

Validity and Reliability of Physical Education Learning Motivation Questionnaires

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Abstract—The purpose of this study is to determine the validity and reliability of physical education learning motivation questionnaires. The subjects in this study were 32 seventh grade junior high school students aged 13-14 years. The instrument testing method used is the Corrected Item-Total Correlation test to determine the level of validity and Cronbach's Alpha test to determine the level of reliability. Instrument grid are arranged in five aspects: perseverance in learning, tenacity in dealing with difficulties, interests and sharpness of attention in learning, achievement in learning, and independence in learning. A total of 46 statements were produced through the development of the instrument grid. Validity test results obtained 29 valid statement items and reliability test obtained a coefficient value of 0.906, which means a very high category of validity. Based on the results of this study indicate that the physical education learning motivation questionnaire instrument created and developed in this study meets the standards of validity and reliability so that it can be used to measure the level of learning motivation in attending physical education lessons at school.

Keywords—validity; reliability; learning motivation; physical education

I. INTRODUCTION

Physical education programs at schools are aimed at developing students' potential [1]. Learning is a multidimensional process involving various sources of motivation [2]. Likewise, in physical education learning. Motivation is the heart of many of the most interesting problems of physical education as a result of the development of social environments such as competition, perseverance, learning and appearance [3]. Learning motivation is one of the research variables that is widely studied in various scientific fields, including physical and sports education. Learning motivation can be one of the factors of student achievement in improving their skills through the learning provided. The biggest and most significant contribution in social psychology research to physical education during the last thirty years has been related to motivation [4]. The position of motivation as an interesting variable certainly needs to be supported by the right instrument.

Research instruments are tools or facilities used by researchers in collecting data. The research instrument is very influential on the success of a research; therefore, the

preparation of research instruments must be well designed so that the results are obtained in accordance with their usefulness. The instruments used in a study must meet the standards and rules in a scientific work. Proper conclusions are based on data from an assessment of the validity of research instruments [5]. Research on testing the validity and reliability of tests in physical education and sports has been carried out, including the accuracy of shooting tests in basketball games, strength testing in playing games, and football players' agility tests [6-8]. However, testing the validity and reliability of instruments regarding questionnaires, especially the motivation to learn in physical education learning is still limited [9] and there is a need to develop in order to produce good instruments. In this study, researchers will try to adopt and develop physical education learning motivation questionnaires made by Ginanjar to be more comprehensive [10]. Based on the results of the study, researchers will develop in several ways, namely clarifying the sub-aspects of the grid and statement items that are still commonly seen, and adding the number of item statements. This study aims to test the validity and reliability of physical education learning motivation questionnaires that have been developed.

II. LITERATURE REVIEW

Validity can be interpreted as the measurement of a measuring instrument in measuring or collecting data from a study. Instruments that have high validity can measure or obtain a data that matches the purpose of the measurement. Validity refers to suitability, meaningfulness and truth [5]. The relevance of variables is the extent to which these variables represent important concepts that are measured [11].

Regarding the position of validity in a research instrument, validity is the most important thing to consider when preparing or choosing an instrument to use. More than anything, researchers want the information they get through the use of instruments to serve their purposes [5]. Validity is the main thing that is considered by each researcher in using a research instrument, especially in making or developing a research instrument.

Reliability is often associated with the accuracy of a research instrument. In the context of performance analysis, reliability can be said to be a consistency, where the measurement can be used to measure the same appearance by

different researchers [11]. Reliability refers to the consistency of the scores obtained, how consistence an instrument gets a score from one set of items to another [5]. Consistency in obtaining scores from an instrument can be likened to if a student scores is high when he firstly take the test, then in the next test he will get a high score as well. Although the acquisition score may not be exactly the same, the score obtained is not much different. It can be said that the instrument has a good reliability value.

Motives refer to the source of drivers or drivers of human behavior [8]. The motive is psychological energy which is abstract, its form can only be observed in the form of the manifestation of behavior displayed. Motivation is the process of actualization of the driving or driving source. "The motivation of a person to do something depends on the size of the motive he has. In other words motivation is a process for achieving goals based on a certain motive. Someone who has strong motivation means he has a strong motive too. Motivation as a psychological process is a reflection of the power of interaction between cognition, experience and needs [12]. Someone who has a strong motive will be motivated to try his best to achieve it. Simply put, motivation can be defined as a motivator or driver of someone to do something. Motivation has direction and intensity. Direction refers to whether someone is looking for, approaching or interested in a particular situation [13].

Motivation describes one of the most important variables in physical education and sports [14]. Students' motivation in

physical education and sports appears as important variables, because individual students' motivation for physical education has been recognized as a major determinant of students' physical activity [4]. It is known that student involvement in physical education and sports learning is influenced and even determined by motivational factors [2]. Some research results show that students who are more intrinsically motivated have a greater likelihood of practicing outside physical and sports education learning, but based on the theory of achievement goals show that students are motivated to gain success [15].

III. METHOD

This research was conducted in order to test the physical education learning motivation questionnaire instrument that had been developed. Researchers develop in several ways, namely clarifying the sub aspects of the grid, statement items and their numbers. The instruments of learning motivation adapted and developed from Ginanjar's research [10]. The study involved 32 junior high school students who were involved to fill out the motivation questionnaire and learn in accordance with what they felt. Instrument testing uses SPSS version 22 software. Validity test uses correlation test, or more precisely Corrected Item-Total Correlation. Meanwhile the reliability test uses the Cronbach's Alpha test. The questionnaire instrument designed was a closed questionnaire consisting of statements using the Guttman scale.

