

The Effect of Interactional Teaching Style on Student Learning Outcomes on Respiratory System Material

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ABSTRACT

An interactional teaching style is needed for the learning process in the classroom. The use of an interactional teaching style is believed to affect student learning outcomes. This study aims to determine the interactional teaching style on student learning outcomes in the material on the respiratory system in class XI MIPA SMA Negeri 2 Singaparna Academic Year 2022/2023. The research method uses a quasi-experiment with a research design called a nonequivalent pretest-posttest control group design. The population in this study were all class XI MIPA SMA Negeri 2 Singaparna with 4 classes totaling 215 students. The sample technique used was purposive sampling with the sample used being class XI MIPA 2 as the experimental class and class XI MIPA 4 as the control class with 60 students. The instrument used in this study was to measure student learning outcomes referring to the taxonomic bloom indicators of indicators C1, C2, C3, C4, and C5. The data analysis technique used is the independent t-test. The results of the study show that there is a significant effect of using an interactional teaching style on student learning outcomes with a significance value of $0.000 < 0.05$. It can be concluded that there is an influence of interactional teaching style on the learning outcomes of students in class XI MIPA SMAN 2 Singaparna Academic Year 2022/2023 on the material of the respiratory system.

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Keywords: Interactional teaching style, Learning outcomes

Introduction

Education plays a vital role in human life in forming quality individuals because we cannot deny that education is a must for humans. Education is an effort made by humans to become independent people so that they can become part of a society that has values and can play a

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role in nation-building ([Inanna, 2018](#)). To realize this, it is necessary to have an effective and efficient learning process, the teaching and learning process involves various teacher activities that are directly related to students, and these activities contain learning objectives. In the learning process, there must also be a reciprocal relationship between the teacher and educative students to achieve certain goals ([Setyosari, 2017](#)).

During the teaching and learning process, it is hoped that the teacher will be able to recognize and understand students and consider several things. One is the learning style used in the learning process because each student has different abilities and intelligence. This difference can be a reference material for a teacher to broaden the teacher's horizons in training the focus of students and evaluating students' abilities. Creating learning that is expected of a teacher requires various skills to manage the class well during the process of learning activities so that student learning outcomes can be maximized ([Mansyur, 2017](#)).

Learning outcomes are the level of knowledge achieved by students regarding the material received when participating in and doing assignments and learning activities at school ([Ifa, 2013](#)). With the learning outcomes, students can know the quality of development in their learning in terms of affective, psychomotor, and cognitive. This can be developed with a balance in class management.

A teacher's teaching style is a teacher's way or technique in conveying the content of their teaching in carrying out the teaching and learning process so that goals can be achieved. This teaching style is the teacher's way of organizing and guiding students' learning experiences. Teaching style is also important because it gives an impression of students' understanding of the presented teaching material.

The teacher's teaching style can influence the learning process to create good learning outcomes and skills ([Hasri, 2021](#)). The term teaching style itself is a teacher teaching with the preferred habits related to the material delivered based on behavior and ways of speaking. The teaching style implemented by the teacher reflects how the teacher teaches, and the teaching style that is owned is a teaching style in his view.

Teachers are expected to have a teaching style that is easily accepted by students, both classical, technological, personalization, and interactional teaching styles which are then realized in teaching and learning activities ([Anwar et al., 2020](#)). The way to achieve the expected learning of the teacher is to apply the interactional teaching style ([Wiguna et al., 2018](#)). Efforts to apply the teacher's interactional teaching style do not dominate during the learning process; besides that, the teacher can help create conditions conducive to learning and provide motivation and guidance so that students can develop their potential and creativity through teaching and learning interactions. The interactional teaching style was chosen to convey learning material in the style of a teacher who shows professionalism.

