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Vocational school students' perceptions toward science learning activities in the context of fashion design

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Abstract

The structure of the vocational school curriculum is different from the structure of the high school curriculum in that the vocational school curriculum contains vocational subjects which causes students to set aside non-vocational subjects such as science. One of them is science subjects, whose role is unknowingly very important because the learning process prioritizes direct experience and does not become an important concern for students. The purpose of this study was to explore empirical data regarding the perceptions of vocational school students with the expertise of Fashion Design regarding the science learning process. So far, very few or even rare empirical reasons have been found for the perceptions of Vocational High School students of fashion skills regarding the science learning process. This research uses a type of case study research method with a quantitative and qualitative approach. The sampling process in this study used purposive sampling with participants totaling 37 students with an age range of 15–16 years. The instruments used in this study were questionnaires and interviews. The results of the study revealed that there were several different student perceptions in terms of interest, competence, effort, pressure, and values related to science learning activities in fashion design vocational schools.

Keywords: Science learning, vocational school, students' perception, fashion design

1. Introduction

The general understanding of clothing is a fibrous material, sewn or not sewn, worn or draped to cover the human body. Clothing is a very important part for humans because the clothes worn can reflect the personality and social status of each user. Therefore, many pay attention to dress harmoniously, beautifully and attractively (Baniaji et al. 2018).

Talking about the world of fashion, there have been many changes for the sake of flexible changes. As time goes by and the development of life in modern times like today, many new fashion models have emerged. In addition to the new models, there are also many old models modified by collaborating between traditional clothing and modern clothing. Because in essence fashion will never be timeless. So that finally the knowledge of fashion is considered important. Therefore, many schools and courses open up learning about the science of fashion as a career development.

Vocational high school is one of the institutions that creates jobs and prepares students to enter the world of work and turns students into productive and skilled workforce. Vocational Higher Education prioritizes the readiness of its students to enter the job market and develop a professional attitude. The vocational school curriculum includes areas of expertise, competency programs, and competency packages to meet the goals of vocational schools. One of its divisions is in the field of tourism with a fashion design expertise program (Herin and Sawitri 2017).

The curriculum structure for vocational school is certainly different from the curriculum structure for senior high school. The vocational school curriculum consists of nine compulsory subjects, vocational subjects, local content and self-development. The existence of these vocational subjects can cause vocational students to ignore non-vocational subjects. For example, science subjects, which are unknowingly related to each other and occupy the same important position as vocational subjects. Science learning activities carried out so far, even in vocational schools, only focus on cognitive aspects and have not led to an increase in students' science process competence (Ramdani et al. 2021).

In fact, the role of science is very important because the learning process prioritizes direct experience to develop students' competencies in order to be able to understand the natural surroundings through the process of "finding out" and "doing". This process will help students to gain knowledge at a high and deep level (Abdika 2021). including in this case the Vocational High School students of the Fashion Design expertise program. For example, the concepts of units and measurements are closely related to the Fashion Design major. The relation is that a fashion designer indirectly involves the concept of measurement in the activities of drawing the human skeleton, making designs, measuring the consumer's body, and making patterns in designing clothes. It is proven that the role of science education in fashion design is also very important.

However, empirical facts based on the experience of researchers show that vocational students, specifically with the expertise in fashion design, do not see science as a very important lesson in supporting their competence. So far, very few or even rare empirical reasons have been found regarding how the perceptions of fashion skills vocational students have regarding the science learning process in vocational schools. Going deeper, research in the field of science education very rarely reveals the interests, challenges, efforts, and values obtained by vocational students when carrying out the science learning process (Maknun 2015). Therefore, the purpose of the researchers in conducting this research was to seek to find a reference or empirical data regarding the perceptions of vocational high school students in fashion design regarding the science learning process.

