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The Effect of the Relating, Experiencing, Applying, Cooperating, Transferring (REACT) Learning Model on Students' Science Process Skills on Elasticity Topic

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Abstract

This research is motivated by the lack of science process skills in physics learning. This is seen from the average percentage of science process skills of 31.25% in the lower category. To overcome these problems by using the REACT learning model that emphasizes direct experience in learning to improve students' science process skills. This study aims to determine the effect of REACT learning model on students' science process skills on the elasticity topic. The methods in this study are quasi-experiments, posttest-only control design research design, and sampling techniques in the form of random cluster sampling. The instrument used is a test instrument in the form of a question description. The analysis technique test uses a normality test and the homogeneity test, and then the hypothesis test uses a t-test. The results of the hypothesis with the t-test showed that after applying the REACT learning model, $4.49 > 2.385$ $t_{count} > t_{table}$ is obtained so that H_0 is rejected with a significant level ($\alpha=0.01$). According to the research findings, students' science process skills receive an average score of 86% in the "very good" category after being applied to the REACT learning model. This demonstrates that using the REACT learning model has an impact and can help students improve their science process skills.

Keywords: Elasticity; REACT Learning Model; Science Process Skills

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INTRODUCTION

Physics is a department of an era from the herbal sciences circle of relatives that research herbal phenomena. Learning activities in physics include: observing, processing, analyzing, and drawing conclusions, which aim to improve students' basic skills so they can understand an existing concept or the process of discovering a new concept. Permendiknas No.69 of 2013 explains that physics is included in the

specialization subjects at the senior high school and Madrasah Aliyah (MA) levels. Physics subject as a specialization aims to develop students' interests and talents in physics as a preparation for a higher academic level. To be able to master physics subjects thoroughly, college students have to be capable of apprehending the simple concepts and application of standards so that meaningful learning is fashioned. Meaningful learning experiences can be



obtained independently through the skills possessed by students (Mahmudah et al., 2019; Nadia et al., 2021; Nurhuwaida et al., 2022). In line with Rahmat (2019), meaningful knowledge is obtained when learning activities are carried out without neglecting the skills being trained. This can be built through direct experience in the learning process in class. In physics learning, students are more active in gaining knowledge through direct experience, not just receiving information from what the teacher conveys (Nurmayani et al., 2018; Prahani et al., 2021; Zainuddin et al., 2020).

Learning through direct experience is needed in physics learning. According to Handayani (2021), physics learning emphasizes students' direct experience through discovering by developing their potential to gain experience with the natural surroundings. With direct experience, of course, students can feel, and understand the meaning and can practice various skills from the learning that has been done. One of the skills developed in direct experience is scientific process skills. Scientific process skills should be developed through direct learning experiences to be used as learning experiences (Arifuddin et al., 2020; Handayani et al., 2017; Priyani, 2020).

One of the abilities students should process is knowledge of the scientific method of the capabilities college students ought to have is science technique abilities. According to Lestari & Diana (2018), those science system competencies are wished by students as a provision to use medical techniques on physics issues. Science Process Skills (SPS) are one of the skills used in a scientific investigation (Ramadhani et al., 2019). The SPS indicators on a basic and integrated basis include: Observing, predicting, planning the experiment, applying concepts, interpreting, and communicating (Suswati et al., 2021). This set of skills is fundamental for

teachers to create a scientific environment in their classroom (Arslan et al., 2023). SPS are needed in physics learning (Komariah et al., 2017; Rustaman, 2005; Sudrajat et al., 2017).