The interactional teaching style allows students to interact more intensely in learning, so that it will increase high learning outcomes, creating a climate of interdependence and the emergence of dialogue between children. Teachers create more learning environments with the aim that students not only learn to improve their cognitive abilities, but also function to change their behavior as a whole, both in terms of cognitive, affective, and psychomotor ([Herawati, 2018](#)). The teacher's responsibility is not only to improve cognitively. The teacher has the responsibility to see everything that happens in the classroom to help the development process and student learning outcomes.

Based on the results of initial observations that were made at SMA Negeri 2 Singaparna Tasikmalaya, on September 14 - November 14 2022 in general when delivering material, teachers have different teaching styles, most of the time during the learning process the teacher uses a teaching style that is less interactive and tends to transfer knowledge, in other words, it explains and tells more about the content of the material and theory presented. While students only listen to what the teacher says in front of the class, students are not actively involved during the learning process. This causes students to feel bored and less focused during the

learning process, this can be seen during the learning process, it can be seen that some students are chatting.

This condition causes there to be many students who have not answered questions from the teacher and have not been able to conclude the content of the material that has been studied, so there are still many students who get low learning outcomes, as seen in the average value of students who are still below the Minimum Completeness Criteria (KKM). Based on the analysis of the problems and alternative solutions offered, as well as similar research that has been carried out by other researchers before, educational research using the Interactional Teaching Style needs to be carried out to improve the learning outcomes of Class XI MIPA Students of SMAN 2 Singapore.

Methods

The research method used is a quasi-experiment with the Nonequivalent Control Group design. The population in this study was all class XI MIPA SMAN 2 Singaparna, consisting of 4 classes with a total of 118 students. The sampling technique used is purposive sampling. The research sample used 2 classes, namely class XI MIPA 2 with a total of 30 students as the experimental class and class XI MIPA 4 with a total of 30 students as the control class. The dependent variable in this study is learning outcomes, and the independent variable is interactional teaching style.

The data collection technique used is the learning achievement test given to the experimental class and the control class. The research instrument used was a written test with a total of 30 multiple-choice questions. Data processing techniques to determine the increase in learning outcomes before and after learning is done by calculating N-gain. The data analysis technique used the t-independent test, which was previously carried out with the normality test using the Kolmogorov-Smirnov test and the homogeneity test using the Levene test. All data analysis was carried out with the help of SPSS software

Results and Discussion

Data from the Kolmogorov-Smirnov test analysis in the experimental class and control class can be seen in Table 1.

Table 1. Kolmogorov-Smirnov test data in the experimental class and control class

Test of Normality		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Student	Class	Statistic	df	Sig.	Statistic	df	Sig.
Learning Outcomes	Experimental Pretest	.146	30	.103	.910	30	.015
	Experimental Posttest	.122	30	.200*	.972	30	.601
	Control Pretest	.149	30	.088	.909	30	.014
	Control Posttest	.141	30	.134	.932	30	.057

*. This is a lower bound of the true significance

a. Lilliefors Significance Correction

Table 1 shows that the Kolmogorov-Smirnov test in the experimental pretest has a significance value of 0.103, in the posttest in the experimental class it has a significance value of 0.200, in the pretest in the control class, it has a significance value of 0.88, and in the posttest in the control class it has a significance value of 0.134. This shows that the four significance values stated > 0.05 , which means that the data shows a normal distribution.

The next stage was to test the homogeneity of the data using the Levene test, which can be seen in Table 2.

Table 2. Levene Test Homogeneity Test Data

Test of Homogeneity of Variance					
		Levene Statistic	df1	df2	Sig.
Learning Outcomes	Based on Mean	3.058	1	118	.083
	Based on Median	2.994	1	118	.086
	Based on Median and with adjusted df	2.994	1	111.987	.086
	Based on trimmed mean	3.037	1	118	.084

Based on Table 2, it states that the data homogeneity test gets a significance value of 0.083, which means that the significance value is > 0.05 . So, it can be concluded that the pretest-posttest data of students has homogeneous data. Test the data hypothesis using the t-independent test which can be seen in Table 3.

