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THE INFLUENCE OF CHASE METHOD AND TEAM BASE PROJECT-BASED LEARNING MODELS ON LEARNING OUTCOMES IN BASIC PHYSICS AND CHEMISTRY CONCEPTS COURSES PGSD FIP UNIMED STUDENTS

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ABSTRACT

This research aims to determine whether there is an influence of the Chase method and Team Base Project-based learning model on learning outcomes in the basic physics and chemistry concepts course of PGSD FIP UNIMED students. The research method used is a quantitative research method with a type of correlation research. The research population is all PGSD FIP UNIMED students in the second semester of the 2021/2022 academic year. The sample taken was 42 students using purposive sampling data collection techniques. The data in this study were obtained through a learning outcomes test. The test results used have been tested for validity and reliability. Meanwhile, the data analysis technique used is correlation. From the calculation results obtained t count is 56.414, then the result is compared with t table at a significance level of 5% which is 2.018. This shows that t count > t table which means that there is an influence of the Chase method and Team Base Project-based learning model on learning outcomes in the basic physics and chemistry concepts course of PGSD FIP UNIMED students. Meanwhile, the use of the Chase method and Team Base Project-based learning model contributed 98.8% to learning outcomes in the basic concepts of physics and chemistry courses of PGSD FIP UNIMED students, while the remaining 1.2% was influenced by other factors.

Keywords: Chase Method and Team Base Project, Learning Outcomes, Basic concepts of Physics and Chemistry.

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INTRODUCTION

Case Method is a participatory learning method based on discussions to solve cases or problems. The application of this method will help students hone and improve critical thinking skills for solving problems, communication skills, collaboration, and creativity. Meanwhile, Team Based Project is a method built on learning activities and real

project-based tasks that provide challenges for students related to daily life to be solved in groups.

The Case Method and Team Based Project-based learning model requires HOT (High Order Thinking) which is accommodated through the Bloom Level 4 taxonomy of analysis and synthesis, evaluation and create capabilities. In particular, the ability

to create or create students must be achieved in the Project Based Learning learning model. Thus, in the formulation of Course Learning Outcomes, lecturers began to formulate with Operative Verbs (KKO) derived from the bloom taxonomic level, for example "Students are able to analyze problems in management information systems which are then able to evaluate various alternative solutions."

Through the formulation of the learning design, of course, it requires learning activities that support the achievement of being able to analyze and evaluate. The application of appropriate learning activities is an important point in the case method and team base project. Thus, lecturers need to design learning activities that are in accordance with the weight of the learning load of the course.

This learning method can be effectively applied to any study program, including in the PGSD Study Program, because the learning process will develop students' abilities to be creative and innovative. Especially for the PGSD Study Program, the courses presented in the curriculum are indeed more applicable to courses that are applicable in daily life, so that if you apply these two learning methods, it will be more effective for students to master. Students will learn a lot how to apply their knowledge in everyday life. The learning of the Case Method and Team Based Project is expected to make students more creative, innovative and develop critical thinking skills.

Ways to train students' analytical power are wrong, including by getting them used to solving case studies in learning. Students will be trained to find the root of the problem, explain the factors "why" a phenomenon occurs, think critically, and try to find the best solution. Students will also be trained to integrate knowledge, skills, and experience in problem solving. In this case

learning is carried out by the case method. In addition to *being case-based*, learning in the form of *team-based projects* can also train students in problem solving. The creativity of students is demanded here for the success of designing a defined project. Collaboration with real classmates is necessary in the completion of the project. This learning process allows an inquiry process that starts from making observations, raising questions, guiding students, and integrating various materials in the curriculum.

Learning outcomes are changes in behavior after going through a teaching and learning process that covers the cognitive, affective and psychomotor fields. Learning outcomes can be known by conducting certain assessments that show the extent to which the assessment criteria have been achieved. This assessment is carried out by giving tests. Student learning outcomes are learning achievements achieved by students in the process of teaching and learning activities by bringing about a change and forming someone's behavior. To state that a learning process can be said to be successful, each lecturer has his own views in line with his philosophy.

