The influence of technical skills and 21st century skills on the job readiness of vocational students

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Abstract. One of the reasons for many unemployed SMK graduates is the gap between industry demand and the skills of graduates produced by SMK. The cause of this discrepancy occurs due to several factors, which include the competence or skill factor and the mental condition of graduates who are also still low. Hence, they are not ready to enter the job market. Students' lack of skills and work readiness also affects the absorption of vocational graduates in the job market. Competition in the 21st century depends on the quality of human resources. For this reason, knowledge and skills are needed to deal with continuous change to adapt to new and dynamic situations in the 21st century. 21st-century skills can help students learn and adapt to changes over time. This study aims to describe and analyze the influence of technical and 21st-century skills on the job readiness of vocational students. This study used a descriptive-correlational design. Data analysis in this study used descriptive and inferential statistical analysis. The results of the study indicate that technical skills and 21st-century skills simultaneously have a significant effect on students' work readiness; technical skills have a significant effect on students' work readiness; 21st-century skills have a significant effect on students' job readiness.

Keywords: engineering skills, 21st century skills, student work readiness.

1 Introduction

The results of research conducted by [1] found that the workforce produced by educational institutions such as vocational schools, training institutions, or various other course institutions has yet to be able to produce workforce qualifications as required by the job market. The cause of this discrepancy occurs due to several factors, which include the competence or skill factor and the mental condition of graduates who are also still low. Hence, they need more time to be ready to enter the job market. This is also reinforced by research [2] which found that students' lack of skills and work readiness also affects the absorption of vocational graduates in the job

market. Another problem related to the absorption of vocational graduates also occurs at SMKN 2 Seririt, which cannot be absorbed optimally in the job market. Some graduates can get a job, but many still need to be absorbed in the job market. Based on the results of a tracer study conducted by SMKN 2 Seririt, it was found that 29.15% of vocational graduates were absorbed in the job market, 47.29% of graduates continued their studies, and the remaining 23.56% had not worked or were unemployed. The data and phenomena above show that graduates produced by vocational education, especially SMK, have yet to be able to meet what is expected by the job market. In other words, the high unemployment rate for SMK graduates indicates that the quality of this education is less relevant to the expectations of the job market. The non-absorption of vocational graduates in the job market is not only because they need to adapt to the development of science and technology but also because they have low job readiness. This is also in accordance with research findings by [3], which found that one of the causes of inequality in the job market is low competence and mental condition, causing unpreparedness to enter the job market.

Work readiness can be defined as a person's ability to independently perform a task or job to a certain level based on competence. Research conducted [4] succeeded in identifying several large categories that indicate a person's work readiness condition, namely, motivation, personality development, technical focus, mental maturity, awareness of an organization, attitude to work, interpersonal orientation, ability to adapt, problem-solving ability, and lastly resilience. From some of these definitions, it can be concluded that a person is ready to work if he has the skills, knowledge, understanding and personality to help complete a task or job correctly.

Technical skills of vocational students are closely related to job readiness [5]. Technical skills are seen in students' ability to carry out practical tasks or work and use tools. In contrast, work readiness is seen from work ethics which include responsibility, self-confidence, self-management, punctuality, efficiency, and responsibility. In the SMK curriculum, students' provision of technical skills is delivered in groups of subjects of vocational specialization taught in schools.

Competition in the 21st century depends on the quality of human resources. For this reason, knowledge and skills are needed in dealing with continuous change to adapt to new and always dynamic situations in the 21st century. 21st-century skills can help students learn and adapt to changes over time. Thus, expertise in 21st-century skills is an important right for students today. According to [6], to overcome the challenges of the 21st century, students need to be equipped with 21st-century skills to ensure competitiveness in today's global era. Therefore, as an educational institution that aims to produce graduates who are ready to work in the 21st century, Vocational Schools must also equip their students with 21st-century skills, which include: (1) learning and innovation skills; (2) information, media and technology skills; and (3) life and career skills.

One of the challenges and problems of vocational schools in remote areas is the limited access to information related to the job market. The results of this study are in accordance with [7] that job readiness is mandatory for students to make it easier for them to enter the job market. Common problems faced by vocational students in relation to job readiness are: (1) lack of knowledge of the job market; (2) lack of cooperation between SMK and the job market; and (3) the function of counseling guidance in schools is not optimal in providing career counseling services for students.

The job readiness of SMK students has been widely studied. [8] examines the influence of the Contribution of Class Climate, Achievement Motivation and PKL Experience on Expertise Competence and Their Impact on the Work Readiness of Vocational Students in Computer and Network Engineering Skills Competencies. Research [9] on the description of job readiness in SMKN students in Indonesia. Another study by [10] also examined the work readiness of vocational students, Work Readiness in terms of Work Motivation, Entrepreneurial Attitude, and Competence of Women's Clothing Expertise. And research by [11] also examines the role of work interest and learning achievement on vocational school students' work readiness.

