



Development of Achievement Motivation Measurement Instrument for High School Students

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Abstract. Students are the main subjects in education, which requires good learning and motivation to achieve learning goals. In their learning success, a student needs achievement motivation. This study aims to develop and validate the resulting product, namely the achievement motivation scale in high school students. Achievement motivation is the desire and drive of an individual to do something with good results. The development of a measuring instrument or achievement motivation scale instrument in the form of an achievement motivation questionnaire can be used by schools to check students' achievement motivation, where previous validity and reliability tests have been carried out. This study uses a simple development model consisting of: 1) introduction, 2) model development, 3) model validation test, and 4) model trial, which functions to test the effectiveness of the products that have been produced. The subjects in this study were high school students in Madiun City, totaling 62 students. The results of the validity test from 25 statements contained 24 questions that were declared valid, while 1 question was declared invalid. The results of the reliability test obtained a result of 0.857 and were declared reliable. Based on the results of data processing, the results obtained were 31 students or 50% of students had high achievement motivation. The achievement motivation questionnaire can be used as a tool to measure students' level of achievement motivation.

Keywords: Development, Measurement Tool, Achievement Motivation.

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1 Introduction

The teaching and learning process can be a successful one if there is an interaction between the teacher and the students. In this context, the teacher is involved in learning where the teacher has to develop and deliver his best subject, being prepared in classroom teaching to make the students easy to understand. While the students are active

individuals who are directly involved in the learning process. Students are the main component among other components and as a supportive decider in the teaching and learning process. Without students, there is no learning and teaching process [1].

Learning and teaching is a process that contains a series of actions of teachers and students based on reciprocal relationships; because learning and teaching are two concepts that cannot be separated from each other [2]. This process is carried out so that students can achieve academic goals, guide students towards changes that include intellectual, moral, and behavioral changes, and foster student learning motivation is the main goal of education [3].

In learning activities, continuity and success of the teaching and learning process are not only influenced by the intellectual factor, but also the nonintellectual factor which has a crucial part, one of those is the ability of the students to motivate themselves. Intellectual Quotient (IQ) gives support just 20% to a successful life, while 80% is other support factors, one of them is the Emotional Quotient (EQ) the ability to motivate oneself, overcome stress, control heart desires, control one mood, empathy, and the ability to work together and on how the students' possess a high achievement motivation [4].

According to Santrock (2015), achievement motivation is the desire and drive of an individual to do something with good results [5]. Achievement motivation is also a cognitive drive consisting of the need to know, the need to understand, and the need to solve problems [6]. Achievement motivation is the most important component in learning, so it is certainly needed by every student to improve learning achievement, create student enthusiasm for learning, and foster good habits in learning. Through the drive or motive that exists in each student, it is hoped that they can direct their behavior to achieve success in learning or education. Achievement motivation in the context of learning activities will encourage learners to tend to make choices on realistic actions, which can assess their abilities in the tasks to be done [7].

In the present reality, there is low achievement motivation in our teenagers as mentioned by Psychologists Klinis Sanatorium Dharmawangsa, and Liza Marielly, there are many factors that influence why teenagers have a low achievement motivation level. "In the theory of psychology, there is no stupid child. The mistake occurs on how to approach, and the students are not motivated [8]. High and low achievement somebody is influenced by achievement motivation in sode his self.

Based on the statement above, it can be concluded how important achievement motivation is for students in learning, and all personnel to be able to help develop achievement motivation, both teachers (educators), parents, the environment, and the students themselves. To develop student achievement motivation, a measuring tool is needed, in this case, an instrument to measure how much student achievement motivation is in fighting for the expected target or goal.

The development of the measuring instrument used in this study, namely the achievement motivation scale instrument, contains statements that are adjusted to the indicators of the achievement motivation variable, including 1) liking tasks that require personal responsibility, 2) having realistic and challenging goals, 3) being willing to accept change and feedback, 4) enjoying working independently, 5) enjoying competing to outperform others, and 6) the desire/drive to achieve. Statements in the

achievement motivation scale can be adjusted to the needs and goals expected. It is hoped that through this instrument, it can provide accurate results measuring what should be measured, or results can be obtained that can later be used according to the expected needs so that it can be useful for motivating students to achieve and improve good learning outcomes.

