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A STUDY ON STUDENTS' NEEDS ANALYSIS ON THE INDUSTRIAL WORK CULTURE CHARACTER

Arhamni Hamid^{1*}, Zahari Supaian², Anwar Ramli³, Saifullah Idris⁴

¹ Department of Educational Studies, Universiti Pendidikan Sultan Idris, Malaysia
Email: p20211002759@siswa.edu.my

² Department of Educational Studies, Universiti Pendidikan Sultan Idris, Malaysia
Email: zahari.supian@fpm.upsi.edu.my

³ Department of Educational Studies, Universiti Syiah Kuala, Indonesia
Email: anwarramli@usk.ac.id

⁴ Department of Educational Studies, Universiti Islam Ar-Raniry, Indonesia
Email: saifullahidris@ar-raniry.ac.id

* Corresponding Author

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Abstract:

Character has become a requirement that must be paid attention to in learning in vocational schools. However, the development of an instrument to assess the character of students in vocational schools is not yet available. The purpose of this study is to explain the need for analysis of the design of a character assessment instrument for SMK students in Aceh who are preparing to work in the industrial world. Character is a set of traits that define personality and morals. This study aims to describe the analysis of the planning needs of the industrial work culture character assessment instrument (IKBKI) for SMK Aceh students in implementing the industrial work culture character assessment. Data was obtained through a survey of 65 SMK students in Aceh who were given a questionnaire followed by a brief interview. The sample involved is 65 SMK students in Aceh. Students are selected with a purpose. Questionnaires were distributed to all students selected as a sample. The questionnaire was developed by the researcher. Data were analysed using Statistical Package for Social Science (SPSS) version 25.0 software for frequency, percentage, mean, and standard deviation. The results of the study show that the work culture character instrument (IKBKI) is needed to assess the development of the industrial work culture character of SMK Aceh students. The characteristics of industrial work culture that are evaluated are discipline, hard work, honesty, responsibility, and entrepreneurial spirit. The result of the needs analysis obtained is that students need an assessment of the character of industrial work culture as a reference in preparing themselves to enter the world of work and industry. Students' understanding of the need to

have good manners has been taught by teachers in character education strengthening programs and also through Pancasila moral education and the Pancasila Work Culture and Student Profile Strengthening Project, but the character of industrial culture has never been studied specifically. Because this instrument is not yet available, the assessment of the character of the industrial work culture has not been carried out, so it cannot be concluded whether the character of the industrial work culture of students who have completed vocational education so far is on target. whether it is good or not, or whether it meets the expectations of government and industry as users of the service. The character of industrial work culture is something that is an important and necessary consideration in the industrial world, known as attitude. The results of the preliminary study show that there is no instrument to assess the character of industrial work culture. On the other hand, the government and industry hope that students will be equipped with good morals when entering the world of work. On this basis, it can be concluded that it is necessary to design the Industrial Work Culture Instrument (IKBKI).

Keywords:

Industrial Work Culture Character Instrument, Elements, Needs Analysis.

Introduction

Vocational High School (SMK), according to the explanation of the National Education System Law (UU Sisdiknas) No. 20 of 2003 Article 15, is a secondary education that prepares students specifically to work in specific areas of expertise. Vocational education aims to improve students' intelligence, knowledge, personality, noble character, and skills to live independently and follow further education in accordance with the vocational programme, preparing students to work in certain fields. Currently, the relevance of vocational education to the world of business and industry in Indonesia is still low. There are still many vocational education graduates who do not work or do not work in their field; this gap is felt by the industry as service users.

The above opinion is reinforced by Government Regulation No. 29 of 1990, which states that vocational secondary education is an education that prioritizes the development of students' abilities to perform certain jobs. Vocational secondary education focuses on preparing students to enter the workforce and developing professional attitudes. Vocational high school students are recommended to be able to adapt to the field of work.

Decision of the Minister of Education, Culture, Research, and Technology of the Republic of Indonesia, number 165/M/2021 About the Centre of Excellence Vocational High School Programme of the Minister of Education, Culture, Research, and Technology In the results of the study, it was explained that learning in SMK is learning with a new paradigm that focuses on strengthening character competence and work culture in accordance with the student profile of Pancasila.