Table 3. Independent t-test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning Outcomes	Equal variances assumed	3.058	.083	2.194	118	.000	7.0600	3.2179	.6878	13.4322
	Equal variances not assumed			2.194	113.567	.000	7.0600	3.2179	.6852	13.4348

Based on the independent t-test in Table 3 states that the interactional teaching style influences student learning outcomes. This is because it is shown in the Equal variances assumed category with a significance value (0.000) which is less than 5% ($0.000 < 0.05$) so it can be concluded that H_0 is rejected.

The interactional teaching style used in this study affects student learning outcomes. High student learning outcomes will affect the competence of students in thinking well. This is because a teacher has an important role in the learning process of students, and for that, the teacher needs to create conditions that support them so that they can carry out good learning activities ([Rahmat & Jannatin, 2018](#)). Teaching and learning activities that are always carried out by the teacher should be able to attract the attention of students and arouse the enthusiasm of students to participate in the learning process ([Safari et al., 2014](#)).

As for the use of the interactional teaching style, it has advantages in the learning carried out, namely, creating a more active, conducive, and effective classroom atmosphere. If

the teaching styles, resources, and programs are adapted to the needs of students, the academic achievement and attitudes of students will increase due to the influence of this teaching style. ([Astutie, 2013](#)). Meanwhile, the obstacle found during the research was that there were still students who spoke in the classroom by talking about something that was not related to the material presented, so there had to be supervision and changes to variations that would cause students to be more focused on learning. In learning activities, the application of an interactional teaching style as a teacher must provide more stimulation to students so that students are not only passively listening to explanations from teachers, because basically, an interactional teaching style requires teachers and students to be equally dominant in learning activities ([Ariani, 2016](#)).

The interactional teaching style designs learning by creating a balanced learning atmosphere between the roles of the teacher, teaching materials, and students which can create an atmosphere of interdependence between teachers and students ([Hasri, 2021](#)). According to Abdul Majid ([Rahmat & Jannatin, 2018](#)), Students and teachers, or students and students, the interdependence between students and teachers is both a subject of learning, and no one is considered good or vice versa the worst. According to Thoifuri in [Hasri \(2021\)](#), the characteristics of an interactional teaching style are that the learning material is in the form of situational problems related to socio-cultural and contemporary, the delivery of material is carried out in two directions, dialogic, teacher questions and answers with students and between students, the role of students is more dominant in expressing their views about a fact, listening to their friends' opinions and modifying various ideas to look for new forms that are sharper and more valid, the role of teachers is dominant in trying to create a learning climate of interdependence and together with students modifying ideas or knowledge to find forms the new one.

The learning outcomes of students in both the experimental class and the control class had significant differences because the average for each indicator between the experimental class and the control class was much higher in the experimental class. This is caused by interactional teaching style factors in learning activities so that the learning outcomes of students in the experimental class are better than those in the control class. Each indicator has a different average depending on the level of the indicator. The higher the level of difficulty, the indicator of learning outcomes, the lower the average score obtained by students. Each indicator has certain characteristics in an instrument of learning outcomes. This is supported by research conducted by [Lisabolit et al. \(2021\)](#), who state that the influence of teaching style is in the high category and to increase it to the maximum it is necessary for a teacher who pays more attention to his students when teaching this to prevent boredom in ongoing learning activities so that student learning outcomes will obtain maximum results.

The interactional teaching style will be the center of attention of students which in this case will determine the success of the teacher in conveying his learning. Students pay attention to the teacher in delivering learning material and all the teacher's behavior when in class. The existence of this interactional teaching style helps the interaction between students and teachers in ongoing learning activities. The teacher's role is to arouse students' enthusiasm for learning through an interactional teaching style ([Wiguna et al., 2018](#)). Teaching style is related to the learning process of students; when the teacher's teaching style is not good, it will affect the learning process of students who are not good either. If on the contrary, the teacher's teaching style is very good, it will affect the learning process but has good results ([Saleh et al., 2017](#)).

