The effect of discovery learning on chest pass learning outcomes in basketball games

Puguh Satya Hasmara*[1], Basuki[2], Ilmul Ma'arif[2], Guntum Budi Prasetyo[2]

[1]Departement Sport Coaching Education, Faculty of Sport Science, Malang State University, Malang, Indonesia
[2]Physical Education, PGRI Jombang University, Jombang, Indonesia
*Corresponding Author

Abstract

Background Problems: In learning chest pass students at school need an effective and appropriate learning method required at the time of learning. The discovery learning method is one option that can be used by teachers, using this approach the teacher must create something new by creating different learning conditions and learning activities by the demands and development of education. **Research Objectives:** This study aimed to determine the effect of the Discovery Learning model on Chest Pass on Basketball Games. **Methods:** Quasi-experimental research, the population of this study was VII grade students of SMPN 2 Gondang with a total of 112 students, sampling with a Random Sampling technique so that it was known that the VII A class sample was 65 students. Instruments include a chest pass process assessment test and a skill test bouncing the ball against the wall, a descriptive test data analysis technique, and a t-test with the help of the SPSS computer program. **Results:** The results of this study were obtained from the results of this study in the paired sample-test table in the calculation of the results test and process test obtained a Sig (2-tailed) value of 0.000. For that 0.000<0.05, then H0 is rejected, and Ha is accepted. **Conclusion:** the conclusion is that there is an effect of the Discovery learning model on chest passes in basketball games.

Keywords: Discovery Learning; Chest Pass; Basketball

INTRODUCTION

The education system includes physical education, which aims to improve physical skills, motor skills, critical thinking skills, social skills, reasoning, emotional stability, and moral action. Physical education is very important because it helps learners grow as individuals and social beings naturally, (O'Donnell et al., 2020). In the implementation of education as a coaching process. Physical education which includes both physical and educational aspects should be emphasized, Physical education involves knowledge of movement and theory (Quennerstedt, 2019). Physical education helps children learn movement and develop successful athletes. Physical education teachers are critical to developing successful athletes (Mashud et al., 2024).

Physical Education (PE) is a medium to encourage the development of motor skills, physical abilities, knowledge, and healthy lifestyle habits. Through good physical education, it will make students to have physical literacy, who are happy and love physical activity (Mashud, 2019). Because it is part of the overall education system, physical education is very important for students' growth and their health (Febriyanti, 2023). In addition, PE teachers supported by the school should build relationships with sports clubs or even participate in the sports club (Wright et al., 2016). Success in learning depends on the teacher's ability (Raibowo et al., 2019). The teacher's ability to present the learning material well will help students find interest in this sport, which in turn will encourage their interest in exercising.

Discovery learning is a form of mental process that can allow students to apply ideas by observing, explaining and making conclusions, therefore this discovery learning method students must find and experience mental processes independently and educators provide direction. For this reason, learning with the discovery learning model will provide opportunities for students to determine themselves in doing so by starting from making a strategy so that later they will get the results of a discovery (Harja & Rahmat, 2022). The role of teachers in the world of education is very important, so it should be able to be used as motivation for students in carrying out the learning process especially in the subject of health services, PE teachers must have good knowledge and competence to perform their task well (Kasandrawali, 2019). In its learning activities physical education is a communication process that must be created through the exchange of messages or information from a teacher to students so that the messages from learning can be absorbed and appreciated, in basketball games the discovery learning model can help students find creative and interesting ideas (Munir et al., 2021).

In physical education subjects there are several kinds of materials that are taught, including big ball subjects one of which is basketball, one type of technique in basketball is passing with a chest pass movement in basketball which includes this type of pass is the most frequently used pass in

basketball games (Ali, 2018). Chest pass type of pass is used for short passes to playmates who are not closely guarded by opponents, the chest pass is a pass that requires hand skills in making a pass where the ball is held in front of the chest and then pushed towards a friend or opponent. Basketball players often make fundamental mistakes if they cannot grasp the situation quickly and make the right decisions, especially in match situations (Solahuddin et al., 2023). Basketball is considered a fun, competitive sport, educational, entertaining, and healthy for people of all ages. In one of the competency standards in PE subject school's students are expected to be able to practice various sports game skills with the techniques and values contained in them; to achieve this goal it is necessary to have the right learning model to provide material so that it is easy for students to understand one of the models is discovery learning.

