

Development of Vocational School Facilities for Teachers to Prepare Graduates with Digital Talent and Employability Skills

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Abstract—Vocational education and training have an important role in the development of the whole person and the development of Indonesian society as a whole. Human development must be carried out as a whole, which includes the development of thinking power, heart power, physical strength, mastery of science, and technology. The success or failure of the role of vocational education can be measured by the balance of these two objectives, namely the development of the whole person and the development of the Indonesian society as a whole. Today's industry requires a workforce that has technical skills and employability skills. The preparation of vocational students to have technical skills and employability skills stems from the implementation of a scientific approach which is one indicator of the quality of learning. In addition to coaching and training, the acceleration of digital culture development in the company can be created through external hires who are digital talents who are able to create disruptive ways of thinking in an effort to create digital innovations and accelerate the adaptation process to environmental changes.

Keywords—vocational school (SMK), facility, digital talent, employability skill

I. INTRODUCTION

The strength of a nation's competitiveness lies in its human resources. This means that a developed nation is supported by human resources who have high competence. One of them is a competitive and skilled workforce born from quality vocational education that is relevant to the demands of the world of work that is constantly evolving. Thus, the world of education must also follow the developments and changes of the times. So steps are needed to improve vocational schools. One of the efforts made by the government is to issue Presidential Instruction No. 9 of 2016 concerning the revitalization of vocational high schools in order to improve the quality and competitiveness of Indonesian human resources.

With the enactment of the AEC, there will be liberalization in all fields automatically. One of them is the service sector which involves the placement of human resources, because

human resources are a determining factor for excellence in national and global competition [1,2].

In order to prepare graduates who are ready to work to fill existing job vacancies both locally, globally and internationally or to be independent by creating their own jobs, employability skills or skills to work need to be achieved at the highest level.

In the global era, citizens are not only required to master the ability to read, write and count like a few decades ago but are required to have a number of other competencies such as digital age literacy, inventive thinking, intellectual capital, interactive communication skills, social and personal skills and create quality and up-to-date works [1].

In line with this, Indonesia's Microsoft and IDC study in February 2018 also showed that 93 percent of jobs in the next three years will undergo digital transformation, 68 percent of jobs will be transferred to new positions that require retraining to be ready for digital transformation. As well as other facts, according to IMD data in 2018, Indonesia is ranked 62 in digital talent competitiveness in the global arena.

In facing the industrial revolution 4.0, there are two paths to take: First, to prepare the implementation of education that is a link and match between human resources and the needs of the times in the industrial revolution era. Second, in addition to preparing a link and match education, the prepared human resources must also be equipped with education on human values taught by the social sciences and humanities. When the exact sciences play a role in empirical technology development, the humanities sciences still play a role in maintaining human quality.

II. BASIC THEORY

A. Digital Talent

Digital talent or digital talent is someone who can not only use social media applications or digital technology, but people who have mastery and know how these digital services can

operate. In addition, digital talents are people who think digitally and have new approvals for their work, their vision and approach that will influence what they propose, design and implement. In addition, the talent possessed must be able to express itself. In digital talent, it can be analyzed with 3 scopes, namely; soft digital skills, hard digital talent and role digital skills (Figure 1) [3,4].



Fig. 1. Strategies to reduce the digital talent gap.

B. Employability Skills

The preparation of students to have technical skills and generic skills (employability skills) stems from the quality of the implementation of learning programs. In the implementation of the learning program there is an interaction between various factors, both raw input factors (students) and instrumental input. Several research results show factors that interact with each other in the learning process including the learning system, the learning environment that is created when the learning process occurs as a factor that mediates the development of student skills. The learning system is a description of the approach used by lecturers in implementing employability skills learning activities including: non-technical skills, including generic skills, essential skills, soft skills, key competencies, transferable skills, enterprise skills and general capabilities [1].

To answer the challenge of the need for a skilled workforce, a profile of vocational education graduates who have employability skills is needed, namely the ability to work which includes: (1) having characters that reflect the attitude of believers, noble, knowledgeable, confident and responsible in interacting effectively with the social and natural environment as well as in placing oneself as a reflection of the nation in the association of the world, (2) having work competence, (3) mastering ICT, (4) able to communicate in English, (5) physically and mentally healthy, (6) have literacy skills, (7) have a critical, creative, innovative and problem-solving oriented way of thinking, (8) have a communicative and

cooperative way of working, (9) are able to collect information/data and use information technology tools and media, (10) have integrity and discipline in carrying out their duties and carrying out obligations related to the profession signal (Figure 2) [1,5].

