

Development of a Self-Assessment Instrument to Measure Learner Motivation

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ABSTRACT

Learning motivation is crucial in the learning process. The motivation to learn will also be able to affect their academic abilities, and this will be one of the supporters of the success of the learning process. Judging from the importance of the function of learning motivation, the purpose of this study is to measure the level of learning motivation through self-assessment instruments with the aim of knowing how high learning motivation is in learning physics. The object of this research was the students of class X SMA 1 Kalasan, with a total of 60 respondents. This research is development research with a 4D design, namely define (definition), design (planning), develop (development, and disseminate). The data collection method in this study uses a questionnaire method with a Likert scale. Based on the results of the analysis, the self-assessment instrument has validity and is quite good with numbers above 0.330. And the reliability is quite high with the number 0.492. Based on this data, the self-assessment instrument can be said to be valid and reliable, so it is feasible to use it to measure the learning motivation of students.

Keywords: Instruments; Self-assessment; Learning motivation

INTRODUCTION

In teaching and learning activities, assessment is a very essential thing to do. For this reason, certain methods are needed to carry out the assessment. One of the methods that has been developed is using an instrument developed as a tool to assess. Some of them are using questions, physical practice, and oral exams. In addition, in the process, assessment can be divided into several aspects, namely attitude, knowledge, and skills assessment.

The assessment process has also been regulated in the applicable curriculum at any time, but because the curriculum in Indonesia changes every 12 years, the assessment process in each curriculum also has differences as stated in Permendikbud no. 66 of 2013 regarding assessment standards. The regulation explains that the 2013 Curriculum uses assessment instruments and techniques that include assessment of attitudes, skills, and knowledge competencies. This shows that an assessment and learning should be able to change or even improve the competence of students in the three domains of learning, namely the psychomotor, cognitive and affective domains. The definition of assessment itself is the collection of information about the achievement of student learning outcomes or competencies through individual and group performance assessments that are carried out consistently.

The 2013 curriculum states that the assessment of attitudinal competence includes peer assessment, observation, journals, and self-assessment.

- 1) Peer assessment, which is an assessment technique that allows students to assess each other regarding competency achievement, by utilizing instruments in the form of self-assessment sheets.
- 2) Observation, which is an assessment technique by utilizing the senses indirectly or directly based on observation guidelines which include indicators of observed behavior. The implementation of this technique is carried out continuously.
- 3) Journal, a technique that allows teachers to record the behavior and attitudes of students inside and outside the classroom regarding their strengths and weaknesses.
- 4) Self-assessment, an assessment technique in which the teacher provides time for students to describe their shortcomings and strengths in achieving certain competencies using a self-assessment sheet as an instrument.

Researchers chose to examine the development of self-assessment instruments in measuring learning motivation. The development of this instrument was carried out so that researchers could find out the willingness of students in undergoing the teaching and learning process, because learning motivation is very essential in the teaching and learning process. If the motivation is high, then there is a high chance that students will get good grades.

Djemari Mardapi (2004) states that the affective domain can be a determinant of individual success, so of course, in teaching and learning activities, a teacher should pay attention to the affective domain of students. The preparation of valid and appropriate affective domain assessments must be carried out by educational units, so that learning activities can be carried out optimally and achieve their goals. This is because the development of assessment in the effective domain greatly influences physics learning activities positively.

Krathwohl et al (1974) classified the affective domain into five taxonomic levels, namely:

1. Receiving or attending

This level is the level of individual sensitivity in receiving external stimuli in the form of symptoms, problems, situations, and so on. Examples of the affective domain at this level are: desire and awareness to get stimulus, control and select external stimuli. This domain is also often referred to as the individual's capability to pay attention to certain objects and activities.

2. Responding

This level encompasses an individual's capability to respond, or actively participate in a given situation and react in a certain way.

3. Valuing

This level can also be referred to as the level of appreciation or valuation, where an individual gives appreciation or valuation to a certain object or activity, so that the disappearance of the activity will cause the individual to feel loss and regret.

4. Organize

Organizing involves an individual's capability to create a value system to

guide their life, which is expressed in the development of a set of values.

5. Value Characteristics Life pattern formation

Includes the individual's capability to appreciate the value of life as a clear guideline to be applied to various aspects of life.

Affective domain assessment is structured in the form of a Likert scale. The affective domain assessment scale used in this study is a self-assessment to measure student learning motivation. The writing of this article was carried out to be able to determine the feasibility of a self-assessment instrument to measure student learning motivation.

The development of student motivation assessment instruments can be applied as an alternative solution to obtain information related to students' capabilities and interests in participating in learning activities through instruments to support data collection. Since assessment is an essential element in the teaching and learning process, it is necessary to use assessment instruments with good measurement capabilities. A common form used to conduct assessments is with a questionnaire. Where this questionnaire is in the form of a google form that contains questions that will be answered by students.

Motivation is an internal drive that individuals have to carry out something in order to achieve their expected goals. The role of motivation is very essential in teaching and learning activities, because the motivation that individuals have can give birth to curiosity, enthusiasm, and active student behavior in learning so that students are more serious in participating in the teaching and learning process. Sugeng (2016) states that learning motivation is a psychological condition that can move individuals to carry out something, or it can also be referred to as a driving force to bring about learning activities so that learning goals are achieved. Meanwhile, Warti (2016) states that motivation can be defined as the willingness, desire, internal will within the individual to move the individual to carry out certain activities. Overall, motivation can be defined as the power that drives individuals to carry out the activities they want.

In learning activities motivation plays an essential role because students who have high motivation will also increase their desire to follow learning. And this will also be able to improve his academic grades. But beyond that, the role of the teacher as a facilitator is no less important.

