

The influence of communication and teamwork skills on the work readiness of vocational high school students

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ABSTRACT: Vocational high schools (VHSs) aim to educate students who are ready to work upon graduation. The problem in Indonesia is the high unemployment rate of VHS graduates. Job readiness is essential for the successful inclusion of graduates in the workforce. The primary work skills that graduates must possess are communication and teamwork skills. This study aimed to analyse the influence of communication and teamwork skills on the work readiness of VHS students in Indonesia. This research was quantitative with an *ex-post-facto* approach. The population of this study comprised of 187 state VHS students in grade 12 studying building information modelling and design in VHS2, VHS3 and VHS7 in Surabaya, Indonesia. Data was analysed using path analysis. The findings confirm the importance of communication and teamwork skills in improving the work readiness of VHS students, which is followed by the recommendation to more thoroughly incorporate the development of these skills into the curricula of VHSs in Indonesia.

INTRODUCTION

The vocational high school (VHS) is a secondary-level education institution that provides knowledge and skills according to a particular field of work. Vocational high schools must be able to educate independent graduates with expertise or competence in specific fields of work. The graduates are expected to find work on the existing job market or create their own jobs. The main goal of vocational education is to create graduates who are ready to work. Vocational education is expected to provide specific, productive training with guidance from teachers to develop skills in specific industrial fields [1].

The challenge for VHSs are the constantly changing skills requirements by the industry, especially in the 21st Century. The 21st Century is known as the century of information technology, globalisation, the Fourth Industrial Revolution (4IR), and now the Fifth Industrial Revolution (5IR), etc. The changes occur quickly, are difficult to predict and happen in all aspects of life. They create opportunities if they can be appropriately utilised, but they can also become severe threats if they are not adequately anticipated [2].

These constant and rapid changes prompted by advancements in technology have also impacted on the skills needed in the workforce. Predicting skills that will be needed in the near future is very difficult because it depends on the specificity of each occupation and their sub-occupations that are the focus of the skill [3]. The 21st Century has created a need for skills that had not existed before or were marginalised, and eliminated skills no longer relevant [4].

Problem-solving, team working and communication skills are the skills most needed in the workplace today. Communication and collaboration are critical 21st Century skills because many current and future jobs require them. The survey results reported by Kenworthy and Kielstra pointed out that problem-solving (50%), teamwork (35%) and communication (32%) are the top three skills needed by companies [5].

The Partnership for 21st Century Skills (P21) highlights that the core of the P21 framework is called 4C: communication, collaboration, critical thinking and problem-solving, and creativity and innovation. Employability skills for the 21st Century include five significant skills: team player, self-motivation, verbal communication, problem-solving and being proactive [6].

Vocational high schools aim to educate graduates who are ready to work [7]. The problem is the high unemployment rate (UER) for VHS graduates. Based on the data from the Central Bureau of Statistics of the Republic of Indonesia, vocational graduates ranked second in UER after high school, amounting to 2,111,338 in August 2021 [8]. According to the data from the Central Bureau of Statistics in East Java, Indonesia, the UER for vocational graduates in East Java Province occupies the top position, with 11.89% in 2020. Judging from the district, the highest UER in East Java is in

Sidoarjo Regency with 10.97%, Surabaya City with 9.79% and Gresik Regency with 9.61% [8]. These problems have been exacerbated by the Covid-19 pandemic, which posed a challenge for students and graduates [4][9]. The results of interviews with teachers in VHSs offering building information modelling and design (BIMD) courses, and industry representatives as employers during practical work internships indicate that VHS students already have basic job skills, but are not yet really ready to work. There are work skills that these students do not yet have that are needed by the industry.

An important aspect in educating students who can compete and succeed in finding appropriate jobs upon graduation is developing their work readiness; and by doing so, hopefully reducing the unemployment rate among vocational high school graduates [10]. Vocational high school graduates have high job readiness if they have mastered the knowledge and skills matching the job requirements as stated by their prospective employer. Several aspects need to be addressed, so that graduates achieve high work readiness; namely, employability skills or soft skills [11].

Work Readiness (WR)

Work readiness is skills, knowledge and attitudes that will enable new graduates to contribute productively to achieve the organisational goals of their workplace [12]. Another definition of work readiness focuses on the extent to which graduates are deemed to have attitudes and attributes that make them ready to work or succeed in the work environment [13]. Work readiness shows a person's ability to complete work following the provisions without experiencing difficulties and obstacles with maximum results and by the specified targets. Work readiness is an individual's ability to work directly without requiring a time-consuming adjustment period in creating a product or adding value to a resource with maximum results per predetermined targets [14].

