtained Fcount = 68.102 is bigger than Ftable = 3.94 on the significant level α = 0.05. Therefore, H0 is rejected which means there is an interaction effect between the learning model and general motor skills on the learning outcomes of athletic skills. Considering that the interaction hypothesis has been tested significantly, it is necessary to carry out further testing or hypothesis testing simple effects with t-Scheffer.

The hypothesis results in simple effect found that the statistical value of the t-test is obtained by the value of tcount = 8.826 is bigger than ttable(44) = 1.980 on the significant level of α = 0.05. Thus Ho is rejected, and it can be concluded that for students with high general motor skills, the learning outcomes of athletic skills of students who practice using Bandura's observational learning model based on performance assessment are higher than students who follow conventional learning models. Then, the results show that the statistical value of the t-test is obtained by the value of tcount = 2.845 is bigger than ttable (44) = 1.980 on the significant level of α = 0.05. Thus, Ho is rejected, and it can be concluded that for students with low general motor skills, the learning outcomes of athletic skills of students who practice using Bandura's observational learning model based on performance assessment are lower than students who practice using the conventional learning model.

The findings of this study are in line with the results of previous studies which state that the Bandura's observational model had an effective and significant effect on learning outcomes of basic basketball techniques in terms of hand-eye coordination abilities (Dharmadi, 2013). This study is also relevant with another study that analyzed the effect of implementing the Bandura's observational learning model on motivation and learning outcomes of Indonesia Jaya gymnastics, and indicate that the Bandura's observational model has a simultaneous effect on motivation and learning outcomes of gymnastics (Mas et al., 2014). Similar research also shows that the Bandura's observational model can improve physical education learning outcomes and students' kinesthetic intelligence (Yoda, 2020).

Bandura's observational learning model based on performance assessment is a learning process that begins with an observation. By observing, students will get a clear and accurate picture of the concept of motion to be carried out (Asakura et al., 2022; Behzadi & Mahmoudi, 2018). Direct observation becomes a process of remembering, so it is very useful in carrying out activities of movement to be performed, while the direct function of the model is reinforcing because the model comes from someone who is an expert (Morse et al., 2019). Armed with a memory that is strengthened by a role model, it is possible for a learner to be more focused, concentrated, interested, and have a high enthusiasm for learning. Bandura's observational learning based on performance assessment also emphasizes student-centered learning. With student-centered learning, will provide experience to students and can provide better memory because students do it themselves (Bressington et al., 2018; Kostiainen et al., 2018).

This is proven by the stages in observational learning which consist of retention and production. At the retention stage, students are freed to do the concept of thinking and remembering and imagining as widely as possible both individually and in groups based on what has been observed from the model, with this flexibility, students actively think and behave according to their needs to improve transfer to remember it to the face of the movement. While at the production stage, students are given the freedom to do exercises and practice the movements that have been remembered and observed as widely as possible, so that conceptually students are patterned the results of their movements from observing, remembering, and practicing. Likewise in the production process, students display their movement skills through a performance appraisal process. Performance assessment is carried out by lecturers regarding the performance displayed by students and the results of the assessment are informed to students during the period of the meeting.

The outcomes of this assessment are used as a reference to carry out further performance at the next meeting. With this pattern, it is possible to learn movement results in performing athletic techniques (sprint, shot put, discus throwing, and long jump techniques) enabling them to be more successful in their mastery. The pattern that occurs in the Bandura's observational learning model based on performance assessment may not necessarily occur in the conventional learning model, so it makes sense if the learning of athletic skills is better than the results using the Bandura's observational learning model based on performance assessment than the conventional model of learning. The findings, improving the quality and learning outcomes of athletic skills can be done by employing lecturers providing a Bandura's observational learning model based on performance assessment so that students are more motivated in learning. First of all, Bandura's observational learning based on performance assessment provides enormous benefits for lecturers and students, so this will have an impact on the quality of lecturers in providing learning, lecturers will function more as facilitators and mediators, especially in directing students through models, besides empowering students through the retention process. and production (learning) provides considerable opportunities in activating students in learning movements.

Second, learning using Bandura's observational learning model based on performance assessment causes learning activities to become more conducive so that students more easily achieve learning goals through the process of paying attention to the model, remembering, training, motivating, and assessing movement performance. By using an attractive

model that arouses the attention of students, students will be motivated and have a high focus on learning (Mahrani et al., 2022; Puspitarini & Hanif, 2019; Sunardi, 2021), followed by the opportunity to remember and imagine as widely as possible so that what is remembered can be properly actualized into skill movements. This condition is supported by an organized practice process guided by a model and a lecturer as a facilitator making students more motivated to learn and practice. This then becomes more meaningful by providing appropriate and continuous reinforcements so that students feel that themselves and the skills they will be doing have a good effect on themselves and their future. Bandura's observational learning model based on performance assessment is suitable to be given to students who have high general motor skills because, in practical learning that requires skills, the motor role is very important, considering that motor skills are the basis for the ability to perform a movement.