Preliminary studies have been conducted in the form of interviews and test with students and teachers. The results of the interviews with physics teachers at the SMA Negeri 4 Tasikmalaya showed that studying activities still used the lecture method so learning is still dominant towards the teacher (teacher-centered). This makes students less active in class, reducing the direct learning experience. In learning physics, of course, direct experience in learning is needed, such as through practicum activities to teach college students SPS. Within the past year, teachers have not carried out practicum activities at all due to difficulties in conditioning students during a pandemic. Therefore the students' SPS are reduced. In line with Diana et al. (2019), students rarely make observations or experiments, so they cannot expand their SPS. In line research Khamhaengpol et al. (2021), learning physics for secondary school students is difficult because of limited laboratory equipment. Furthermore, the teacher is only fixated on learning through lectures, discussion, and practice questions, making the learning atmosphere boring. This is supported by the results of the written test in the preliminary study by distributing 15 questions about SPS. The questions represent 6 indicators of SPS that will be examined: observing, predicting, planning the experiment, applying concepts, interpretation, and communicating. Researchers can measure students' SPS on elasticity topics with test questions. The initial test results showed that the average percentage of students' SPS was 31.25% in the less category. This shows that it is necessary to research to improve students' SPS in the material of elasticity. The low results

of students' SPS are because practicum activities do not accompany the learning process, so students' SPS are less trained. According to Kurniawan et al. (2018), students' science process talents may be seen thru practicum activities by actively engaging students in the utilization of practical resources to learn physics concepts. SPS must be used by teachers delivering teaching in the form of scientific facts as a whole (Turiman et al., 2012). Based on the results in the form of interviews and test with students and teachers, students' SPS are still lacking. This happens because students' direct learning experience is lacking, such as direct student involvement through practicum activities and learning models unsuitable for improving students' SPS. Based on this, a learning model is needed to train and improve students' science process skills, one of which is using the REACT learning model with a contextual approach.

The Center of Occupational Research and Development in America was the organization that initially coined the phrase Relating, Experiencing, Applying, Cooperating, and Transferring (REACT) (Nisa et al., 2018). This model has the basic principles of contextual learning and constructivism that produce meaningful learning. The basis of contextual learning is constructivism which means getting to know the emphasis of college students to construct their personal information so that getting to know is not just memorizing knowledge (Helmiati, 2012). To build this experience, of course, real learning experiences are needed. This states that the REACT learning model emphasizes the experience of direct studying so that students get meaningful learning. Direct experience in learning can certainly improve college students' scientific process skills. This REACT learning model has basic contextualism and constructivism principles that are felt capable and suitable for improving

students' SPS. Contextual is described as a mastering that can assist teachers in relating the knowledge being taught to students' actual-world situations (Fadhilah et al, 2021). While the relationship between the REACT model and SPS can be seen at each stage of REACT which can be measured by one indicator of SPS. At the relating stage, the measured indicator is observed and predicted. During the experiencing stage, a measured indicator is planning experiments. In the applying stage, a measured indicator is applying the concept. Cooperating stage, a measured indicator is interpretation. In the transferring stage, a measured indicator is communicating.

Based on the consequences of previous research regarding the REACT educational model, it positively impacts learning physics. Many studies have been conducted on the positive influence of the REACT educational model, including the REACT educational model which affects pupils gaining knowledge of effects (Sugita, 2020; & Tarafu, 2020), has an effect on spatial thinking (Hidayanti, 2019), has an effect on cognitive abilities (Rosdianto, 2020). The effects of this study are consistent with Patimah (2020) and Suraji (2020). So it can be concluded from the effects of those previous studies that the REACT learning model can have a high-quality impact and can be implemented in mastering physics to improve scholar gaining knowledge of effects and abilities. However, previous studies have not examined SPS, have not specifically explained supporting learning theories, and only used conventional models for the control class. Based totally on this, this research turned into carried out to decide the impact of the REACT mastering model on SPS in physics studying.