The Discovery learning model is a discovery-based learning model where a student is faced with a problem or situation that seems odd so that students can find solutions individually or in groups so that the results obtained will be faithful and durable inn memory, project-based learning has tremendous potential to make students learning experiences more interesting and meaningful (Harja & Rahmat, 2022). The Discovery Learning Modell seeks to lay the foundation and develop a scientific way of thinking. The use of the Discovery Learning model in schools has a major effect on students with some studies finding a positive relationship with increased disciplinary behavior from students (Chu & Zhang, 2018). Students are placed as subjects who learn the role of teachers in the Discovery Learning model is a learning guide and learning facilitator, the Discovery Learning model can stimulate critical thinking skills (Yulianti Rahayu et al., 2019). So that students become more aware of their own findings and thoughts when facing a problem, this situation makes learning active, innovative and fun for students. Understanding concepts, meanings and relationships through an intuitive process is the goal of the discovery learning model, the Discovery Learning model develops an active student learning method and self-discover, self-investigate, then the learning results will be long lasting.

With the existence of a problem of chest pass learning carried out at school is still less effective, because of this, it is necessary to apply a learning model to see how the model can have a good impact on learning at school related to chest pass learning in basketball games, so that one of the actions taken by applying the discovery learning model to help students learn basketball games. Therefore, it is necessary to make efforts in determining steps in optimizing learning so that the planned goals in learning can be achieved. Research that has been conducted (Erwan et al., 2018) looking at the results of how students can do chest pass passing, while in this study it will look at how the process and skills performed by students in chest pass basketball games. Teachers should be more creative in the learning process to create situations that can make students actively learn to find their own knowledge in the teaching materials of the discovery learning model. Although the subject matter is not given in its complete form, students are required to perform various tasks to collect data, compare, categories, analyze, combine, re-organize the material, and make inferences. Based on the opinions of the experts above, the researcher concluded that the discovery learning model is a learning process that requires students to find a concept that has not been known before by conducting observations and research on problems given by the teacher which aims for students to act as learning subjects who are actively involved in learning in the classroom.

METHOD

Research Design

This study uses a pre-experimental design conducted as a preliminary study that can later be continued with the actual experimental research so that it can be called a pre-experiment, because there are still external variables that influence the formation of the dependent variable.

Participants

The population used in this study was State Junior High School 2 Gondang 7th grade students with a total of three classes totaling 112 students. Sampling in this study using random sampling technique. So, it is known that the sample of class VII A totaled 65 students.

Research Instruments

The instruments used in this study are process assessment tests and skill tests, for process assessment by looking at when doing a chest pass and skill tests by directing the ball to the target within one minute.

Data Analysis

The data analysis technique before the data is processed: Data Description, Test of Normality, Homogeneity Test, and T-test, use the help of the SPSS for windows computer program version 24.0.

RESULTS

Based on the research objectives to see the results of the calculation of the chess pass test, the following data is known:

Data Description

In this case, the researcher uses the SPSS for windows version 24.0 program to find out the results of mean, maximum, minimum, median and standard deviation values.

Table 1. Result descriptive statistics

	Value of Results		Process Value	
	Pretest	Posttest	Pretest	Posttest
Mean	13.23	15.90	6.38	7.85
Std. Deviation	3.49	3.46	0.92	1.01
Maximum	22	24	8	9
Minimum	7	9	5	6
Median	13	15	7	8

It can be concluded that there is a difference or comparison between the pretest and posttest scores.

Normality Test

Table 2. Result Normality Test

	Test Results		Process Test	
Sig	0,08	0,200	0,07	0,23
Alpha	0,05	0,05	0,05	0,05
Conclusion	Normal distribution	Normal distribution	Normal distribution	Normal distribution

In the normality test with the provisions: if the p-value> 0.05, then the data is declared normally distributed and the p-value <0.05, the data is declared not normally distributed. From the results of the above analysis on the

Pretest, the p-value is 0.08> 0.05, while on the Posttest the p-value is 0.200> 0.05. This means that through the Kolmogorov-Smirnov test it is declared normally distributed. while in the process test from the analysis results above it can be seen that the p-value on the Pretest is 0.07> 0.05, while on the Posttest the p-value is 0.023> 0.05. This means that through the Kolmogorov-Smirnov test it is declared normally distributed because the p-value is more> 0.05.