It's expected that the instrument called achievement motivation scale can give the exact result in measuring what should be measured or find the results which can be used according to the needs expected, so it can be useful in motivating students to be achievers and elevating the good result of the studies.

2 Research Method

The research method used is a simple development model. This method is used as an approach to produce a particular product, which functions to test the effectiveness of the product that has been produced. Sugiyono (2019) stated that the research and development method is used to test the effectiveness of the product using quantitative methods as the primary method and examining user satisfaction with qualitative methods as the primary method [9].

The development carried out in this study is a simple development model, which consists of:

1. Introduction, in the form of an analysis of the problem and causes of the problem, namely students have low learning motivation based on information from teachers and initial observations.
2. Model development, namely developing a measuring instrument for learning achievement motivation based on learning theories
3. Model validation test, namely conducting a validity and reliability test of the achievement motivation questionnaire that has been compiled
4. Model trial, namely implementing an achievement motivation questionnaire for students.

This study also aims to develop and validate the resulting product [10]. To be scientifically accountable, validity and reliability tests are carried out. Validity testing is related to the problem of whether the instrument intended to measure something can measure something that can be measured accurately [11]. To test the validity, the researcher used the product-moment method. The validity criteria use the r product moment value with a significance level of 5%, if the calculated r -value $\geq t$ table, then the measuring instrument is declared valid. Meanwhile, a reliable instrument is an instrument that, when used several times to measure the same object, will produce the same data [9]. In this research instrument, to find reliability using the Alpha Cronbach testing technique with a significance level of 5% is 0.60. If the calculated $r \geq 0.60$ then the scale is declared reliable, conversely if the calculated $r < 0.60$ then the scale is declared unreliable.

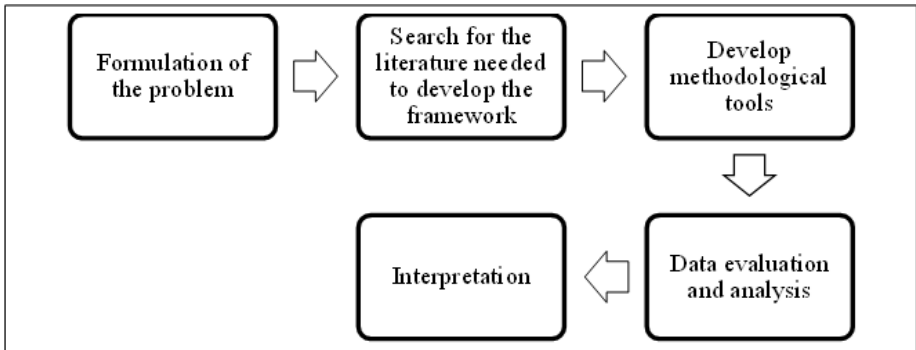


Fig. 1. Stages of Analysis of Development of Achievement Motivation Instruments

The data collection method used was a questionnaire with a Likert scale to obtain data related to validity, practicality and effectiveness. Effectiveness is known from the test results of the achievement motivation scale.

3 Results and Discussion

3.1 Research Result

Data was collected on 62 high school students in Madiun City on 25 statement items using SPSS 22 and then data analysis was carried out according to the existing data presentation. From the results of the validity test, 24 items were valid and 1 item was invalid. A summary explanation of the validity test is depicted in Table 1 below:

Table 1. Validity Test Results of the Achievement Motivation Scale

Indikator	Nomor Item	
	Valid	Invalid
Likes tasks that require personal responsibility	1, 2, 4	3
Have realistic and challenging goals	5, 6, 7, 8	-
Be willing to accept changes and feedback	9, 10, 11, 12	-
Enjoy working independently	13, 14, 15, 16	-
Enjoys competing to outperform others	17, 18, 19, 20	-
Desire/drive for achievement	21, 22, 23, 24, 25	-
Total	24	1

The limit value of r for the *product-moment* table with a significance level of 5% for $N=62$, $df = (N-2) = 60$ is 0.254. If $r \text{ count} \geq r \text{ table}$ (0.254) then the item is declared valid and conversely if $r \text{ count} \leq r \text{ table}$ (0.254) then the item is declared invalid. From the results of the validity test on the achievement motivation variable items, it can be concluded that of the 25 achievement motivation variable items, 1 item was declared invalid, namely item number 3.