SPS are certainly needed in solving a problem in physics learning, where some of the material in physics lessons requires students to work scientifically. Science

learning will be carried out if it can maximize students' SPS (Nana, 2020). According to Parmin et al. (2022), it's intriguing to research and experiment experimentally so that knowledge can be built from it. One subject that requires SPS is the elasticity topic. Based on the consequences of interviews with students, it was found that they had never carried out practicum activities on the elasticity topic, so students had a problem understanding information. In line with what was conveyed by the physics teacher during the interview which stated that the elasticity topic was quite difficult for students to understand so many students had not achieved maximum results with an average test score of less than minimum completeness criteria or less than 75. According to the law of the Minister

of training and culture number 20 year 2016 regarding Graduate Competency requirements covering attitudes, knowledge, and skills. Based on this, the results of student tests on the elasticity and Hooke's law material have not reached the Graduate Competency Standards with a minimum completeness criteria score of 75. The content standards or basic competencies according to the regulation of the Minister of training and way of life variety 21 of 2016 on physics subjects, namely elasticity and Hooke's law, include competencies in the form of formulating problems, formulating hypotheses, carrying out experiments, presenting results in graphical and tabular form, concluding, and reporting experimental results. These basic competencies have not been fully achieved. As a result, students still do not understand the topic of elasticity and Hooke's law properly so the outcomes of college students' regular exams are low.

The low results of college students' daily tests on elasticity topics can be overcome using the REACT learning model. The learning uses a direct

approach with practical activities so that students get direct experience in learning. Students actively discover a concept through direct experience in practicum activities (Nana & Surahman, 2019). This direct experience certainly makes learning physics more interesting and fun. The REACT educational model is hoped to overcome the problems of learning physics so that the learning expected by educators can be achieved.

For this research to be more focused, it is necessary to limit its problems. The limitation of the matter in this study is that the material used is elasticity, including the definition of elasticity, physical quantities on the elasticity of materials including stress, strain, modulus young, and Hooke's Law. Then to measure college students' technological know-how, process skills are observing, predicting, planning the experiment, applying concepts, interpreting, and communicating. Primarily based on the history of the issues on this look at, a problem can be formulated, namely "Is there an impact of the REACT studying model on college students' SPS in elasticity topic in class XI IPA SMA Negeri 4 Tasikmalaya?". This study aims to determine the effect of REACT learning model on students' science process skills on the elasticity topic.

METHOD

The research was a quantitative study. This sort of research tests the impact of the independent variable (Learning Model) on the dependent variable (SPS). The research design is a Quasi-Experimental Design with a posttest-only control design. The instrument used was a written essay test with 23 questions on elasticity. The written test tool changed into tested using validity and reliability tests. Furthermore, the data analysis method uses the prerequisite normality check and homogeneity check.

The study population was 180 students from all XI MIPA classes at SMA Negeri 4 Tasikmalaya for the 2022/2023 Academic Year. This study uses random cluster sampling as a sampling technique conducted by researchers. This sampling technique was applied because it was found that the groups looked uniform, judging from the acquisition of the same material and the same source books used. The samples chosen were two classes with 36 students for the experimental class and 36 college students for the management class. This research was carried out from 20 August 2022 to 20 September 2022. The instrument used was a written essay test with 23 questions on elasticity. Based on the 23 instrument questions used, they

had passed the validation stage by the validator who stated that the questions were suitable for measuring science process skills. The 23 questions represent the 6 indicators of SPS used, namely four questions, each representing the indicators of observing, predicting, applying concepts, interpretation, and communicating, and three questions representing the indicator of planning the experiment. The division of the questions is representative enough to measure each indicator of SPS so that the questions are suitable and feasible to use for research. The questions represent each indicator of SPS. A lattice of indicators for the SPS that will be researched is presented in Table 1.