TABLE I. QUESTIONNAIRE GRID MOTIVATION FOR LEARNING PHYSICAL EDUCATION BEFORE TESTING

Aspect	Sub Aspect	Statement Number		Total
		Positive	Negative	
Perseverance in learning.	School attendance.	1,3	2,4	4
	Follow the physical education in field student Intake.	5,7	6,8	4
	Exercise at home / outside school.	9,11,13	10,12,14	6
Tenacious in the face of difficulties.	Attitudes toward difficulty in movement in physical education.	15,17,19	16,18,20	6
	Attempting to overcome the difficulties of the material of Physical Education.	21	22	2
Interest and sharpness of attention in learning	The habit of taking classes of Physical Education	23,25	24,26	4
	Enthusiastic in following Physical Education's students intake	27,29	28,30	4
Achieving learning	The desire to excel in physical education lesson	31,33	32,34	4
	Qualification of the physical education lesson	35,37	36,38	4
Independent in learning	Perseverance in practicing the subject matter of physical education	39,41	40,42	4
	Use the opportunity outside of the class hours of physical education	43,45	44,46	4
	Total			46

IV. RESULTS

Data obtained from the research results have been processed and analyzed to test the feasibility of the questionnaire motivation learning instrument for physical education and sports.

Validity test uses a comparison of r count values with r table. If the value of r count is greater than the value of r table, then the test item is declared valid. From a sample of 32 students, obtained r table = 0.3388 with significance $\alpha = 0.05$. The results of the validity test show that 29 items of statements from 46 items of questions have a value of r count > 0.3388 which means the item is declared valid. While

the remaining 17 item statements have a calculated r count of <0.3388 , which means declared invalid.

The next test is to determine the reliability level of the questionnaire instrument.

TABLE II. RELIABILITY TEST RESULTS

Cronbach's Alpha	Total Valid Item
0,906	29

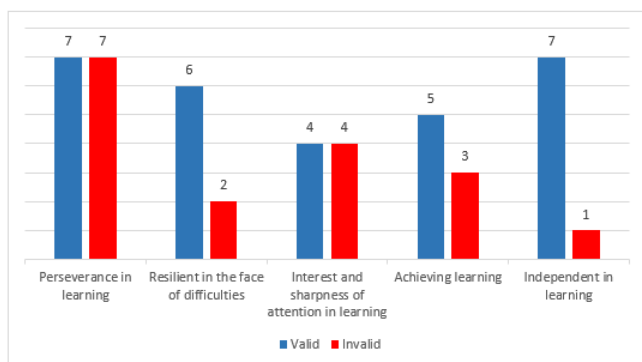


Fig. 1. Recap of indicator based validity test results.

The reliability is expressed by the reliability coefficient which is in the vulnerable range from 0 to 1.00 [16]. The higher the reliability coefficient near 1.00 means the higher the reliability. Based on the results of reliability testing in Table 2, we can see the value of Cronbach's Alpha = 0.906 or 90.6% is very close to 1.00 or 100% means that this instrument is declared reliable in a high category.

V. DISCUSSION

Based on testing the validity and reliability of the physical education learning motivation questionnaire instrument shows this questionnaire instrument meets the standards of validity and reliability. This physical education learning motivation questionnaire consists of five indicators, the following is the distribution of validity test results based on the learning motivation questionnaire.

Figure 1 shows the results of the validity test based on the questionnaire motivation indicators for physical education. Overall, there are 29 valid statement items and 17 invalid statement items. Percentage of valid statement items is 63% compared to 37% invalid statement items. Although there are invalid items, each indicator in the questionnaire has been represented by several other valid items. Meanwhile the level of reliability in this instrument test shows a high value of 0.906 means that the consistency of the physical education learning motivation questionnaire can be used to measure what is being measured.

The validity and reliability of a test instrument are very important to measure because it becomes the basis for the validity of a measuring instrument. Motivational instruments in sports have been developed by experts such as the Sport

Motivation Scale [13] with 28 question items, the Intrinsic Motivation Inventory [17] with 16 items of questions, Situational Motivation Scale [18] with 16 items of questions, and Behavioral Regulation in Sport Questionnaire [17] with 24 items of questions. The development of motivational instruments in this study focuses on motivational instruments that are more comprehensive by producing 29 question items.

The results of this study indicate that the motivational instruments developed can be used validly and reliably to measure students' motivation when attending physical education. This motivational instrument is developed comprehensively with five test indicators and can be used extensively in the scope of physical education in junior high schools.

Some researchers confirm the importance of the contribution of students' motivation in physical education [2,3,12,15,19]. Furthermore, what is of concern is how teacher motivation strategies can influence student motivation in physical education [13]. Based on this, it makes one of the recommendations in this study that further studies can apply the learning model that innovates in physical education and sports, thus leading to an increase in high learning motivation.

VI. CONCLUSION

The physical education motivation questionnaire instrument meets the standards of validity and reliability. Based on this, the learning motivation questionnaire instrument is suitable to be used as a data collection tool in a study related to learning motivation in the field of physical education.

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