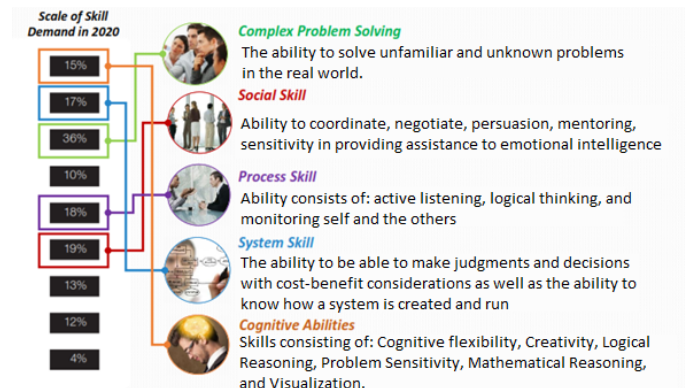


Fig. 2. Skill demand mapping.

C. Vocational School Facilities

Modern SMK building standards are needed to support the performance of both students, teachers, technicians and people who are directly involved in it. In designing the building, the SMK must consider how the building can be adapted and configured to meet future educational needs. Building systems in school facilities must be able to operate and be able to be maintained properly. Building systems include roofing, plumbing, electrical, heating and cooling systems, fire alarms, two-way communications, infrastructure technology, and security systems.

The condition of the SMK building based on the results in the field at this time is still a lot that does not meet the standards, especially the SMK building, both in terms of quality and quantity. The condition of the existing SMK building at this time still needs to be improved, especially building equipment and supplies that are adjusted to existing standards. The data in the field found that SMK buildings and equipment and equipment were still relatively minimal, many SMK buildings were found with; 1. Insufficient lighting in the room, both sunlight and existing lighting facilities. 2. The temperature in the room is hot, caused by the lack of ventilation and the absence of air conditioning. On the other hand, the building and roof designs are not appropriate. 3. There is no fire extinguisher in a fire prone area. 4. Inadequate toilets both in quality and quantity. The number of existing toilets does not match the number of students, in addition to the placement of toilets (maximum 30 meters) which are far from users. Then the lack and absence of toilet equipment such as; cleaning tools, hand washing, soap and air freshener. 5. Placement of cable installations that are still not neat.

Skills and work attitudes as one of the competencies that must be possessed by graduates can be created and developed during the learning process. Educational institutions as

institutions are required to provide supporting facilities and means, the involvement of educators in conveying and providing experience from all elements of work skills in the learning process. The effectiveness of developing work skills depends on their development in learning and student readiness [6,7].

III. IMPLEMENTATION METHODS

The methods and stages used in the Vocational Facility Development activities for Teachers to Prepare Digital Talent and Employability Skills can be explained in Figure 3.

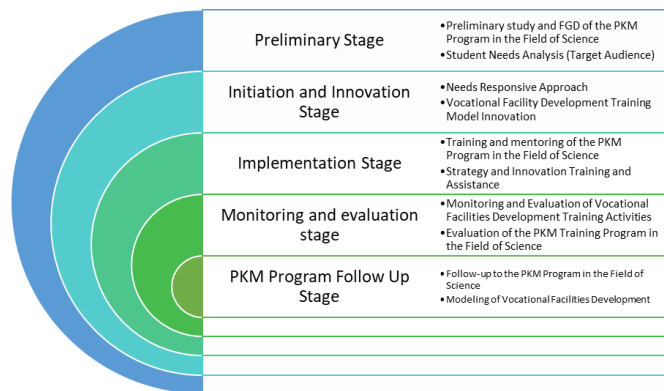


Fig. 3. Stages of activity method.

A. Stages of Activities

In general, the stages of this entrepreneurship-based community service program include: planning, implementing, and evaluating the program.

1) *Planning stage*: Need Assessment (NA), a preliminary study by the PKM team in the Field of Science has identified that the problem faced by vocational teachers in developing vocational facilities for teachers to prepare graduates who have Digital Talent and Employability Skills is the lack of understanding and socialization about how to utilize their expertise/discipline to prepare Digital Talent and Employability Skills. Besides that, teachers are still not able to capture the impact of technological developments, especially digital information technology to create and develop Employability Skills in the world of work and industry.

2) *Implementation phase*: The main activities carried out at this stage of implementation or implementation include, among others: (1) Strengthening socialization and communication for teachers who have development in digital talent and Employability Skills, (2) Guidance and Development of Vocational Facilities for Teachers to Prepare Digital Talent and Employability Skills (3) Training on Vocational Facility Development for Teachers to Prepare Digital Talent and Employability Skills (4) Strengthening and mentoring activities in an effort to maintain program sustainability.

3) *Evaluation stage*: The PKM implementation team in the Field of Science from LPPM UPI together with partner institutions as providers and transfer of technology will carry out direct supervision in the field related to program progress reports in carrying out development activities in the field of science by making input, process and output indicators. Process indicators are the extent to which SMK teachers are able to develop program activities and work targets to be achieved with students or target groups. The output indicator is the extent to which the performance of the development of the field of science can understand and apply knowledge in their field to be able to prepare Digital Talent and Employability Skills and their benefits for vocational high school graduates so as to reduce the gap between the qualifications of the industrial world and the business world for vocational high school graduates. In addition, the realization of the PKM goal is to encourage the creation of teachers in implementing their abilities in preparing Digital Talent and Employability Skills for Vocational High Schools.