Communication Skills (CS)

Communication comes from the Latin words *communis* and *communicare*, which refer to making equal (common), to sharing or transmitting. Communication is the delivery of messages that aim to create the same perception or meaning between the sender (communicator) and the receiver (audience) [15]. It is the process of conveying information from one party, whether an individual, group or organisation as a sender to another party as a receiver to understand and open up opportunities to respond to the sender. Effective communication makes it easier for everyone in an organisation to carry out the tasks they are responsible for, and thus contribute to the achievement of organisational goals. Communication can be written, oral or nonverbal. It refers to writing and reading ability, speaking and listening ability, and nonverbal communication ability [16].

Teamwork (TW) Skills

Teamwork is defined as activities managed and carried out by a group of people with diverse abilities who have the same commitment to goals, performance measures, responsibilities, and the same approach. A team is a group of people working to achieve a common goal. When working together, they enjoy the work and can achieve the best, high-quality results from their collaboration. The ability to work in a team involves several aspects, such as collaboration, social intelligence, cultural awareness, acceptance of diversity, being able to influence other people, conflict resolution skills, and others [17].

Considering the above background in relation to VHS students in building information modelling and design courses it is necessary to research the effect of communication and teamwork skills on their work readiness in view of improving their employability in the regions with high unemployment rates, and specifically in Surabaya. The purpose of this study is as follows: 1) analysing the influence of communication skills on work readiness; 2) analysing the influence of teamwork skills on work readiness; and 3) analysing the joint effect of communication skills and teamwork skills on the work readiness of vocational students in building information modelling and design courses.

METHOD

This research is quantitative with an *ex-post-facto* approach. The variables of this study are communication skills, teamwork skills and work readiness. The research design model can be seen in Figure 1.

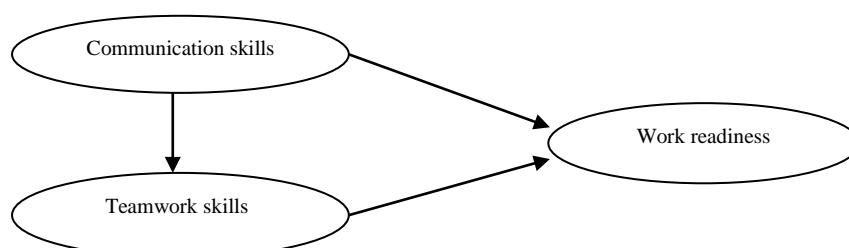


Figure. 1: Research design model.

The research was focused on the city of Surabaya, Indonesia. The research subjects were state VHS students in grade 12 in building information modelling and design courses. The vocational schools involved were: VHS2 Surabaya, VHS3 Surabaya and VHS7 Surabaya. The total population was 187 students. The sample size was calculated based on the Slovin formula to obtain a total sample of 128 students. The sample consisted of 73 male and 55 female students between 17 and 18 years old.

This research was conducted from June to September 2022. Data were collected using a questionnaire. There were three stages involved; namely, preparation implementation and data analysis.

The preparatory stage consisted of initial observations, preparation of research proposals and arranging research permits.

The implementation stage consisted of:

- 1) conducting a literature review on work readiness, communication skills and teamwork skills;
- 2) developing instruments: the instrument was developed in the form of a questionnaire with a Likert scale, and validation and trials were carried out to obtain valid and reliable data;
- 3) data collection and tabulation.

The research data analysis stage was conducted by descriptive analysis and path analysis. Descriptive analysis was used to describe the data for each variable with graphs and tables showing the average score of the respondents' answers according to the questionnaire results. Path analysis with SmartPLS was used to analyse the effect of communication and teamwork skills on work readiness.

RESULTS AND DISCUSSION

Communication Skills

Communication skills are the ability to convey information, ideas or materials to others. As mentioned above, communication skills can support the achievement of organisational goals. Communication skills in this study were measured by four dimensions and 14 statement items (CS1 to CS14); namely, oral communication skills (six items), written communication skills (four items), listening skills (two items) and visual communication skills (two items). The respondents' answers to the communication skills variable can be seen in Figure 2.

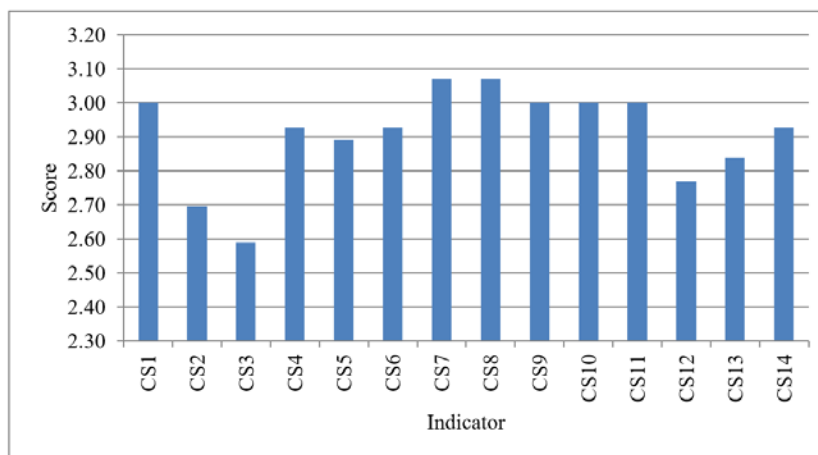


Figure 2: Average indicator scores of the communication skills variable.

