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Analysis of vocational interests and student's perception of work-based on society 5.0 towards learning outcomes

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ABSTRACT

The challenge of education in Indonesia with the entry of the era of society 5.0 requires efforts to improve student learning outcomes, especially engineering education students. This paper focuses on looking at the influence of vocational interest on learning outcomes, perceptions of the world of work based on society 5.0 on learning outcomes, and vocational interests and perceptions of the world of work together on learning outcomes. The results of the study found that (1) there was a significant influence between vocational interest on student learning outcomes by 10.3%, (2) there was a significant influence between perceptions of the world of work based on society 5.0 on student learning outcomes by 11.3% and (3) there is a joint influence of vocational interest and perceptions of the world of work based on society 5.0 on student learning outcomes by 16%. Thus, it can be concluded that vocational interest and perceptions about the world of work based on society 5.0 are two factors that contribute to student learning outcomes. This means that the higher the vocational interest and perception of the world of work based on society 5.0, the student learning outcomes will tend to be higher.



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Introduction

The development of the industrial world is currently undergoing very significant changes. In the industrial revolution 4.0, it has experienced a very strong evolution in influencing aspects of one's life through the combination of technology (Coşkun, Kayıkcı, & Gençay, 2019), and is now surprised by the emergence of society 5.0. Described the present circumstances of society, suggested solutions for the achievement of a responsible human-centered society (Higashihara, 2018; Nakanishi, 2019). The rapid development of technology is oriented to solving social problems and preventing new problems from using technology. With advances in technology, human work is helped but humans remain the center of control. In a society in the era of society 5.0 (Salgues, 2018), students must be able to understand where their vocational interests and job opportunities are headed. Not only skilled in carrying out their duties but also must be able to create new jobs. The development process without skilled personnel will cause the development to become less efficient and unproductive and uncompetitive. The world of education is very closely related to the industrial world because the world of education must prepare education that refers to the development of the industrial world.

Vocational education is education that prepares students to become productive human beings and can immediately work in their fields after going through education (Tasrif, 2019). Vocational education is prepared

for students to enter the world of work and be able to live independently (Ganefri et al., 2017; Ganefri et al., 2018), by itself can help the government reduce the unemployment rate and increase state income. One of this independence is through the entrepreneurial competence of engineering education graduates (Hidayat, 2015; Hidayat, 2017a, 2017b; Hidayat, & Yuliana, 2018; Hidayat et al., 2018a, 2018b). Vocational interests, people who have realistic ideas, are curious about something, find something new, are able to get along with the community, are passionate, and have strong opinions (Holland, 1997). In pursuing vocational education students must have a vocational interest. Vocational interest is a preference for practices in the fields of carpentry, business (Hidayat et al., 2019a, 2019b, 2019c; Hidayat et al., 2020), industry, agriculture, transportation, and others. With the vocational interest in each student, they will be serious in responding to any knowledge. Interest will be shown by trying to get complete information, adapting to existing conditions, and trying to pay attention to every piece of information. This means that a student who has a vocational interest is expected to always look for complete information about vocational education, adapt to his needs and they will try to improve his lack of vocational skills.

The world of work is the final target after students complete their studies. Students must also understand the need for the world of work through their perception of the world of work in choosing a major (Polmear et al., 2019; Sánchez et al., 2019). Perception of the world of work is a view that is how a person perceives or interprets something, where a person's perception of the world of work is determined by its relevance to his needs. The perception of the world of work will also help students in making decisions about their future. With an understanding of the world of work, students will continue to explore the capabilities that exist within them to be able to compete in the world of work later (Anwar, 2019).

