

Determining Factors for Readiness to Enter Work Field in the Era of Industrial Revolution 4.0 of Disruption Technology Digitalization

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ABSTRACT

In the era of industrial revolution of digital technology 4.0 job seekers are required to have good abilities of hard skills and soft skills facing disruption. Therefore, the government through the Department of Education and Culture has prepared vocational senior high school students with teaching and learning programs that are in line with the needs of industry. This research aims at identifying the factors that create the readiness of vocational senior high school students to work that can be clearly identified as the factors that influence them, then it will be able to design teaching and learning programs for strengthening students' competencies. The study uses a survey method by selecting two vocational senior high schools in West Sumatra, with proportional sampling techniques. There are 171 students as a sample of data. Data were analyzed by using descriptive statistical analysis, factor analysis and multiple regression analysis. The results of the study are that there are a number of factors that make up the students' readiness which are grouped into 2 categories, namely the main factors and supporting factors.

Keywords: working of world, vocational high school student, the era of industrial revolution 4.0.

1. INTRODUCTION

Disruption revolution-era industry 4.0 presents the situation of more complex work, full of challenges as well as bring in multi benefit [1]–[5]. The complexity and challenges for the workers is very high and exposed to conditions of work especially on the borderless interactions with unlimited data digitization as a result of a massive internet technology development. Therefore the mastery of technology competency is inevitably requirement to compete [6]. On the other hand, the utility is increased production capabilities both in terms of quantity, quality and cost efficiency of production, satisfaction of customer service as well as an increase in investment which boils down to the level of welfare of all offender Economics [7]–[10]

The growth of industry in the the revolution the industry 4.0 is dominated by digital-based industry, such as; robot artificial intelligence, nanotechnology, biotechnology, and quantum computer technology,

block chain such as cloud-based technology, bit coin, and 3D printer. This industry demands labor with knowledge and skill. Middle-level professional manpower is needed in order to support the economic growth of a country.

Vocational secondary school (VSS) as one of the institutions of formal education which aims at setting up a ready-made workforce. The national education system Act No. 20 Year 2003 Article 15 states that the VSS is secondary education that prepares students especially for working in a particular field. According to [11] one of the factors in planning an education for a job the existence of vocational interest. Vocational interest itself is the tendency of a person to have an office or job prospects in accordance with the characteristics of his personality ".

VSS students work readiness in terms of mastery of the competencies which include knowledge, skills or attitudes work owned by the students needs to be

improved. The importance this work preparedness improved is actually given a large number of complaints from employers who complain that the workers do not have adequate skill [12] many factors that affect the readiness of working students, both from within and from outside the learners such as social economic, environment, and view of life factors [13]. Other factors that affect the readiness of the students to work, are knowledge and insight, intelligence, skills, talents, interests, attitudes, values, personal traits, psycho-social work environment, career opportunities and employment prospects, type of work, work characteristics, self efficacy, locus of control, work practices in the industry, independence, motivation, competence, entrepreneurship and career guidance [14]. Those factors determine the readiness of students to enter the workforce.

Research [15] finds that there is the determination of the significant exercises work and entrepreneurial competencies and career guidance to vocational students working with the contribution of 53.7%. [16] explains that the practical experience, learning achievement and parents' support gave the effect on the readiness of the students of VSS work amounted to 39.6%. It is a pretty interesting research findings stating the importance of industry practices as a determining factor affecting the readiness of vocational students to work [5], [17], [18].

In contrast to previous research, this study tried to do in-depth research undergone to find factors that give most dominant effect on the readiness of the VSS students to enter the work field. The purpose of this study is to identify factors that affect the readiness of the students of VSS to work which provided the entry point for policy makers to be able to improve the competence of students of SMK in entering the competition work in the era of the revolution the industry 4.0

2. REVIEW OF THE LITERATURE

Dikmenjur (2008) states that the purpose of vocational is to create students or graduates; capable to enter employment and develop a professional attitude, able to choose career, be able to compete and develop themselves, into a middle-level manpower to fill the needs of the business world/world industry's current and future, become a productive workforce, adaptive and creative.

The work field is one of the ultimate purpose of the vocational education as contained in section 15 of the Act Education National System that VSS is secondary education that prepares students primarily for work on specific areas. For that purpose, students is expected to have the readiness to enter the work as well as are able to improve the fit the demands of the work field.

The readiness to enter the workforce is an essential requirement that must be owned by each person before entering competition in the workfield. Work readiness is the attitude of the individual that has been prepared to deal with an activity that requires specialized knowledge [20], [21]. The readiness of the work can be seen from how his mastery related to the theory of knowledge, skills, techniques and his attitude carried out seriously and can bring benefits for oneself and someone else, be it benefits in the form of satisfaction, wages and other so on.

