

# Work and Entrepreneurship Readiness through 21<sup>st</sup> Century Skills in Vocational School Students

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**Abstract** Other skills that students need to develop beside their expertise fields are 21<sup>st</sup> century skills. What is needed in preparing students for work and entrepreneurship are, among others, communication, critical thinking, and collaboration skills. The purpose of this research was to see the effect of 21<sup>st</sup> century skills on job and entrepreneurship readiness, partially and simultaneously. This research was quantitative using multiple linear regression analysis. Respondents in this study were vocational high school students with a total of 445 respondents. The results of this study were the partial or simultaneous influences of communication, critical thinking, and collaboration skills on work readiness and entrepreneurship. The results can be used as consideration materials for educational institutions and the industry to increase the importance of 21<sup>st</sup> century skills for students and employees. The more improvement of these skills increases job and entrepreneurial readiness of vocational high school students. Students who master other skills would find it easier to find work or develop entrepreneurship because academic skills could not keep up with the situations and conditions when they are about to graduate from vocational high schools. The industry is looking for workers who can see the situation and conditions when they are working, and also stated that academic potential or vocational abilities could be developed over time.

**Keywords** 21<sup>st</sup> Century Skills, Job Readiness, Entrepreneurial Readiness, Vocational High Schools

## 1. Introduction

Vocational high school graduates need to be equipped with broad insights and abilities to solve problems in the workplace to be competitive [1-3]. Therefore, they need to have new competencies that are needed by the global job market [4]. The goal is to ease the adaptation in their work environment.

The problem that needs to be addressed is the lack of skills that they have to face the industrial world or enter the next level of study [5-6]. It is expected that students have other skills for work readiness to increase the needs of the business world and industry in Indonesia so that the quality of the human resources is not only seen from the ability in their fields. Lack of skills outside of the expertise can lead to an increase in unemployment [7-8]. The solution to overcome unemployment is to enter vocational schools because they already have expertise [9]. Based on the field observations results, the problem was similar to the previous opinion: some students did not have other skills to strengthen their areas of expertise.

Every individual must have good communication skills, and it is an additional value for job hunting [10-11]. The ability to communicate helps build good relationships at work or with fellow entrepreneurs. The advantage of good communication in the workplace can be found in discussing with the colleagues of the same division. Meanwhile, and in entrepreneurship, it can be found as an opportunity to discuss the targets to improve their businesses.

Critical thinking skill is one of the 21<sup>st</sup> century skills,

and it includes the ability to analyze, evaluate, and create [12–14]. Students can solve a problem they face using the ability to think critically [15]. Industry and entrepreneurs still feel a lack of critical thinking skills among their workers, so they still have difficulty in problem-solving. Critical thinking ability refers to how to solve a problem and provide a solution to the problem. Workers who can think critically can help with the problems in the company. Solutions can be found to solve the problems that exist in the workplace or business. In entrepreneurship, the ability to think critically is useful when determining different products so that the business continues to run.

Communication skills and critical thinking skills can be strengthened and balanced with collaborative skills. The higher the skills to collaborate, the easier it will be to find work; and workers who can collaborate will be whom the workforce is currently looking for [16]. The collaboration process occurs when two individuals or groups of people are working together to achieve common goals by sharing their ideas and skills. In the collaboration process, it will be easier to find solutions to problems and communicating plans to be made.

Work readiness in the 21<sup>st</sup> century is increasingly narrowed by the presence of other competencies apart from their expertise. Companies recruit prospective workers who can work efficiently and can deal with all conditions, and entrepreneurship is one of the skills of the 21<sup>st</sup> century; with these skills, a student is independent in determining options after graduation apart from being in a workforce.

Students with other skills will find it easier to face the demands of the 21<sup>st</sup> century that is expected to follow the ongoing developments. Workers in the 21<sup>st</sup> century are expected to have communication skills, critical thinking skills, and collaborative skills [17]. Apart from being a professional workforce, a vocational student must be able to become an independent person through entrepreneurial skills to survive in life. The 21<sup>st</sup> century skills are essential skills for students in Indonesia they can find work or build a business using these skills.

The results of this study can be used as consideration materials for educational institutions and the industry to improve the skills of students and employees. The results of the study were closely related to the importance of 21<sup>st</sup> century skills needed by vocational high school graduates and the development of skills for industrial workers. Also, this research would be useful for developing the learning process in vocational high school, which is associated with the development of 21<sup>st</sup> century skills.

