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Student Perceptions of Science Subjects at State Vocational Schools in Central Lombok Regency

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Abstract

Vocational High School (SMK) is an education that prepares students to become professionals according to their program of expertise. In addition to learning science in vocational education subjects, which is something new, the previous vocational subject curriculum did not study science. The purpose of this study was to describe students' perceptions of science learning at State Vocational High School (SMKN) 1 Praya, SMKN 1 Pujut , and SMKN 1 West Praya. This research includes descriptive research. The sample in this study was 20% of the tenth grade students of Paiwisata Vocational High School in Central Lombok district, totaling 37 students SMKN 1 Praya, 25 students of SMKN 1 Pujut, and 26 students of SMKN 1 West Praya . Sampling was done by simple random sampling, and the instrument used for data collection was a questionnaire. The data analysis technique used is percentage. Students' Perceptions of Research Results in Science Lessons show a percentage of 74.02% with sufficient criteria. It can be concluded that students' perceptions of learning science meet sufficient criteria.

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INTRODUCTION

One of the realities of the implementation of the class revolution in its technological and industrial aspects is the existence of vocational secondary schools. (SMK). According to Government Regulation No. 17 of 2018, the maintenance of vocational secondary schools (SMK) is intended to prepare students to have skills or expertise in a particular field so that they are ready to enter the world of work, either as a productive labor force or to develop themselves to create jobs for themselves through entrepreneurship (Subijanto et al., 2020).

SMK is an educational system that prepares its students to become professionals according to the expertise they have. Secondary education focuses on preparing students for a particular type of job. Students who graduate from SMK must be able to independently pursue a particular profession. Nowadays, students are not only looking for jobs but are also expected to be able to create jobs. Vocational education aims to provide students with the skills and knowledge they need to succeed in their chosen careers or pursue education at a higher level, while also preparing them to live independently in society. With vocational education, students can learn the skills needed to improve their quality of life and reduce poverty.

Vocational education is seen as a path to stable employment for graduates who do not continue to college and as a means to re-engage young people who are dissatisfied and promote social inclusion. (Fuller, 2015). Vocational education is identical to learning "how to work", Vocational education seeks to improve the technical competence and position of a person in his environment through the mastery of technology and professional education closely related to the needs of the labor market (Dharma et al., 2013).

SMK can be conceived to tackle the quality of education, as previously announced, and to form students who are ready to enter the world of work and even create jobs (Sahade & Ngampo, 2016). Natural Science (IPA) learning at SMK can play a role in training basic skills that can elevate students' science literacy so as to support their expertise. In the independent curriculum, IPA learning was introduced under the name of the Natural and Social and Natural Sciences Project (IPAS). The Natural and Social Sciences project covers the integration between social sciences and natural sciences as the key to success in the learning process. All aspects of social life, including humility, religious diversity, and interdependence, are covered in the social sciences. As for the interaction between man and nature, as well as seeing the various phenomena that occur with nature, they can be explained logically and scientifically with natural science. So through the integration of both social science and natural science, we are able to use the wealth of natural resources wisely (Kementerian Pendidikan, 2022).

Those with vocational education are job creators. Since vocational education trains students and develops the skills and competences needed to improve the well-being of society, vocational training plays a vital role. It is expected that vocational education will help reduce educational and social inequalities. In addition to boosting economic growth and employment, professional education can also be beneficial.The primary goal of vocational education is to produce graduates who are ready to work. Vocational education is a type of education that focuses on the development of specialized skills in a particular industry with the help of teachers.

After graduating from school, graduates are prepared to enter the workforce and make a profit in the national economy. The objective of vocational education is to find the type of job that best suits each individual and to help them build their working capacity in order to be more efficient.The Indonesian government has implemented the Merdeka Curriculum, which is a new curriculum system that emphasizes competence-based learning and character-building. The Merdeka curriculum is being implemented at all levels of education, including SMK, and is expected to be fully implemented by 2024 (Kompas.id., 2022; Randall et al., 2022).