2. Literature Framework

2.1 Aesthetics in the context of science education

Vocational High Schools are secondary educational institutions that prepare graduates for the world of industry and the world of work as stipulated by Legislative Decree No. 29 of 1990. Science learning at the vocational school level has four main components, namely attitudes, processes, products and applications. Science as a product is a collection of knowledge, a set of concepts, theories, facts and laws. The process is a settlement procedure using the scientific method. Attitude is the attitude taken and developed by scientists to achieve the desired results. In application, science theories create technologies that make life easier (Fatimah 2017).

Fashion design is the science and art that studies the application of design, aesthetics and beauty to clothing and ornaments (Venkatesh et al. 2010). The terms aesthetics, art and beauty can be seen and interpreted in the same way by every human being, those who have never been involved in the world of art. Art is defined as beauty and aesthetics. Aesthetics is defined in the same way as beauty, and beauty itself is simply defined as pleasing. Humans are said to be "animal rationale" by Aristotle, and according to Cassirer humans are "animal symbolism", so humans as creatures who enjoy beauty are called "animal aesthetics". People who want to beautify themselves, and people who want to beautify their environment. People also love beautiful clothes and jewelry, and try to

stay attractive (Bloch and Richins 1992).

2.2 Science learning process

In accordance with the recommendations announced by UNESCO in 1996 in formal and informal learning must provide participants with learning experiences through learning to know, learning to do, learning to be and learning to live together (Dewi and Primayana 2019). This opinion confirms that science learning will be easily understood if it is directly observed. Field observation facts state that there are still many teachers who use the lecture method to deliver material in class. Each learning material delivered in class has its own characteristics, but not all learning material can be delivered using the lecture method.

The purpose of the learning process is to train students to think and make decisions, not just listen and act. This is in accordance with what was revealed by Holbrook (2003) stated that "Science is easy to learn when what is learned makes sense from the student's point of view and is relevant to human life, aspirations, and interests" (Ke *et al.* 2020).

2.3 The interest in the science learning

Interest is one of the factors that influence the quality and learning outcomes achieved by students in a particular field of study (Furtak and Penuel 2019). Students who are interested in learning will pay more attention to lessons, develop interest and enjoyment over time, and become more active and involved in learning activities. In the context of the vocational subjects, interest can cause students to motivate to learn non-vocational subjects. For example, physics subjects, which are unknowingly related to each other and occupy the same important position as vocational subjects. There are many kinds of interest as represented:

- Competencies acquired by students after studying science: After learning activities, students will know the level of success in learning. Learning outcomes will not be immediately visible when students follow the learning process, but after learning activities. In order to attain this competencies, students have to understand what they have learned in the classroom. Assessment of student learning outcomes includes everything that is learned in school, including knowledge, attitudes, and skills that are related to the subjects taught to students" (Said and Muslimah 2021).
- Efforts made by students in learning science: Students who are committed and have a high level of hard work to learn Science tend to solve every question given. Therefore, students who work hard and are involved in learning science have an effect on improving student learning outcomes. Students who are serious in learning, earnest, tenacious in learning, work tirelessly, will not stop until the goals and what they want are achieved.
- Feelings felt by students when learning science: Media can convey messages and provide stimulation to students' thoughts and feelings, thus enabling the learning process within them (Aliyyah, Puteri, and Kurniawati 2017). Everything that is able to convey learning messages and stimulate students' attention, thoughts and emotions so that the learning process takes place is also called learning media. In addition, students also need self-confidence to avoid feeling tense when studying science. High self-confidence is also very beneficial for the development of personal character.
- Perceived value after learning science: The level of success achieved by students in the learning process is represented by learning outcomes. The learning outcomes achieved by a student provide an overview of their level position relative to other students. This can be determined by using learning outcomes to find out whether a person has gone through a learning process and whether knowledge, skills or attitudes have changed. Learning outcomes are changes that occur in individual behavior that can be observed and measured in terms of knowledge, attitudes, and skills (Ardoin, Bowers, and Gaillard 2020).

