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The Effectiveness of Cooperative Learning Model and Interpersonal Intelligence on Motivation of Primary Teacher Education Students

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Abstract

The learning process greatly influences student activity and behavior, causing students to be more active in the learning process when learning is designed with a good teaching style. Students are expected to always be active and have intelligence that will be a provision when they become educators, but in fact, in the field, many students always complain about the indoor lecture process and that interpersonal intelligence is not used enough by students. This research aims to analyze whether the application of the two stay two stray learning model can improve PKN students' understanding of concepts. The method used in this research is a quantitative survey method. The population in this study was 98 students and 10 people with PGSD doses. Data collection uses observation and questionnaires with data analysis methods including validity and reliability tests, normality tests, linearity tests. The results of the research show that the significance value for the influence of X1 and It is hoped that this will serve as material for consideration in order to increase students' motivation and interpersonal intelligence and also as a suggestion for future researchers so that they can carry out research by encouraging students' interpersonal intelligence to be better and developing the learning process

Keywords: Model, motivation, intelligence

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INTRODUCTION

The effectiveness of the learning process plays a crucial role in shaping students' engagement and behavior in the classroom. When instructional methods are thoughtfully designed and implemented, students tend to participate more actively and show greater enthusiasm for learning. Conversely, a lack of engaging teaching strategies can lead to passive behavior and reduced involvement, highlighting the need for innovative learning models that foster active student participation. Higher education is an educational unit providing the highest level of education in Indonesia. Universities produce graduates who are ready to serve society. Therefore, the quality of college graduates needs to be considered (Nashiroh et al., 2020; Hidayah et al., 2018) then education is one of the media for

gaining knowledge. With knowledge, a person can develop self-quality, quality of life, personal potential and personal skills. Education is also a means for developing the quality of human resources in a country. Through education, quality of life can be developed both individually and in national life. Being a country rich in natural resources is not a guarantee that the country will prosper and achieve. The strength of the resources possessed is the product of a good education system because through education these resources are forged into individuals who are able to study theories and even new theories and are able to apply them in everyday life.

The learning process should be able to develop abilities and shape human character so as to create quality The most important thing in the implementation of education is the curriculum itself because the curriculum is a set of educational programs that are planned and arranged systematically and implemented to achieve educational goals. Curriculum is an important component in education. The curriculum is a guideline for achieving the goals that have been planned in an educational program (Fujiawati, 2016; Julaeha, 2019) Without an educational curriculum, it will be difficult to achieve the educational targets or goals that have been programmed. Considering the importance of a curriculum in education, a teacher should understand what a curriculum is and what the contents of a curriculum are (El-Astal, 2023; Sharma, 2016). Because the curriculum is a part of the education system that cannot be separated from other system components, without a curriculum an education system cannot be said to be a perfect education system. The curriculum currently being implemented in Indonesia is the 2013 Curriculum where this curriculum places more emphasis on competency with thinking based on attitudes, skills and knowledge. From the statements above, to support this, there is a need for a broad understanding of the curriculum itself.

One way to support student success and also to provide an understanding of student care skills is learning tools because education is a form of manifestation of dynamic human culture and developmental requirements (Du Plooy et al., 2024; Mebert et al., 2020; Meland & Brion-Meisels, 2024) To help overcome problems It requires a learning innovation or a set of events that influence it in such a way that students gain convenience. (Dewi et al., 2024; Munna & Kalam, 2021; Retnaningrum et al., 2023)said that educators are learning facilitators who lead students to achieve learning goals in improving active, effective and conducive learning, so teachers must innovate using interesting and varied methods. Because learning is a process of effort carried out by a person to obtain a new change in behavior as a whole, as a result of his own experience in interaction with his environment. Choosing the right action will help students enjoy writing skills and be enthusiastic about learning to write observation reports. Students will also be able to understand the learning material optimally. One of the innovations of prospective teachers in carrying out the teaching process so that students are active is by using models in learning because teaching is the transfer of culture in the form of experience and skills to our students. This model also seeks to change learning that is centered on lecturers to be centered on students. From the several statements above, it is clear that there is a need for PGSD students to understand the lecture process given by a lecturer during lectures so that they can implement it for their students later.