## 2. Literature Review

### 2.1. Communication Skills

A skill is an ability that an individual has to do things

easier or more effective. Communication is a social process where an individual uses symbols to construct and interpret the meaning of what is conveyed to the recipient in their environment [18]. Communication skills are an ability possessed by individuals to convey ideas or exchange information with individuals or groups. An individual or group cannot survive without good communication skills [19]. Besides, communication skills are tools or instruments to reduce obstacles in the effective communication process.

An individual needs communication skills to convey and receive messages when interacting with individuals or in group discussions. Communication skills are also a provision for vocational high school graduate students to continue to the next predetermined level.

### 2.2. Critical Thinking Skills

Critical thinking is the art of analyzing and evaluating a thought to find solutions to a problem [20]. Critical thinking skills can analyze true or false news. Thus, individuals with these skills do not readily believe news from unclear sources [21].

Critical thinking is a central concept in education reform that calls for schools to place greater emphasis on skills to be used in all subject areas and that learners can apply in all educational, career, and civic settings throughout their lives.

### 2.3. Collaboration Skills

Collaboration is a process of participation of several people or groups of organizations to work together with others to achieve specific results [22]. Collaboration is the involvement of participants together in coordinated efforts to solve problems by providing ideas, experiences, and abilities [23]. These skills aim for students to work together in solving problems and be able to complete the responsibilities [24] collectively.

### 2.4. Work Readiness

Readiness is a condition for someone to be able to or to do what the plan. Readiness is a person's overall condition which will make them ready to respond or answer in a certain way to a situation or condition that is happening [25].

Graduates who successfully prepare for the future or workplace will be able to survive in the workplace with those skills. The faster the skills or provisions that are prepared, the faster they will be in exploring the workplace.

### 2.5. Entrepreneurial Readiness

Each individual is ensured to have an entrepreneurial

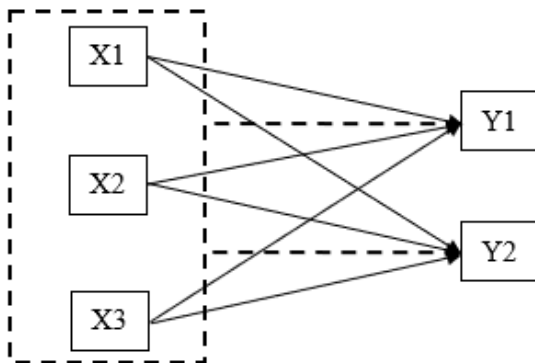
spirit with different skills in the process of developing it, and one can increase the entrepreneurial spirit to achieve the preplanned plans by having skills. An entrepreneur is a person who can recognize new products, determine how to make new and different productions, organize operations to create new products to be made, manage capital in managing their business, and market their products [26]. An entrepreneur is an innovator, or it can be said as the creator of something different, as an individual who has an instinct to see opportunities or opportunities that exist by having the spirit, skills, and thoughts to conquer the laziness to develop their life [27].

Entrepreneurship is a science that discusses the process of developing and building a sense of the creative spirit and a courageous attitude in taking the risks that will occur in the working world to be done to realize the desired work.

### 3. Research Methods

#### 3.1. Research Type

The research was conducted as quantitative. This study aimed to determine whether there was an effect of communication skills, critical thinking, and collaboration on work readiness and entrepreneurial readiness in the 21<sup>st</sup> century in vocational students in Tulungagung Regency. The following is the research design Caption:



- X1: Communication skills variable
- X2: Critical thinking skills variable
- X3: Collaboration skills variable
- Y1: Work readiness variable
- Y2: Entrepreneurship variable

—→ : The effect of each independent variable on the dependent variable

---→ : The effect of the independent variables together on the dependent variable

#### 3.2. Population Dan Samples

This research's population was the XI class and XII class students of all vocational skills programs of public vocational high schools in Tulungagung Regency with a

total of 8,159 students. The process sampling used the Slovin formula with an error rate of 5%. The population in each class had a different number to ease the distribution of the questionnaire to using a proportional random sampling technique. This research obtained a sample of 445 respondents to fill out the questionnaire that was provided by taking the samples using the Slovin formula.