3. Research Method

3.1 Research design

This research uses a type of case study research method with a quantitative and qualitative approach. The case study method is a comprehensive and focused method for uncovering the background, status, and interactions of certain individuals, groups, institutions, and communities with their environment (Jason and Glenwick 2016). The quantitative approach in this study is a numerical method to describe observations of objects or variables whose numbers are part of the measurement. The quantitative approach refers to the use of descriptive statistics. Meanwhile, a qualitative approach is a form of research in which the researcher is part of the research process as a participant in the collection and analysis of data, together with the informants who provide the data (Gentles et al. 2015). In this study, researchers used the interview method as a qualitative approach.

3.2 Participants

The population is a generalized area consisting of objects/subjects that have certain characteristics and characteristics determined by the researcher to study and draw conclusions from them. To achieve the goals to be achieved in this study, the researchers focused on the participants in this study, namely grade tenth (fashion design major) at one of the vocational high schools in the Garut city. As a population, namely all students of Fashion Design from grade tenth to class XII which consists of 7 classes.

The sample is a small part of the number and characteristics of a population. The sampling process in this study used purposive sampling, which means "a sampling technique using certain considerations" (Sharma 2017). Certain considerations in this study are the convenience of researchers in accessing participants. In this study the sample chosen was grade tenth, totaling 37 people representing all grade tenth (fashion design major) students. The participants involved in this study were grade tenth students at one of the vocational high schools in the Garut city majoring in fashion design, totaling 37 students. All these students have an age range of 15–16 years. Basically, all students follow the science learning process that is carried out in class. Within a week they have to attend science classes within 3 hours (135 minutes).

3.3 Instruments

The research instrument is a tool to measure observed natural or social phenomena (12). The instruments in this study were presented in the form of questionnaires and interview guidelines. Questionnaire grids and interview guidelines can be seen in the table below.

Questionnaire is a data collection technique in which respondents respond by using a prepared list of questions or statements and selecting the answers provided. The questionnaire in this case is a closed questionnaire, namely a questionnaire that is directly selected and answered by the respondent. For scoring in the questionnaire, the Likert scale is used for assessment. The Likert scale is used to measure attitudes, opinions, and perceptions of individuals or groups of individuals about social phenomena. In research, this social phenomenon has been specifically defined by researchers, hereinafter referred to as research variables. Respondents' answers are in the form of choices from five alternatives and depend on the types of positive and negative questions presented in the following table.

Interview is a question-and-answer process carried out by researchers and informants in a study to obtain information through a question-and-answer session. This interview technique was used to obtain data by asking questions directly to the respondents, namely students of fashion design vocational Schools. Before conducting the research, the researcher conducted a validation test for the two instruments used. The research instruments in the form of questionnaire statement texts and interview texts were tested for their feasibility by 2 validators who had expertise in Physics Education. The validated instrument was repaired following the suggestions and comments from. In the end, the instrument to be used is suitable for research.

Table 1. Questionnaire scales

Positive question	Negative question	Score
Totally agree	Totally disagree	5
Agree	Disagree	4
Doubtful	Doubtful	3
Disagree	Agree	2
Totally disagree	Totally agree	1

Table 2. Questionnaire items

Aspect	Question item
Interest	1,2,3,4,5,6,7
Competence	8,9,10,11,12
Effort	13,14,15,16,17
Pressure	18,19,20,21,22, and 23,24,25,26,27,28,29
Value	30,31,32,33

Table 3. Interview questions

Aspect	Interview questions
Interest	How are your interest toward science learning process?
Competence	What are competences that you obtained after science learning process?
Effort	How are your efforts in order to support science learning in the classroom?
Pressure	How are your feelings /pressures during science learning process?
Value	What are values that you obtained after doing science learning process?