All components in the learning system are interconnected and influence each other to achieve teaching goals, including the success of the teaching and learning process and increasing student engagement. Two factors influence the teaching and learning process: internal factors (within the student) in the form of physical condition, intelligence, motivation, interests, attitudes and talents and external factors (outside the student) in the form of the environment, lecture materials, learning models, the use of learning models is very important. influencing the success of the learning process carried out, one of which is by improving the quality of education (Giantari et al., 2022; Munna & Kalam, 2021; Thaariq et al., 2020; Zagoto, 2022) .Therefore, motivation is very important to support student success because students have the encouragement or drive to carry out learning activities in college to achieve their desired learning goals. Encouragement or driving force is what we call motivation. A child who is motivated to learn will usually try to study well and diligently in the hope of getting better results (Johnson, 2017; Rasuli et al., 2023; Sailer et al., 2021; Zaki et al., 2021). The role of lecturers in teaching is an important factor in growing and increasing students' learning motivation which can ultimately improve the quality of student learning.

Interpersonal intelligence has a very important role in developing student personality in the teaching and learning process as an effort to improve the quality of the learning and learning process. convey thoughts about stimuli, moods, as well as what people around us feel by responding according to ability in an effective and efficient way (Kozlowski, 2018; Tustonja et al., 2024). One of the goals of national education is to develop intelligence. Intelligence is the ability to learn so as to gain knowledge and then through the intelligence obtained each individual is able to carry out real actions that have goals and a rational way of thinking. The intelligence possessed is also able to solve problems so that it is able to adapt to existing situations(Asfiati & Kalsum, 2023; Gignac & Szodorai, 2024). Interpersonal intelligence is defined as social intelligence, because a person's cognitive and psychomotor domains in creating relationships, building relationships and maintaining social relationships are in a favorable situation. This intelligence is very important for students to be able to understand their surroundings so that they can understand the character of friends and also lecturers during the lecture process as motivation to get good learning results because interpersonal intelligence is a person's ability to observe and understand intentions, motivations, temperament, desires, feelings, and the behavior of 134 other people in visible or even hidden circumstances.

Primary school teacher education is an important stage in the formation of basic knowledge and skills for children. Primary school teachers have a very important role in providing quality education to students. To become effective teachers, elementary school teacher education students need to have good interpersonal communication skills and high learning motivation. In an effort to improve these two aspects, using the right learning model can be an effective solution.

One learning model that can influence interpersonal communication and learning motivation is the Two Stay Two Stray learning model. This model allows students to interact and communicate well with each other through discussions and exchange of opinions. In this learning model, students are divided into small groups

consisting of two pairs. Each pair has the task of discussing and solving the given problem. After that, each pair will present the results of their discussion to another group. This method can improve interpersonal communication between students, motivate them to actively participate, and develop critical thinking skills.

Several previous studies have shown interesting results regarding the influence of the Two Stay Two Stray learning model on interpersonal communication and learning motivation at various levels of education. However, there is still little research that focuses on elementary school teacher education students. Therefore, this research aims to fill this gap and explore the influence of the Two Stay Two Stray learning model on interpersonal communication and learning motivation of elementary school teacher education students.

The aim of this research is to test whether the use of the Two Stay Two Stray learning model can improve the interpersonal communication skills of elementary school teacher education students. Apart from that, this research will also test whether this learning model can increase students' learning motivation. Thus, it is hoped that this research can provide a better understanding of the effectiveness of using the Two Stay Two Stray learning model in improving interpersonal communication and learning motivation for elementary school teacher education students.

Through this research, it is hoped that the interpersonal communication skills of elementary school teacher education students can be improved by using the Two Stay Two Stray learning model. Apart from that, it is also hoped that this research can provide important input for the development of a primary school teacher education curriculum that is more effective and responsive to student needs.

Students in taking lectures at tertiary institutions really need achievement motivation in acquiring knowledge, values, and skills related to their science because student learning motivation is the overall driving force within students that generates learning activities, which ensures the continuity of learning activities and which provide direction to learning activities, so that the goals desired by the student subject can be achieved (Handayani, 2018). With high learning motivation, students are expected to obtain good learning outcomes. According to learning outcomes are the result of an interaction of acts of learning and acts of teaching. This is confirmed reveals that motivation is a force that encourages someone to do something, determines how strong the urge is, and directs the purpose of a behavior. (Denensi et al., 2020)

The influence of motivation results in a strong urge, strong desire, and a tendency to want to solve a problem immediately because motivation is the basic drive that moves a person to act to achieve the goals he wants (Nurwahidah et al., 2021). The characteristics of high learning motivation include: working hard, being tough, never giving up, having goals for the future, having enthusiasm, motivation can also influence what we learn, how we learn, and when we choose to learn. an individual with optimal motivation has adaptive attitudes and strategies (always adjusting to circumstances) which include the ability to maintain intrinsic motivation, set goals to be achieved (Pratama et al., 2021).