#### 3.3. Data Collection and Data Analysis Techniques

The questionnaire that was used is a modification of the instruments that have been used in the previous studies. The assessment process on the communication skills variable used the modified results of the instrument from the Interpersonal Communication Skills Inventory; this instrument is supported by research that was conducted by [28]. The critical thinking skills variable used the modified results of the California Critical Thinking Disposition Inventory instrument that was developed by [29]. The Teamwork Scale for Youth was used to measure or carry out the assessment process on the variable collaboration skills [30]. The work readiness variable used the modified results of the Work Readiness Scale instrument; this instrument was taken in a study conducted by [31]. The instrument in the entrepreneurial readiness variable used a modification of the assessment of Individual Entrepreneurial Orientation [32]. The data analysis technique in this study used multiple linear regression analysis.

#### 3.4. Validity and Reliability

The results of the validity and reliability tests carried out by researchers can be seen in the table below.

**Table 1.** Results of Validity and Reliability

Instrument	Validity	Reliabilities
<i>Interpersonal Communication Skills Inventory</i>	Valid	0.92
<i>Critical Thinking Disposition Inventory</i>	Valid	0.965
<i>Teamwork Scale for Youth</i>	Valid	0.856
<i>Work Readiness Scale</i>	Valid	0.96
<i>Individual Entrepreneurial Orientation</i>	Valid	0.809

### 4. Research Result

#### 4.1. Data Description

The described research results consisted of five variables, including: (1) Communication Skills; (2) Critical Thinking Skills; (3) Collaboration Skills; (4) Work Readiness; and (5) Entrepreneurial Readiness. The assessment of these five variables used a questionnaire filled out by predetermined respondents. Table 1 shows the data frequency distribution for the five variables.

**Table 2.** Frequency Distribution of the Five Variables

Information	Communication Skills	Critical Thinking Skills	Collaboration Skills	Work readiness	Entrepreneurial Readiness
Category	Percentage	Percentage	Percentage	Percentage	Percentage
Very low	0	0	0	0	0
Low	0.4	0	0	0.7	0
Enough	15.3	21.8	4	3.8	4
High	62.7	64.1	73.3	67.9	57.6
Very high	21.6	14.1	22.7	27.6	38.4
Total	100	100	100	100	100

Based on the above data frequency distribution table, the communication skills, critical thinking skills, collaborative skills, job readiness and entrepreneurial readiness variables in public vocational school students in Tulungagung Regency are categorized as high.

#### 4.2. Hypothesis Test

Hypothesis testing in this study used multiple linear regression analysis. This regression analysis was carried out in two stages, namely the first sub-structure and the second sub-structure. The results of the hypothesis test are as follows.

**Table 3.** Hypothesis test results

Variable relationship	R Square	Significance
$X_1X_2X_3 \rightarrow Y_1$	.132	.000
$X_1 \rightarrow Y_1$	.0228	.008
$X_2 \rightarrow Y_1$	.0329	.003
$X_3 \rightarrow Y_1$	.0765	.000
$X_1X_2X_3 \rightarrow Y_2$	.196	.000
$X_1 \rightarrow Y_2$	.0420	.000
$X_2 \rightarrow Y_2$	.0667	.000
$X_3 \rightarrow Y_2$	.0876	.000

Table 2 explains the two sub-structures consisting of simultaneous and partial effects on the research results. The first sub-structure simultaneously got a significance value of 0.000, then in the first sub-structure partially to  $Y_1$  obtained values of 0.008, 0.003, and 0.000. These values are less than the significance level of 0.05. It can be concluded that there was a significant effect, simultaneously and partially, between communication skills ( $X_1$ ), critical thinking skills ( $X_2$ ), and collaborative skills ( $X_3$ ) on job readiness ( $Y_1$ ). The second sub-structure got the same results with a similar explanation as in the first sub-structure based on Table 2. With these results, it can be concluded that there was a significant effect simultaneously and partially between communication skills ( $X_1$ ), critical thinking skills ( $X_2$ ), and collaborative skills ( $X_3$ ) on entrepreneurial readiness ( $Y_2$ ).

## 5. Discussion

21<sup>st</sup> century skills are related to work and entrepreneurship readiness. Students with more skills will find it easier to prepare to become workers or entrepreneurs. Skills in the field of expertise are not sufficient to face the working world nowadays. Vocational high school students are expected to master some 21<sup>st</sup> century skills. In this discussion, the 21<sup>st</sup> century skills had a partial or simultaneous influence on job and entrepreneurial readiness. If students cannot master the overall 21<sup>st</sup> century skills, they will still be able to survive and face the developments in the industrial and business world. Teachers play an essential role in improving 21<sup>st</sup> century skills in students. Teachers with learning innovation will find it easier to provide 21st century knowledge to their students [33].

