The Analysis of Science Process Skills (SPS) of 11th Grade Science Students

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Abstract
This research is motivated by students who do not understand chemistry lessons, especially in explaining formulas and calculations. Even though the learning methods and models used by teachers are different so that students have a "mindset" that learning chemistry is a difficult subject to understand. Another problem experienced by the teacher during learning, only the teacher is actively involved during learning while students are more dominant in listening to the teacher's explanation. The purpose of this study was to analyze and find out the Science Process Skills (SPS) of 11th grade science students at SMAN 1 Pulau Punjung. This research method is qualitative (descriptive). The subject of this research was the class of Stage F.2 which consisted of 27 students. Data collection techniques in this study were observation techniques, interview questionnaires, SPS documentation and questionnaires. The data obtained relates to the science process skills of students. Furthermore, researchers used data analysis techniques, namely the theory of Miles and Huberman which included data reduction, data presentation, and data verification and drawing conclusions, then the data was validated using the triangulation method. Based on the research that has been done, it can be interpreted that the results of the SPS analysis of Phase F.2 students of SMAN 1 Pulau Punjung on the observation indicator with a proportion of 89% and the experimental design indicator with a proportion of 82% both have very good categories. Then a classification indicator with a proportion of 77% and a predictive indicator with a proportion of 68% both have good categories. Then for the hypothesis delivery indicator with a percentage of 58% it is categorized as enough while for the hypothesis preparation indicator it has a proportion of 39% in the not enough category.

INTRODUCTION

Education is a very important component in life, this is due to the large role and positive impact that arises from the progress of an education system. Based on previous studies, education plays a role as an effort made to create a learning atmosphere so that the potential that exists in students can develop (Butnaru, Haller, Dragolea, Anichiti, & Tacu Hârşan, 2021). Currently education has a very special mission in improving Human Resources (HR) because education develops the ability to think and shape one's attitude for the better. Highly advanced technological and scientific developments require humans to provide quality human resources (HR) and be able to compete globally. Education is an activity that has a specific purpose or goal so that it can be directed to develop the potential of students both in the school environment and in society (Asy'ari & Fitriani, 2017).

Senior High School, both public and private, is an educational institution that can provide the expected business results. Where in the learning process in high school, learning strategies are applied properly so that the resulting output is useful in class (Hamadi, Priyayi, & Astuti, 2018). Quality output can be achieved with subjects that are in accordance with students' interests in the subject itself.

The subjects taught in high school have differences in the majors taken or studied by students, for example, the Science major. One of the compulsory subjects for the Natural Sciences (IPA) major is Chemistry. Chemistry teaches about the composition, properties, structure, changes that occur, and the inclusion of energy around it. Natural phenomena are also taught in chemistry. Based on these natural phenomena, para-concepts, para-theories, and para-laws are composed. these para-concepts, para-theories, and para-laws are then reused in terms of explaining various events that occur in nature (Taber, 2001).

According to Abd Rauf, Rasul, Mans, Othman, and Lynd (2013), chemistry cannot be separated in two ways, firstly chemistry becomes a product (chemical knowledge in the form of facts, concepts, principles, laws and theories) findings of scientists and secondly chemistry becomes a process (scientific project). The nature of chemistry to be a product is interpreted if the resulting process is in the form of teaching science using reading books as a function of spreading knowledge in schools. The nature of chemistry to be a process means that all scientific activities can develop knowledge to discover and refine new knowledge (Coley, Eyke, & Jensen, 2020). This new knowledge can be continued and developed if students dig deeper into chemistry through chemistry lessons taught by teachers at school.