The Merdeka curriculum for SMK is structured based on the Expertise Spectrum, which is a list of fields and programs of expertise in SMK that are organized according to the needs of the workforce, including the development of science, technology, art, and culture. Each course consists of at least one concentration of expertise, taught over three or four years. The curriculum is divided into two parts: intracurricular learning and a project to strengthen the student profile of Pancasila. Learning in the curriculum is divided into two groups: the general subject and the professional subject. The student profile strengthening project Pancasila is a co-curricular activity aimed at developing the student's character beyond academic subjects.

The objectives of the Natural and Social Sciences Project (IPAS) are to equip students with the basic knowledge, skills, and attitudes (hardskill and softskill), including: 1. applying the thinking, behavior, and character-building of students to care and be responsible for themselves, society, and the universe, as well as the problems faced; 2. being able to explore the potential benefits and risks of the use of natural and social sciences; 3. being capable of making more informed decisions using Natural and social science and technology; and 4. finding solutions to problems confronted through science, both individual and society's problems (Kementerian Pendidikan, 2022). Learning in the natural and Social Sciences is packaged in the form of

project-based learning that integrates several elements of content or educational material into one project. Each project is implemented according to the natural and social sciences competence element and is tailored to the characteristics of each area of expertise. This is in line with the Pancasila Student Profile Strengthening Project, which emphasizes project-based learning designed to strengthen the efforts to develop competence and character in accordance with the Pancasilla student profile, which is structured on the basis of graduate competence standards. (Satria et al., 2022).

Natural Science (IPA) project subjects can be used as a means to train creativity, science process skills, and entrepreneurial literacy. Creativity and entrepreneurship are also two major learning outcomes of science, technology, engineering, and mathematics education. (Weng et al., 2022). IPA lessons have an important role in the SMK curriculum (Sekolah Menengah Kejuruan). Although SMK is more focused on vocational education and practical skills, IPA subjects still have an important place in providing the basis of scientific knowledge to students. The important role of IPA lessons at SMK is to help students understand the scientific fundamentals that cover a variety of concepts in the natural sciences, help develop students' analytical skills, provide a basis for specific practical skills, and help students understand the relationship between humans, nature, and the environment. IPA knowledge can also help students comprehend the basic aspects of health and safety, especially if they plan to work in the field of health or safety at work. It is important to be aware that curricula can vary between different schools and SMK programs. Therefore, the role of the IPA lesson may vary slightly depending on the educational program taken by the student in a particular SMK.

METHOD

This research has been carried out in State Vocational High School (SMKN) Tourism, namely SMK State 1 Praya, SMK State 1 Pujut, and SMK State 1 West Praya. This type of research is called descriptive research, where researchers only describe and interpret data as it is. The population in this study is the entire class X students of SMK Tourism (SMK State 1 Praya, SMK State 1 Pujut, and SMK State 1 West Praya) who studied PA subjects in the strange semester of the academic year 2023-2024. As for the sampling technique in this study, it is Simple Random Sampling, which is a simple random method of voting students based on their national student identification number. Whoever comes out of his national student identification number, that is what is made as an answer.The steps in this research are to create research instruments, spread the word to the respondents, and analyze the data. The variable in this study is the perception of X-grade students, and the variables studied consist of: (a) Knowledge, (b) Understanding, (c) Experience, and (d) Interpretation.

The data analysis techniques used in the research mentioned are percentage statistics (Purwanto, 2010; 102). This technique is used to analyze the quantitative data that has been collected by calculating the percentage of each category or existing variable. These analytical techniques can be used to find average values, percentages of learning success, and so on. The data that has been collected is then analyzed to answer the problem formula as well as the purpose of the research. This data analysis technique is a quantitative descriptive technique. Here is the formula used to calculate the percentage value in this study:

$$NP\ (\%) = \frac{R}{SMax}\ x\ 100\% =$$

Information:

NP(%)	= The percentage value
R	= Score obtained
SMax	= maximun Skor

RESULTS AND DISCUSSION

The results of the study regarding students' perceptions of science subjects at State Vocational Schools in Central Lombok Regency, in general, can be found in Table 1.

