

## Counting of Z-generation with the development of work-based characters in practices learning

Hera Yuliana<sup>1</sup>

<sup>1</sup> SMK Negeri 1 Salam, Magelang, Indonesia  
E-mail: <sup>1</sup> [herayuli80@yahoo.com](mailto:herayuli80@yahoo.com)

**Abstracts.** The purpose of this research and development is to describe the implementation of industry-based work character development in practical learning that can equip students as Z-generation and to define the feasibility level of industry-based work character-based practice learning methods that can improve student learning achievement as Z-generation. Used in this study is the method of research and development (R & D). The development procedure uses the Borg and Gall models. The data subjects were class XI ATPH students in 2 classes as a control and experimental group — data collection techniques with learning observation, validation questionnaire, and documentation. While data analysis uses qualitative and quantitative descriptive analysis, the results of the study produced a guidebook, learning tools, and assessment tools. Evaluation of products and learning devices is feasible and can be used for trials. While the effectiveness of the product developed can improve student learning achievement.

**Keywords:** Z-generation, fostering the character of industrial work, practical learning

### Introduction

The direction of government policy in the development of vocational schools today is a demand-driven alignment of the workforce while emphasizing the main principles of vocational support for the economy in efforts to alleviate poverty, reduce unemployment and increase competitiveness. This can be seen at the core of the president's priority program, which is to encourage no mismatch between vocational high school graduates and the needs of the business / industrial world.

"Link and Match" in revitalizing SMK is expected to create a generation of productive age people who are ready to work who have the skills competencies or ready-to-use skills needed by companies and the world of industry — considering that the company with the world of industry is in desperate need of a skilled workforce that is characterized by work ethic and discipline and has high competitiveness.

The situation and conditions that exist according to the observation of the researcher, where the researcher carries out the daily learning tasks at SMK Negeri 1 Salam, among others: 1) students or students who are studying

at school are currently between 16 and 18 years of age or born around 2000 , so that it includes the 'Z' generation where this generation is more dependent on smartphones and the internet compared to other generations in activities; 2) schools have established cooperation with the business world / industrial world, but do not yet have accurate information about the character of work required from the business world / the world of industry. As a result, many graduates have not been absorbed in the business world/industry; 3) vocational teachers in implementing learning have not been oriented to character development and have not considered the character/character of students as generation 'Z.'

The above statement is supported by data from the 2017/2018 NK 1 Special Vocational High School (BKK) that the graduates have been accommodated in the workforce by 46.19% of the 394 total students who have graduated. While specifically for the Plant Agribusiness Expertise Program which has gotten work as much as 58.24% of the 91 total graduated students from the expertise program. One reason is that vocational graduates do not have work

readiness; in this case, the aspect of work readiness (soft skills).

Thus the Vocational School is obliged to prepare the workforce by educating and training its students through the learning process using methods, media and useful learning materials by emphasizing and fostering the character of work in the business world / industrial world. Teachers as the spearhead of implementing education are required to be able to describe, plan, implement, evaluate and improve the learning process in schools according to the situation and conditions.

Vocational graduates' competency standards as desired by the business world / industrial world are changing; it should be followed by curriculum changes, changes in the ability of teachers or educators, learning processes, learning atmosphere, learning tools/media, learning resources and so on. The business world / industrial world expects graduates who have more character besides being technically skilled at work. On the other hand, students who are currently vocational school students are a generation born into the digital era with information technology that is so sophisticated. Thus educators or teachers are required to be willing and able to adjust to change or develop approaches, models, methods of learning that have been carried out.

Learning that should be done by teachers is learning that rests on the potential and characteristics of students, with teaching materials and assistive devices or learning media that are in line with the technological development of their generation, learning materials relevant to the world of work, fun learning approaches and world-oriented character work business / industrial world. Therefore research and development are needed through the development of industry-based character work in practical learning (Bikarja) on the 'Z' generation. This character development can be used in practical education and assisting teachers in improving learning culture in a direction that is approaching the work culture in the industry.

According to Hamdan S, et al. (2017: 41) strengthening character education (KDP) which is the central axis of improvement in national education, which is closely related to various government priority programs. There are five main values of character which are the priorities

of the ministries of education and culture, namely; 1). Religious, 2). Nationalists, 3) Mandiri, 4). Integrity, 5). Cooperation.

Character education is a fundamental study that must be instilled in students through a learning process to realize the dignity of character and civilization of a proud nation (Wardoyo, 2013: 90). Furthermore, Zubaedi (2011: 17) states that character education is a process of civilization and empowerment of ethical values in the environment of education units (schools), family environment, and community environment.