Factors that affect a person's work readiness are factors from inside oneself (intern) and factors from outside oneself (external). The internal factor includes, intelligence, skills and know-how, talents, abilities and interests, motivation, health, psychological needs, personality, goals, and objectives in the work, whereas external factor includes, family environment (home), the environmental work, a sense of security in the job, the chance of getting advancement, peers, relationships with the leaders, and salary [22], [23]. Thus, exercise work intended to make people ready to be hired. This ability at least to be able to perform the job duties at the time of the commencement of the job entry, or which are presupposed to be accepted to work. The skills of committed to Labor candidate is intended to provide basic skills, because of what has been accomplished by someone in the past will have no meaning for the present activities. What happened today will determine to an individual's readiness in the future.

Some important aspects that should be owned is the confidence, the ability to work, work discipline, work motivation, ability, responsibility and communication cooperation [24]–[28]. Thus the readiness to work is a means to prepare themselves with a number of competencies principal and ancillary capital so that it becomes important for job seekers to be able to compete with other job seekers at once become a better value owned. In addition, the readiness to work, it is also important to note a number of important skills that have been identified by the World Bank in the year 2014 i.e. positive work habits, leadership, communication, technical, writing, English, education and employment, problem solving, reading, computer, team work.

Based on a review of existing research and theory then the hypothesis presented in this research is "there are a number of important factors that shape the dominant VSS students readiness to enter the world of work"

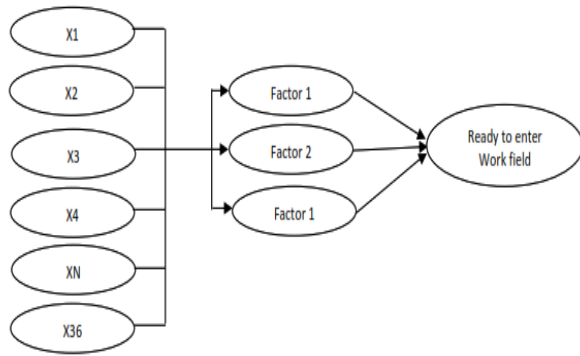


Figure 1 Framework Research

3. METHOD

This type of research is the study of non experiment (survey) with the design of descriptive research. The sample was selected using a proportional random sampling techniques. The population in this research is the entire VSS students in West Sumatra Indonesia. Whereas the selected random sample is a class XII students on both the SMK, as for the considerations choosing the class XII is because they have been carrying out an industrial practice and get ready to entering the workforce.

Technique of data analysis was descriptive analysis, the analysis is conducted through explanatory factor analysis (EVA) and simple regression analysis using SPSS program version 21. Descriptive analysis to describe the profile of the respondents, while the explanatory factor analysis to find out the factors of the dominant shaper of the readiness of the students of VSS entered the working world, and simple regression analysis to find out the influence of the dependent variable independent of variable

4. RESULT AND DISCUSSION

4.1. Result

Analysis of the factors is done with four important step i.e. appropriateness, factoring and rotation, validation, and scoring factor [29]–[31]. The assessment

Table 1. Result Factor Analysis

No	Variabel	Factors	Eigen Value	Loading Faktor
1.	Industrial practice	The Main Factors	8.377	0.838
2.	Values			0.792
3.	Characteristics Of Work			0.778
4.	Psycho-social work environment			0.726
5.	Career Opportunities			0.707
6.	Career Guidance			0.693
7.	Independence			0.691
8.	The attitude of the			0.643
9.	Proficiency			0.598
10.	Motivation	Personality Factors	2.153	0.596
11.	The physical and Mental condition	factor control	1.567	0.593
12.	Locus Of Control			0.761
13.	Socio-cultural society	Environmental Factors	1.143	0.717
14.	Peers			0.666
15.	Socio-economic conditions of the family			0.647
16.	Type Of Work	Information Factors Of The World Of Work	1.063	0.756
17.	Work Prospects			0.635

phase variable, is done with regard for the value of KMO and barlet's test where the value is above 0.5 on the significance of 0.001. Factoring and rotation stages, performed with values in the communalities and the total variance explained. The validation stage, performed with attention to component matrix that must be above the value of the cut off 0.05. The stage makes the factor scores, namely by observing the loading factor value that is formed

Table 1 above shows that in the 5 components of the factor that forms the readiness of students of VSS enter the workforce, five factors are formed according to the results of merging the sub factors based on the value of the factor loading given names as follows; the first component consists of the main factors that industry practices, values, work characteristics, psycho-social work environment, career opportunities, career guidance, independence and attitude, this forming factor of eight industrial practice is to have the value most high loading factors so that this can be a major factor given the name factors of industrial practice. The second component factor is personality. Component The third factor is related to control, the fourth components factor environment factor and the fifth component is information workforce. Thus a factor that is formed is industry practices, governing, personalities, information environment and the world of work

Table 2. Multiple regression analysis of work practices

Variabel	Standardized Coefficients(β)	T-value	F-value
Industrial practice	.393	3.819	
Career Guidance	.228	2.220	
Regression			11.158