Tabel 1. Student Perceptions of Science Subjects

	Indicator	SMKN	SMKN	SMKN	Score	Cat
	1. knowledge					
A	Definition and scope of science subjects	76,37	77,12	70,1	74,5	Good
B	Science subject objectives	76,04	75,81	68,4	73,4	Good
C	Science learning load	75,13	75,81	75,3	75,4	Good
D	IPA minimum completeness criteria	78,22	78,7	70,2	75,7	Good
E	Minimum completeness criteria	76,56	74,82	70,4	73,9	Good
	2. Understanding					
F	Science subject coverage	81,32	82,14	82,3	81,9	Very Good
G	IPA basic competence	73,95	75,86	80,5	76,8	Good
	3. Experience					
H	Subject matter	76,73	78,26	77,5	77,5	Good
	4. Interpretation					
I	Relationship of science subjects with student talent	69,61	69,93	72,5	69,77	Good
J	The relationship between science subjects and graduate profiles of SMK students	74,65	77,35	72,4	76	Good
K	The relationship between choosing Tourism Major Vocational Schools with student interests	59,63	58,97	85,4	59,3	Enough
	Sum	818,21	824,77	825	814,25	Good
	Average	74,38	74,98	75,00	74,02	

Based on the results of the analysis of data in Table 1 seen from each indicator that expresses the perception of respondents about IPA subjects in SMK Tourism, there is only one indicator in the category sufficient that is the relationship of choosing SMK tourism with the interest of students with the category 59,3. This indicates that students entered the SMK Tourism due to the presence of their own desire. Based on the ten indicators used obtained results with very good and good categories this is because students have known IPA in the previous level of education both at the time of Elementary School to the First Secondary School.

The views of SMK students on IPA subjects may vary depending on various factors such as interests, talents, previous experience, and teaching methods applied in the school. Student perception of IPA subjects at SMK Tourism in Central Lombok district will be discussed further on the respective aspects of variables and research indicators to know student perception in more detail.

Knowledge

In the process of learning at SMK, it is not merely to study a special subject of the profession but to study other subjects, one of which is the IPA subject. IPA learning plays a major role in the educational process and also in the development of technology. Therefore, IPA subjects are also studied at SMK. The indicators evaluated from the knowledge variables include the understanding and scope of the IPA subject, the objectives of IPA subjects, the learning burden

of IPA topics, the minimum IPA qualification criteria, and the limits of IPA Minimum completeness criteria values.

Knowledge has a strong influence on students perceptions of IPA lessons. The way students understand and interpret the knowledge they have acquired in IPA lessons can shape their view of the subject. Accurate, in-depth, and relevant knowledge of IPA concepts can help students feel confident and competent in understanding the subject. Students with strong knowledge tend to have a more positive perception of IPA lessons. Knowledge dynamics is a complex phenomenon that reflects the knowledge variation in time and space, as well as knowledge transformation from one form into another one (Bratianu, 2023).

Understanding

IPA education is an application of education and IPA for learning purposes, including learning in SMK. The aim of IPA education is to help the intellectual development, creativity, and self-development of students so that they can think critically, creatively, and broadly so as to be eloquent and useful to society. Education is a conscious and planned process for each individual or group to form a good personality by developing the potential that exists in an effort to realize the aspirations and goals of life. From the above defense, it can be said that education is not only focused on the development of mentality but also on developing all the potential that exists in a person. So, education concerns all aspects of a person's personality to make someone that good. In IPA education, knowledge and experimentation are two important aspects. Through observations and experiments, natural science evolves and provides an understanding of natural phenomena and the principles underlying them.