Based on the author's interviews with students, their perception of the world of work is still low. This is marked in the selection of majors, many of them in determining the majors more follow trends that are developing or are currently popular. Have not thought about where the final destination will be after graduating from an engineering education (Crawley et al., 2007; Felder et al., 2000; Holmegaard, Madsen, & Ulriksen, 2016). In addition, students also do not understand what is needed by the world of work today. Learning outcomes are achievements that are achieved after participating in the learning process (Andrianis, Anwar, & Zulwisli, 2018). Through these learning outcomes, we will be able to see how students' achievements during education (Inayat et al., 2013; Duque, 2014). Factors that affect learning outcomes can be classified into two factors, namely: internal factors (interest, intelligence, motivation, physical, talent, attitude, learning method, readiness, self-concept, cognitive abilities, and others) and external (family, school, community). and the world of work). In this case, vocational interest (Robertson et al., 2010; Glosenberget al., 2019), and student's perceptions of the world of work will be able to influence student learning outcomes (Stoll et al., 2017).

Method

This study uses a descriptive correlation research method (Koh, & Owen, 2000; Sneek et al., 2016). The analysis technique used is simple regression analysis and multiple regression which aims to test how much influence two independent variables have on one dependent variable. The instrument used is a Likert scale model. There are 3 variables in this study, namely: vocational interest (X1), perception of the world of work based on society 5.0 (X2) as the independent variable, and learning outcomes (Y) as the dependent variable.

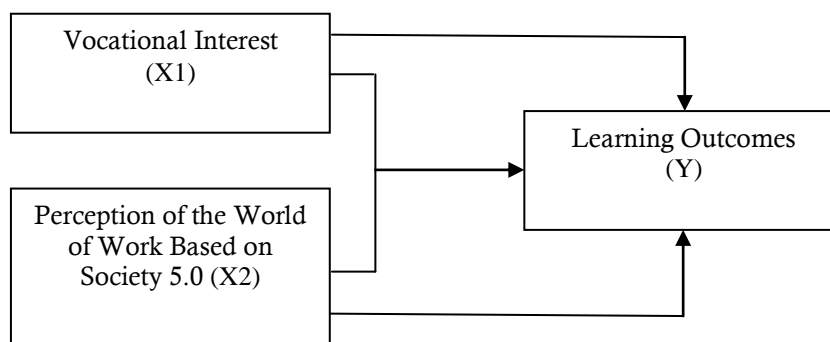


Figure 1. Conceptual Framework

The population in this study were students of the Informatics Engineering Education Study Program, Faculty of Engineering, Padang State University who had undergone lectures for 4 semesters as many as 134

students. Sampling in this study using simple random sampling technique or random technique because the population used as a sample is all homogeneous or uniform. The sample size is based on a limited population formula, as shown in Figure 1 (Riduwan, 2009). From a population of 134 students, the required sample is 57 students.

The instruments used to collect data on the three variables are questionnaires and student learning outcomes. The questionnaire was compiled using a Likert scale with 5 alternative answers in the form of an attitude scale and frequency adjusted for the purpose of the question or statement, namely the Attitude Scale: strongly disagree (SD), disagree (DA), disagree (SD), agree (A) and strongly agree (SA) Frequency Scale: never (N), rarely (RR), sometimes (ST), often (O), always (A). Data collection was carried out by distributing a test questionnaire to 30 students with 44 questions, then the validity and reliability tests were carried out, so there were 40 questions declared valid. Then the valid questionnaire was distributed to 57 samples. Data analysis with descriptive statistics of simple regression and multiple regression using SPSS version 16.0 program.

The research hypothesis consists of 3 main problems:

H1. There is a significant influence between Vocational Interests on Student Learning Outcomes.

H2. There is a significant influence between Perceptions of Society-Based Work World 5.0 on Student Learning Outcomes.

H3. There is a significant influence between Vocational Interest and Perceptions of the World of Work Based on Society 5.0 simultaneously on Student Learning Outcomes.