Next, in the decision note, principals, teachers, technicians and the SMK administration need to empower students' technical (soft skills and hard skills) competencies that suit the needs of the world of education. work, as well as develop a character that is in line with the values of Pancasila. Vocational education is secondary education that prepares students to work in a specific field. formal educational institutions that prepare their graduates to work with

knowledge, skills, and work attitudes in certain fields that suit the needs of the business world and the industry world (Resolution of the Minister of Education, Culture, Research, and Technology of the Republic of Indonesia number 2021).

Based on the understanding above, it can be concluded that vocational education is formal education to provide knowledge and competence in preparing students to work in accordance with their field of expertise. The reality in the field of SMK graduates being graduates with the highest unemployment rate based on data from the Central Statistics Agency (BPS) released a report on the number of unemployed in Indonesia until February 2022, reaching 8.40 million people. This number is down 350,000 compared to February 2021. Based on the percentage, the open unemployment rate (TPT) in February 2022 was 5.83 percent, down 0.43 percentage points compared to February 2021 at 6.26 percent. This figure increased compared to February 2020, exactly one month before the World Health Organisation (WHO) announced cases of transmission of the COVID-19 virus as a global pandemic. It is known that the TPT rate in that year was 4.99 percent (BPS, 2022).

The total unemployment in Indonesia among vocational high school graduates (SMK) is the highest based on the education level category, which is 10.38 percent. "If viewed based on the highest education completed by the workforce, the TPT in February 2022 has a similar pattern to February 2021. In February 2022, the TPT of SMK graduates was still the highest compared to graduates of other educations (BPS, 2022).

In 2019, there were statements related to complaints from the business world about low labour productivity (soft skills). The most interesting are the results of the JETRO (Japan Foreign Trade Organisation) study in 2019, which said it involved more than 13,000 respondents from Asian and Oceanian countries. This study was conducted in Indonesia against 1,726 Japanese companies operating in Indonesia (JETRO, 2019).

In 2017, the government also called for the strengthening of character education (PPK) to be implemented in education units at all levels. However, if you look at the actual practice in the field, the education that takes place in Indonesia focuses more on knowledge or intellectual intelligence alone, even though attitudes or moral values have a very large role in determining a person's actions. According to Nia Fuji Lestari et al. (2021), many citizens of this country are caught in cases not because they have low knowledge but because of bad morals, Next, the current problem is that it is still rare to find a comprehensive, valid, and reliable character education assessment instrument that can be used by teachers and students to accurately measure the character of industrial work culture. Teachers still face difficulties in organizing character education instrument. This is in line with the study conducted by Zuliani (2017).

If the matter is not dealt with, it will cause losses felt by students in terms of material loss, age, and time spent pursuing education. Losses are also on the part of the government because they have budgeted large funds in the field of education, but the results are not as expected. Revitalization and improvements continue to be carried out to fulfil the purpose of the implementation of the vocational school. As a result of interviews with several stakeholders in the field of vocational education, until now there has been no instrument to measure the character of industrial culture to be used in the context of vocational secondary schools. Therefore, this study was conducted to develop an instrument to measure the character of

industrial culture that will be used to measure the character of discipline, honesty, hard work, responsibility, and entrepreneurship.

As a result of interviews with several stakeholders in the field of vocational education, until now there has been no instrument to measure the character of industrial culture to be used in the context of vocational high schools. Therefore, this study was conducted to develop an instrument to measure the character of industrial culture that will be used to measure the character of discipline, honesty, hard work, responsibility, and entrepreneurship. Based on the above, the researcher has an interest in conducting a study by developing an instrument that will be tested for validity, reliability, and usability so that teachers and students of SMK in Aceh can use the instrument as a measuring tool to measure the character of industrial work culture.

Research Methodology

The methodology in this research uses the Design Development Research (DDR) method. DDR is a research method for developing and testing products that have begun to be developed in the world of education. There are various kinds of research methods that can be used as references in development research, one of which is DDR. (Richey and Klien, 2007). The approach to conducting research is dynamic and continues to change over time. Starting from a qualitative and quantitative approach, the research moved to mixed methods and then to multi-methods called Design Development Research (DDR). This approach is suitable for use in a variety of research that is characterized by the final production of research such as models, modules, frameworks, taxonomies, and others research that will produce something innovative (Saedah Siraj, 2021).