Based on the explanation above and the relationship between the importance of vocational school graduates having job readiness as prospective workers for secondary education graduates, it is necessary to study the influence of technical skills and 21st-century skills on the work readiness of vocational students. This study aims to find solutions that can help teachers, schools and students with the problem of student work readiness, especially at SMKN 2 Seririt, Buleleng.

2 Research methods

This research was conducted at SMKN 2 Seririt, located at Jl. Yudhisthira , Banjar Asem, Seririt, Buleleng . In general, this study aims to describe and analyze the influence of engineering and 21st-century skills on the job readiness of SMKN 2 students in Seririt, Buleleng. This study uses a descriptive-correlation design. Descriptive-correlation research is used to describe and analyze the relationship between a set of exogenous (independent) and endogenous (bound) variables. The independent variables in this study were technical skills and 21st-century skills, while the dependent variable was student work readiness. This study's population was all SMKN 2 Seririt, Buleleng students. The student population in this study was 643 people spread over 4 skill competencies, namely multimedia expertise competence, computer and network skill competence, accounting skill competency, and hospitality skill competency. From the population above, the number of samples in this study was 247 students. In this study, data collection used instruments like a closed questionnaire and document data. Data collection in this study was carried out in two ways: questionnaires and documentation. The questionnaire instrument was used to obtain information from students about 21st-century skills and job readiness. There are three research variables whose data were collected using a questionnaire instrument, namely technical skills, 21st-century skills, and the last one is student work readiness. The indicators used on the research variable instrument grid for 21st-century and technical skills are life skills, learning skills and digital skills. As for work readiness, the indicators are physical condition, responsibility, flexible thinking, communication and evaluation skills. In contrast, the documentation technique is used to collect data related to student skills, as seen from the scores obtained by students. Documentation is a method or technique of collecting data using existing documents. The documentation technique in this study was carried out by collecting data to obtain test scores or student skill test scores on the skill competency test. Researchers collected the data on the value of the competency test results from the head of the department of each expertise competency at SMKN 2 Seririt, which became the research sample.

3 Results and discussion

Table 1. Technical Skills Data Description

Variable	N	min	max	median	mean	SD
technical skills	247	68	87	78	76.97	5.17

Table 2. Technical Skills Data Description

No	criteria	interval class	frequency	percentage
1	low	0-25	0	0
2	enough	26-50	0	0
3	tall	51-75	90	36.5
4	very high	76-100	157	63.5
	amount		247	100

The results of empirical research revealed that students' technical skills were included in the very high category, namely 63.5% of respondents with an average score of 76.97. It can be concluded that SMK students have very high technical skills. [12] stated that in carrying out the practice, there are various aspects of expertise, such as time management and stress management. The existence of technical skills can improve students ' work readiness because, in general, the industry or the business world makes these technical skills one of the requirements or tests to get a job. Thus it can be said that technical skills increase students ' job readiness. If students' technical skills are good, students will be more ready to go directly to work.

Table 3. 21st Century Skills Data Description

Variable	N	min	max	median	mean	SD
The 21st century skills	247	17	60	48	46.87	9.2

Table 4. 21st Century Skills Data Frequency Distribution

No	criteria	interval class	frequency	percentage
1	low	15-26	9	9
2	enough	27-37	30	12.2
3	tall	38-48	85	34.8
4	very high	49-60	123	49.6
	amount		247	100

The results of empirical research reveal that the 21st-century skills of vocational students at SMKN 2 Seririt are included in the very high category, as many as 49.6% of respondents, with an average score of 46.87. Based on the results of filling out the 21st-century skills questionnaire, there is an extreme score for the statement item because the respondent chose a score of one on that item. Respondents who chose the item with the highest score of one were

found on life and career skills indicators. These indicators explain the work skills and responsibilities that students must have for a professional career. Extreme item scores occur because many students lack work skills and are responsible for a professional career.

Table 5. Work Readiness Data Frequency Distribution

Variable	N	min	max	median	mean	SD
work readiness	247	35	76	61	61.52	9.68

Table 6. Work Readiness Data Frequency Distribution

No	criteria	interval class	frequency	percentage
1	low	19-33	0	0
2	enough	34-47	19	7.7
3	tall	48-61	108	43.6
4	very high	62-76	120	48.7
	amount		247	100

The results of empirical research reveal that the work readiness of vocational students at SMKN 2 Seririt is included in the very high category of as many as 48.7% of respondents, with an average score of 61.52. Based on the results of filling in the student work readiness questionnaire, there is an extreme score for the statement item because the respondent chose a score of one. Respondents who chose the item with the highest score of one were found on the indicators of critical thinking & acting flexibly.

4 Conclusion

Technical skills have a significant effect on student work readiness. This means that the technical skill variable can explain the level of student work readiness. Based on the findings of this study, it can be concluded that the research hypothesis, which states that technical skills have a significant effect on job readiness, is acceptable. 21st-century skills have a significant effect on students' job readiness. This means that the 21st-century skills variable can explain the level of student work readiness. Based on the findings of this study, the research hypothesis, which states that 21st-century skills have a significant effect on job readiness, is acceptable. This can have implications for students to further improve technical and 21st-century skills in entering the job market.

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