Results and Discussions

Prior to data analysis, normality, linearity and multicollinearity tests were carried out. The results of the normality test of the data obtained are Normality test using the Liliefors Kolmogorov-Smirnov test method with a significant level of = 5%, Sig on the three variables the value is 0.200 > (normally distributed data). Next, Linearity $X_1 - Y = 0.016$ and $X_2 - Y = 0.008$, the two variables are linearly related because < 5%. So it can be concluded that between the variables of vocational interest and perceptions of the world of work based on society 5.0 on learning outcomes there is a linear relationship. Then, the results of the Multicollinearity test obtained The VIF value of the two variables is $1,139 < 10$, meaning that there is no multicollinearity between the two variables, so there is no problem between the variables.

Hypothesis Test

Table 1. Model Summary of the Influence s of All Independent Variables on Dependent Variables

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.320 ^a	.103	.086	.28776
2	.336 ^a	.113	.097	.28613
3	.400 ^a	.160	.128	.28103

In table 2 the summary of the regression analysis between $X_1 - Y$ obtained a significant influence with the regression coefficient $r = 0.320$ and the regression between $X_2 - Y$ obtained a significant influence with the regression coefficient $r = 0.336$. From Table 5 Model Summary, it shows that vocational interest has an influence on learning outcomes by 10.3% ($R^2 = 0.103$) and perceptions of the world of work based on society 5.0 by 11.3% ($R^2 = 0.113$). The summary of the regression analysis between $X_1, X_2 - Y$ obtained a significant influence with the regression coefficient $r = 0.400$. Table 6 shows that vocational interest and perceptions about the world of work together have an influence on learning outcomes by 16% ($R^2 = 0.160$).

Table 2. Influence of X_1, X_2 on Y

ANOVA ^b					
Model		Sum of Squares	df	Mean Square	F
1	Regression	.520	1	.520	6.284
	Residual	4.554	55	.083	
	Total	5.075	56		

a. Predictors: (Constant), Vocational Interests X_1

b. Dependent Variable: Student Achievements Y

ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.572	1	.572	6.988	.011 ^a
Residual	4.503	55	.082		
Total	5.075	56			

a. Predictors: (Constant),

Students_Perceptions_About_Of_The_World_Of_Work_Society_5.0_X2

b. Dependent Variable: Student_Achievements_Y

Table 2 ANOVA, the value of Sig on the variable X1 = 0.015 and Sig X2 = 0.011 . Both variables Sig value <0.05, it can be concluded that the variables X1 and X2 affect Y

Table 3. Influence of X1, X2 together on Y

ANOVA ^b					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.810	2	.405	5.128	.009 ^a
Residual	4.265	54	.079		
Total	5.075	56			

a. Predictors: (Constant),

Students_Perceptions_About_Of_The_World_Of_Work_Society_5.0_X2,

Vocational_Interests_X1

b. Dependent Variable: Student_Achievements_Y

Table 3 ANOVA, the value of Sig = 0.009 , it can be concluded that the variables X1 and X2 together have an influence on Y

The Influence of Vocational Interests on Learning Outcomes

The results of the regression test showed that vocational interest contributed 10.3% to learning outcomes. Significance also shows that vocational interest has an influence on learning outcomes. Various conditions that describe the high interest in student learning include the attention and participation of engineering education students in learning activities (Lee, Chao, & Chen, 2011). Interest in doing vocational assignments, adding vocational insight, fun in vocational learning, and mastering the material contribute to learning outcomes (Minnaert et al., 2011; Nurahman et al., 2018). Interest is said to be a persistent tendency to pay attention and remember some activities. When someone has an interest in something, he will show a high sense of interest by paying attention continuously with feelings of pleasure (Krapp, 1999; Su, 2020). The findings of this study indicate that one of the student learning outcomes is related to the vocational interest of technical education students (McDowall, Jackling, & Natoli, 2015; Jüttler et al., 2021).