Design and development research, which is more synonymous with the acronym DDR, was developed by Richey and Client in 2007. Research methods in the DDR approach are basically the same as in other research approaches. However, Richey and Client (2007) have made improvements to existing research methods to meet the needs of practitioners and researchers in carrying out impactful research. (Mohd Ridhuan, 2021)

This research uses a multi-method approach. Survey methods are also conducted to obtain comprehensive and fast information (Chua, 2022). Data was taken from 65 SMK students from Aceh. The instruments used are those developed by the researcher from the literature review, past instruments, and discussions between the researcher and experts. This instrument contains three parts, namely Part A: Demographics of Respondents and Part B: Background. Next, Part C is related to the level of agreement regarding the domain of industrial work culture character values. The five elements of industrial work culture consist of discipline, hard work, honesty, responsibility, and entrepreneurship. A 5-point Likert scale was used in Part C to see the respondent's agreement response to the items presented, starting from a Likert scale of 1 for strongly disagree to 5 for strongly agree. The instrument was distributed face-to-face to the respondents.

A pilot study was conducted before the actual study was conducted to check the reliability and validity of the instrument. A pilot study is one of the most important activities for any survey study because it is used to test the best method of administering and interpreting the instrument, as well as identify the sample and the appropriateness of the analysis method (Mohd Najib, 2003). First, the questionnaire was given to three experts for content validity. Then, the

questionnaire was distributed to 65 respondents who were not the actual study respondents. Then the reliability value of the instrument was calculated based on the Cronbach Alpha value, as shown in Table 1.1. The accepted Cronbach Alpha value must be more than 0.7 (Azar & Bayat, 2013).

Table 1.1: Cronbach's Alpha Value For Each Element Of The Needs Analysis Questionnaire

Element	Cronbach Alpha Value	No of items
Discipline	0.836	18
Hard Work	0.702	14
Honest	0.872	13
Responsible	0.811	13
Entrepreneurial	0.806	12

The descriptive statistical data analysis described the frequency, percentage, standard deviation, and mean used for study reporting. Statistical Package for Social Science (SPSS) version 25.0 was used to analyse the data. The interpretation for descriptive analysis is based on the interpretation of the mean score by Ghazali and Sufean (2016), which states that the low level is 1.00–2.00, the medium-low level is 2.0–1.00, the medium-high level is 3.01–4.00, and the high level is 4.01–5.00.

Findings

A total of 65 students in the second level of Aceh Vocational School were selected. All students provide answers to closed questions only. Therefore, a discussion of the findings is as follows: Table 1.2 shows a summary of Part A in questionnaire form, namely the demographics of the respondents.

Table 1.2: Demographic Analysis Of The Respondents

	Aspect	Percent (%)
Gender	Male	49 (87.5%)
	Female	16 (12.5%)
Field of study	Electrical Avionic	23 (35.4%)
	Airframe Powerplant	15 (23.1%)
	Aircraft Machining	27 (41.5%)

If you look at Table 1.2, the number of male students (N = 49) exceeds the number of female students (N = 16). So, the total number of respondents involved in this research analysis stage was 65. Respondents had three types of certificates in their field of study, namely Electrical Avionic (N = 23), Airframe Powerplant (N = 15), and Aircraft Machining (N = 27).

The next step is to look for findings that answer the three research questions. The first research question is 'i): Is it necessary for industrial work cultural characteristics to be implemented and familiarized in the school environment; ii): Has there been an assessment carried out on the character of the industrial work culture; iii): Is it necessary to assess the development of the character of industrial work culture?

**Table 1.3: Respondents' Consent For Respondents' Agreement
With The Need For Industrial Work Culture Characteristics**

Aspect	Consent	Percentage (%)
Is it necessary for industrial work cultural characteristics to be implemented and familiarized in the school environment?	Yes	100.0
	No	0.0
Has there been an assessment of the character of the industrial work culture during this time?	Yes	0.0
	No	100.0
Is it necessary to assess the development of the character of industrial work culture?	Yes	100.0
	No	0.0

Based on the research findings in Table 1.3, it is clear that all students, with a percentage of 100.0% (N = 65), think it is necessary for industrial work culture characteristics to be implemented and familiarized in the school environment. All students with a percentage of 100.0% (N = 65) also stated that so far, no assessment has been carried out on the character of industrial work culture. All students with a percentage of 100.0% (N = 65) stated that it was necessary to assess the development of the character of industrial work culture. Next, to answer the fourth research question, a 5-point Likert scale was used to determine its suitability for all elements of the industrial work culture character required by respondents, namely: discipline, hard work, honesty, responsibility, and entrepreneurship.

