Effect of attitude and motivation on turning practice

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Abstract. This research aims to determine the effect of attitudes of turning practice with students' turning practices achievement, the influence of turning practice motivations with turning practice achievements, and the influence of turning practice attitudes and practice motivation on the turning performance of students of PIRI 1 Vocational High School. This research is a descriptive study with a quantitative approach. This study's population was students of class XI and XII majoring in machining engineering at PIRI 1 Vocational High School. Data collection techniques using questionnaires and documentation. Data analysis techniques using descriptive analysis and regression analysis. Based on the research results, the attitude of practice has a positive and significant effect on turning practice with a contribution of 37%. The motivation of practice has a positive and significant effect on the achievement of turning practice with a contribution of 30%. The attitude of practice and practice motivation positively and significantly affects practice achievement with a contribution of 41%, and the regression equation $Y = 46.141 + 0.365X_1 + 0.183X_2$.

1. Introduction
Vocational high school is a vocational education institution that aims to prepare its graduates to become a workforce that knows skills that allow individuals to develop skills in the future [1] [2]. Learning is an activity carried out consciously by a person and causes changes in him in the form of additional knowledge or skills [3]. Practical learning in the workshop has a significant role in developing students' skills in working in the industrial world [4]. The supporting media in practical subjects also plays an important role [5-6].

Student learning and achievement are influenced by many factors, including student attitudes towards subjects, teacher learning practices, and the school environment [7]. One of the most significant factors influencing students' academic success is their attitude towards school, learning, and academic success. Attitudes are individual tendencies that regulate thoughts, emotions, and behavior toward psychological objects [8].

An attitude is a form of positive and negative responses to the environment, events, objects, and other individuals' behavior. Attitudes are evaluative statements that are pleasant or unpleasant towards objects, individuals, or events. This reflects how someone feels about something [9]. Attitudes should be linked to professional task performance skills and knowledge in specific work situations [10]. Students' attitudes must be positive in the lathe machining practice subject because it can influence the experimental learning process's behavior. This shows that in addition to teaching skills to students, the practical learning process also needs to provide learning to students about the attitude patterns that a worker or operator must-have.

Learning and motivation are very complex aspects of human behavior. People learn from their experiences, while some influence their willingness to learn. Research has shown that motivation plays a crucial role in improving learning achievement [11]. Motivation is believed to be a driving force in learning and academic success [12]. Motivation is believed to be a driving force in learning and academic success. Motivation is often described as having three psychological functions: (a) energizing or activating behavior, what makes students involved or not in learning; (b) directs behavior, why one action is chosen over another, and (c) regulates the persistence of behavior [13].
Motivation is the students' desire to carry out learning activities that cause feelings of pleasure and satisfaction [14]. High enthusiasm can encourage students to have reasons for participating in practical learning activities. Motivation is a complex part of human psychology and behavior that influences how individuals choose to invest their time, how much energy they use in specific tasks [15]. Basically, motivation can come from someone or what is often known as internal motivation and can also come from outside a person or external motivation [16]. In connection with learning motivation and learning achievement, some factors affect student learning motivation and achievement, namely learning support facilities that are more effective and varied and learning method factors that are less attractive, so students do not fully understand and focus on subjects [17].

Internal factors that affect learning achievement arise from within the child, such as health, mental, intelligence, student motivation, participation, involvement in the learning process, organizing the learning process, and the relationship between students and teaching [18]. This opinion reveals that attitudes and motivation are one of the factors that affect student achievement. Therefore, it is necessary to examine students' attitudes and motivations, affecting student achievement during lathe machining practice.

2. Methods
This study uses the ex-post-facto method, where the data taken is data that comes from events that have occurred according to the facts based on measurements on the respondent.

2.1. Research procedures
The research was conducted by observing how to find problems, formulating problems, objectives, and benefits before conducting research. This action is taken to find out whether the research can be continued or not. Determine the appropriate research method and type of research to determine the appropriate data collection and data analysis techniques in this study.

2.2. Instruments
We were collecting data in this study using a questionnaire and documentation. The data collection technique used a questionnaire to collect data about the variables of students' attitudes and motivation to practice. Meanwhile, data collection techniques using documentation are carried out to obtain data on turning practices' achievement variables. The instrument's validation was carried out using the expert judgment method, namely asking for the opinion of an expert in the field of educational psychology.

2.3. Analysis techniques
The data analysis technique used in this research is descriptive analysis and regression analysis. Descriptive analysis is used to determine the level of tendency in each variable. Meanwhile, regression analysis is used to determine the relationship between the independent variables and the dependent variable using regression equations. With regression analysis, hypothesis testing in this study can be done.

3. Results and Discussion
3.1. Descriptive Analysis
A descriptive analysis of the practice attitude variable was carried out using Microsoft Excel 2010 software. The mean value was 69.89, the median was 70, the mode was 68, the standard deviation was 6.09, the range was 28, the minimum value was 55, the maximum value was 83, and an amount of 2726. From this price, categorization in the form of a histogram can be done to determine the level of the tendency of the practice attitude variable shown in Figure 1. Based on Figure 1, it can be seen that the tendency of student attitude from 39 students is that 28% of students are classified as very high, 28% students are classified as high, 31% students are classified as low, and 23% students are classified as very low.