Table 2. Reliability Test Results of the Achievement Motivation Scale

Scale	The Reliability coefficient (r) from the alpha formula	Table r value on sign. 5% = 0.60	Explanation
Achievement Motivation	0,857	R count $\geq$ r table	Reliable

The r Alpha value limit with a significance level of 5% is 0.60. If the calculated r is ≥ 0.60 then the scale is declared reliable, conversely if the calculated r is < 0.60 then the scale is declared unreliable. From the reliability test results in Table 2, it can be concluded that the achievement motivation scale is declared reliable because the Alpha value (0.857) ≥ 0.60 .

The results of processing questionnaire data filled out by 62 high school students in Madiun City, it can be seen whether the level of student achievement motivation is very high, high, medium, low, or very low. The results of the calculation of descriptive percentage analysis will then be depicted in the form of a percentage table to be able to determine the level of student achievement motivation as below:

Table 3. Criteria of The Student's Achievement Motivation Level Amount

Score	Percentage	Explanation
85 - 100	81 – 100%	Very High
70 – 84	61 – 80%	High
55 – 69	41 – 60%	Medium
40 - 54	21 – 40%	Low
25 – 39	1 – 20%	Very Low

Based on the criteria in Table 3 above, the picture of the achievement motivation of the Senior High School Students in Madiun City can be explained below:

Table 4. The result of The Student's Achievement Motivation Level

Category	Number of Respondents	Percentage
Very High	9	14,51%
High	31	50%
Medium	21	33,88%
Low	1	1,61%
Very Low	0	0%
Total	62	100%

The result of the questionnaire analysis which was filled by 62 students on achievement motivation of Senior High School students in Madiun City is 9 students (14,5%) in the category level of very high, 31 students (50%) in the category level of high, 21 students (33,88%) in the category level of medium, and one student (1,61%) in the category of low, and while in the category level of very low is 0 (zero) or none of the students.

3.2 Discussion

Based on the calculation and data analysis using SPSS 22, from a total of 62 students in Madiun City High School, the results obtained were 9 people (14.51%) students were in the very high category, 31 people (50%) students were in the high category, 21 people (33.38%) were in the medium category, 1 person (1.61%) student was in the low category, while the very low category was 0 or none. This states that the level of achievement motivation of students in Madiun City is in the high category, namely 31 people (50%).

The factor causing the high level of student achievement motivation is because the sentences in the questionnaire statements are easy, so that students quickly understand and of course according to the students, the statement indicators in the questionnaire are something that students need to do in the learning process, which comes from internal and external factors. Mc Clelland explained that internal and external factors influence achievement motivation [12]. Internal factors include: the possibility of stress, self-confidence, values, experience, age, and gender. External factors that influence achievement motivation include: school environment, family, and friends.

Characteristics of Individuals with High Achievement Motivation According to Hawadi (2001) in people who can manifest the following behaviors: 1) responsibility, 2) considering risks, 3) paying attention to comments, 4) creativity [11]. People are often creative in completing tasks to complete tasks with maximum results. Students who have high motivation can be shown by behavior that tends to motivate themselves in a better direction and to be able to maintain it is greatly influenced by factors both from within themselves and by their social environment. Meanwhile, research conducted further by Pratiwi, 2020, explains that the relationship between self-esteem and parental support is very influential and brings positive effects to students, making it easier for teachers and schools to solve problems faced by students [13]. Based on the description above, students' achievement motivation is greatly influenced by encouragement from themselves and from their social environment so the role of teachers in providing guidance and services to students is a factor that is used as a determinant of how students behave, think, determine attitudes and development in understanding themselves. services and counseling for students aim to ensure that students have the ability to motivate themselves well through their motivation to achieve.

4 Conclusion

Achievement motivation is very important in learning activities because having achievement motivation in each student can encourage enthusiasm for learning and conversely a lack of achievement motivation will weaken enthusiasm for learning. Achievement motivation is a target in achieving learning achievement, whereby increasing a student's achievement motivation, the student will be diligent in working on each question and struggle to overcome all obstacles to obtain better achievements than before according to their abilities and potential.

Validity and reliability tests are measuring tools that can be used to explain how appropriate and consistent the instrument is to measure each student's achievement motivation. Teachers can use the test results of the achievement motivation scale instrument as a follow-up assistance in increasing student motivation.

The results of the analysis of questionnaires filled out by 62 high school students in Madiun City stated that achievement motivation was in the high category, namely 31 students (50%).

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