Based on Figure 2, the average score for each indicator of the communication variable has been obtained. The highest average score has been obtained for CS7 (writing skills with correct, excellent grammar) and CS8 (skills in using applications/programs for writing). The lowest average scores relate to CS2 (speaking well in public) and CS3 (making exciting presentations). Effective written and oral communication is important for students, so it needs to be improved, especially oral communication which is not sufficiently developed.

Teamwork Skills

Teamwork skills relate to working with other people in groups to complete a job. Teamwork is accomplished by dividing tasks and responsibilities according to the group members' competence for maximum results. Teamwork skills in this study were measured by four dimensions and 18 statement items (TW1 to TW18); namely, team leadership (six items), team orientation (six items), adaptability (two items) and task collaboration (four items). The respondents' answers to the teamwork skills variable can be seen in Figure 3.

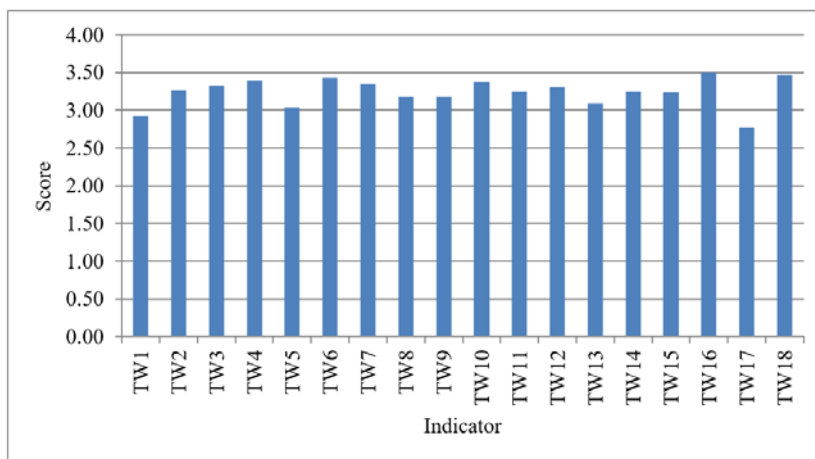


Figure 3: Average indicator scores of the teamwork skills variable.

Based on Figure 3, the average score for each indicator on the teamwork skills variable has been obtained. The highest average score has been obtained for TW16 (the division of tasks into teams can make it easier to complete work) and TW18 (can work in teams consisting of various backgrounds and cultures). The lowest average scores relate to TW1 (being able to become coordinators in work groups) and TW17 (preferring to do tasks in groups).

Work Readiness

Work readiness is the condition of someone ready to carry out a job with good results. Work readiness shows a mental attitude and skills that are applicable to a specific job. Work readiness in this study was measured by four dimensions and 25 statement items (WR1 to WR25); namely, personal characteristics (eight items), organisational acumen (eight items), work competence (five items) and social intelligence (four items). The respondents' answers to the job readiness variable can be seen in Figure 4.

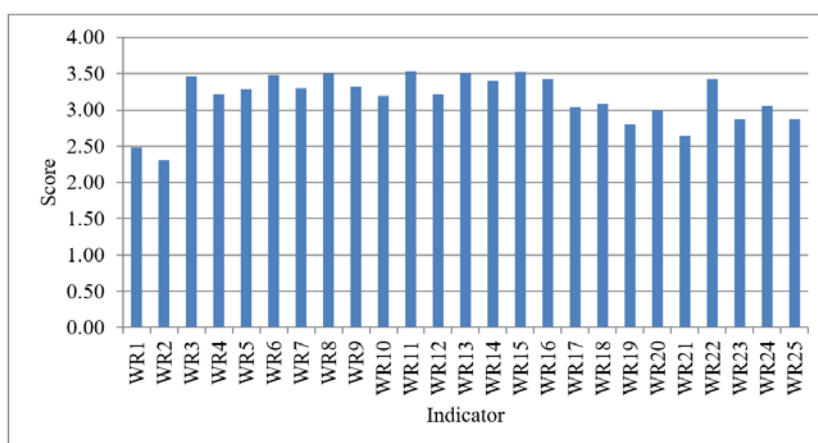


Figure 4: Average indicator scores of the work readiness variable.