IV. RESULTS AND DISCUSSION

A. Implementation of Activities

In accordance with the objectives of the PKM program in the Field of Science in Vocational Facility Development Training for Teachers to Prepare Graduates who have Digital Talent and Employability Skills. At this stage the PKM-BI team collaborates with Vocational High Schools in the Greater Bandung area. We provide information to stakeholders in the Greater Bandung area. Participants who generally come from Vocational High School institutions which have relevance to the training carried out and are the target targets of the BI PKM team to be able to provide training in conducting Vocational Facility Development Training for Teachers to Prepare Graduates who have Digital Talent and Employability Skills.

The challenge of Vocational Schools today is to prepare graduates who have digital talent and have employability skills or work skills, besides that there is a need for equivalence to create a link and match between schools and the industrial world so that the content of the Vocational School curriculum must also have a match between what is taught in schools and what is taught in schools. work in industry.

“Development of School Facilities to Prepare Digital Talent and Employability Skills Towards a Center of Excellence (CoE) Vocational School”, on this occasion the resource person explained how to develop digital talent and employability skills for graduates and collaborate with the industry so that Vocational High Schools can create a Center of Excellence or CoE in priority areas. Furthermore, it was also conveyed that the SMK curriculum with the new paradigm needs to be the attention of all parties so that the content in the new curriculum can be a provision for SMK graduates in facing the digital era as it is today. At the end of this session, it was continued with a discussion between the resource persons and teachers regarding the various readiness and obstacles of

SMK facing changes and renewal of the curriculum and its implementation in the field and expecting more intensive guidance and financial assistance from lecturers in Higher Education (UPI) to support the realization of SMK CoE.

With the holding of PKM BI, it is hoped that teachers can facilitate their students to have digital talent and employability skills so that they become graduates who are ready to use in the world of work, but can continue their studies to a higher level to higher education and become prospective entrepreneurs in various fields as expected by the Vocational High School Directorate. Directorate General of Vocational. With this training, the readiness of schools in developing facilities to support students' abilities to master digital talent and employability skills can be achieved in the future.

B. Monitoring and Evaluation

Monitoring and evaluation have been carried out since the PKM Science Field training activities were carried out. Money is mainly carried out on program management that is directly related to teaching activities to participants and participant development in making models and methods of SMK facilities that are in accordance with preparing graduates who have Digital Talent and Employability Skills in every field of majors in SMK, then from each model and method The training developed is assessed.

The evaluation carried out in the PKM activities in the Field of Science is in the form of the extent to which the training carried out can run effectively and efficiently. Besides that, at this stage, the PKM team provides direct consultation services to vocational school teachers who want to discuss and develop vocational facilities in preparing graduates who have Digital Talent and Employability Skills who are able to compete in the global world.

Various things become obstacles in carrying out this PKM activity and solutions to overcome these obstacles. The SKM teacher also always provides valuable input for the PKM research team so that the PKM in the Field of Science runs well and can achieve the expected target. The follow-up of the training activities carried out was in the form of training to increase the teaching capacity of workshop/laboratory management on practical subjects in SMK.

C. Research Data

The results of the data obtained in this study indicate that the data obtained provide significant results in understanding related to digital talent and employability skills.

TABLE I. TRAINING ASSESSMENT DATA

No	Ability in Digital Talent	Standard Deviation	Score
1	Understanding digital talent	0.539	4.1
2	Creative ideas in the field of digital talent	0.4	3.8
3	Ability to adapt creative ideas for digital talent	0.3	3.9
4	The ability to create creative schools and	0.447	4

No	Ability in Digital Talent	Standard Deviation	Score
	students, especially in the digital field		
5	Able to provide added value that distinguishes the school and the students I produce are different from others.	0.7	3.9
6	Able to create creative combinations of new digital fields to develop schools and students	0.489	3.6
7	Utilization of school facilities to develop digital talent	0.539	3.9
8	Utilization of practicum facilities in schools in developing schools and students	0.5	4.5
9	The use of the latest technologies such as IT that makes it easier to develop innovation and employability to develop schools and students	0.640	4.3
10	The number of graduates who have digital talent and work skills has increased every period	0.830	3.9
11	The number of graduates absorbed by IDUKA is always increasing	0.872	3.8
12	The number of school's newest facilities to increase digital talent and work skills continues to grow	1	4

The data in Table I shows where the score is from -5, indicating that it is at an average value of 3.97. From each aspect that is asked has a varied score, but the overall score produced provides significant results in terms of developing Vocational Facilities Development for Teachers to Prepare Graduates who have Digital Talent and Employability Skills. These results indicate that the ability of participants in this training activity can be continuously improved and can be implemented in a real way in SMK.

V. CONCLUSION

Facility development training for Vocational High School teachers in preparing graduates who have Digital Talent and Employability Skills providing coaching and training, accelerating the development of digital culture in Vocational High Schools and can be created through external recruiters who are digital talents who are able to create disruptive ways of thinking in efforts to create digital innovations and accelerate the process of adaptation to environmental changes.

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