3.4 Data analysis

Data analysis is an activity carried out after all data has been collected from all respondents or from other data sources. Activities in data analysis include grouping data based on variables and types of respondents, tabulating data based on variables from all respondents, presenting data for each studied, performing calculations to answer the problem formulation and to test the hypotheses proposed (Setyosari 2016). This study describes two data analyzes for questionnaires and interviews.

Descriptive statistics are a method of collecting and presenting data to provide useful information (Walpole, 1995). Descriptive statistics are used to describe or describe the object under study using sample or population data. The data presented in descriptive statistics is usually formed in terms of data concentration. The commonly used measure of data concentration is the average. Apart from being a measure of the center of data, it can also be represented in charts and tables. Based on the questionnaire data, the analysis of the questionnaire data was analyzed using the formula 1. Where P is the percentage, F is the frequency searched, and N is the number of individual frequencies. The mean and standard deviation (SD) of the scores obtained are calculated to create grouping categories. Furthermore, the data from the questionnaire results are presented in the form of a bar chart. Bar charts are data charts that are rectangular in shape with the same width, and are equipped with a scale or size according to the desired data. Bar charts can be single component, multiple component, or multiple component charts. The thematic analysis strategy is used because it is one of the most effective research methods for research that requires detailed and thorough analysis of existing data to find important themes. Thematic analysis is also considered as a core skill or basic knowledge for conducting analysis in qualitative research. Thematic analysis is a data analysis method that

aims to find patterns or themes in the data collected by researchers (Gumilar and Ismail 2023). The following are the steps for using thematic analysis: a) Understanding the data: Qualitative research has the objective of reviewing in depth to reveal what happened based on the perceptions of research participants, which originate from the recordings during interviews, interview transcripts which are explored in more depth; b) Coding: At this stage the researcher did coding to find the main themes from the interview results; c) Searching for Themes: This stage is a transition from searching for codes to finding themes; and d) Conclusion: Contains the conclusions of the existing codes to be made as the main theme.

4. Result of the research

We have considered that the result of the research was categorized to several aspects such as aspect of interest, competence, effort, pressure, and value.

4.1 Aspect of interest

Based on the results of the questionnaire obtained, it is known that students' perceptions in terms of interest in learning science at vocational school varied. The data revealed that 21.62% of students strongly agreed that they had an interest in learning science, 21.62% of students agreed, 37.84% disagreed, and 18.92% strongly disagreed. The percentage of approval shows the level of interest of vocational fashion students in learning natural sciences. The percentages above were obtained from seven questionnaire statements with some substance as follows: students enjoy activities in science class, science learning is very fun for students, science learning is boring for students, student learning attracts students' attention.

Meanwhile, the interview data revealed an important theme that students liked learning science when the science concepts being studied were easy to understand and carried out using a practicum approach. Interest in science is inseparable from the teacher's role in providing material to students. The material conveyed by the teacher must of course be in an interesting way so that students can understand the material taught by the teacher. However, sometimes students do not understand the material conveyed, so that students are not interested in science. So that the material presented can be understood by students, the teacher tries to hold practicums or use learning media such as PowerPoint and videos, so that science learning is interesting and not boring. This was revealed by students in the following interviews:

"...but if science is quite interested but not socially more interested in the economy and outer space, I prefer that direction (P-3)."

"Interested if the material is easy to understand, and not interested if the material is difficult to understand, so it depends on the material (P-4)".

"It's quite interesting, when learning sometimes there are practical, there's power point, then there's a video so when giving material it's not so boring (P-5)".

4.2 Aspect of competence

In terms of competence, students feel that learning science at SMK encourages them to have several competencies. The percentage in this aspect revealed that 16.22% of students stated that they strongly agreed that learning science encourages the mastery of certain competencies, 40.54% of students agreed, 35.14% disagreed, and 8.11% stated that they strongly disagreed. This percentage is obtained from the results of 5 questionnaire statements which reveal the competencies acquired by students after learning science in class. These statements contain students' sense of competence in participating in science lessons, students are skilled in activities carried out in science classes, and students are satisfied with the performance carried out in science classes.