Chemistry learning should lead to a learning process to help students hone skills that can be applied in everyday life (Rahmawati, Taylor, Taylor, Ridwan, & Mardiah, 2022). Government Regulation no. 22 of 2006 states that the objectives of learning chemistry include content standards, chemistry subjects prepare students' skills so that these abilities can be developed in life and at a higher level of education. Ideal chemistry learning should pay attention to the characteristics of chemistry as a product, process, and attitude in order to be able to understand concepts and be able to solve chemical problems in everyday life through skills. Process skills are needed in chemistry learning which functions to uncover interactions in discovering principles, theories, and concepts by developing the process skills themselves (Haryadi & Pujiastuti, 2019).

Students are expected to search for and develop independently what are called facts and concepts and then create the development of attitudes and values by practicing the skills development process that already exists in each student. In the process of learning teaching skills it is intended that students feel for themselves, find the truth, or try to find laws or propositions to be used as guidelines, and draw conclusions about events that are felt (Sari & Helsy, 2018). The concept of desired process skills encompasses the goals of science itself. Science is a scientific discipline that addresses three aspects, namely science as a scientific product, process, and attitude. Science as a product is a collection of knowledge that includes concepts, principles, laws, and theories. Science becomes a process that plays a role in acquiring and developing knowledge through education. One of the process skills needed by students and which is very suitable to be applied in learning chemistry is Science Process Skills (SPS) (Marjan, Arnyana, & Setiawan, 2014).

According to Gürses, Çetinkaya, Doğar, and Şahin (2015), SPS are skills in functioning reason and logic efficiently in order to achieve a result to be achieved. Ongowo and Indoshi (2013) said that SPS help students to create a sense of responsibility during learning and then remind them of the important role of research methods during the learning process. SPS help solve life problems, help students develop their own concepts, and increase their creativity (Sunyono, 2018). Unlike the opinion of Fajriah (2017), intellectual, manual, and social skills

are also included in SPS which function as builders of good understanding such as theories, ideas, and insights, when perfect understanding is formed through the development of behavior and behavior values. Science learning tools, student activity, forming an attitude of responsibility, and improving learning are included in SPS. SPS are all the skills needed to acquire, develop, apply (concepts, laws, and scientific theories in the form of physical, mental, and social skills) and facilitate learning in using the mind and reason, to perfect learning and build / increase understanding in achieving certain results (Andini, Hidayat, Fadillah, & Permana, 2018).

According to Al-Rabaani (2014) quoted from Rustaman the purpose of SPS certainly expects students to be active, understanding, and mastery in carrying out the design that will be carried out such as carrying out observing actions (observation), grouping (classification), interpret (interpretation), compile (predictions), develop hypotheses, design experiments (research), and communicate. These skills basically encourage the development of students' potential in the form of intellectual, social, and physical skills that originate from fundamental abilities that in principle already exist in students (Duruk, Akgün, Dogan, & Gülsuyu, 2017). Teachers must understand this skill because it is very necessary in teaching science. Chemistry becomes processes and products that are created through this skill with the aim that students are required to plan and act on problems that will occur (Imaduddin & Hidayah, 2019).

Based on initial observations and interviews with the chemistry teacher, which was conducted by researchers at SMA Negeri 1 Pulau Punjung, the problem experienced by students was their lack of understanding of chemistry lessons, especially in chemistry subjects materials that explain formulas and calculations. Although the learning methods and models used by teachers vary, the problems experienced by students remain the same. So that students have a "mindset" that learning chemistry is a subject that is difficult to understand. Another problem experienced by the teacher during learning, only the teacher is actively involved during learning while students are more dominant in listening to the teacher's explanation. In contrast to the constraints experienced by the teacher when learning chemistry, namely teaching materials or worksheets that have been given to students but students do not bring them during learning takes place so that students become not focused during learning. This obstacle was also experienced by the teacher during the practicum because students did not bring the tools and materials needed during the practicum so that the practicum did not go according to the plan that had been prepared by the teacher in the lesson plan.