Table 1 A grid of indicators of SPS

No	Aspects of science process skills	Explanation indicator
1	Observe	- Using senses such as the eye to observe - Gather or use relevant facts
2	Predicting	State what might have happened to the situation which has not been observed
3	Planning the experiment	- Determine what will be measured by the tools and materials used - Determine the work steps to be carried out
4	Applying concepts	Applying that concept have learned in new situations through practice questions
5	Interpretation	- Finding patterns in practicum activities - Summarize the results of the practicum
6	Communicating	- Explain practical results - Changing the form of presentation from table form to graphic form

According to Table 1 The six signs are turned into testable instrument questions. The research tool comprised 30 descriptive questions corresponding to the six indicators of SPS shown in Table 1 (attached). The item instrument was validated by three expert validators, who concluded that it could be tested after going through the expert validator's revision step. A sample of 36 students from classes XII at MIPA and SMA Negeri in Tasikmalaya 4 participated in the trial. Then, the validation was done using the correlation coefficient (r), which was determined from 30 questions,

23 of which were valid. At the 5% significance level, the criteria for determining whether the questions are valid are visible. The query is said to be valid if $r_{xy} > r_{table}$. Cronbach Alpha values were used in a reliability test, which yielded a result of 0.799. The instrument is credible if the Cronbach Alpha calculation is $0.799 > 0.6$. The instrument is said to be dependable and suitable for use in research because the Cronbach Alpha value is 0.799, which is in the high category.

The written test tool changed into testing using validity and reliability tests, specifically:

- a. The validity check makes use of the correlation coefficient check with a significance level of 5%
- b. The reliability check is carried out after the validity test to determine if the instrument is reliable.

The data analysis method uses the prerequisite check, specifically:

- a. The normality check uses the Chi-square check with a significance level of 0.05%.
- b. The Homogeneity check makes use of the F test with a significance level of 1%
- c. After the prerequisite test was executed, the hypothesis was tested using the t-test take a look at with a significance level of 1%.

The hypothesis test is carried out after the normality and homogeneity tests. Based on this test, the results obtained for both data are normally distributed and homogeneous, so the hypothesis test used is the test. The hypothesis to be tested is as follows:

Ho: there is no effect of the REACT learning model on SPS on the elasticity topic in class XI MIPA SMA Negeri 4 Tasikmalaya.

Ha: there is an effect of the REACT learning model on SPS on elasticity topic in class XI MIPA SMA Negeri 4 Tasikmalaya.

The decision to test the hypothesis is based on the testing criteria is, $t_{count} < t_{table}$, then Ho is ordinary, but $t_{count} > t_{table}$ Ha is ordinary. The results of the calculation $t_{count} > t_{table}$ Ha are ordinary. This means that at the 99% confidence level, it can be concluded that the REACT learning model has an effect on SPS on elasticity topics.

RESULT AND DISCUSSION

The effects of this take a look at have been obtained from the pretest and

posttest values within the experimental and control classes. In the experimental class, the researcher used the REACT learning model, while the control class used the direct instruction model. A total of 36 students from both the experimental class and the control class made up the study's sample. An elasticity topic was employed in this study. Observing, predicting, planning the experiment, applying concepts, interpreting, and communicating are the six SPS examined in this study (Rustaman, 2005).

Based on the results of data processing on the posttest scores for the experimental and control classes, the average value of students in the experimental class was 85.57, and the average value of students in the control class was 73.72. The results of calculating the variance and standard deviation for the experimental class were 4 and 16, while for the control class, it was 5.88 and 34.58. Based on these results, it can show differences in the diversity and distribution of data in the experimental class and the control class. The value of the variance and standard deviation of the control class is greater than that of the experimental class. This shows that the posttest data in the control class is more varied, and the data spread is wider than that of the experimental class.

After getting the posttest values, the data is processed using the prerequisite test first, then testing the hypothesis.

Prerequisite Test:

The data normality check uses the Chi-square with a significant degree of 0.05%. The normality test decision is made based on the test criteria: if $\chi_{count} < \chi_{table}$ then Ho is ordinary and the data will be normally distributed, but if $\chi_{count} > \chi_{table}$ is obtained then, Ha is ordinary and the data isn't normally dispensed. The normality test using Chi-Square may be visible in Table 2.