In addition to the data from the questionnaire results, the results of interviews in the competency aspect revealed two themes, namely learning science supports the communication aspect and science learning supports the creativity aspect. In the competence felt by students after learning science, students can communicate well because learning science also trains social interaction. In addition, science learning within the scope of fashion design vocational students also encourages students to get creative ideas to make designs by utilizing natural products. Empirical evidence for these two themes can be seen in the quotations below.

"There is. Social interaction. For example, if someone makes clothes, if you make clothes for me, for example. It will be social interaction, so we need each other (P-1)".

"... Well, in IPA there happens to be social interaction and there we definitely need to know how to interact well so that in the future we can also for example find customers in a good way, with pretty good interactions and also provide good also (P-3)".

"I got the idea to be able to make a collage design by attaching leaves to the design. Then if it's finished, the clothes are like clothes with natural-colored fabrics like that (P-1)".

"Yesterday, you made a collage design made of plants, materials that you don't need. So yesterday I tried using flowers (P-3)".

4.3 Aspect of effort

In the effort aspect, vocational fashion students revealed that the science learning process in class requires serious effort in the process of understanding it. A total of 16.22% of students stated that they strongly agreed, 27.03% of students agreed, 40.54% of students stated that they did not agree, and 16.22% of students stated that they strongly disagreed in this aspect. This percentage was obtained from five questionnaire statements which revealed the efforts made by students in learning science which referred to the statement that students tried to understand during science learning activities and students felt it was important to do assignments in science class well.

Apart from the results of the questionnaire, the analysis of the data from the interviews revealed that students needed serious effort. Even though students study hard, students still complain about the difficulty of understanding science concepts. Another thing from the interview data revealed that students were afraid of not understanding science material; even so they still try to be confident. Other data regarding the results of the interviews revealed that students were serious about understanding science material by asking the science teacher even though they felt that there was no connection between science and the clothing skills they were learning. Other seriousness is carried out by students by focusing more on learning science and doing science assignments in a timely manner. All of these findings can be seen in the following interview excerpts:

"Study hard, but that too sometimes. If you can't learn science, sometimes you like to complain (P-4)".

"In my mind there is always a desire to do science. Sometimes I like to be surprised when learning science if I don't understand the material and I'm afraid I can't. But I did my best not to be surprised, so I understood confidently (P-4)".

"The effort I did was asking the teacher. But when it comes to clothing. In my opinion, science lessons have nothing to do with clothing" (P-1).

"To be precise, it's even more serious because it's only been effective again full day, usually at 11 o'clock sleep sometimes it's less focused so maybe it's more here to improve it so that it's more focused (P-3)".

4.4 Aspect of pressure

Based on the results of the questionnaire on the aspects of feelings felt by students related to learning science at fashion vocational schools, there were two aspects that were revealed, namely aspects of pressure/tension and aspects of choice that students felt when learning science. In the aspect of pressure/tension, 5.41% of students strongly agreed that science learning could be done in a relaxed manner, 51.35% of students agreed, 29.73% of students disagreed, and 13.51% of students strongly disagreed. This percentage was obtained from five questionnaire statements which refer to this statement that students are very relaxed in carrying out activities carried out in science class.

Similar to the aspect of pressure/tension, in the science learning process students are faced with choices where they have to do assignments related to science concepts. The results of the questionnaire for this aspect showed that 51.35% of students agreed, 5.41% stated that they strongly agreed, 29.73% stated that they did not agree, and 13.51% stated that they strongly disagreed. This percentage was obtained from seven questionnaire statements which revealed that students felt compelled to do science assignments.