The teacher also said that the continuity of the practicum in the laboratory made students do things that were not in accordance with the practicum material, some students did practicum by following the work steps written on the blackboard. Meanwhile, several other students did not carry out the work steps that had been written because they were confused and did not understand what was being practiced, causing a commotion in the laboratory. This condition certainly does not train students' SPS. This certainly affects the conductivity in the laboratory because SPS students need to be developed through direct experience as a learning experience. In direct experience, students can appreciate a process or learning activity that is carried out independently. and influence on student learning outcomes.

If students' science process skills (SPS) are not analyzed or evaluated, then we will lose a deep understanding of the extent to which they have developed these skills. Without a KPS analysis, teachers may struggle to identify areas that need improvement, measure the impact of certain teaching methods, or develop more effective educational programs. Therefore, evaluation of KPS is important to ensure that the education provided can produce learners who have a strong foundation of understanding and skills in science and the scientific

method. There are several studies that have measured students' SPS, Rusmini, Suyono, and Agustini (2021) measures SPS during the pandemic. Antrakusuma, Masykuri, and Ulfa (2017) conducted a content analysis of science process skills in 11th grade chemistry textbooks on the concept of solubility and solubility product. This research is different because it analyzes SPS on stoichiometric material and is conducted after the pandemic.

The solution to overcome this, the teacher needs to know the extent of the skills students have in learning the lessons conveyed in class. One of the skills in question is SPS with indicator aspects such as observing, communicating, classifying, predicting, formulating hypotheses, and designing experiments from classroom learning and practicums that will be carried out with the aim of building students' scientific understanding concepts that are useful and meaningful to achieve them better learning outcomes (Widyaningrum & Agustini, 2021). The purpose of this study was to analyze and find out the Science Process Skills (SPS) of 11th gradestudents at SMAN 1 Pulau Punjung.

METHOD

The research method used is qualitative (descriptive). Descriptive qualitative analysis is suitable for this type of research because this method allows researchers to understand and explain in detail the characteristics, context, and complexity of the phenomenon being studied. The research subjects were students of Phase F.2 class, totaling 27 students from SMAN 1 Pulau Punjung in the 2023/2024 academic year.

In this research, the researcher acts as the main (key) instrument. Data collection techniques in this study is to use observation techniques. Interview questionnaires, documentation and SPS questionnaires. To test the validity of the data, researchers used a triangulation technique. Furthermore, researchers used data analysis techniques, namely the theory of Miles and Huberman which included data reduction. Data reduction in this study uses the equation, namely (Rohmah, Purwanto, & Permadi, 2023):

$$NP = \frac{R}{SM} \, x100$$

Information:

NP   :   The value sought or expected
R   :   Raw scores are obtained
SM   :   Ideal maximum score

This equation is used to generate the percentage of science process skills which later this percentage will be presented (Display Data) in the form of categories as shown in the table below.

Table 1. Scoring categories of science process skills

No	Score Percentage Range (%)	Category
1	81-100	Very good
2	61-80	Good
3	41-60	Enough
4	21-40	Not enough
5	0-20	Very less

Then to find out the number of students based on the SPS indicator can be categorized into high, medium and low categories (Setiawan, Suwondo, & Syafii, 2021) as shown in the table below.

Table 2. Scoring categories of science process skills indicator

No	Score Percentage Range (%)	Category
1	80-100	High
2	60-79	Medium
3	0-59	Low

After the data display stage, the data is then described in written form which will be concluded later.

RESULTS AND DISCUSSION

This study aims to analyze and find out the Science Process Skills (SPS) of Stage F.2 students at SMAN 1 Pulau Punjung. This study used three questionnaires, namely a closed questionnaire (SPS questionnaire) and an open questionnaire (non-material & material interview questionnaire). After collecting data through the 3 questionnaires, researchers analyzed the data with steps, namely data reduction through a Likert scale on each indicator of SPS of 11th grade students, then presenting (display) data in tabular form and then described in narrative and descriptive writing, and after that making conclusions from the data (Miles & Huberman, 1994).