Homogeneity Test

Table 3. result Homogeneity Test

Result			
Levene Statistic	df1	DF2	Sig.
0.017	1	65	0.985
Process			
Levene Statistic	df1	DF2	Sig.
0.173	1	65	0.680

From the results of the homogeneity test above, it is known that the data is said to be homogeneous if the p-value is > 0.05, on the other hand, if the p-value < 0.05 it is declared not homogeneous. From the analysis results it is known that the sig value is 0.985> 0.05, it can be concluded that the data is homogeneous, the calculation of the process above obtained a significance value of 0.680> 0.05, it can be concluded that the data has the same variant or the data is homogeneous. Because the Sig. results obtained ≥ 0.05, the data obtained in this study are homogeneous.

T Test

The researcher used the SPSS for windows version 24.0 program to calculate the t-test so that the following results were obtained:

Table 4. Result Paired Samples Test

		Paired Differences						t	Df	Sig. (2tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Test Results	Posttest - Pretest	2.67	1.35	0.2	2.05	3.28		9.02	64	0.000
Test Process	Posttest - Pretest	1.47	0.92	0.20	1.05	1.89		7.28	64	0.000

The results based on the paired samples t-test test results and process test were obtained by Sig. (2-tailed) of 0.000. The decision from the result is H0 accepted if Sig. (2-tailed) ≥ 0.05. Because the value of Sig.(2-tailed) is 0.000, meaning 0.000 < 0.05, H0 is rejected in other words H1 is accepted. This means that there is an influence of the Discovery learning model on the learning outcomes of basketball chest pass in 7th grade students of SMPN 2 Gondang. In the discovery learning model, educators provide opportunities for students to be able to have the ability to analyse and solve problems, even though the teaching materials are not given in full, students are still told to participate in various forms of tasks related to analysing the material, therefore students can make the right movements in improving skills in basketball chest pass.

DISCUSSION

This discussion describes the results of research on the influence of the Discovery Learning (DL) learning model on chest pass learning outcomes in basketball games at State Junior High School 2 Gondang. Based on the hypothesis testing that has been carried out by the paired sample t-test, the null hypothesis (Ho) is rejected, and the working hypothesis (Ha) is accepted. This means that there is an influence of the DL learning model on the learning outcomes of basketball chest pass in Grade VII students of SMPN 2 Gondang. To overcome the learning outcomes of the chest pass, it is necessary to have a creative, in a basketball match, one of the techniques that is often performed is passing the ball with two hands from the front of the chest. This technique is useful for short distances and will increase speed, accuracy, and accuracy. Mastery of good basic techniques must be truly mastered by a basketball player (Simanjuntak, 2020). An innovative and effective learning process that is interesting for students to more easily accept the material taught, one of which is through Discover Learning model. Anything that can convey messages from a source in a planned manner to create a conducive learning environment where the recipient can learn effectively, including the discovery learning model (Sufi, 2023). Discovery Learning is an approach in physical education learning, especially

games that allow children to always be creative and understand the concepts of play.

The Discovery Learning approach is one of the approaches that accommodates the needs of children in playing. Physical education teachers as classroom managers play a more role as learning facilitators and do not become dominant by providing examples as happens in engineering-based learning. In basketball game learning activities, a teacher must be able to direct students to be free and creative in learning a sports game learning but still under the supervision of the teacher (Derri et al., 2014). Physical education teachers must strive to apply the Discover learning approach in learning as soon as possible to achieve the goals of physical education that balance the development of cognitive, affective, and psychomotor aspects. When the initial basic ability is known, the teacher can provide the right formulation and method so that the target learning outcomes are met (Casteliana et al., 2023). In learning basketball games with chest pass material, the form of the game is Invasion Games, learning variations on the ability of basic techniques of chest pass basketball pass is a plan that is used to design learning (Erwan et al., 2018). To play basketball technical skills are also very important. Throwing techniques, catching techniques, dribbling techniques, shooting techniques, circular movement techniques, lay-up techniques, and rebounding techniques are basic techniques (Suryadi et al., 2022). Different physical education methods can improve basketball skills.