The Influence of Perceptions About Society-Based Work World 5.0 on Learning Outcomes

The results of the regression test show that the perception of the world of work based on society 5.0 contributes 11.3% to learning outcomes. The significance also shows that the perception of the world of work based on society 5.0 has an influence on learning outcomes. Engineering education students' perceptions of the world of work based on Society 5.0 can be interpreted as student responses based on stimuli or stimuli to several work environments related to Society 5.0 which can change their life circumstances for the better by doing a number of activities (Ali, 2021). Perceptions of job opportunities, job availability, welfare, and job security are predicted to improve learning outcomes (O'Shea, Lysaght, & Tanner, 2012). The findings of this study indicate that student learning outcomes, one of which is related to the perception of the world of work based on society 5.0 students, which is supported by several expert opinions including (Atkins, & Flint, 2015) stating that Occupational Preference is not just choosing the best group of jobs according to someone's opinion. only, but also seeing the reality of the work, for example, can provide high wages and can provide a future/prosperity for a better future (Korkusuz, Durak, & Ari, 2020).

The influence of vocational interests and perceptions of the world of work based on society 5.0 together on learning outcomes

The results of the multiple regression test show that vocational interest and perceptions of the world of work based on society 5.0 together contribute 16% to learning outcomes. Significance also shows that vocational interest and perceptions of the world of work based on society 5.0 have an influence on learning outcomes. Thus, student learning outcomes have an influence on the variables of vocational interest and perceptions of the world of work based on society 5.0 with student learning outcomes.

There are two things that can affect student learning outcomes in engineering education, namely internal factors, and external factors. One of the factors from within students is psychological factors. Psychological factors that influence learning outcomes in engineering education are of interest. According to Sulfemi (2019), interest is a persistent tendency to pay attention and remember some activities. Activities that are of interest to students are considered continuously accompanied by a sense of pleasure, and a sense of satisfaction is obtained. Furthermore, that interest is a feeling of liking and interest in a thing or activity, without anyone telling. According to Kartika, Husni, & Millah, (2019), argues that a person's interest in the learning process can be seen from the tendency to give greater attention to the learning process. It is further explained that if someone has a great interest in learning, the value of learning outcomes tends to change for the better, not least in the vocational interest of technical education students (Volodina, & Nagy, 2016; Kumaidi, Farida, & Haq, 2017; Kokou et al. al., 2018).

Students' vocational interest in learning in engineering education can be observed through curiosity, perseverance, pleasure, and attention of students as well as student enthusiasm in learning in engineering education (Annuar, & Prima Zola, 2019; Glosenberget al., 2019). One of the psychological factors that affect student learning outcomes in engineering education and is quite important to consider is perception. As Repelita (2018) argues that perception is an important factor in achieving student learning outcomes because perception can be a strength and a driving force for students to learn, as well as foster a sense of love and pleasure to learn. According to Wahyuni (2018), perception is an impression obtained by an individual through the five senses which are then analyzed, interpreted, and then evaluated, so that the individual gains meaning, including the perception of engineering education students towards the world of work based on society 5.0 (Gladden, 2019). A good and correct perception of the world of work based on society 5.0 can provide encouragement in the learning process so that it has an impact on the learning outcomes of engineering education students (Lakin et al., 2020). Technical education is education that provides competencies in certain areas of expertise that can later be useful and beneficial in society (Tasrif, 2019; Tasrif et al., 2021). Apart from the competencies possessed by engineering education graduates, they are also able to create jobs with their expertise (Trenor et al., 2008; Anwar, 2021), and entrepreneurship (Yulastri, & Hidayat, 2017; Yulastri et al., 2018; Yulastri et al., 2019). The high vocational interest possessed by engineering education students and good and correct student perceptions of the world of work based on society 5.0 provide great advantages and benefits to the learning outcomes of engineering education students (Aryanti, Anwar, & Zulwisli, 2017; Tasrif et al., 2020).

Conclusions

Based on data analysis and data testing, this research can be concluded that: 1) There is a significant influence between Vocational Interests on Student Learning Outcomes of 10.3%; 2) There is a significant influence between Perceptions about the World of Work Based on Society 5.0 on Student Learning Outcomes of 11.3%. There is a significant influence between Vocational Interest and Perceptions of the World of Work Based on Society 5.0 simultaneously on Student Learning Outcomes by 16%.

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