The results of the SPS questionnaire will be analyzed using data to determine the percentage of students' SPS based on the SPS indicators. The test results were analyzed using Microsoft Office Excel. The percentage of science process skills is known by calculating the scores obtained from each SPS indicator divided by the maximum score on the science process skills indicator as seen in the equation. Based on the results of the reduction of SPS data for SMAN 1 Pulau Arjung class Phase F.2 using Microsoft Office Excel, a percentage data and SPS category for SMAN 1 Pulau Arjung class Phase F.2 students were obtained which are presented in the table

Table 3. Percentage and Category of Science Process Skills for class students of SMAN 1 Pulau Punjung Stage F.2

Components of SPS	Percentage	Category
Observe	89%	Very good
Communicating	58%	Enough
Classifying	77%	Good
Predicting	68%	Good
Formulating a Hypothesis	39%	Not enough
Designing an Experiment	82%	Very good

Science Process Skills (SPS) students of SMAN 1 Pulau Punjung class Stage F.2 on the indicators of observing and designing experiments are in the very good category with percentages of 89% and 82%. Whereas on the indicator of communicating SPS, students of SMAN 1 Pulau Punjung class Stage F.2 are categorized as enough. Indicators of compiling hypotheses are categorized as lacking which is indicated by a percentage of 39%. The observation indicator has the highest percentage of 89% as shown in the table above. The following describes the SPS categorization for each indicator:

This observation skills indicator has a proportion of 89% in the results of SPS questionnaire data processing which has a very good category. This shows that the students in Stage F.2 class at SMAN 1 Pulau Punjung are very good at observing skills. This means that Phase F.2 class students use this skill more often in the learning process so that this skill is higher than the other skills. So that it can be interpreted that observing indicators are students' abilities to various objects such as graphs, pictures and diagrams as well as events by using the five

senses both in learning and everyday life (Idris, Talib, & Razali, 2022; Suryaningsih, 2017). This was also supported by interviews conducted by researchers through interview questionnaires, when researchers asked about observing skills in exposure 2 students said that students understood if the teacher explained the material it had to be clear and detailed and other answers from students also sometimes understood the material being conveyed. Explained depending on the way the teacher delivers the material.

Based on the results of the interview questionnaire analysis, the researcher categorized the answers that had been submitted in the previous results sub-chapter with the answer "Yes" so that the student observation indicator that answered "Yes" was 93% (25 people).) as many as 27 students while those who answered "No" were only 7% (2 students) of 27 students. This shows that the students of Stage F.2 class at SMAN 1 Pulau Punjung are more skilled in the process of observing. Observing skills must be owned by all students because these skills are needed to develop other skills (Grant, Mills, & Bouck, 2009). Then for the results of the interview questionnaire analysis with stoichiometric material on the observation indicators, the correct percentage of 89% was obtained in answering the questions about the Molarity and Molality formulas which have been compiled by researchers to observe the indicators. This shows that students have used observing skills in learning so that this indicator is in the very good category. The results of this study are in accordance with research conducted by (Jayanti, Enawaty, & Sahputra, 2013) which states that as many as 53.3% of students have a very good category with the help of flash media.

The communication ability indicator has a percentage of 58% in the SPS questionnaire data processing results in the enough category. This shows that the students in Stage F.2 class at SMAN 1 Pulau Punjung still have not fully used these skills in the learning process so that these skills are in the sufficient category according to the data that has been processed by researchers. Communication skills need to be improved in learning so that when learning takes place these skills can function in students to become active individuals in conveying opinions, ideas, and students' ideas in the teaching and learning process (Yusuf & Adeoye, 2012). This was also supported by the interviews conducted by the researchers, when the researchers asked the intent of observing, the students said that during presentations students sometimes explained and answered questions from friends who asked.

