Influence of Studying While Working and Learning Motivation to Academic Achievement of College Students Majoring Information System at Stmik Royal Kisaran

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Abstract. The purpose of this study is to determine the influence of studying while working and the learning motivation toward the academic achievement of college students majoring Information System at STMIK Royal Kisaran. The data collection method was using random sampling survey to regular students in the range of semesters 2, 4, 6 and 8. A total of 101 respondents were taken as samples and filled out the online questionnaire as the instrument of this study. The instrument testing was using validity and reliability test, and the results of each item are valid. The analysis method used in this study is a classic assumption test that is strengthened by normality test, multicollinearity test, heteroscedasticity test and t-test hypothesis testing. From the results of the study it was found that study while working turned out to have no influence on academic achievement. Learning motivation significantly has an influence to academic achievement of students majoring Information System of STMIK Royal Kisaran. The learning motivation has an influence of 7.8% on academic achievement and the rest is an unknown predictor in this study.

1. Introduction

An indicator of qualified education is the maximal learning outcomes by students. The learning outcomes are influenced some factors which determine the success of learning process such as curriculum, educators, motivation, learning style, learning environment, etc. In colleges, some students are not doing study only but some of them are having several extra activities. Some students are choosing to get work while they are also studying.

There are many reasons to get work while they also study such as to help the family economy, pay the college fee, get the work experience, to wider the network relation, develop the soft skills or even just to spend their spare time [1] [2].

The increasing of students who study while working is raising many questions from various parties regarding the balance between studying and working, whether the work will not become a significant problem to their study.

Orszag, Orszag dan Whitmore [3] says that if a student can manage their time management by limiting his working time then the study activity will not be disturbed.

There is an opinion says that through working then students can earn their own income, and that working will increase their ability so that they become more organized, nimble and absorp learning easier and that it will affect the higher academic achievement [4].

But some argue that there are negative effects that the working students will get more tired compared to students who only study. Another effect is lack of time to study will make them only get
lower academic achievement result. Yenni in Daulay [5] says that students who work may ignore the main focus on their study. It makes working while study being a dilemma among students. This is confirmed by the statement of Rothstein [6] states that “The choices and consequences of working while attending school are intertwined”. The relation between studying while working and its consequences are being questioned by various parties. Student who is facing a dilemma of choosing options between focus on his study or working while studying, feel a doubt of his ability to maintain his academic achievement that impact to his Grade Point Average [7].

Motivation is a process that explains the intensity, direction and perseverance of the effort to achieve a goal. Motivation is a basic driven support for a want, expectation and purpose that belongs to individual. Students who have strong motivation will tend to act according to their objective to get better academic achievement while students who have weak motivation will tend to show decreasing of their academic achievement. The academic achievement is influenced of the strong motivation by himself. [8][9][10]

Based on that reason, this research is conduct to investigate the effect of studying while working and learning motivation to academic achievement of college students majoring information system at STMIK Royal Kisaran.

Academic Achievement
Academic achievement is a term to indicate an achievement or level of success in academic as a result of optimal learning efforts that has been done by a student. Academic achievement is a benchmark for the success of student in completing his study.

Bloom in Hipjillah [10] says that the academic achievement is a process that experienced by the students to produce changes in knowledge, understanding, implementing, analysis ability, synthething and evaluating. He says that the academic achievement is an educational assessment in the form of changes in students’ knowledge, students’ understanding, students’ way of implementing, the ability to analyze, synthetic and evaluating, where the result is given based on the test result, or examination of each subject, and the result are interpreted objectively and applied in the form of quantitative and qualitative in accordance the achievement of each student in one period.

Kuh, Kinzie, dan Buckley [11] in Metriana [12] states their opinion that the measure of academic achievement can be used as an assessment of learning success. In college, the total value of the entire subjects is called the Grade Point Average (GPA) and can be used as a measure to academic achievement of the student.