Table 1.4: Character Discipline

Item	Mean Score	Std dev	Score req.
I read the rules and regulations that apply at school	1.25	0.434	Necessary
I am on time for school	3.35	0.571	Necessary
I got to class on time	5.00	0.000	Necessary
I follow the dress code	5.00	0.000	Necessary
I have used the attributes according to school regulations	4.97	0.174	Necessary
I always respect teachers both inside and outside class time	4.85	0.364	Necessary
I follow the lessons in class with full discipline	4.97	0.174	Necessary
I asked the teacher for permission to leave class if I was bored of studying	5.00	0.000	Necessary
I get angry at the teacher if I don't give permission to go to the toilet	4.94	0.242	Necessary
I will find an excuse to leave class if I don't like the teacher's way of teaching	4.12	0.331	Necessary
I will encourage my friends to leave because they don't like the teacher's way of teaching	1.25	0.560	Necessary
I will make a mess if I feel bored in class	2.26	1.241	Necessary
I sit in the cafeteria if I don't like studying with a teacher	1.97	1.436	Necessary

Item	Mean Score	Std dev	Score req.
I won't go to class if I don't like one subject	2.25	1.212	Necessary
I complete the assignments given by the teacher within the specified time	2.00	1.358	Necessary
I studied seriously with the aim of gaining knowledge as a preparation for the future	4.68	0.562	Necessary
I have made notes on the problems that have been resolved for improvement	4.34	0.834	Necessary
I try to improve myself	5.00	0.000	Necessary
Average Agreement Score	3.733	0.527	Necessary

Table 1.4 shows that the average score of approval for the discipline character required by respondents is 3.733 (S.D. = 0.527). In general, they strongly agree that they really need the recommended character of discipline.

Table 1.5: Character Hard Work

Item	Mean Score	Std dev	Score req.
I am active and enthusiastic in studying	4.77	0.580	Necessary
I feel happy when studying	4.97	0.174	Necessary
I am happy when I learn new things	4.97	0.174	Necessary
I will try to find information regarding the assignments given by the teacher	4.80	0.403	Necessary
I feel a loss if the teacher is not present to provide knowledge	4.34	0.735	Necessary
I feel excited when the teacher gives assignments	4.26	0.796	Necessary
I do not depend on other people to do my work	4.92	0.269	Necessary
I repeat the lesson review if I still don't understand the teacher's explanation	3.75	0.685	Necessary
I will ask the teacher if I don't understand something	2.34	0.906	Necessary
I repeat studies with friends to improve my understanding of a subject	3.46	1.562	Necessary
I follow the extra-curriculum program required by the school	4.05	1.217	Necessary
I take part in optional extra-curriculum activities that are not required to improve my performance	4.12	0.331	Necessary
I like taking part in competitions held by the school	2.95	0.943	Necessary
Average Agreement Score	4.130	0.675	Necessary

Table 1.5 shows the average agreement score for the hard work character required by respondents with an average agreement score of 4.130 (S.D=0.675)

Table 1.6: Character Honest

Item	Mean Score	Std dev	Score req.
I do my assignments with full confidence	3.34	0.957	Necessary
I do my assignments by asking friends	2.54	0.831	Necessary
I finished the exam questions asking friends	2.91	1.221	Necessary
I ask for my friends' approval if I want to see the results of my friends' assignments	2.83	0.993	Necessary
I admit to the teacher when I take assignments instead of my friends	2.95	1.230	Necessary
I tell the teacher if I don't understand how to complete the assignment	4.26	0.796	Necessary
I returned the loan in the form of pens and books that I borrowed	4.92	0.269	Necessary
I paid back the pocket money loan I asked my friends for	3.54	1.288	Necessary
I took a friend's things without his knowledge	4.92	0.269	Necessary
I exchange items I don't like with friends without telling them	3.71	0.701	Necessary
I took a friend's item with the other friend's knowledge, not with the owner's permission	3.65	0.672	Necessary
I make daily activity reports	4.08	0.797	Necessary
I set learning achievement targets	3.11	1.002	Necessary
Average Agreement Score	3.596	0.848	Necessary

Table 1.6 shows that the average score of approval for the honest character required by respondents is 3.596 (S. D = 0.848). In general, they agreed that they really needed the honest character suggested.