It is affirmed by Ambarastuti M, (2017: 10) three soft skills that are the most crucial and fundamental to be owned and continue to develop, especially in the early stages of work. These three things include communication skills, teamwork, and self-management (emotional intelligence).

Thus in the opinion of researchers, the business world / industrial world as work partners of Vocational Schools can establish various forms of cooperation and can determine the character of work for their workforce by the development of technological and information progress. Likewise, Vocational Schools are obliged to prepare their workforce by educating and training their students through the learning process using methods, media, and useful learning materials by emphasizing and fostering the character of work in the business / industrial world.

The business world / industrial world is one sector that has a very big interest in graduates of the education system (anonymous 2016: 7). The business world / industrial world as a partner or institution partner for Vocational High Schools (SMK). As a working partner for the business world/industry, it can carry out its role in several forms of cooperation, namely; fieldwork practice, industrial class, training center, guest or teacher training program, research collaboration, student certification, labor recruitment, production-based education training, and teaching factory. The business world / industrial world is the primary user of graduates from SMK.

The generation that is currently a student or student in school is a generation of 'Z.' According to Bening Pertiwi (2017: 23) said one of the main characteristics of the generation 'Z'

is being familiar and competent in utilizing technology that facilitates everything in their lives. But the negative side is that they become impatient individuals, difficult to appreciate the process and like everything that is instantaneous, while the positive side, they can do things effectively and efficiently. To prepare for the 'Z' generation in the future, technology-based learning alone is not enough. Learning needs to be supported by the development of character and character or character.

Along with human civilization that continues to grow, the needs and demands of competencies possessed by students are no longer oriented to positive skills. It will remain all the realms of competence which include affective, psychomotor, and cognitive to be essential to be mastered by students. The demands of optimizing all domains of competency certainly have an impact on the concept of education carried out by an educator.

As stated in the national education system law Number 20 of 2003, learning is the process of interaction between students and educators and learning resources in a learning environment. According to Slavin in Wardoyo (2013: 20), Learning is defined as a change in a person caused by experience. The experience that occurs is permanent, meaning that the changes that occur are not immediate, but through a process of interaction and systematic experience. The learning process takes place in three domains of competence, namely affective (attitudes), psychomotor (skills), and cognitive (knowledge). Thus, in the opinion of researchers learning is a process of communication between students and educators who aim to achieve a change in behavior through interaction between educators and students and between students.

Vocational education has a close relationship with the world of work, so practical learning plays a vital role in equipping graduates to be able to adapt to employment. Therefore they must be formed through a series of practice or learning practices that almost resemble the world of work. In teaching vocational methods, work skills require regular training. If trained directly with actual equipment it will produce workpieces by the plan.

Noting the description above, the formulation of the problems to be answered in this paper include: (1) how is the implementation of industry-based character work in practice

learning that can equip students as a generation of 'Z' ?, (2) how to provide world-based work character building industry in student practice learning that can improve student learning achievement as a 'Z' generation?

Based on the formulation of the problem as mentioned above, the objectives in this research and development are: (1) to describe the implementation of industry-based work character development in practical learning that can equip students as a 'Z' generation, (2) to describe the feasibility of the method industrial work character-based practice learning that can improve student learning achievement as a 'Z' generation.

### **Research Method**

This research was carried out with a research and development approach. The development procedure used the Borg and Gall models which were adapted and held a slight modification in the stages. According to Borg & Gall (1979) in Wine Sanjaya (2013: 133) detailed the steps of research and development into 10 levels, namely: initial research and information gathering, planning, initial product development, initial product testing, major product revisions, tests try the main products, revise operational products, operational test products for final product revisions, and disseminate and implement. However, referring to Borg's explanation, the ten stages can be simplified without reducing the value of research and development itself.

The stages in this study are as follows: (1) a preliminary study to gather information about development needs; (2) conceptual product development; (3) validating conceptual products through FGD activities; (4) revising conceptual products; and (5) theoretical product trials. Development is carried out until the fifth stage, which is to repair the initial product based on the results of the initial trial.

The development research period began analysis until evaluation starting in July, September 2018. The overall activity of this research was carried out in class XI of the Salam Agro Business Program in SMK Negeri 1 Salam in some two classes.