Conceptual Framework

From the framework, can be seen that studying while working is set as a independent variable \( X_1 \) and learning motivation is as second variable \( X_2 \) that affect to academic achievement as dependent variable (Y).
2. Methodology
Population in this research is students in majoring information system at STMIK Royal Kisaran who are in 2nd, 4th, 6th and 8th grade of evening classes amount 669 persons. The reason of choosing evening classes is because the evening classes are specially purpose for students who are willing to study while working. That is why we can find many students who are study while working here.

The sampling size is defined by Yamane formula as below where n is sample size, N is population size and d is margin error:

\[ n = \frac{N}{Nd^2 + 1} \]

From the number of population and margin of error 10% then from the formula can be calculated the sample size is 101 persons.

The data collection method used was a survey using questionnaire instrument that distributed using google form application and it can be filled online by respondents. Data measurement is using ordinal scale that is Likert scale [13] with answer choices as in table below:

| Answer choices | Score |
|----------------|-------|
| Strongly disagree | 1     |
| Disagree         | 2     |
| Netral           | 3     |
| Agree            | 4     |
| Strongly Agree   | 5     |

Table 1. Measurement scale

The validity is tested by using Bivariate Pearson correlation and for reliability test is using Cronbach alpha’s method. The data is processed by using Statistical Program for Social Science (SPSS) version 25.

3. Result and Discussion
Validity and Reliability test
The validity is tested by using Bivariate Pearson correlation. The coefficient correlation of each item to total score at 5% level of significance at two-tailed test gives result that the r-table is 0.1937. From the output result, both of the studying while working variable and learning motivation variable show that all the correlation coefficient is over the r-table value and so it states valid. For reliability test is using Cronbach’s alpha’s method. From the testing result that coefficient correlation Cronbach’s alpha is 0.849. The acceptable coefficient Cronbach’s alpha’s value is in range 0.7 to 0.8 [14].

Table 2. The testing result of validity and reliability of studying while working

| Item | Coefficient Correlation | r table | Cronbach’s Alpa | Result |
|------|-------------------------|---------|-----------------|--------|
| 1    | 0.683                   | 0.1937  |                 | Valid  |
| 2    | 0.663                   | 0.1937  |                 | Valid  |
| 3    | 0.741                   | 0.1937  |                 | Valid  |
| 4    | 0.808                   | 0.1937  | 0.848           | Valid  |
| 5    | 0.582                   | 0.1937  |                 | Valid  |
| 6    | 0.774                   | 0.1937  |                 | Valid  |
| 7    | 0.747                   | 0.1937  |                 | Valid  |
| 8    | 0.616                   | 0.1937  |                 | Valid  |

Table 3. The testing result of validity and reliability of learning motivation

| Item | Coefficient Correlation | r table | Cronbach’s Alpa | Result |
|------|-------------------------|---------|-----------------|--------|
| 1    | 0.579                   | 0.1937  |                 | Valid  |
| 2    | 0.713                   | 0.1937  |                 | Valid  |
| 3    | 0.716                   | 0.1937  |                 | Valid  |
| 4    | 0.665                   | 0.1937  | 0.841           | Valid  |
| 5    | 0.433                   | 0.1937  |                 | Valid  |
| 6    | 0.360                   | 0.1937  |                 | Valid  |
| 7    | 0.734                   | 0.1937  |                 | Valid  |
| 8    | 0.621                   | 0.1937  |                 | Valid  |
| 9    | 0.810                   | 0.1937  |                 | Valid  |
| 10   | 0.678                   | 0.1937  |                 | Valid  |
Normality test
Normality test is used to determine whether the sample data has been drawn from a normally distributed population. If the variable is normally distributed then we can use parametric statistics that are based on this assumption. In this research, we use Kolmogorov-Smirnov test so it can be used as a goodness of fit tests following regression analysis. Kolmogorov-Smirnov test is conducted by using criteria to compare the probability value to 0.05 level of significance. If probability value greater than 0.05 then the data is normally distributed. From the SPSS output, it shows that the value of two-tailed significance is 0.2, then the data is said as normally distributed.