Table 1.7: Character Responsible

Item	Mean Score	Std dev	Score req.
I only study if there is an assignment from the teacher	2.66	1.189	Necessary
I carried out the task of cleaning the classroom without being asked	2.85	0.972	Necessary
I agree to dispose of rubbish appropriately	1.49	0.664	Necessary
I am willing to water the flowers in the school yard	1.63	0.780	Necessary
I repack the workshop after using	1.62	0.784	Necessary
I put workshop items in their original places after using them	2.89	0.793	Necessary
I throw rubbish everywhere	2.68	0.752	Necessary
I am active in scout activities	1.34	0.538	Necessary
I am active in activities run by OSIS	2.40	0.632	Necessary

Item	Mean Score	Std dev	Score req.
I am active in holiday activities	2.40	0.632	Necessary
I like to accept other people's opinions	3.00	1.046	Necessary
I prepare when taking exams or tests	1.60	0.725	Necessary
I always try to convince other people's ideas	2.63	0.911	Necessary
Average Agreement Score	2.24	0.801	Necessary

Table 1.7 shows that the average score of approval for the responsible character required by respondents is 2.24 (S. D=0.801). in general, they agreed that they really needed the recommended responsible character.

Table 1.8: Character Entrepreneurial

Item	Mean Score	Std dev	Score req.
My co-workers expect me to give advice if there is a problem	2.72	1.008	Necessary
I accept other people's ideas even if they don't match what I think	2.62	0.979	
I give different ideas from people in general	2.34	1.149	
My friends asked me for ideas because they thought they had better ideas	2.74	0.906	Necessary
I enjoy being in forums to share ideas and discuss to find good ideas	2.86	0.726	Necessary
I like to try things if I think they are good	3.15	1.107	Necessary
I'm lazy about following developments in information and technology	2.94	0.966	Necessary
I enjoy seeing information about the business world and the industrial world	2.78	1.008	Necessary
I enjoy discussing with friends about developments in the business and industrial world	2.78	1.023	Necessary
I am excited about the results of my efforts.	2.78	1.008	Necessary
I am able to solve all my problems myself without the help of others	2.62	0.804	Necessary
I feel happy when working in a team because it produces better work	3.11	1.002	Necessary
I love hearing other people's opinions	2.78	1.008	Necessary
Average Agreement Score	2.572	0.976	Necessary

Table 1.8 shows that the average score of approval for the entrepreneurial character required by respondents is 2.572 (S.D. = 0.976). In general, they agree that they really need the recommended entrepreneurial characteristics.

Discussion

Thomas Lickona, who defines character as "an internal character that can be trusted to respond to situations in a morally good way," Additionally, Lickona adds, "Inspired character has three

interrelated parts: moral knowledge, moral feelings, and moral behaviour" (Lickona, 1991). In the literature review, it was also found that industrial work culture needs to be developed among vocational schools as capital for students to enter the world of business and industry. However, in the existing literature review, there is no instrument to measure the character of the industrial work culture of vocational school students.

This study was conducted following a review of the literature related to industrial development in various developed countries, so it became the basis for the need to develop the industrial working character of vocational school students in entering the world of industry at an international level. Furthermore, from the literature review, work characteristics from various developed countries become the principles and requirements of industrial culture characteristics fostered among Aceh SMK students. Next, refer to the Strategic Plan related to character strengthening as well as the Ministerial Regulation of the Indonesian government regarding the need for character development among students. It is necessary to create an instrument to evaluate the development of industrial work culture among Acehese vocational students.

Conclusion and Recommendation

There are several research questions that are studied in the requirements analysis phase, namely:

1. Is there an industrial work culture character education programme?
2. Is there an instrument to assess the character of industrial work culture?
3. Is it necessary to create an Industrial Work Culture Character Instrument (IKBKI)?

As a result of the questionnaire and the analysis of the students' needs, the answers to the questions from the problem were found: first, the industrial work culture character education programme was organized to be implemented in the activities of SMK students. Second, there is no instrument to assess the character of the industrial work culture, and thirdly, it is concluded that an instrument to assess the character of the industrial work culture needs to be developed.

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