Based on Figure 4, the average score for each indicator of the work readiness variable has been obtained. The highest average score has been obtained for WR11 (being able to work responsibly) and WR13 (accept differences of opinion from colleagues). The lowest average scores refer to WR1 (being able to work under pressure) and WR2 (being able to work within short time limits).

Results of the Variable Influence Analysis

The collected data has been analysed for the influence of communication skills and teamwork skills on work readiness. The results of the analysis can be seen in Table 1, Table 2, with the r-squared values in Table 3.

Table 1: The value of the direct influence between variables.

	Original sample (O)	Sample mean (M)	SD (STDEV)	T-statistics ((O/STDEV))	P-value
Communication skills -> teamwork skills	0.757	0.779	0.045	16.676	0.000
Communication skills -> work readiness	0.176	0.172	0.086	2.054	0.040
Teamwork skills -> work readiness	0.778	0.787	0.078	9.988	0.000

Table 2: The value of the indirect effect between variables.

	Original sample (O)	Sample mean (M)	SD (STDEV)	T-statistics ((O/STDEV))	P-value
Communication skills -> teamwork skills-> work readiness	0.589	0.612	0.060	9.810	0.000

Table 3: R-squared values.

	R-squared value	R-squared value adjusted
Teamwork skills	0.573	0.565
Work readiness	0.844	0.838

Based on Table 1, the *p*-value is less than 0.05, so the influence between the variables is significant. Each influence has a positive value. The following is an explanation of each variable.

Effect of Communication Skills on Job Readiness

Based on Table 1, it was found that communication skills had a positive effect of 0.176 on work readiness. A *p*-value of $0.004 < 0.05$ means significant. Communication skills positively and significantly influence the work readiness of vocational students in building information modelling and design courses. Communication needs serious attention in job readiness in the present and the future. Communication that develops with information technology will be essential in work. Professional communication is a general skill needed by workers [18].

Effect of Teamwork Skills on Job Readiness

Based on Table 1, it was found that the ability to work in a team had a positive effect of 0.778 on work readiness. A *p*-value of $0.000 < 0.05$ means significant. So, there is a positive and significant influence of the ability to work in teams on the work readiness of vocational students in building information modelling and design courses. The analysis results indicate a reasonably strong influence between the ability to work in a team and work readiness. Job readiness can be seen from the ability of workers to enter new communities, organise and adapt to them. Working in a team is essential in every job [19].

Joint Influence of Communication Skills and Teamwork Skills on Work Readiness

Based on Table 1, it was found that communication skills had a positive effect of 0.176 on work readiness, while the teamwork skills had a positive effect of 0.778. A *p*-value < 0.05 means significant. Based on Table 3, the r-squared value is 0.844 or 84.4%. So, it means that in the model communication skills and team work skills can explain work readiness by 84.4%, and the remaining 15.6% are influenced by other variables.

The teamwork skills variable has a higher coefficient than communication skills on work readiness. In order to improve the work readiness of BIMD vocational students, it is necessary to improve their teamwork and communication skills.

Finally, from a practical point of view to increase the work readiness of vocational students, communication skills and teamwork skills which are included in the employability skills must be included in the curriculum [20]. Especially, the ability to work in teams should get more attention because it has a higher effect on work readiness. Students who can communicate better in a team and co-operate in completing work will get better results.

CONCLUSIONS

Based on the data analysis and discussion, it can be concluded that:

- 1) Communication skills have a positive and significant effect on the work readiness of BIMD vocational high school students.
- 2) Teamwork skills have a positive and significant effect on the work readiness of BIMD vocational high school students.
- 3) Communication and teamwork skills jointly affect the work readiness of BIMD vocational high school students' skills competence by 84.40%, and other variables influence it by 15.6%.

The results of this study may provide information on how to increase the work readiness of vocational high school students, especially they may improve communication and teamwork skills by integrating them with the curriculum. Communication skills that have been positioned in a good category are written communication skills, while oral communication skills still need to be improved. Within teamwork skill collaboration tasks are in a good category, while team leadership still needs to be improved.

The limitation of this research is that the survey was conducted with BIMD vocational high school students in the last semester, so further surveys need to be carried out with employers, as well as the schools' graduates.

Recommendations from this study are as follows:

- 1) to cultivate vocational high school students who have good work readiness, it is necessary to incorporate teamwork and communication skills into learning;
- 2) to introduce changes in the curriculum to improve the soft skills of vocational high school students, especially in teamwork and communication, in addition to hard skills;
- 3) further research is suggested to analyse more factors that affect the work readiness of vocational high school graduates who have joined the workforce. .

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