Based on the results of the interview angle analysis, the researcher categorizes the answers that were previously submitted with the answers "No" so that on the communication indicator, students who answered "Yes" amounted to 37% (10 people) of the 27 students. while those who answered "No" were 63% (17 students) of the 27 students. This shows that students in Stage F.2 class at SMAN 1 Pulau Punjung are still lacking in using communication skills. Based on the results of the interviews, the factors causing this low skill are because students have difficulty answering friends' questions during discussions so that students' communication skills are still lacking compared to other science process skills (Rini & Aldila, 2023). Furthermore, the results of the analysis of the interview questionnaire with stoichiometric material on the indicators communicate the correct proportion of the amount obtained, namely 33% in answering questions about differences in molarity and molality.

Student answers are correct such as "Molarity uses volume and molality uses solvent". only too short so that researchers think students still have not used this communication skill because this skill aims to visualize the data contained in the previous painting image, namely the first problem so that to visualize/explain the painting image a thorough explanation is needed . Factors causing low communication skills because students are not used to expressing opinions in written form and answers are given briefly, causing these communication skills to be classified as low and less skilled than other scientific processes (Damayanti & Listyani, 2020). The results of this study are in accordance with previous

research conducted by Mahmudah, Makiyah, and Sulistyaningsih (2019), namely that communication skills as a whole are included in the sufficient category with a value of 40%. Some students have not been able to mention data in the form of sentences, students' answers are almost correct but still not focused.

The classifying skills indicator has a proportion of 77% in the results of the SPS questionnaire data processing in the good category. This shows that students in Stage F.2 class at SMAN 1 Pulau Punjung use these skills well to understand learning in the teaching and learning process. Classifying skills are skills in choosing various event objects based on their special characteristics, so that a class or group of similar event objects is obtained (Grusec & Davidov, 2010). The classification process includes several activities such as seeking comfort, looking for differences, contrasting features, comparing, and looking for classification bases (Rizal, 2019). This is also supported by the analysis of the interview questionnaires that the researchers distributed, when the researchers asked about classifying skills in combining 2 students, they said that during practicum students could group objects/observations of similarities and differences they had.

Based on the results of the interview questionnaire analysis, the researcher adjusted the answers given in the previous results section with the answer "Yes" so that in classifying the indicators, students who answered "Yes" amounted to 81% (22 people) of 27 people while students who answered "No" were only 19 %. (5 people) of 27 students. This shows that the students of Stage F.2 class at SMAN 1 Pulau Punjung used classifying skills in the learning process. the reason for this high ability to classify is based on the results of interviews conducted by researchers. Student factors during practicum can classify the results of observations based on the differences and differences in the characteristics, structure, and form that these results have. Then for the results of the interview questionnaire analysis with stoichiometry material on the grouping indicator the proportion of correct numbers is obtained, namely 74% in answering the questions regarding various basic chemical law theories put forward by experts then hiding the True statement. The student's answer is correct and this shows that the student is able to use the skills to classify the basic laws of chemistry in the problem so that the category obtained in this skill is good.

The results of this study are in accordance with research conducted by (Matsna, Rokhimawan, & Rahmawan, 2023), namely the ability to classify in an acid-base titration practicum of 75% in the moderate category. Based on the observer's statement, students recorded their observations in groups, but students did not exchange information with other groups with the aim of comparing or adjusting theory with practicum results so that this indicator category was in the medium category.

The predictive skill indicator has a percentage of 68% in the results of SPS questionnaire data processing. This shows that students in Phase F.2 class at SMAN 1 Pulau Punjung use this skill well so that the predictive indicators are categorized as good. According to (Dimyati & Mudjiono, 2006), this skill is a skill that relies on forecasting an event either based on pictures, graphs, tables, predicting something that might happen when the practicum is carried out, this skill is also used to predict what will happen, and can also predict facts, concepts, principles of science. This is supported by interviews conducted by questionnaire researchers who disseminated these interviews, when researchers asked about predicting skills, most of the students who answered "Yes" were 89% (24 people) of the 27 students while those who answered "Yes" were 89% (24 people) of 27 students. answered "No" as much as 17%. (3 people) of 27 students. This shows that students in Stage F.2 class at SMAN 1 Pulau Punjung use these predictive skills in the learning process to predict what will happen in an event, graph and picture. This skill must be high because it is also used by students

when they want to estimate a result that will be obtained when the practicum is carried out (Hayati, Bintari, & Sukaesih, 2019).