The technique of collecting data uses observation, questionnaires, and documentation. The observation sheet is used to obtain

information about the character needed by the world of industry, observing the character of the work of the students and observing the implementation of practical learning. Questionnaires are used for product validation along with practical learning tools. While documentation to obtain student learning outcomes. Data analysis techniques used qualitative and quantitative descriptive analysis. Data analyzed includes product validity data along with device data developed and effectiveness data.

## Finding and Discussion

### Preliminary studies

In the preliminary research begins with reviewing various literature and research results that support this research, the rules and guidelines for implementing practical learning based on the traditional curriculum, identifying competencies to be achieved and analyzing the need for development to be performed.

The next stage is an observation of the industry to gather information about the competencies and aspects of character needed in the industry and work climate in the industry. The tool for digging information uses a closed questionnaire that lists the elements of the role that are adapted to the character of industrial work practices. The results of observation activities in the industrial world can be seen in the following table.

**Table 1.** The survey results of alumni service satisfaction towards the work character of the industrial world.

Aspects	Satisfy (A)					$\Sigma$	Mean
	1	2	3	4	5		
Responsible	1	2	3	3	9	3.89	
Discipline		1	3	5	9	4.44	
Creativity		3	2	2	9	3.33	
Adaptation		2	2	3	2	9	3.56
Communication		4	2	3	9	3.89	
Work quality		2	2	2	3	9	3.67
Leadership		3	3	3	9	4.00	
Mandiri		1	3	2	3	9	3.78
Cooperation		2	2	2	3	9	3.67
Cleanliness		1	1	1	6	9	4.33
Total Mean					-	3.86	

From the data from the level analysis of the level of customer satisfaction in several industries, it still shows that number 3 has not met the target of achieving alumni quality at number 4, which is programmed from BKK N 1 Salam. For this reason, it is necessary to take corrective actions and follow-up from the school by developing aspects of the character / soft skills.

### Product Development

Based on the results of literature studies, field surveys and needs analysis including material, teaching materials, learning strategies, and information data for other needs analysis, an alternative that can be done is to develop business / industry-based character building coaching that is integrated into practical learning. The product for the development of work character is in the form of a method of fostering industrial work characters in practical learning arranged in the way of a guidebook. With this coaching method, it is hoped that it can give direction to the teacher in fostering and integrating work characters in the practice learning process so that the character of student work can be formed and entrenched.

In addition, other products produced from this development are learning tools in the form of 1) learning scenarios that contain sequences of steps to guide the work of teachers and students in practical learning activities, 2) job sheets that are packaged in the format of mastering concepts and working processes for each job practice, 3) RPP with the integration of industrial work characters.

### Validate

The validation process was carried out through MGMP teacher discussion forum (FGD) program Plant Agribusiness Expertise Program N 1 Salam by evaluating the product and instrument validation sheet to be used for development. Product validation in the form of a method of fostering work characters packaged in a guidebook consists of aspects of content, material, and language. The average overall element of the validation method of working character coaching is 91.67% with very good or valid value categories.

While the results of the validation of learning instruments, both the practice learning scenario, job sheet and lesson plan can be seen in the table below.

**Table 2.** Recapitulation of validation of learning devices

Device	% Mean	Skor	Res.
Job sheet	96.21	Very Good	Valid
Scenario	98.81	Very Good	Valid
RPP	95.59	Very Good	Valid

Based on the table above, all learning devices are declared valid can be used for the next trial.

#### Product revision

Product revisions aim to improve or improve the results of the initial development. Product revisions are based on the results of the peer teacher validation in the FGD forum. To promote the product guide book, the method of fostering work character, indicators need to be made to achieve each aspect of the character of work to be developed. So that the presence of indicators of achievement will be more comfortable in observing and assessing the character of work to be developed. Furthermore, for learning instruments, both scenarios, job sheets and lesson plans have been corrected according to suggestions so that practical learning devices are suitable to be used at the pilot stage.

#### Trials

The products and devices that have been produced are then tested, to test their validity. At this stage, the trial process through learning ornamental plant agribusiness practices with problem-based learning models. The steps in practical work are by the scenario of business / industry-based character building coaching that has been designed in the guidebook.

The trial was carried out on ATPH class XI students of SMK 1 Salam in 2 (two) classes. The trial process was carried out using the quasi method, where the XI ATPH 1 class as the experimental class and XI ATPH 2 class as the control class. Determination of the experimental and control classes was chosen by conducting evaluation tests several times for class XI ATPH students until one day the results of the tests in both classes received almost the same value.