While on the conventional learning model, the learning process is centered on the lecturer as a provider of information. Lecturers subjectively manage to learn in terms of topics, quality, and learning strategies. The goal will be achieved if able to demonstrate skills appropriately so that they can be imitated by students. While students are not actively involved in their learning, the opportunity to remember and pay attention is quite minimal, so they are less able to stick to the student's brain, besides the limitations of the lecturer in demonstrating the movement will have a very bad impact on the mastery of the movements carried out by students. This conventional learning model is suitable to be given to students who have low general motor skills because these students tend to accept what is given by the lecturer alone, and always expect lecturer guidance, so the conventional learning model can accommodate the needs of students who have low general motor skills. Based on these findings, to obtain the quality of the learning process and optimal athletic skills learning outcomes, it is expected that lecturers understand the interaction pattern between learning models and general motor ability and their influence on athletic skills of learning results. By knowing the pattern of interaction between the two factors, to improve and obtain optimal athletic skills learning outcomes, in the learning process lecturers should select and use different learning models, and give attention to the suitability of the learning model with the material to be provided.

Third, the implementation of Bandura's observational learning based on performance assessment for students who have high general motor skills provides a strategic role and good control and coordination so that during learning students can carry out movements appropriately and skillfully. This is very evident because, in practical learning that requires skills, the role of the motor is very important, considering that motor skills are the basis for the ability to perform a movement consisting of a series of movements of running, throwing, jumping, and so on (Hasanah, 2016; Nusir, 2019; Van Hooren & De Ste Croix, 2020). This is also supported by Bandura's observational learning model based on performance assessment that accommodates student needs for the process of paying attention, remembering, practicing, and evaluating performance so that learning takes place actively and with quality coupled with the provision of motivation that makes the spirit and level of human ability increase so that learning can go well. high motor skills, learning outcomes differ significantly between cooperative learning with models and those without models (Pujawan et al., 2022; Setiawan et al., 2020). From the description above, it appears that Bandura's observational learning model based on performance assessment provides students with broad opportunities to explore their attention and memory for the learning process as well as reinforcement with structured motivation, while conventional learning models are not able to explore abilities optimally because the learning process is often monotonous and teacher-oriented. In the application of skills learning, besides the lecturers must make the selection and use different learning models and also consider general motor skills because it is useful for students in coordinating every movement. They make so that students are better able to carry out the movements well. The principle in athletic skills learning outcomes emphasizes the extent to which a person can coordinate movements between running, jumping, and throwing.

Fourth, the Bandura's observational learning model implementation based on performance assessment on students who have low general motor skills makes students easily discouraged and have a pessimistic feeling about the ability to master movement, because the Bandura's observational learning model based on performance assessment requires psychological and physical concentration in the learning process and activeness. Students are highly demanded, so those who have low general motor skills will find it difficult in a structured way to carry out movements because they are hampered by the limitations of their general motor skills. Meanwhile, for students who have low general motor skills if they follow the conventional learning model centered on the lecturer, they will feel more optimistic because they are used to the guidance of the lecturer in each lesson, causing them to be motivated to excel. Thus, with these conditions, conventional learning models are more suitable to be given to students who have low general motor skills.

Based on the findings above, Bandura's observational learning model based on performance assessment can improve athletic skills learning outcomes. Thus, Bandura's observational learning model based on performance assessment is one of the determining factors for improving athletic skills learning outcomes. In addition, general motor skills must be considered. Success in the learning process, especially in practice, is highly dependent on the ability of the lecturer to understand the interaction pattern between the learning model and general motor ability and their effect on the learning result of athletic skills. By knowing the pattern of interaction between the two factors, to improve and obtain optimal athletic skills learning outcomes, in the learning process lecturers should select and use different learning models, and giving attention to suitability of learning model with the material to be given and consider general motor skills.

## Conclusion

The outcomes showed that applying Bandura's observational learning model based on performance assessment could increase student learning results, this can be observed from the difference in the average value of each group. The average score of student athletic skills learning outcomes following Bandura's observational learning model based on performance assessment. Bandura's observational learning model based on performance assessment is a learning process that begins with an observation of a learning model using Bandura's observational learning model based on performance assessment, causing learning activities to motivate students to learn through the process of paying attention to the model, remembering, practicing, motivating and assessing movement performance. The implementation of Bandura's observational learning based on performance assessment for students who have high general motor skills provides a strategic role and has good control and coordination so that during learning students can carry out movements appropriately and skillfully.

## Recommendations

Based on the result of this study, the researcher recommended for teachers to implement Bandura's observational learning model based on performance assessment as an alternative learning strategy to improve learning results. Moreover, this model can be implemented constantly in other learning activities. The research is expected to be a reference for other researchers to conduct similar research or even with other research methods.

## Limitations

These researches still have many limitations such as the limitations of the population and sample, then limitations that only involve the dependent variable studied. Thus, for further research, it is expected be able to involve a larger population and measure other variables that are more specific than learning outcomes.

### Authorship Contribution Statement

Parwata: Conceptualization, design. Widiana: Analysis. Wijaya: Writing/drafting manuscript. Muliarta: Editing/reviewing, supervision.

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