Table 2 Chi-square normality test results

Data	χ_{count}	χ_{table}	Analysis Results	Conclusion
Posttest score (Experimental)	9.8	12.8	$\chi_{\text{count}} < \chi_{\text{table}}$	The sample has been taken from a normally distributed population
Posttest score (control)	9.4			

Table 2 suggests that the normality check results of the posttest data in the experimental magnificence and control magnificence are normally distributed. The value of $\chi_{\text{count}} < \chi_{\text{table}}$ in the experimental magnificence and control magnificence could be concluded that H_0 is accepted and all data groups are taken from populations that might be commonly distributed.

Homogeneity takes a look at making use of the F test with a significant degree of 1%. The posttest values in the experimental magnificence and control magnificence have $F_{\text{count}} < F_{\text{table}}$, namely $0.46 < 2.291$. So it could be concluded that all group data have identical or homogeneous variances.

Next, searching the statistics within the experimental class and manipulating magnificence, the outcomes show that the information the data are normally distributed and homogeneous, so a hypothesis test is carried out.

Hypothesis testing

The hypothesis takes a look at making use of the t-test with a significant traffic of 1%. The decision to test the hypothesis is based on testing, namely $t_{\text{count}} < t_{\text{table}}$ then H_0 is ordinary, but if $t_{\text{count}} > t_{\text{table}}$ is obtained then H_a is ordinary. The results of the hypothesis test may be visible in Table 3.

Table 3 Hypothesis test results

Data	t_{count}	t_{table}	Analysis Results	Conclusion
Pretest	0.95	2.384	$t_{\text{count}} < t_{\text{table}}$	Ho approved, Ha disapproved
Posttest	4.49	2.384		

Table 3 shows that calculating the hypothesis results in the pretest information for the experimental magnificence and control magnificence obtained $t_{\text{count}} < t_{\text{table}}$, namely $0.95 < 2.385$, so H_0 was ordinary. This means that at the 99% confidence level, it can be concluded that there's no significant distinction between the pretest scores of the experimental magnificence and the control magnificence. Posttest data of students in the experimental and control classes with a confidence level of 99% obtained $t_{\text{count}} > t_{\text{table}}$, namely $4.49 > 2.385$, so H_a is ordinary. This means that at the 99% confidence level, it could be concluded that the REACT studying model influences SPS in elasticity topic.

The hypothesis test results for the experimental magnificence and control

magnificence, which were given special treatments, obtained $t_{\text{count}} > t_{\text{table}}$. This means that using the REACT studying model is proven to affect students' scientific method ability in elasticity topics. The effect of the REACT learning model is that there is an increase in SPS in the experimental class's posttest scores, which are superior to the control class. That is in line with the results of Anas and Fitriani (2018), which state that the REACT educational model has a greater influence on students' understanding of scientific concepts and skills compared to other educational models, namely contextual. That is supported by a comparison of the experimental and control classes' posttest scores for every indicator of SPS, which are presented in Table 4.

Table 4 Assessment of the common percentage of posttest scores for each SPS indicator on Experiment class and Control class

Indicator SPS	Experiment Class		Control Class	
	Percentage (%)	Category	Percentage (%)	Category
Observe	89	Very Good	78	Good
Predicting	86	Very Good	76	Good
Planning the experiment	85	Good	74	Good Enough
Applying	85	Good	76	Good
Interpretation	84	Good	72	Good Enough
Communicating	84	Good	72	Good Enough
Average	86	Very Good	74	Good Enough

Table 4 indicates the common percentage of posttest ratings for every indicator of technological know-how procedure skills within the experimental class is advanced to the control class. The experimental class used the REACT learning model to improve SPS with the "very good" category on two indicators, observing and predicting, and the "good" category on four indicators, namely planning experiments, applying concepts, interpretation, and communication. At the same time, the control class uses contextual learning models to enhance SPS with the "good" category on three indicators, namely observing, predicting, and applying concepts. In comparison, the "good enough" category is on three indicators: planning experiments, interpretation, and communication. In addition, Table 5 also shows that in the experimental class and the control class, the indicators of applying the concept are already in the "good" category, but what distinguishes between the experimental class and the control class, namely the indicators of observing, predicting, conducting experiments, interpreting, and communication. In the experimental class, the indicators of observing and predicting were in the "very good" category, while the indicators of conducting experiments, interpretation, and communication were in the "good" category. Unlike the case in the control class, the indicators observing and

predicting were in the "good" category, and the indicators conducting experiments, interpretations, and communications were in the "good enough" category.