(Research results) R = R2 = 481.232 SEE = 3.559 p = .000

Based on table 2 above the influence of industry work practice variables and career guidance on readiness to enter the workforce is significant both partially and jointly, while the contribution of these two variables is 23.2% while the other 76.8% is determined by other variables as the findings in previous factor analysis

4.2. Discussion

The results of this study identifies two groups of factors forming the readiness of students enter the workforce that is a major factor and supporting factors. The main factors of forming students vocational readiness entering the world of work consists in this factor is the factor of industrial practices, values, work characteristics, psycho-social work environment, career guidance, career opportunities, independence, and attitude. The supporting factor consists of governing, personalities, information environment and the world of work [22]–[28]. Some research also suggests the same thing that it can be concluded that the competence of

entrepreneurship, practical experience, learning achievement, support parents, industry practices are a number of factors that give a fairly high determination against the readiness of students enter the workforce [15]–[18], [32].

This industry practice factor is the most dominant factor affecting the readiness of students entering the workforce. Industrial practice activities provide experience and professional attitude to form students. In accordance with [15] who found that the exercises work hard-wired is one important factor that can increase students' work readiness CMS. The industry practice of giving students a learning opportunity in a more real (work based learning) also directly involved in the learning process and the work which gives effect in the form of real experience that directly benefits perceived by them [23]. As in the cone of experience Dale [33], [34] expressed that direct experience of a learning activity that is done will contribute to more experience (90%) towards an understanding of a person will be a science that he has. Industry practice bring multi benefits for schools, students, world industry that forms a triple helix mechanism between education/schools, industry and Science [35].

Career guidance becomes a major factor affecting the readiness of VSS to enter the workforce, and career guidance becomes important programs that have been run by CMS to support competence of students to enter the world of work. Career guidance is the school programs that related to industry practice, likened to the theory with the practice of career guidance is the preparation phase containing the information to prepare the learners both in the selection the major for studying, work environment and the introduction of information services to look for job.

The personality factor is a group supporting the first factor as a factor forming the readiness of students of VSS to enter the world of work. In accordance with research [36][36] that concluded the personality factors, namely: the condition of the physical, mental and emotional, needs, motives and goals, skills, talents, interests, and values, life skills, affect readiness working students enter the workforce.

In locus of control may be evaluative functions in the individual. Through the evaluative function, individuals understand the ability he has already master. Because the students as the holder control over anything that happens late in life itself, the locus of control factor can be said to be the governing factor which is a factor supporting the latter. The results of this study in accordance with the research [37] that locus of control is one of the factors that influence on career maturity of students. Individuals with a locus of control when faced with electoral career, then he would do the effort to get to know himself, find out about the work and

educational measures, as well as trying to troubleshoot related issues.

The third factor in groups supporting factors namely environmental factors which belong to the Group of factors, namely; factors of social culture community, community diversity providing many insights and provide experiences for students in everyday life. Student residence environment shape the attitudes of children in determining the pattern of his life and will provide opportunities for youth (male or female) to be the more mature [13].

The fourth factor in the group supporting factors that influence the employment information is obtained from a variety of sources that offer a wide range of job prospects for job seekers become important factors that determine the readiness of students to enter the world of work since students can measure between the his competencies possessed by the qualifications and job prospects are offered [14].

4. CONCLUSION

Entering the era of digitalization technology of the eruption on revolution industry 4.0 promises challenges and expectations that are not simple thing for job seekers specific CMS. A number of competencies that are either hard skill nor softskill was a number of important factors that affect the readiness of the VSS students in entering the world of work on two factors, namely the main factors and supporting factors.

The main factor is composed of factors industry practice, values, work characteristics, psycho-social work environment, career guidance, career opportunities, independence, and attitude. The supporting factor consists of governing, personalities, information environment and the world of work. From the number of factors above, there is a major factor, especially the practice of industry and career guidance are two important factors that have to get serious attention from the school in particular, because the practice of industry and career guidance as the program that are specialized introduced the VSS students on the workforce then that aspect of management must be observed carefully and systematically in the form of a cooperation program, the job fair recruitment, entrepreneurship, through CMS, will provide an opportunity in students and graduates of vocational school adding to the knowledge, experience and networks, so that students are aware that a number of competencies-competencies that are needed in the era of digitalization on the technological revolution of the disruption industry 4.0 needs to be prepared to be able to compete with other job seekers in the scale of local, national, regional and international.

Theoretical implications of this research is into donations for Polytechnic education studies in

developing the concept of the education of students in industry so that the relationship needs-based school and the corporate world to become a single unitary mutual need that will have implications for on completion of the curriculum (written curriculum) as well as activity learning including teacher quality, service quality, and other supporting facilities

AUTHORS' CONTRIBUTIONS

The title "AUTHORS' CONTRIBUTIONS" should be in all caps.

ACKNOWLEDGMENTS

We thank Mrs. Armida as team for constructive suggestions during the review process.

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