The basic concept is an initial thought which will be used as a guide and developed in the formation of existing scientific knowledge. The basic concept is necessary because it is used as an initial thought in order to be developed into an invocation in various scientific fields or in life in general. This basic concept of Physics and Chemistry course is a course in the S-1 program of the Elementary School Teacher Education Study Program with compulsory course status. This course is given to 2nd semester students with a weight of 2 credits. This course provides knowledge and assessment of the basic concepts of Science in

Physics and Chemistry by making observations, experiments, and solving problems related to the substance and methodology of the basic science of Physics and Chemistry related to the concepts of measurement and measuring instruments, force and motion, matter and its changes, energy and changes, temperature and heat, waves and sounds, light and optics, electricity, magnetism, as well as the environment and universe that support science learning in elementary schools as a means to develop an attitude of piety to God Almighty, religious, and scientific behavior, as well as the ability to apply logical, critical, systematic thinking, analyze, make decisions, make reports, present reports, communicate work results, in solving various problems related to science physics and chemistry. Through this course, it is hoped that students will be able to understand the basic concepts of Science in Physics and Chemistry and be able to apply them in science learning in elementary schools.

RESEARCH METHODS

This research is an association research, which is a study that aims to analyze the relationship between one variable and another or how one variable affects another

variable or whether one variable affects another variable or not. Quantitative data analysis using the correlation method using the SPSS application program version 22. As a population, all PGSD FIP UNIMED students in the second semester of the 2021/2022 academic year while samples were taken by purposive sampling of 42 students in the second semester of class E in the basic concepts of physics and chemistry courses. The type of test used is a student learning outcomes test of 20 multiple choice questions with 4 options where respondents are given questions in a multiple choice format then given a scoring.

RESULTS OF RESEARCH AND DISCUSSION

In this section, an overview of the influence of *the Chase method-based* learning model and team base project will be described on learning outcomes in the basic physics and chemistry concepts course of PGSD FIP UNIMED students. The influence of *the Chase method* and *Team Base Project-based* learning model in this study was measured by 20 question questions. The results of the analysis of the question items are as follows:

Table 1. Results of validity of learning model instruments Based on Chase Method and Team Base Project

Question Item No.	r count	r table	Status
1	0,363	0,361	Valid
2	0,442	0,361	Valid
3	0,374	0,361	Valid
4	0,435	0,361	Valid
5	0,385	0,361	Valid
6	0,388	0,361	Valid
7	0,502	0,361	Valid
8	0,508	0,361	Valid
9	0,526	0,361	Valid

10	0,547	0,361	Valid
11	0,508	0,361	Valid
12	0,429	0,361	Valid
13	0,451	0,361	Valid
14	0,556	0,361	Valid
15	0,473	0,361	Valid
16	0,832	0,361	Valid
17	0,622	0,361	Valid
18	0,757	0,361	Valid
19	0,687	0,361	Valid
20	0,603	0,361	Valid

Table 2. Results of the Validity of Instruments regarding Student Learning Outcomes

Question Item No.	r count	r table	Status
1	0,694	0,361	Valid
2	0,429	0,361	Valid
3	0,685	0,361	Valid
4	0,441	0,361	Valid
5	0,385	0,361	Valid
6	0,732	0,361	Valid
7	0,377	0,361	Valid
8	0,368	0,361	Valid
9	0,372	0,361	Valid
10	0,679	0,361	Valid
11	0,739	0,361	Valid
12	0,402	0,361	Valid
13	0,634	0,361	Valid
14	0,372	0,361	Valid
15	0,694	0,361	Valid
16	0,390	0,361	Valid
17	0,505	0,361	Valid
18	0,679	0,361	Valid
19	0,445	0,361	Valid
20	0,634	0,361	Valid

Table 3. Hypothesis Test

Coefficients ^a					
Type	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.502	1.280		3.517	.001
Type	.985	.017	.994	56.414	.000

a. Dependent Variable: Learning Outcomes

Based on the results of hypothesis testing shows a calculated t value of $56.414 > t$ table 2.018, with a significance level value of 0.000 less than 0.05, this means that the hypothesis in this study rejected H_0 and

accepted H_a . Thus, it can be concluded that the *Chase Method* and *Team Base Project-based* learning models have a positive influence on student learning outcomes.