The cause of observing and predicting indicators in the experimental class is very good because it is facilitated by the syntax of the REACT studying model in the first stage, namely relating. In the relating stage, college students are trained to attach the principles being studied to everyday experiences or knowledge that students previously had (Nurhasanah & Luritawaty, 2021). In the observing indicator, students are trained in their activities by observing pictures of the phenomena of everyday life related to the concept of elasticity (Nisa et al., 2018). Data collecting that uses pertinent facts and the sense of sight is used to assess pupils' abilities through observation. The indicator questions are used to display images of real-world elasticity applications, and students are asked to observe, identify those that fall within this category, and justify their selections. Students are tasked with observing and describing the link between force and the lengthening of the spring in the following question indicator. After these questions were asked, the findings of the proportion of observing skills fell into the very good category. This follows the research of Saleh et al. (2020) stated that observing skills get good grades because students

are used to making observations. Darmaji et al. (2019) observing skills can develop other skills in communication, concluding, and conducting experiments.

Prediction is the second talent. To estimate the equations needed to solve real-world physics problems, students must first master observing indicators. Only then can they engage in predictive activities. Students are asked to determine how the power will affect the length of the spring when given examples of springs subjected to various loads as problem indicators in this research. The fact that students are asked to estimate the extent of the increase in spring length based on a table of observations is another sign of a problem. Following the asking of these questions, many results fall into this category. According to research by Gasila et al. (2019), if a topic is provided with engaging pictures, students can anticipate it before practical activities are carried out. Prediction activities impact the development of students' SPS because they are based on interpretation skills (Ramadhani et al., 2019).

The third skill is the skill of planning experiments. The indicator is experimenting in the experiencing stage, an exploratory activity for students through experimental activities in making discoveries (Marwiyah et al., 2020). In line with Bruner's Discovery Learning theory, students must learn independently to find and seek answers to problems to find a concept (Haryati, 2017). Students are requested to identify the tools and materials utilized and the work processes necessary to complete practicums as indicated by photographs of the tools and materials for implementing Hooke's Law. Trial indicators achieve the "good" category percentage. According to Wahyudi and Lestari's research (2019), practicum activities can improve students' SPS.

The fourth skill is the skill of applying the concept. The indicator of applying the

concept in the experimental class is in the same right category as in the control class. The indicator of applying the concept is in the applying stage of the REACT syntax. Students can apply the concepts that have been learned through the practice questions that have been provided. The skills to apply concepts encourage the student to apply a new concept to everyday life (Nana, 2018). Determine the amount of stress, strain, and Young's modulus are the markers of the questions that are being presented, and students are asked to use the knowledge they have gained to respond to these questions. When students are asked to estimate the spring constant's magnitude based on a table of observations related to Hooke's Law, it is another sign that they are answering a question. Applying the idea of receiving a percentage in the "good" category is what the indicators do. In line with Saraswati and Agustika (2020), practice questions can improve students' thinking skills. According to Sinan Ozgelen, science process skills are related to cognitive development and students' way of thinking in solving problems.

Furthermore, when compared to the indicator of experimenting, the indicators of interpretation and communication are in the "good" category. Data interpretation indicators assist students in interpreting and interpreting practicum results data. The implementation of the two indicators involves group cooperation of students. According to Nurliani et al. (2018), students search the internet for practicum conclusions. Furthermore, students are still not proficient in identifying observation patterns from which to draw conclusions and do not understand how to communicate conclusions (Yunita & Nurita, 2021). As a result, the interpretation indicator has the lowest percentage but remains in a good category.