Based on the explanation above, researchers are interested in carrying out development research with the title "Development of Self-Assessment Instruments to measure student learning motivation". With the aim of knowing the validity and reliability of the instrument developed and then later, it is hoped that readers can find out how important learning motivation is for students.

METHODS

This research is a quantitative descriptive research development model with a 4D design, namely define, design, develop, and disseminate. Quantitative research is research that utilizes data in the form of numbers to draw conclusions in its research. Sudjana (2004) states that descriptive qualitative research can be done

when researchers want to describe an event through data in the form of numbers that can be interpreted to be meaningful.

The instrument used is a questionnaire sheet. The attitude scale using the Likert scale is an instrument commonly used to measure the affective domain. Djaali and Muljono (2008) stated that the Likert scale can measure the perceptions, opinions, and attitudes of an individual or group towards the phenomenon being measured.

This study uses descriptive quantitative to analyze data, namely to measure the validity and reliability of self-development instruments to measure student learning motivation. Validity testing is carried out so that researchers know the validity of each instrument item through the correlation value of the item score with the total score of students. The validity test is used to determine whether each item in the instrument is valid or not, in this study using the Pearson Product Moment technique which is carried out by correlating the item score with the total score (Sugiyono, 2013). The formula for the Pearson Product Moment technique is:

$$r_{xy} = \frac{n(\sum x_i y_i) - (\sum x_i)(\sum y_i)}{\sqrt{((n \sum x_i^2 - (\sum x_i)^2)(n \sum y_i^2 - (\sum y_i)^2))}}$$

If you get $r_{count} > r_{table}$, then the item can be declared valid, and vice versa. Reliability is a test conducted to test whether an instrument will remain consistent when used twice or more to measure the same symptoms. The reliability test can be done with Cronbach's Alpha whose measurements use the help of SPSS. Guilford (Russeffendi, 2005) states that the reliability coefficient criteria are:

Table 1. Cronbach's Alpha Criteria

VALUE	DESCRIPTION
$R_{11} > 0.20$	Very low
$0.20 > R_{11} > 0.40$	Low
$0.40 > R_{11} > 0.70$	Medium
$0.70 > R_{11} > 0.90$	High
$0.90 > R_{11} > 1.00$	Very high

RESULT & DISCUSSION

The results of the data analysis obtained are: a. Instrument Validity Test Results Aitem can be called valid if $r_{hitung} > r_{tabel}$. Data is said to be valid if $r_{hitung} > r_{tabel}$. The students involved as a sample of this study were 60, so the r table used was 0.330 (Ghozali, 2016). The results of the validity test conducted by researchers using SPSS are presented in the table below:

Table 2. Instrument Validity Test

Pernyataan	r_{hitung}	r_{tabel}	Kesimpulan
1	0,361	0,33	Valid
2	0,386	0,33	Valid
3	0,350	0,33	Valid
4	0,492	0,33	Valid
5	0,516	0,33	Valid
6	0,369	0,33	Valid
7	0,416	0,33	Valid
8	0,362	0,33	Valid
9	0,373	0,33	Valid
10	0,413	0,33	Valid
11	0,511	0,33	Valid
12	0,329	0,33	Valid
13	0,388	0,33	Valid
14	0,425	0,33	Valid
15	0,546	0,33	Valid
16	0,314	0,33	Valid

Based on the data from 60 respondents who have been obtained, it can be determined that the development of self-assessment instruments has been "effective enough" to measure student motivation, based on the results of the assessment of the instrument that has been processed, it shows that of the 16 questions the validity value is all valid. This is obtained because the entire value of $r_{hitung} > r_{tabel}$, so according to the assessment criteria, all items can be declared valid.

These results are obtained from r_{tabel} , namely the number of respondents who participated amounted to 60 students which if made r_{tabel} to 0.33. So to be said to be valid with 60 respondents, the r_{count} value must be more than 0.33, and the data obtained from the results of 60 respondents shows a numerical value of more than 0.33, meaning that the data results from the instrument made can be said to be valid.

a. Reliability test results

The reliability test is carried out to determine the consistency of the instrument when it is used to measure two or more times using the same instrument Reliability is to know (Sugiyono, 2012). The item reliability tests obtained in this study are:

Case Processing Summary

		N	%
Cases	Valid	60	100.0
	Excluded ^a	0	.0
	Total	60	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.492	16

Double-click to activate

Product reliability

b. Cronbach's Alpha test results

The results of the Cronbach Alpha test obtained were 0.495. based on the reliability coefficient criteria according to Guilford (Ruseffendi, 2005), the self-assessment instrument to measure student learning motivation is reliable with a moderate category.

In addition, the value of reliability which reaches 0.495 indicates that the self-assessment instrument can be said to be quite effective if used to measure student learning motivation. Then, to determine the reliability of the data, it can be calculated using Cronbach's Alpha, and the data can be said to be good if the calculated figure is above 0.40. So the reliability obtained by researchers is already in the good enough category because it is at 0.492. Thus it can be interpreted that the data from the research instrument can be said to be good.

Based on what has been explained above, data calculation using spss is a good thing in research because of its high validity. It proves that the data obtained in this study is data that has high validity.

CONCLUSION

Based on the research, it can be concluded that the development of self-development instruments can be used to measure students' learning motivation well. It is proven by the value of validity and reliability which reaches the medium category with the reliability value reaching 0.495. This is enough to prove that the self-development instrument can indeed be used as an instrument for measuring student learning motivation. This calculation is obtained by calculating through the spss application. The suggestion for further researchers is to add more respondents in order to get even more optimal results.

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