Professional workers are workers who can communicate well [34]. Effective and open communication is a crucial factor when dealing with and collaborating with teams [35].

Critical thinking skills have a significant role in a person's life; someone will be able to analyze and think about what to do and be able to provide solutions to a problem with this skill. These skills help increase a student's confidence in taking action [36]. Critical thinking skills can be improved through critical learning provided by the teacher.

The collaborative process has the advantage of developing a good plan. Collaboration helps in finding solutions or ways from several people with various kinds of thoughts. Another advantage of the collaborative process is that it can bring together different experiences and ideas to benefit the plans.

Work readiness that is influenced by 21<sup>st</sup> century skills had different contribution values. Communication skills had a contribution value of 2.28%, critical thinking skills had a contribution value of 3.29%, and collaboration skills had a contribution value of 7.65%. Each of these skills' contribution could be categorized as small, but still provided values to have these skills.

Even though the results of the distribution value were relatively small, the communication skills, supported by

researches conducted by [37-38], can affect the work readiness of students. Moreover, the higher their communication skills, the easier for them to prepare to enter the industries. Critical thinking skills result agreed with the researches of [39-40] that stated that critical thinking skills become an added value if students can develop them. These skills can affect students' job readiness. Collaborative skills with the higher value compared to others were also supported by the research of [41] that stated that the collaborative process could affect the production results of an industry and a fair collaboration process will make a job more manageable.

Communication skills, critical thinking skills, and collaborative skills simultaneously have a significant effect on student work readiness. The contribution value of these skills to job readiness was 13.2%. The research conducted by [42] showed that communication skills, critical thinking skills, and collaborative skills had simultaneous influences on job readiness; with three skills mastered by students, they will be better prepared for work after graduating from vocational high school.

After graduating from vocational high school, apart from preparing to be a worker, a student also has the opportunity to become an entrepreneur. Students who have the opportunity to become entrepreneurs must prepare the 21<sup>st</sup> century skills that are currently required. With the 21<sup>st</sup> century skills, an entrepreneur will find it easy to develop his business. Entrepreneurial readiness is influenced by communication skills, critical thinking skills, and collaboration skills. Each skill had a different contribution value. Communication skills had a contribution value of 4.2%, critical thinking skills had a contribution value of 6.67%, and collaboration skills had a contribution value of 8.75%.

The previous researches' results support the results of these contributions. Communication skills are supported by researches that were conducted by [43-45], that communication skills must be prepared from the start and will get positive results in ongoing entrepreneurship, and can improve communication in discussions with other entrepreneurs. The results of critical thinking skills are supported by the research of [46-47] that critical thinking skills directly affect entrepreneurial readiness, as well as critical thinking, will generate creative and innovative ideas. Collaboration skills are supported by the researches of [48-49] that stated that collaboration skills would have a positive impact on the development of their business because the entrepreneur can support each other.

The results showed that communication skills, critical thinking skills, and collaborative skills had significant effects simultaneously on the entrepreneurial readiness of vocational high school students. The magnitude of the influence of the variables of communication skills, critical thinking skills, and collaboration skills on entrepreneurial readiness was 19.6%.

A student must have several skills other than their

expertise skills that are learned in secondary education to prepare to be a worker and have an entrepreneurial attitude to becoming an independent person in the 21<sup>st</sup> century. Other skills possessed by students in addition to the field will be an added value for job hunting [50]. Other skills that must be met include communication skills, critical thinking to solve a problem, and skills to cooperate or collaborate [51-54]

## 6. Conclusions

From this research, it can be concluded that communication skills, critical thinking skills, and collaborative skills had simultaneous effects on job and entrepreneurial readiness. This conclusion can be seen from the significance value of 0.000. The obtained significance value was less than 0.05. A student can face the industrial world and will become a professional worker with soft skills by having these skills.

Partially, or any among the variables that do not coincide with the readiness of the work as well as the readiness of entrepreneurship also have influence. By only having one of the skills, a student is also able to prepare himself to be a professional worker in the field or outside the vocational field and able to make an entrepreneurship that will be selected.

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