As for research conducted by (Riswanto, 2016) entitled Effects of the Team Assisted Individualization Type Cooperative Learning Model on Student Learning Motivation with the results of the research that there are differences before and after

using the TAI type learning method, with a better level of student learning motivation in mathematics material economy. Then the research conducted (Sari & Indarini, 2021) entitled The Effect of Using the Jigsaw Type Cooperative Learning Model on Student Learning Outcomes with the results of the research results obtained that > namely 55.53 > 4.11, the regression line equation shows significant and it can be concluded that there is an influence of the jigsaw cooperative learning model on the learning outcomes of linear algebra third semester students of the Physics Study Program, Faculty of Science and Technology, State Islamic University of North Sumatra (Fadhila & Liana, 2022). As well as research conducted by (English, 2017) entitled The Influence of Learning Media and Interpersonal Intelligence on English Learning Outcomes of STIPAS Tahasak Danum Pambelum Palangkaraya Students, while the results of this study are English learning outcomes of students who have high interpersonal intelligence who study with media video is higher than those learning with still image media with sound. From some of the research findings above which discuss the influence of models and also intelligence on learning motivation. Therefore the researcher wants to see the level of influence on Elementary School Teacher Education students by using the *Two Stay Two Stray* Cooperative Learning Model and Interpersonal Intelligence on Learning Motivation. The limitations of the researcher in the preparation of this article are that the researcher has not found previous findings that are in accordance with the topic to be studied, therefore the researcher only collects findings that are similar to the research variables.

METHODS

This research is quantitative research with a Quasi Experimental type. Quasi-experiment is a type of research that regularly manipulates one or many variables and then looks at and causes the impact of these variables on the variable of interest (Creswell & Creswell, 2018; Zajić & Maksimović, 2022). Experiments are chosen because researchers cannot completely control external variables that influence the experiment. The research design used was non-equivalent control pretest-posttest group design with experimental and control groups. Experimental and control groups The group begins with a pre-test, a pre-test is an assessment administered before the start of instruction to determine students' prior knowledge, skills, and understanding of a subject. Its main goal is to establish a baseline, identify learning gaps, and help educators tailor their teaching strategies to meet students' needs, then The number of treatment meetings during a treatment period typically depends on the goals of the intervention, the needs of the participants, and the specific recommendations of the therapy or program being implemented. Most commonly, therapy or treatment sessions are scheduled once a week, which is considered optimal for fostering consistent progress and allowing time for reflection and application of new strategies between meetings. However, the frequency can be adjusted based on individual circumstances-some individuals or programs may benefit from bi-weekly sessions, while others might require more intensive schedules, such as meeting two or three times per week, especially during critical periods or for more intensive interventions. Ultimately, the total number of

meetings you had during treatment would be determined by multiplying the session frequency by the duration of the treatment period. For example, if you attended weekly sessions over an eight-week program, you would have had eight treatment meetings. If the sessions were held twice a week for the same duration, the total would be sixteen meetings. The exact number should be tailored to your specific treatment plan and goals, in collaboration with your therapist or program facilitator. The research design can be seen in Table 1 below:

Tabel 1. Non-equivalent control group pretest-postest design

Pretest	Treatment	Postest
O1	X1	O2
O3	X2	O4

Information:
O1: Pre-Test In The Experimental Class
O2: Post-Test In The Experimental Class
O3: Pre-Test In The Control Class
O4: Post-Test In The Control Class
X1: Two Stay Two Stray Learning Model
X2: Conventional Learning

The population in this study were 3rd semester students in the PKN learning course. The research sample size should be large enough to provide reliable results. The larger the sample size, the more likely it is that the sample's characteristics will accurately reflect those of the population. selection used a simple cluster random sampling technique where samples were taken in random groups. The groups chosen in this research were class 3C as the experimental class and class 5A as the control class. Data collection techniques are used to obtain data through tests and observations. Test objectives (multiple choice) are used to determine students' understanding of concepts in social studies learning. On the other hand, observation is used to see the application of the two stay two stray syntax in the learning process. Before being used in group research, the test questions are validated rationally by asking for help from experts in the field (expert judgment). The grid of research instruments used is presented in Tables 2 and 3.