Apart from the results of the questionnaire above, the results of the interviews revealed 4 themes, namely, science learning is fun when there is media, science learning creates feelings of pleasure, science learning creates feelings of tension, science learning encourages sleepiness. From the student interview data, it was found that students enjoyed learning science because the teacher used learning media in the teaching process. In addition, learning science in fashion also raises emotional complications. From the interview data, it was revealed that students were happy and enjoyed learning, students enjoyed learning science because the teacher was friendly. However, behind the students who stated that the teacher's way of explaining was not boring, the results of the interviews revealed that students were sleepy when studying science because they explained a lot and felt tired when doing science. Apart from being sleepy, there were also interview results which revealed that students felt tense when learning science because they had not done their assignments and were tense because of the teacher's expressions. Empirical evidence regarding the theme above can be seen from the following interview expressions:

"...Then the learning methods are also good such as power point, learning videos, quizzes are also the most fun, then concept maps are also funny, so they are very easy to understand, easy to send too. Because science lessons are related to nature, nature is synonymous with calm, peace too (P-3)".

"Not boring, quite fun. The problem is the mother's way of explaining is not boring, giving the material is given funny pictures, and also explaining it is always connected with related matters (P-5)".

"It makes you sleepy when studying science because it explains a lot (P-2)".

"Sleepy. For example, if you are working on it, you are achy, if the teacher is explaining you like to pay attention or sometimes you also like to fall asleep (P-4)".

"Ever tense when asked for a task that happened to have not been done because of laziness (P-2)".

"Sometimes it's tense, sometimes it's not, it depends on the teacher's delivery. When studying science, it is quite tense because of the teacher's expression (P-4)".

4.5 Aspect of value

In the value aspect, vocational students feel that learning science in class provides value or benefits to clothing designing activities. Questionnaire data revealed that 8.11% of students strongly agreed,

51.35% of students agreed, 16.22% of students disagreed, and 24.32% of students strongly disagreed. This percentage was obtained from 4 questionnaire statements which revealed that science learning activities could provide value for students in designing clothing and activities in science classes could also be beneficial for students in supporting clothing designing skills.

Similar to the results of the questionnaire, analysis of the results of the interviews conducted revealed 4 themes, namely learning science adds insight, learning science creates good communication, learning science makes students appreciate the environment, learning science creates creativity. In the first theme, learning science adds to students' insights, students can get to know outer space after learning science even though they focus on fashion skills. In the second theme, science learning led to good communication, students could interact well with the fashion teacher after learning science. On the third theme, science learning makes students respect the environment, students can integrate science knowledge in making clothes such as making clothes from leaves. The fourth theme, science learning brings out creativity. encourage students to be able to sew on natural themes after learning science and students can get make-up ideas with different themes from nature. This was revealed by students in the following interviews.

"When it comes to outer space material, the advantage is that you can get to know outer space. You can get to know nature more broadly and you can make a collage just like before by attaching leaves to the design or using cotton buds (P-1)".

"...but now after learning science at school, I think that reference is not only from clothes, outer space can also be used as a reference for make-up, so there is more inspiration (P-3)."

"I can apply the results of science learning, that is, I can interact well with the fashion teacher when asking about patterns/designs (P-4)".

"...for example, making clothes from leaves. Making tablecloths with pictures of mountains and then sewn using a machine... (P-2)".

"... for example, fashion shows like to have different themes. If for example about nature it can be adjusted. Make-up can also be rich in fantasy like that (P-5)".

5. Discussion

Based on the results of the research, it was revealed that students had several different perceptions in terms of interest, competence, effort, feelings, and values related to learning science at a vocational school majoring in fashion. In the aspect of interest, students don't like science learning. This is in line with other research that learning science at school is still a difficult lesson for some Indonesian students (Astalini *et al.* 2019). However, other facts reveal that students are interested in learning science when the concept is easily understood and carried out through practicum. This is similar to the results of previous research which stated that interest in learning science can trigger or stimulate the affective component in the form of harmonized pleasure so that it encourages an increase in the experience of learning science (Garland *et al.* 2010). Other research also states that interest or interest in taking the time to learn science makes a more positive attitude in the process of scientific investigation.