The trial was conducted to examine the feasibility of practical learning scenarios based on the character of the business world/industry, the role of the teacher, observation of work

characteristics and practical performance. The trials were conducted twice and in the view were assisted by two teachers as observers.

The results of observations on the feasibility of industrial-based work character learning scenarios starting from the activities of students in the preparation, implementation, and evaluation stages were carried out well with an average percentage of 80.56%. In preparation, students are involved in appreciation and can commit. Similarly, in the implementation phase students can communicate with groups and work according to the instructions in the job sheet to the spirit, producing the results of innovative and creative practices involving the use of technology in the work process. In the final stage, students can analyze the work steps that have been carried out and evaluate until the students interpret their hard work.

Similarly, the teacher's activity goes according to the scenario and the average percentage of combat in learning is 89.93% in the excellent category. The teacher is fully involved according to his role in each stage of practical learning, starting from his position in preparing material, guiding, creating interest in learning, organizing media and learning resources, evaluating the process and results of practice.

As for the development of student work character in practical learning, the average of the nine aspects of character developed shows good criteria. The elements of work characteristics that need to be intensified are the aspects of creative, innovative and solving problems that still show enough categories.

For the assessment of learning outcomes in this development, trial is a psychomotor value (practice value). Practical scores include the score of work processes, work results, work attitudes and time which is the percentage. The amount of the control and experimental group practices can be seen in the following table.

**Table 3.** Recapitulation of practical scores

Groups	Score				Total Score
	Work Preparation (10%)	Work Results (50%)	Work Attitude (30%)	Time (10%)	
Control	8,3	8,4	8,3	8,1	8,08
Experiment	8,1	8,3	8,0	8,1	8,15

From table 3, the value of practice in the experimental class has increased, compared to the practical value in the control class.

### Conclusion

Based on the background of the problem, the purpose of research and development, literature review, observation data and discussion in the implementation of research and development that the researcher did as mentioned above, then some conclusions can be drawn as follows:

1. SMK Negeri 1 Salam, Magelang Regency, when this research and development was carried out, still had more than 50% of graduates in the relevant year who had not been channeled as workers. As an effort to improve the absorption of graduates, the researcher develops the learning process by fostering the character of the industrial work in practical learning.
2. Products developed by researchers, namely; the method of guiding work character guidance packaged in guidebooks, scenarios of learning processes, job sheets, lesson plans, and instruments after validation and improvement as needed can provide simplicity and simplicity of understanding of teachers and students in interacting in the practical learning process based on business character building / industry world.
3. This product of research and development has been implemented in the ATPH class XI of SMK 1 Salam showing results, namely; (1) the performance value of students in practical activities has increased, (2) the development of business / industry-based work characters for students with reasonable criteria, except innovation and problem solving aspects, (4) the teacher's role in learning vocational

practice is very good, (5) the feasibility of the scenario of business / industrial world based work character learning in good learning practice categories, and student activities in each stage of learning both.

4. The implementation of business / industrial world-based character building in practical learning (Bikarja) that researchers do on class XI students can improve work readiness for students as Z-generation who have known digital products since birth.
5. Products developed by researchers, namely; guidelines for fostering work characters, learning process scenarios, job sheets, lesson plans, and assessment instruments, all of which have been validated, so that it is feasible to be used as a reference by teachers, especially practical subject teachers in the implementation of their learning.

### References

- Ambarastuti, M. (2017). *Upgrade your soft skill*. Yogyakarta: Psikologi Corner.
- Anonimous. (2016). *Pedoman Pelaksanaan Mengembangkan Kerjasama yang Efektif antara Lembaga Diklat Kejuruan dan Industri*. Jakarta: SED-TVET Kemendikbud.
- Pertiwi, B. (2017). *Guru Wow Untuk Kids Zaman Now*. Jakarta: PT. Gramedia Pustaka Utama.
- Hamdan, S., dkk. (2017). *Strategi Implementasi Revitalisasi SMK*. Jakarta: Dit PSMK Kemendikbud.
- Wardoyo, S.M., (2013). *Pembelajaran Konstruktivisme, Teori dan Aplikasi Pembelajaran dalam Pembentukan Karakter*. Bandung: Alfabeta.
- Wina Sanjaya. (2015). *Metode Penelitian*. Jakarta: PT. Fajar Interpratama Mandiri.
- Zubaedi. (2011). *Desain Pendidikan Karakter Konsepsi dan Aplikasi dalam Lembaga Pendidikan*. Jakarta: PT. Adhitya Andrebina Agung).