Student learning outcomes scores were obtained from 30 compound choice questions which were carried out using pretest-posttest in the experimental class and control class. When the pretest was carried out, students still felt confused about filling in the questions provided on the Google form because the learning material had not been delivered by the teacher. However, when the learning process takes place using an interactional teaching style, students

are very active in the learning process, students ask questions and interact between students and the teacher.

The average score obtained by students in the pretest-posttest in the experimental class was higher than the pretest-posttest in the control class because the experimental class was given treatment in the form of an interactional teaching style. The use of teaching styles is carried out because the roles of teachers and students are equally dominant. In this case, teachers create a climate of interdependence and the emergence of dialogue between students and students learn through dialogical relationships (Safari et al., 2014).

A comparison of the pretest-posttest average scores along with n-gain learning outcomes between the experimental class and the control class shows that there is a difference in improvement for more details can be seen in Figure 1.

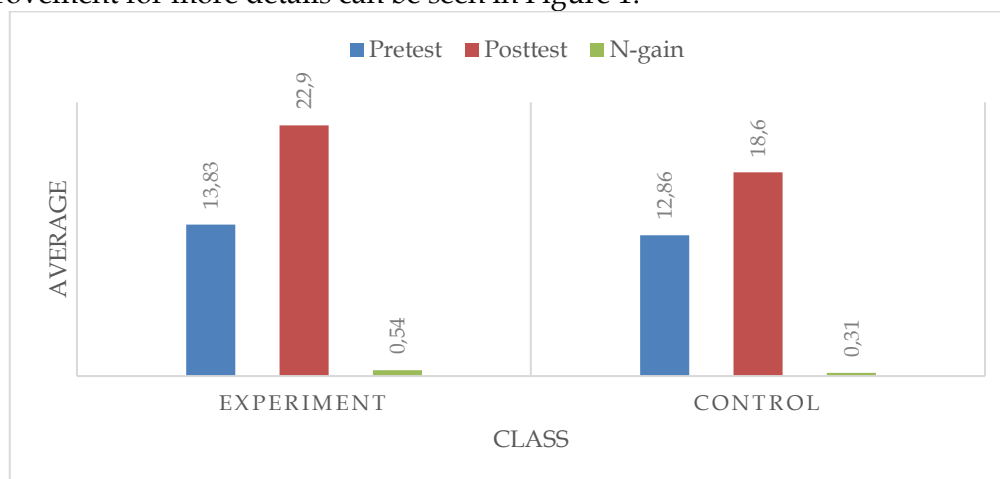


Figure 1. Diagram of comparison of the average scores of experimental and control classes

Even though the results of the N-gain scores each fall into the medium category, in the experimental class the N-gain values were higher than the N-gain values in the control class because the experimental class was treated with an interactional teaching style. One of the factors behind the high score is if the teacher can package it in an interesting way in a lesson, the learning process will run effectively and well. The use of interactional teaching styles needs to be done on an ongoing basis so that students can continuously improve their learning outcomes. One of the milestones of student success lies with the teacher, therefore the teaching style used by the teacher can determine success in educational activities ([Khunaini & Sholikhah, 2021](#)).

According to the student's point of view, the use of an interactional teaching style gets a good response for students in obtaining the learning material delivered. The use of an interactional teaching style requires students to be equally active in the learning process because in this case both students and teachers dominate the learning activities taking place. Teachers should provide more stimulation to students so that students are always actively listening to explanations from the teacher so that the course of this interactional teaching style goes well ([Ariani, 2016](#)).

The following is a comparison of the average pretest-posttest scores and N-gain scores of student learning outcomes in the experimental class, Figure 2.