Table 2. Research Instrument Indicator

Variable	Indicator
Interpersonal Intelligence	Emphaty
	Prosocial Attitude
	Self-awareness
	Solving Social Situations and Social Ethics
	Solution to problem
	Able to Communicate Politely
	Able to Listen Effectively
Motivation to learn	Concentration
	Curiosity
	Spirit
	Independent
	Readiness
	Enthusiasm Or Encouragement
	Give up
	Self-confident

The trial was carried out on class A PGSD UHO semester 5 students with 98 students as respondents and the r table was 0.304. The results of the analysis of interpersonal intelligence items stated that of the 40 items tested and all were valid, then the instrument reliability test was carried out with Cronbach's Alpha Formula using SPSS 20. The results of the reliability test showed that the level of rehabilitation in the category was very high with a score of 0.974 and the results of the item analysis Student learning motivation stated that of the 39 questions that had been tested there were three questions that were invalid. Next, the instrument reliability test was carried out using Cronbach's Alpha Formula using SPSS 20. The results of the reliability test showed that the level of rehabilitation was in the very high category with a score of 0.883 so that the test could be used for further research processes. The prerequisite tests in this research are the homogeneity test and normality test. The results of the normality and homogeneity tests will determine the data analysis tests used in determining the hypothesis. Hypothesis testing was carried out using the Independent Sample T-test to differentiate whether the experimental group and control group had the same or different averages. Next, an N-Gain test was carried out to see the improvement in students' abilities. understanding of the PKN concept after the experiment.

RESULT AND DISCUSSION

Result

Determining whether or not it is necessary to use the two stay two stray learning model to improve students' interpersonal intelligence and learning motivation must go through several data analyzes. The test carried out is a swimmer's test, hypothesis test, Normality test is used to test whether the data obtained is normally distributed. To make it easier to test the data, the SPSS application was used to test the normality of the data. The normality test that resulted in this research can be seen in Table 3.

Table 3. Normality Test Result

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kelas	Statistic	df	Sig.	Statistic	df	Sig.
Understanding the concept of PKN	Pre-test Eksperimen	.208	49	.000	.758	49	.000
	Post-test Eksperimen	.239	49	.000	.742	49	.000
	Pre-test Kontrol	.196	49	.000	.805	49	.000
	Post-test Kontrol	.125	62	.017	.882	62	.000

The normality test that was carried out obtained a significance value for the pre-test and post-test for students' understanding of PKN concepts > 0.05, meaning the data was normally distributed. The next step is to carry out a homogeneity test. The homogeneity test determines the homogeneity variance between the pre-test and post-test scores. The homogeneity test results are shown in Table 4.

Table 4. Homogenity Test Result

		Levene Statistic	df1	df2	Sig.
Understanding the concept of PKN	Based on Mean	1.141	3	205	.334
	Based on Median	1.114	3	205	.345
	Based on Median and with adjusted df	1.114	3	161.105	.345
	Based on trimmed mean	1.085	3	205	.357

Based on data analysis, the results of the pre-test and post-test understanding of students' concepts were obtained shows a significance value > 0.05. So it can be concluded that the data is homogeneous. After the swimmer test, the next step is to test the hypothesis. Hypothesis testing was carried out using an independent sample test to see the results of increasing students' understanding of concepts. The results of hypothesis testing can be seen in table 5.

Tabel 5. Independent Sample Test Result

		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		t	Df	Sig. (2-tailed)
				Lower	Upper			
Understanding the concept of PKN	Equal variances assumed	2.347	5.203	7.981	12.675	.451	96	.005
	Equal variances not assumed	2.347	5.203	7.982	12.676	.451	95.447	.005

Based on Table 5, the significance value (2-tailed) is 0.005 <0.05, which means (H0) is rejected and (H1) is accepted. The conclusion of the hypothesis test on students' conceptual understanding shows that it is significant differences in understanding of the PKN concept of students who use the two stay two stray learning model. Different from students who use conventional learning. Next, experimental and control data analysis was carried out. The results of the class pre-test and posttest were carried out to see the increase in students' understanding of the PKN concept. Test the increase in students' understanding of concepts using the normality test. The N-Gain Test results showed that the average N-Gain score for the experimental group was 71.81%. Test students' increased understanding of concepts using the Normalize Gain test. The N-Gain test results show that the average N-Gain score for the experimental group is 79.81%. Meanwhile, for the control group, the average N-Gain score was 33.68%. Based on the results, it can be concluded that learning using the two stay two stray learning model is more effective in increasing students' understanding of PKN concepts compared to conventional learning with an increase of 15.29%.