By applying the Learning Model in learning, it will be able to give positive things to the results of the chest pass, so it needs to be understood that the learning model used as a form of means or media carried out in the learning process will give positive things to the behavior of everyone through the process created in a learning design. The Discovery learning approach can also be used as an innovation that leads to the improvement of physical education. Learning in Discovery learnings offers a way for students to appreciate the pleasure of playing, encouraging their desire to learn play techniques and improve their performance. variation training method in

physical education learning is effective in improving basketball skills, (Daharis & Rahmadani, 2018). I can provide an overview of learning that can help improve students' basic technical skills in playing basketball. The influence of Discovery Learning on the ability to learn chest passes in basketball games provides a positive and effective approach to learning. With this increase, it can be interpreted that the DL learning model is one of the efficient ways of training to improve chest pass skills and can be used as the latest solution or breakthrough in overcoming problems and difficulties in learning.

CONCLUSION

The conclusion of this study is that the discovery learning model affects the results of chest passes in basketball games, for learning in schools related to learning big balls to use learning models related to how students can do and discover new knowledge independently in the learning process. So later it will be a provision in activities outside of school.

AUTHOR'S CONTRIBUTION

Puguh Satya Hasmara: Writing - Original Draft and Review & Editing. **Basuki:** Software and Writing - Original Draft. **Ilmul Ma'arif:** Methodology and Data Curation. **Guntum Budi Prasetyo**: Validating.

REFERENCES

Ali, M. (2018). Meningkatkan Pembelajaran Chest Pass Melalui Media Simpai Dalam Permainan Bola Basket Siswa Kelas Xiips Sma Negeri 1 Kuok Tahun Ajaran 2016/2017. *Jurnal Pendidikan Tambusai*, *2*(2), 533–544. https://doi.org/10.31004/jptam.v2i4.6

Casteliana, D., Madyhur, M., & Setiawan, I. (2023). Upaya Meningkatkan Hasil Belajar Operan Dada (Chess Past) Permainan Bola Basket Dengan Menggunakan Media Pada Siswa Kelas Vii Sekolah Menengah Pertama (SMP) Negeri 158 Jakarta Timur. *Jurnal Olahraga Kebugaran Dan Rehabilitasi (JOKER)*, *3*(1), 30–40. https://doi.org/10.35706/joker.v3i1.7089

Chu, T. L. (Alan), & Zhang, T. (2018). Motivational processes in Sport Education programs among high school students: A systematic review. *European Physical Education Review*, *24*(3), 372–394. https://doi.org/10.1177/1356336X17751231

Daharis, D., & Rahmadani, A. (2018). Peningkatan Keterampilan Bermain

Bola Basket Melalui Metode Latihan Variasi Pada Pembelajaran Pendidikan Jasmani Siswa Sma Negeri 10 Pekanbaru. *Gladi : Jurnal Ilmu Keolahragaan, 9*(2), 77–85. https://doi.org/10.21009/gjik.092.01

Derri, V., Papamitrou, E., Vernadakis, N., Koufou, N., & Zetou, E. (2014). Early Professional Development of Physical Education Teachers: Effects on Lesson Planning. *Procedia - Social and Behavioral Sciences, 152,* 778–783. https://doi.org/10.1016/j.sbspro.2014.09.320

Erwan, M. T., Suryansah, S., & Nopiana, R. (2018). Pengaruh Variasi Pembelajaran Terhadap Hasil Belajar Tehnik Dasar Passing Chest Pass Bola Basket Pada Siswa Smpn 1 Suralaga Tahun Pelajaran 2017/2018. *Jurnal Porkes, 1*(1), 14–20. https://doi.org/10.29408/porkes.v1i1.1096

Febriyanti, I. (2023). Penerapan Media Pembelajaran Slow Motion Terhadap Hasil Belajar Roll Depan. *Indonesian Journal of Physical Education and Sport Science, 3*(2), 251–258. https://doi.org/10.52188/ijpess.v3i2.466

Harja, A. A., & Rahmat, A. (2022). Pengaruh Metode Pembelajaran Project Based Learning Dan Metode Pembelajaran Discovery Learning Terhadap Hasil Belajar Keterampilan Chest Pass Dalam …. *E-Jurnal Pendidikan Mutiara.* http://ejurnal.stkipmutiarabanten.ac.id/index.php/jpm/article/download/160/123