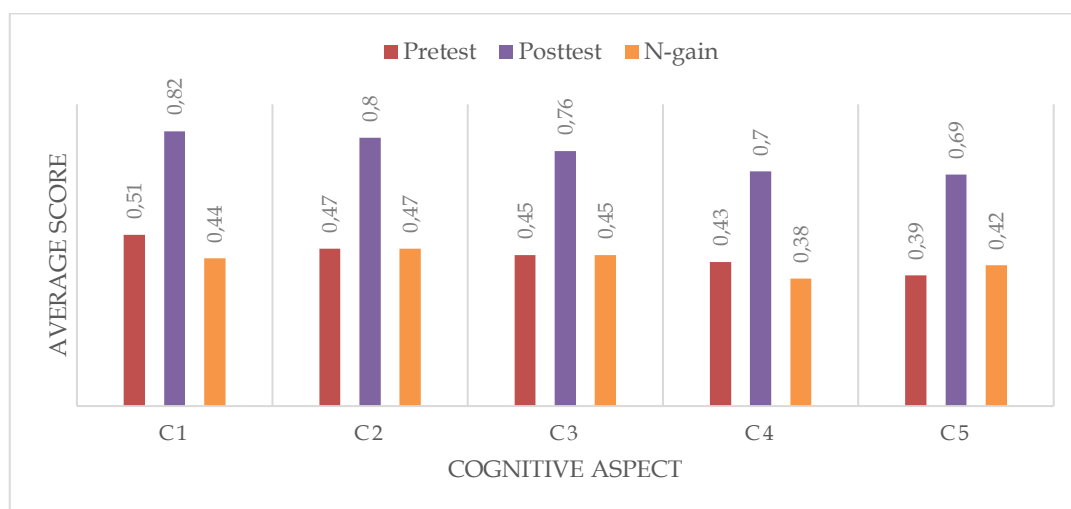


Figure 2. Diagram of comparison of averages of pretest, posttest, N-gain experimental class

Based on Figure 2, it shows that the highest pretest average score is on indicator C1 with a score of 0.51 and the lowest pretest score is on indicator C5, namely 0.39. Meanwhile, the highest posttest average score was in indicator C1, namely 0.82 and the lowest posttest average score was in indicator C5, namely 0.42. The highest N-gain score was obtained for the C2 indicator with a score of 0.47, this shows that students found it easier to work on the C2 indicator questions because they felt they understood the teacher's explanation of the concept or material presented. An initial understanding stored by students will be associated with the new concepts they learn (Suryadi, 2019). The relationship between the high C2 indicator and the interactional teaching style indicator is that in learning using an interactional teaching style, students understand the material provided more quickly because of the interactional teaching style, and students have more freedom to know the material they are studying.

Meanwhile, the lowest N-gain score is in the C4 indicator at 0.38. This is because when students are given a problem related to learning, they find it easy, but when asked to give an example, students find it difficult to explain it. Meaningful learning will be realized when students can connect the information obtained with relevant concepts in the student's cognitive structure (Sari & Wulandari, 2020). Based on Figure 2, it can be concluded that in the experimental class, all indicators are included in the medium category.

Below is a comparison of the average pretest-posttest scores and N-gain scores of student learning outcomes in the drawing control class Figure 3.