Discussion

This research aims to examine the influence of the Two Stay Two Stray learning model on interpersonal communication and learning motivation of elementary school teacher education students. In this discussion, we will explore the research results, implications of the findings, and the importance of using the

Two Stay Two Stray learning model in the context of elementary school teacher education.

This learning model is different from other cooperative models, the characteristic of TSTS is that two people remain in their group and two people look for information in other groups." This learning model will encourage people to be active in their groups, learn to convey and express their opinions using language that is easy to understand. Through learning with the two stay two stray type cooperative learning model, it is hoped that students' abilities can be explored, students can be active in learning, become motivated to learn so that student learning outcomes can be improved(Firman et al., 2020; Nurdin, 2024; Silvia & Zuryanty, 2023; Widyawati et al., 2022). The use of the two stay two stray type cooperative learning model will direct students to be active, both in discussing, asking questions, looking for answers, explaining and listening to the material explained by their friends (Mulianti & Masriani, 2023; Rahayu et al., 2020).

The two stay two stray type cooperative learning model places more emphasis on student activity through the following syntax/steps: 1) the group division stage by the teacher, where the group is a heterogeneous group consisting of 4 people; 2) assignment stage, which must be discussed by each group; 3) the stage of dividing 2 people into guests and 2 people staying in the group; 4) discussion stage, students and the teacher discuss and match the information obtained; 5) reward and punishment stage, students who can discuss and match the information obtained receive a reward, students who cannot discuss and match the information obtained receive a punishment (Ekayani et al., 2020; Elisabet et al., 2020).

Students who have high intrapersonal intelligence are able to control their feelings and are aware of their strengths and weaknesses so that they are able to organize learning patterns that are right for them. With the right learning pattern, students will find it easier to understand examples and be able to classify the mathematical concepts they are studying. Based on this, the ability to understand mathematical concepts in students who have high intrapersonal intelligence will be better than students who have low intrapersonal intelligence.

With intrapersonal intelligence, students will find it easier in the learning process, because they are able to control situations to increase their strengths and overcome their weaknesses in learning mathematics. So, he will try as hard as possible to understand mathematical concepts and be able to apply what he has understood into learning activities so that he can satisfy himself. For this reason, students' intrapersonal intelligence needs to be improved. Several ways to increase intrapersonal intelligence according to Sefrina (Arteaga-Checa et al., 2023) are: "1) arranging daily schedules with children, 2) setting targets for tasks given to children, 3) providing a separate place for children to study and play, 4) providing children's tasks are to increase motivation and self-confidence, 5) involve children in activities to increase motivation and self-confidence, 6) provide a daily notebook to record successes and failures that have been made."

The implication of this research is that the use of the Two Stay Two Stray learning model can improve the quality of learning in elementary school teacher education programs. With increased interpersonal communication, students can learn to listen to each other, appreciate and respect other people's opinions. This can help them face challenges in the classroom and as teachers in the future. Apart from

that, a high level of learning motivation also influences the effectiveness of learning, because students will be more motivated to achieve learning goals.

The use of the Two Stay Two Stray learning model is also in line with educational developments which are currently increasingly leading to a collaborative and participatory approach. This model not only develops academic skills, but also students' social and emotional skills. In the context of elementary school teacher education, interpersonal communication skills and high learning motivation are very important to form a generation of effective and competent teachers.

Although this research has provided a better understanding of the influence of the Two Stay Two Stray learning model, further research is still needed to explore other factors that may influence students' interpersonal communication and learning motivation. In addition, research can look at the long-term impact of using this model in shaping teacher quality and achieving broader educational goals.

CONCLUSION

This research aims to analyze whether the application of the two stay two stray learning model can increase interpersonal intelligence and student motivation to understand the concept of PKN. Based on the results of research and discussions that have been carried out explained, it can be concluded that the use of the two stay two stray learning model is more effective than learning using conventional learning models in increasing understanding of PKN concepts for PGSD students.

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