For the variables of understanding SMKN 1 Praya, SMK N 1 Pujut, and SMKN 1 West Praya, there are results with good categories. So, the students of SMK Tourism have known IPA fully from the beginning of elementary school to SMK, and in SMK, students already have a good understanding of IPA, from living objects and non-living objects up to the symptoms of nature that relate to the learning material of IPA.A strong understanding of the IPA concepts is an important factor in shaping the student's perception of this lesson. Therefore, it is important for educators to design teaching strategies that help students develop a deep understanding that can strengthen their positive perception of science (IPA) lessons.

Experience

For a well-perceived student experience variable, this means that students can apply the experience they have acquired in IPA subjects to be applied in everyday life. Experience in learning IPA (Natural Science) can have a strong impact on student perception of this subject. Positive or negative experiences can shape the student's view and attitude towards the science subject.

So it all depends on the low height of intgence and the information obtained. Because the higher education a person has, the easier it is to receive information so much experience he has. The level of cognitive, social and emotional maturity, as well as moral, will affect her performance in school. Cognitively mature adolescents are able to understand abstract concepts, such as the values of murmuring truths, linking current events to future events. But teenage maturity is not the same. Not all teenagers the same cognitive maturity even though they were the same age. So is social, emotional and moral maturity. It's because of the differences in learning experience and the potential differences that have been carried on since birth.

Interpretation

In the interpretation variables for SMKN 1 Praya, SMK N 1 Pujut, and SMKN 1 West Praya, there are good categories, which means that students have linked the relationship of IPA subjects with their own talents and interests.IPA subjects are very supportive of small and

medium-sized students in the face of the future world of work. Since SMK's Department of Business and Management has specialized programs in accounting, secretariat, sales, tourism business, network computer engineering, and sales, All of this must have a strong IPA learning foundation to create a healthy and clean working environment.

Through a teaching approach that pays attention to student interpretation and designs relevant and exciting learning experiences, we can help students develop a deeper understanding and a strong interest in IPA lessons. In integrating a study, one can see the types of material that have a relationship with one another (Irvy, 2020).The relationship between knowledge, understanding, experience, and interpretation plays an important role in shaping the student's perception of IPA lessons. Knowledge refers to the information and facts that students learn in IPA lessons. When students have a strong knowledge base of scientific concepts, they are more likely to feel confident and comfortable understanding the material. Understanding is the level at which students can connect and stack knowledge into a larger framework. A good understanding allows students to see the interrelationship between concepts, identify patterns, and see the big picture of natural science. Practical experiences, such as experiments, workshops, or field visits, give students the opportunity to experience IPA concepts in real life. This experience can help revive knowledge and understanding, as well as provide a positive experience that attracts interest. Interpretation refers to the way students interpret and give meaning to the information they obtain from knowledge, understanding, and experience. The way students interpret such information can be influenced by their background, initial perceptions, and assumptions.

Interactions between these elements can affect student perceptions of IPA lessons. If students have deep knowledge and a strong understanding of IPA concepts, they tend to have a positive perception of the lesson because they feel they are able to understand and connect the material. Experiences in person in the form of experiments or practices can give a practical dimension to theoretical concepts, increase student interest, and strengthen their understanding. Student interpretation of their experience in IPA learning can be influenced by how well they feel they have gained knowledge and understanding. Positive interpretation can trigger further motivation and interest.

CONCLUSION

Based on the results of the research, data processing, and data analysis that have been carried out, it can be concluded that students' perceptions of science subjects at Tourism Vocational Schools SMKN 1 Praya, SMKN 1 Pujut, and SMKN 1 Praya Barat are classified as good.

RECOMMENDATIONS

Based on the findings in research on students' perceptions of science lessons in vocational schools, teachers and educational institutions must provide adequate support to students, especially in learning outside their field. Lessons outside the field must be designed as integrated as possible with the chosen field to support students' knowledge and skills in future.

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