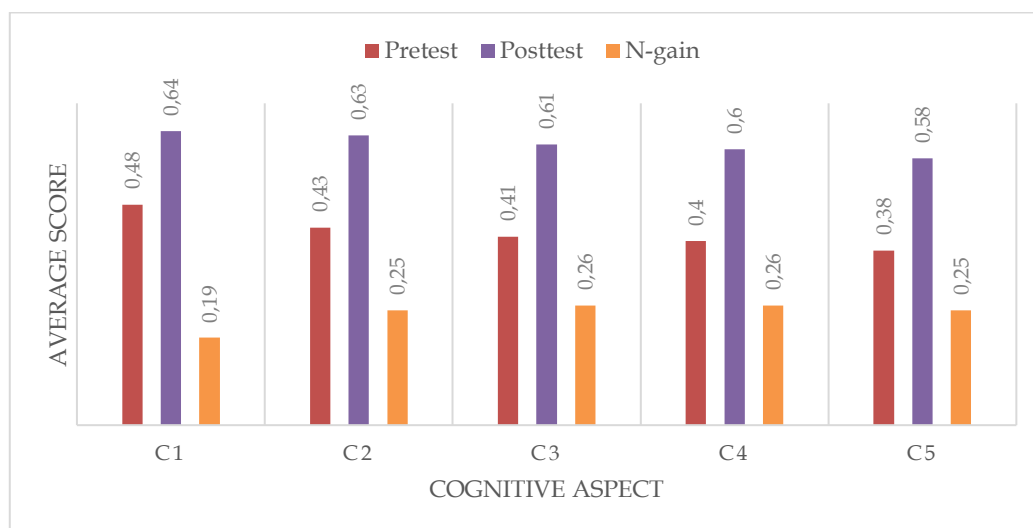


Figure 3. Diagram of comparison of averages of pretest, posttest, N-gain control class

Based on Figure 3, it shows that the highest pretest average score is on indicator C1 with an average score of 0.48 and the lowest pretest score is on indicator C5 with a score of 0.38. Meanwhile, the highest posttest average score on indicator C1 was 0.64 and the lowest posttest score on indicator C5 was 0.58. The highest N-gain score was obtained by indicators C3 and C4 with a score of 0.26, this shows that students show a very active spirit in processing the information obtained, not just storing it without being transformed, and students who are used to asking questions, expressing opinions, and draw conclusions about becoming superior students in the classroom (Sari & Wulandari, 2020). Apart from that, students can apply and analyze the material provided by the teacher using the Discovery Learning model. Even though the control class has the highest indicators C3 and C4, this is still behind the indicator values for the experimental class.

Meanwhile, the lowest N-gain score is in the C1 indicator at 0.19. This is because students do not yet know the material or concepts taught regarding the respiratory system. It is explained that a person can train his memory in many ways. A thinking process is an individual's ability to connect a value and consider an event (Sari & Wulandari, 2020). Based on Figure 3, it can be concluded that in the control class, all n-gain learning outcome indicators are included in the low category. The solution to this is to create student activity, teachers must use good teaching methods where the teaching behavior displayed by teachers is very diverse, one of which is the interactional teaching style (Febrianto, 2014).

Each indicator has a different average depending on the level of the indicator. The higher the level of difficulty, the learning outcome indicator, the lower the average score obtained by students. Each indicator has certain characteristics in a learning outcomes instrument. This is supported by research conducted by (Lisabolit et al., 2021). which states that the influence of teaching style is in the high category and to improve it to the maximum it requires a teacher who pays more attention to his students when teaching, this is to prevent boredom in learning activities, so that student learning outcomes will get maximum results.

The learning outcomes of students in both the experimental class and the control class have significant differences because the average of each indicator between the experimental class and the control class is much higher in the experimental class. This is caused by the presence of interactional teaching style factors in learning activities so that the learning outcomes of students in the experimental class are better than those in the control class.

Based on the description above, it can be concluded that the interactional teaching style can affect student learning outcomes because the existence of an interactional teaching style makes the atmosphere of different learning activities look active between teachers and students equally dominating learning activities. Therefore, the use of interactional teaching styles needs to be increased again to improve the quality of learning and increase the competence of students so that it affects learning outcomes.

Conclusion

Based on the results of the research and analysis of the data that has been used, it can be concluded that there is an influence of interactional teaching style on student learning outcomes in the respiratory system material in class XI MIPA SMAN 2 Singaparna Academic Year 2022/2023. This is shown by the hypothesis testing that has been carried out using the independent t-test that H_0 is rejected which obtains a significance value of $0.000 < 0.05$.

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