Kasandrawali, A. (2019). Survei Minat Olahraga Sepaktakaw Pada Siswa Sd Negeri 20/3 Tonasa Kecamatan Labbakang Kabupaten Pangkep. *Riyadhoh : Jurnal Pendidikan Olahraga, 2*(2), 50. https://doi.org/10.31602/rjpo.v2i2.2482

Mashud, M. (2019). Analisis Masalah Guru Pjok Dalam Mewujudkan Tujuan Kebugaran Jasmani. *Multilateral Jurnal Pendidikan Jasmani Dan Olahraga, 17*(2). https://doi.org/10.20527/multilateral.v17i2.5704

Mashud, M., Priambudi, M. A., & Haffyandi, R. A. (2024). Physical Education Teachers in Educational Units: To What Extent Do They Contribute to Sports Achievement in Schools? *Sriwijaya Journal of Sport, 3*(2), 93–108. https://doi.org/10.55379/sjs.v3i2.974

Munir, A., Arief Nur Wahyudi, & Aba Sandi Prayoga. (2021). Pendekatan Model Discovery Learning dalam Keterampilan Teknik Shooting Permainan Bola Basket. *Jurnal Pendidikan Modern, 6*(2), 68–73. https://doi.org/10.37471/jpm.v6i2.190

O'Donnell, C., Sandford, R., & Parker, A. (2020). Physical education, school sport and looked-after-children: health, wellbeing and educational engagement. *Sport, Education and Society, 25*(6), 605–617. https://doi.org/10.1080/13573322.2019.1628731

Quennerstedt, M. (2019). Physical education and the art of teaching: transformative learning and teaching in physical education and sports pedagogy. *Sport, Education and Society, 24*(6), 611–623. https://doi.org/10.1080/13573322.2019.1574731

Raibowo, S., Nopiyanto, Y. E., & Muna, M. K. (2019). Pemahaman Guru

PJOK Tentang Standar Kompetensi Profesional. *Journal Of Sport Education (JOPE), 2*(1), 10. https://doi.org/10.31258/jope.2.1.10-15

Simanjuntak, E. M. (2020). Upaya Meningkatkan Hasil Belajar Chest Pass Bola Basket Melalui Media Audiovisual Dengan Model Pembelajaran Discovery Learning Pada Siswa Kelas Sepuluh Atph (Pertanian) Smk Negeri 2 Somolo-Molo Tahun Pelajaran 2020/2021. *Indonesia Sport Journal, 3*(1), 32. https://doi.org/10.24114/isj.v3i1.20867

Solahuddin, S., Sulaiman, I., Kridasuwarso, B., Samsudin, S., & Kamalden, T. F. T. (2023). Need analysis of basketball tactical instrument: A literature review. *Sriwijaya Journal of Sport, 3*(1), 41–50. https://doi.org/10.55379/sjs.v3i1.970

Sufi, A. (2023). Pengaruh Model Pembelajaran Discovery Learning Terhadap Hasil Belajar Gerak Dribbling Basket di SMPN 1 Kembangbahu Kelas VIII. *Jurnal Pendidikan Indonesia, 12*(1). https://journal.penerbitjurnal.com/index.php/educational/article/view/48

Suryadi, D., Saputra, E., & Wahyudi, I. (2022). Tinggi Badan dan Keseimbangan Dinamis dengan Kemampuan Lay Up Permainan Bola Basket : Apakah Saling Berhubungan? *Indonesian Journal of Physical Education and Sport Science, 2*(2), 67–74. https://doi.org/10.52188/ijpess.v2i2.276

Wright, P. M., Jacobs, J. M., Ressler, J. D., & Jung, J. (2016). Teaching for transformative educational experience in a sport for development program. *Sport, Education and Society, 21*(4), 531–548. https://doi.org/10.1080/13573322.2016.1142433

Yulianti Rahayu, R. D., Mawardi, M., & Astuti, S. (2019). Peningkatan Keterampilan Berpikir Kritis dan Hasil Belajar Siswa Kelas 4 SD melalui Model Pembelajaran Discovery Learning. *JPDI (Jurnal Pendidikan Dasar Indonesia), 4*(1), 8. https://doi.org/10.26737/jpdi.v4i1.927