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The descriptive analysis of the practical motivation variable was carried out using Microsoft Excel 2010 software. From the analysis results, the mean value is 73.15, the median is 73, the standard deviation is 7.446, the range is 36, the minimum value is 55, the maximum value is 91, and the amount is 2853. From this price, categorization in the form of a histogram can be carried out to determine the level of the tendency of the practice motivation variable shown in Figure 2. Based on Figure 2, it can be seen that the tendency of student motivation from 39 students is that 30% (12 students) are classified as very high, 21% (8 students) are classified as high, 28% (11 students) are classified as low, and 21% (8 students) are classified as very low. In this case, student motivation's tendency is quite balanced, but most students already have very high motivation to practice.

The descriptive analysis of the achievement variable of turning practices was carried out using Microsoft Excel 2010 software. From the analysis results, the mean value is 85.07, the median is 86, the standard deviation is 5.085, the range is 18, the minimum value is 75, the maximum value is 93, and the amount is 3318. From this price, categorization can be done in the form of a histogram to determine the turning practice achievement variable's tendency, shown in Figure 3. Based on Figure 3, it can be seen that the tendency of a student turning practice achievement from 39 students is 44% (17 students) is classified as very high, and 20% (8 students) is classified as high. However, there are still 23% (9 students) who are classified as very low.
3.2. Regression analysis

The first hypothesis testing is to determine how the influence of practice attitudes and students' practical achievement majoring in Mechanical Engineering at PIRI 1 Vocational High School. Data processing was performed using the help of SPSS 26.0 for Windows. The results of data processing using the program are shown in Table 1.

Table 1. The regression results between the practice attitude and the turning practice achievement.

| Data                  | Score |
|-----------------------|-------|
| r                     | 0.609 |
| r²                    | 0.371 |
| Constant Coefficient  | 49.508|
| Practice Attitude Coefficient | 0.509 |
| t_count               | 4.676 |

Based on the regression results shown in Table 1, it is known that practice attitudes have a positive influence on practical achievement, with the correlation coefficient $r_{count} = 0.609 > r_{table} = 0.316$. Moreover, it has a significant effect with a single correlation significance $t_{count} = 4.676 > t_{table} = 1.687$. The contribution of the influence of practice attitudes on the achievement of turning practice is 37%, with the coefficient of determination $r^2 = 0.371$. The regression equation is $Y = 49.508 + 0.509X_1$.

Table 2. The regression results between the practice motivation on the turning practice achievement.

| Data                  | Score |
|-----------------------|-------|
| r                     | 0.549 |
| r²                    | 0.301 |
| Constant Coefficient  | 57.666|
| Practice Motivation Coefficient | 0.375 |
| t_count               | 3.992 |

Based on the regression results shown in table 2, it is known that practice motivation has a positive effect on the achievement of turning practice with the correlation coefficient $r_{count} = 0.569 > r_{table} = 0.316$. Moreover, it has a significant effect with a single correlation significance $t_{count} = 3.992 > t_{table} = 1.687$. The contribution of practice motivation on turning practice achievement is 30%, with the coefficient of determination $r^2 = 0.301$. The regression equation is $Y = 57.666 + 0.375X_2$.  

Figure 3. Histogram categorizing practice achievement.
The third hypothesis testing determines how the correlation between practice attitudes and practice motivation with turning practice achievement of students majoring in Mechanical Engineering at PIRI 1 Vocational High School. Data processing was performed using the help of SPSS 26.0 for Windows. The results of data processing using the program are shown in table 3.

**Table 3.** The regression results between practice attitudes and practice motivation.

| Data Score |  |
|-------------|---|
| r           | 0.643 |
| r²          | 0.414 |
| Constant Coefficient | 46,141 |
| Practice Attitude Coefficient | 0.365 |
| Practice Motivation Coefficient | 0.183 |
| F_count     | 12,707 |

Based on the regression results shown in Table 3, it is known that practice attitudes and practice motivation have a positive effect on the achievement of turning practices with the correlation coefficient \( r \text{ count} = 0.643 > r \text{ table} = 0.316 \). And it has a significant effect with the correlation significance \( F \text{ count} = 12,707 > F \text{ table} = 3,267 \). The influence of practice attitudes and practice motivation on turning practice achievement is 41\%, with the coefficient of determination \( r² = 0.414 \). The regression equation is \( Y = 46.141 + 0.365X₁ + 0.183X₂ \).

4. Conclusion

From the research results, it can be concluded that 1) there is a positive and significant influence between practice attitudes on practical achievement; 2) there is a positive and significant influence between practical motivation on practical achievement; 3) there is a positive and significant influence between practice attitudes and practice motivation on practical achievement.

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