Furthermore, for the results of the stoichiometric material interview questionnaire analysis, the prediction indicator obtained a percentage of 81% correct number in answering the questions regarding mass events. unburned wood and its combustion products. Students answered "yes because the mass of the substance before the reaction/after the reaction remains the same/fixed". This answer is good because from this question the student's level of prediction/prediction is very good for the events described so that the category obtained for this skill is very good. The results of this study are in line with the research of Salosso, Nurlaili, and Kusumawardani (2018), the indicator for forecasting/predicting is quite good with a percentage of 79.33%. Based on the results of observations in the field, this is because students are able to predict what might happen in circumstances that have never been observed before; students are able to predict well because students have gained an understanding of the concept of the practicum that has been implemented (Hayati et al., 2019).

The skill indicator for formulating a hypothesis has a percentage of 39% in the SPS questionnaire data processing results. This means that this skill is included in the not enough category. The factor that causes this skill to be included in the not enough category is because not all students can draw preliminary conclusions from their own mindset (Sitio, Kurniawan, & Kalpatari, 2021). If this indicator has more than one possible explanation of one event that involves each student's logical thinking. This is also supported from interviews conducted by researchers through questionnaires, when researchers asked about skills in compiling hypotheses, students said "depending on what the teacher asked, sometimes I answered with the contents of the book" and other students' opinions such as "sometimes with patterns of thinking himself, sometimes in book language."

Based on the results of the interview questionnaire analysis, the researcher adjusted the answers given in the previous results sub-chapter with the answer "no" so that in the hypothesis preparation indicator, students who answered "Yes" were 30% (8 people) as many as 27 students while those who answered "No" were only 70% (19 students) out of 27 students. This shows that the students in Stage F.2 class at SMAN 1 Pulau Punjung are still lacking in using the skills to develop hypotheses, because these skills focus on the initial conclusion of a statement to explain an event, realizing that there is a possibility for the results that occur then explain this possibility. The causal factors for this skill are low based on the results of interviews conducted by researchers because students have difficulty drawing initial conclusions about a material taught by the teacher compile the hypothesis that the percentage of correct numbers obtained is 26% in answering the questions regarding students' guesses about the mass of wood burned before and after the previous questions.

In the interview questionnaire that has been examined, students generally leave blank answers to questions regarding hypothesis-building skills so that after being analyzed these skills are low and receive a less category. The causal factors for this skill are fewer than other process skills because students are not proficient in conveying hypotheses/temporary conjectures about an event that occurred or an event that was observed. The results of this study are in accordance with previous research conducted by (Ramli, Muslim, & Kurniawan, 2022), based on the analysis of indicators 5A and 5B (hypothesized) to get a low percentage overall. So that the final results of the hypothesized aspects have a percentage of 31.17% and are included in the "less" category. The cause of the tendency for the low percentage of results in the aspect of science process skills is the complacent attitude of practitioners towards the results they obtain, so they are no longer interested in investigating other possibilities that might occur.

There is research conducted by Nurfitra, Mamin, and Muhiddin (2021), in this study also the indicator of making hypotheses gets a low percentage because students are not used to to write hypotheses or temporary conjectures, this indicator is something new encountered by students because before this research was conducted, the new thing encountered by students because before this research was conducted, the learning process did not teach about these indicators. In addition, in previous research from (Lestari & Oktaviani, 2023), SPS on sub-indicators formulates simple hypotheses or conjectures in their own language with low categories. Indicators formulate a hypotheses has the lowest percentage, On instrument questions with formulating indicators hypothesis, factor that causes the low indicators formulate hypotheses due students are not serious in participating in learning activities in class, so students do not understand material explained by the teacher. Besides that, the students' low science process skills on the indicators of formulating hypotheses were also influenced by the minimal implementation of practicum activities at school.