The growing interest in each individual is a positive thing in the science learning process. When interest grows, students try to understand each concept on their own including the science concept; This certainly leads to the mastery of a particular competency. Even though in this study the students' interest in science was low, students felt that learning science encouraged some of the competencies they had. This is in line with the nature of science that learning science which emphasizes direct experience can develop competencies so that students are able to understand the natural surroundings

through the process of "finding out" and doing. done in class and students are satisfied with the performance on the tasks in the science class. This is in line with previous research which revealed that attitudes toward science are seen as important because attitudes can improve educational achievement and affect student performance (Abdika 2021). Specifically, students see that learning science supports aspects of communication and aspects of creativity. In terms of fashion skills, the communication aspect is important so that students are able to interact well with customers who will make clothes or during clothing sales promotions to customers. In addition, students get ideas for making collage designs by utilizing natural products in the form of leaves or flowers which they are familiar with through natural science learning. This is proof that natural science learning encourages creativity related to aspects of fashion. This is in line with research which reveals that science is structured by explaining students' natural and social phenomena as scientific activity, organizing and creating thoughts and ideas.

It is quite interesting that in the business aspect students make efforts to understand the science concept seriously. They demonstrated this effort by carrying out science assignments in a timely manner. In a different context, other efforts were made by students such as trying to ask the teacher when they did not understand the concept of science. Even though students tried to show their performance with a number of attempts to understand the concept of science, students still considered that the relationship between science learning and fashion was less related. This is in line with the results of previous research which stated that learning science at school is still considered a difficult subject for some Indonesian students who think that science is difficult because it is considered that only smart students can do it and it is very boring (Astalini et al. 2019).

Meanwhile, in the aspect of feelings towards the science learning process, students saw that they felt relaxed in the science learning process. Furthermore, students see science learning as fun when it is supported by the use of media. However, in some circumstances students can feel pressured and bored when learning science. This is in line with the opinion of researchers who reveal that there is a considerable consensus of opinion that the promotion of favorable attitudes is an important goal of science education. So that attitudes towards science are very important for students, this shows how students think and express expressions about science. The pleasure of learning in science is defined as that every student who has a positive attitude towards science will feel comfortable and happy with the science learning process.

Finally, in the value aspect, students stated that there is value that they get after learning science if it is connected with the activity of designing clothes, namely learning science adds insight, learning science creates good communication, learning science makes students appreciate the environment, learning science creates creativity. In contrast to the results of previous research which revealed that the science learning activities that have been carried out so far have not led to improving students' science process skills or tend to only lead to cognitive aspects including in vocational schools (Maknun 2015). This happens because students override other subjects (non-vocational lessons) such as science lessons, which actually without students realizing science lessons have a relationship between one another and have a position that is as important as vocational lessons, including in this case dressmaking.

6. Conclusion

This present study has investigated how students in the vocational school considered science learning activities. There are five aspects, in which students have different perspectives to each of them. In the context of the interest aspect, students don't like science learning because the learning science at school is still a difficult lesson and it did not relate to what they learned in the context of fashion design. Even though in this study the students' interest in science was low, students felt that learning science encouraged some of the competencies they had. This is in line with the nature of science that learning science which emphasizes direct experience can develop competencies so that students

are able to understand the natural surroundings through the process of "finding out" and doing. It is quite interesting that in the effort aspect students make efforts to understand the science concept seriously. They demonstrated this effort by carrying out science assignments in a timely manner. Meanwhile, in the aspect of feelings towards the science learning process, students saw that they felt relaxed in the science learning process. Finally, in the value aspect, students stated that there is value that they get after learning science if it is connected with the activity of designing clothes, namely learning science adds insight, learning science creates good communication, learning science makes students appreciate the environment, learning science creates creativity.

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