Table 4. Coefficient of Determination

Model Summary				
Type	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.994 ^a	.988	.987	1.85380

a. Predictors: (Constant), Model

The results of a simple linear regression calculation can be seen that the coefficient of determination (R Square) obtained is 0.988. This means that 98.8% of learning outcomes variables can be explained by *chase method* and *team base project-based learning model variables*, while the remaining 1.2% is explained by other variables that were not proposed in this study.

The case method has the advantage of actively involving students to develop very high thinking skills. Through the formulation of learning design, of course, it requires learning activities that support the achievement of being able to analyze and evaluate. The application of appropriate learning activities is an important point in the case method and team project base. Thus, lecturers need to design learning activities that are in accordance with the weight of the learning load of the course.

The implication of the application of the case method and team project base in the basic physics and chemistry concepts course of PGSD FIP UNIMED students is the increase in students' critical thinking skills which is characterized by an increase in students' ability to identify problems, analyze problems, find information, draw conclusions and present the results of their analysis in front of the class.

Case methods and team project bases

also increase student enthusiasm during lectures on basic concepts of physics and chemistry in class through the role of lecturers as motivators, facilitators and evaluators that have been done well

The application of the Case method and team project base through actions carried out in class E Semester 2 2021 PGSD FIP UNIMED has a positive impact by improving students' critical thinking skills. In addition, a democratic learning atmosphere has been well created. This can be seen from the good communication between group members, students doing group assignments creatively, cooperating with each other, daring to defend group opinions and students learning to respect and respect the opinions of others, thus creating a democratic learning atmosphere.

CONCLUSION

Based on the research that has been carried out, it shows that t count $>$ t table which means that there is an influence of *the Chase Method* and *Team Base Project-based* learning model on learning outcomes in the basic physics and chemistry concepts course of PGSD FIP UNIMED students. Meanwhile, the use of *chase method-based* learning models and *team base projects* contributed 98.8% to

student learning outcomes, while the remaining 1.2% was influenced by other factors.

REFERRAL LIST

Ananda, L.J. Fahrur Rozi, F. Akden Simanihuruk, A. Elvi Mailani, E. 2017. *Implementasi Model Pembelajaran Berbasis Masalah (Problem- Based Learning) Dengan Pendekatan Saintifik Untuk Meningkatkan Higher Order Thinking Skills Pada Mahasiswa Prodi Pgsd Fip Unimed*. SEJ (School Education Journal), 7(4), 434-443.

Ananda, L.J. & Mailani, E. 2018. *Learning Model Based On Problems With Saintific Approach To Improve Students' Higher Order Thinking Skills*. Biodidaktika: Jurnal Biologi dan Pembelajarannya, 13(1), 12-27.

Anggraeni, L. 2012. *Penerapan Metode Studi Kasus Dalam Upaya Meningkatkan Kemampuan Berpikir Kritis Mahasiswa Pada Mata Kuliah Hubungan Internasional*. Media Komunikasi FIS, 11(1), 181-195.

Mailani, E. & Humairah, E. 2019. *Pengaruh Media Visual Tiga Dimensi Terhadap Hasil Belajar Matematika Siswa Kelas V Sd Negeri 101772 Tanjung Selamat Tahun Ajaran 2018/2019*. Seminar Nasional Pendidikan Dasar Universitas Negeri Medan, 1(4), 121-131.

Ratno, S & Elissa, R. A. 2021. *Pengaruh Media Sosial Whatsapp terhadap kinerja guru di masa pandemi Covid-19*. SEJ(School Education Journal), 11(4) 356-361.

Rosidah, C.T. & Pramulia, P. 2021. *Team Based Project dan Case Method Sebagai Strategi Pengembangan Keterampilan Mengembangkan Pembelajaran*

Mahasiswa. Jurnal Kajian Pendidikan dan Pengajaran, 7(2), 245-251.

Sugiyono. 2014. *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.

Sunardi, & Hasanuddin. 2019. *Pengembangan Employability Skill Mahasiswa Vokasi Melalui Pembelajaran Stem-Project Based Learning*. SemanTECH, 3(4), 210–21.