Although they receive the lowest percentage, communication, and interpretation indicators are still considered "excellent." Students are given a table of practicum findings in this indication and instructed to exhibit the information graphically and explain or express it. Students are not accustomed to reading, presenting data graphically, or elaborating on the findings of the data, claim Yunita and Nurita (2021). When communicating the experiment's results, only group representatives were chosen to do so. Effective communication skills include the ability to do so orally and in writing using tables, graphs, pictures, and diagrams (Firdaus & Mirawati, 2017). As a result, the teacher's assessment is not optimal, and the achievement of communication indicators is not optimal when compared to the indicators of conducting experiments. Alternatives can be implemented to improve communication indicators, namely the need for individual assessments and guiding students so that they are accustomed to communicating the practicum results if presented in pictures or graphs.

Primarily based on this, the percentage of the common posttest score for every SPS indicator within the experimental class became better than the control class. The experimental average percentage is 86% in the "very good" category, while in the control class, the average percentage is 74% in the "good enough" category. That is in step with the effects of studies by Sugianti et al. (2020) supported by Hidayanti et al. (2019), which state that the use of the REACT learning model in the experimental class became a better percentage of student learning outcomes and science skills compared to the contextual learning model in the control class. According to Hakim (2017), direct instruction learning models alone are insufficient to build students' SPS; appropriate approaches and strategies must accompany them.

Using the REACT to know the model inside the experimental class successfully enhances college students' science process skills in elasticity topics. That is due to the fact the REACT learning model has five syntaxes, namely Relating (observing), Experiencing (experiencing), Applying (implementing), Cooperating (collaborating), and Transferring (transferring) using a contextual approach and constructivism principles that guide college students to be actively concerned directly in studying activities to get meaningful learning (Crawford, 2001).

The Meaningful Learning theory supports this from Ausubel, which states that learning must be meaningful and related to the cognitive characteristics students have previously possessed. According to Helmianti (2012), the learning process must emphasize students construct (build) their knowledge so that learning is not just memorizing material.

REACT learning uses a contextual approach to encourage students to relate the studied material to real life. This learning is constructivism because students construct their knowledge directly through experience. The student experience makes students able to understand learning by themselves. This is based on Nurhasanah and Luritamaty's research (2021) which states that the REACT studying model may help students understand concepts and solve problems easily. In addition, the contextual approach to the REACT learning model may enhance college students' SPS. In line with the studies by Nisa et al. (2018), a contextual approach with the REACT learning model can affect students' SPS.

The difference in treatment within the experimental class and the manipulated class can be visible from the proportion of average posttest ratings within the experimental class. The REACT

studying model is better than the control class using the contextual gaining knowledge of the model. Of course, the REACT learning model impacted students' SPS in the elasticity topic. This is in line with Syntia et al. (2018), the REACT learning model may affect students' scientific method ability, also supported by research conducted by Feri (2022), pointing out that the REACT studying model is powerful in enhancing students' technological know-how procedure abilities independently.

CONCLUSION

Primarily based on the effects of the examination, after the posttest, the students' SPS received an average score of 86% in the "very good" category after being applied to the REACT learning model. Therefore, it could be concluded that the REACT studying model (Relating, Experiencing, Applying, Cooperating, Transferring) impacts students' SPS of elasticity topic in class XI SMA Negeri 4 Tasikmalaya. The result is that the experimental college students use the REACT studying version compared to the control class using the direct instruction model. This research certainly has drawbacks. The drawback of this research is the number of SPS indicators used only six indicators, so it is not optimal in knowing SPS results and limited learning materials due to limited time during learning. Therefore, the researcher suggests further research, namely that further research into the REACT learning model is required with different materials, especially in physics learning. The measured SPS indicators should not be limited so that each indicator can be measured and researched.

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