The experimental design skills indicator has a percentage of 82% of the SPS questionnaire data processing results. This means that this skill is included in the very good category. One of the factors that causes this skill to be included in the very good category is because before carrying out or designing an experiment students are always prepared by the chemistry teacher a practicum guide before the practicum meeting takes place so that students can prepare tools and materials. then read out the work steps so that the practicum will run smoothly later (Rahayu & Sari, 2023; Wola, Rungkat, & Harindah, 2023). This was also supported by interviews conducted by researchers through questionnaires, when the researchers asked about experiment designing skills, the student mentioned answered "yes because if you don't read the work steps later it will violate laboratory regulations and that is very dangerous" and other opinions from students namely "yes because before doing the practicum we must pay attention to how it works so that there are no mistakes in understanding and can understand the results obtained".

Based on the results of the interview questionnaire analysis, the researcher adjusted the answers from the students with the answer "Yes" so that in the experimental design indicators students answered "Yes" as many as 96% (26 people) of 27 students while those who answered "No" were only 4% (1 student) of 27 students. This shows that the students of Stage F.2 class at SMAN 1 Pulau Punjung are more skilled in designing experiments when practicums are to be carried out. These skills must be high because these skills are needed by students in carrying out practicums (Darwis, Rachmat, & Karim, 2021). The use of the 5E learning cycle learning model has several stages that require students to be able to develop their experimental planning skills on SPS (Cakir, 2017). This stage is the exploratory stage. At this stage students carry out practicum directly so that students can develop work procedures and determine the tools and materials to be used.

From the research results, it is known that only two aspects of KPS are very good. Communication skills results are poor. To improve learners' communication skills, active teaching, speaking practice and communication skill development are needed (Menggo, Suastra, Budiarsa, & Padmadewi, 2019). Learning that familiarizes learners with public speaking is useful. Regular feedback and cooperative learning can help learners build confidence in communication (Baghcheghi, Koohestani, & Rezaei, 2011).

The results of the skill to formulate hypotheses are also low. Practice and experience play an important role in the development of this skill. The more one practices hypothesis generation, the better they will understand scientific concepts, become more skillful in formulating clear questions, and become more creative in making relevant predictions in research or experiments. Therefore, continuous practice is key in improving the ability to formulate hypotheses. There are various learning models whose steps include the formulation of

hypotheses such as inquiry models and discovery models (Fahmi, Setiadi, Elmawati, & Sunardi, 2019; Kuang, Eysink, & de Jong, 2023).

To improve students' Science Process Skills (SPS) in the context of the chemistry education curriculum, there are several aspects that need to be considered. First, it is important to place a strong emphasis on the scientific method in the curriculum, including steps such as formulating hypotheses, designing experiments, collecting data, analyzing data, and making conclusions. In addition, practical chemistry labs and experiments should be provided so that students can develop science process skills directly. Integration of chemistry learning into the context of daily life or relevant issues can also increase students' interest in the subject. Formative evaluation should be used regularly to track students' SPS development, while good teacher training on teaching science process skills is also very important.

CONCLUSION

Based on the research that has been done, it can be interpreted that the results of the analysis of the science process skills of Phase F.2 students of SMAN 1 Pulau Punjung on the observation indicator with a proportion of 89% and the experimental design indicator with a proportion of 82% both have very good categories. Then a classification indicator with a proportion of 77% and a prediction indicator with a proportion of 68% both have a good category. Then for the indicator to communicate with a percentage of 58% it is enough category, while the indicator for compiling a hypothesis has a percentage of 39% in the not enough category.

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