At the graph below, it can be seen the data distribution at P-P plot of regression X1, X2 variable. The data scattered around the diagonal line then the residual value is said normal.

Figure 2. Normal Distribution P-P Plot for X1 variable

Figure 3. Normal Distribution P-P Plot for X2 variable

Multicollinearity test
The multicollinearity test is to identify the correlations between two or more predictor variables. The good fit model should show the absence of correlation between the predictor variables. The criteria of multicollinearity testing is Value Inflation Factor (VIF) at regression model. If VIF < 10 then there is no multicollinearity. Based on the SPSS output, Value Inflation Factor of all variables is 1.394 > 10 then it can be said that there is no multicollinearity.

Heteroscedasticity test
Heteroscedasticity means unequal scatter. It is a systematic change in the spread of the residuals over the range of measured values. In regression model there should not be a heteroscedasticity. From the SPSS output, the level of significance of studying while working variable is 0.396 and for learning motivation the level of significance is 0.133. Both of those values are more than 0.05 so there is no heteroscedasticity in regression model.

Multiple Regression Analysis
Multiple regression analysis is used to predict the trend of dependent variable based on two or more independent variables as predictor variables. Below is the formula of regression models of two predictor variables, where Y is academic achievement, X1 is studying while working, X2 is learning motivation and e is standard error:

\[ Y = a + b_1X_1 + b_2X_2 + e \]

The t-test
The t-test is used to determine whether the independent variables has significant influence to the dependent variable. The hypothesis statement that formulated as “there is a positive and significance
influence of studying while working and learning motivation to academic achievement” can be tested by using the t-test with 0.05 level of significance.

H₀: β = 0, there is no significance influence predictor variables to dependent variable
H₁: β ≠ 0, there is significance influence predictor variables to dependent variable

From the SPSS output t-test result the probability value of studying while working variable is 0.482, and it is greater than 0.05, so we have to accept the null hypothesis (H₀) and it means there is no significance influence predictor variable studying while working (X₁) to dependent variable (Y).

For learning motivation variable, the probability is 0.005 and less than 0.05, so the null hypothesis (H₀) is rejected and we have to accept the alternative hypothesis (H₁), it means there is significance influence predictor variable learning motivation (X₂) to dependent variable.

**Determination Coefficient**

Determination coefficient is used to explain the percentage of total variation of dependent variable. The greater the value of R² the greater influence of the model in explaining the dependent variable. The coefficient is between 0 - 1. Value of 0 means there is no relation between the predictor variable to dependent variable. From the SPSS output, the learning motivation variable is the only variable enter as the predictor variable. The other predictor variable studying while working is being removed because it is proved that ti does not have any significance influence to academic achievement. The determination coefficient (R²) of the influence of learning motivation to academic achievement is 0.078 (7.8%). The constant of linear regression is obtained 2.294, and the regression coefficient of learning motivation to academic achievement is 0.023. Then the linear regression equation is written as follow where Y is academic achievement and X is learning motivation:

\[ Y = 2.294 + 0.023X \]

**4. Conclusion**

The purpose of this study is to determine the influence of studying while working and the learning motivation toward the academic achievement of college students majoring Information System at STMIK Royal Kisaran.

According to t-test hypothesis, can be concluded that studying while working has no significance influence to academic achievement of students majoring Information System at STMIK Royal Kisaran. Only the learning motivation variable has significance influence to academic achievement.

Because of only the learning motivation variable has influence to academic achievement then the linear regression equation is written as Y = 2.294 + 0.023X.

Based on determination coefficient R² that is obtained from learning motivation is influencing 7.8% to academic achievement. This means that there are other predictor factors that are still uncover which have influenceS to academic achievement of students majoring Information System at STMIK Royal Kisaran.

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