Conference Paper

The Application of Practice Rehearsal Pairs (PRP) Method to Develop Inquisitiveness of Learning in Students

Nur Aprilia Utami and Ali Mustadi

Universitas Negeri Yogyakarta, Yogyakarta

Abstract

This study is a Classroom Action Research (CAR) conducted in two cycles. This study aims to increase the Inquisitiveness through the *Practice Rehearsal Pairs* (prp) method. Subject of this study consist of 40 students from science education course in Elementary School Teacher Education Department, Yogyakarta state university. Data collection techniques used in this study is questionnaires and observations. The data analysis technique used in this study are descriptive quantitative and calculates n-gain. The results of this study show that the application of learning using *Practice Rehearsal Pairs* (PRP) method is able to enhance students' Inquisitiveness. It is proved by the increase in each cycle. From the results of the initial condition data, the students' inquisitive obtained by questionnaire is 64.8, indicates as "Fair" with 55% of the classical percentage. At the first cycle, it keeps going up subsequently to reach 67.3, indicated as "Good" with 60% of classical percentage. Then at the second cycle, it continues to rise to 69.7, categorized as "Good" with 67% of classical percentage. The results of the initial condition data, the students' inquisitive obtained by observations is 64.3, indicates as "Fair" with 55% of the classical percentage. At the first cycle, it keeps going up subsequently to reach 66.8, indicated as "Good" with 59% of classical percentage. Then at the second cycle, it continues to rise to 68.9, categorized as "Good" with 65% of classical percentage. Besides, the increase of students' curiosity before and after the action can be seen from the normalized gain test from the pre-cycle questionnaire to the first cycle which reaches 0.071, indicated as "low" category while from the pre-cycle questionnaire to the second cycle reaches 0.139, indicated as "low" category. Furthermore, the gain value of observations from pre-cycle to the first cycle reaches 0.070 which is categorized as "low" while the value of pre-cycle observations up to the second cycle reaches 0.116 which is categorized as "low". From the results and explanation, it can be concluded that the *Practice Rehearsal Pairs* (PRP) method can increase the Inquisitiveness of students in the "science education" course.

The purpose of this study is to improve the students' inquisitiveness of learning Science. The subjects of the study were 40 students of Pendidikan Guru Sekolah Dasar or Primary Teacher Education at Yogyakarta State University. The students were cohort C, academic year 2017/2018 who were in their second semester. The study used Classroom Action Research (CAR) for the design and Practice-Rehearsal-Pairs (PRP) Method was used in this study. The data was gathered from classroom observation and questionnaire. The data was analyzed in descriptively and calculated twice. Each

calculation was conducted after three meetings. This paper describes and discusses the results of the classroom observation and questionnaire. The talk will be closed by discussing the implications of the study.

1. Introduction

Without feeling at this time, we have entered the 21st century. The phase where human resources are needed is qualified and competent in their respective fields, especially in the area of education. The teacher is the spearhead of the success of learning. Levy, Baruch, & Mevarech (2011) state that teacher is a model teacher for their students, so it is essential for teachers and prospective teachers especially students majoring in ESTED (Elementary School Teacher Education Department) in the 21st century to be able to have the high Inquisitiveness about learning.

According to the Ministry of National Education (2010:42), Inquisitiveness is a behavior that is seen in a person to continue to try to understand more deeply something that is learned, seen and heard. According to Grossnickle (2014) Inquisitiveness is a manifestation of the need for knowledge and information. The inquisitiveness that arises in a person takes place temporarily as a consequence of behavior, so it needs to be nurtured and enhanced by finding out (Voss & Keller, 1983). Furthermore Kratochwill, Cook, Travers, & Elliott (2000) explains that students naturally have Inquisitiveness in themselves and if their Inquisitiveness is still stimulated in the form of involving learners participate in every process of learning the prospects for the future a right can last a lifetime Inquisitiveness is usually marked by active students to ask questions in the classroom (Christine & Volker, 2017).

Inquisitiveness included into one of 18 the character to be possessed by learners Indonesia. According to Utami, K & Mustadi (2017) explain that character values can foster a positive attitude from students. So the Inquisitiveness needs to be instilled and familiarized by ESTED (Elementary School Teacher Education Department) students. According to Kurniawan (2013) there are six indicators of inquisitiveness, namely: 1) Being active in teaching and learning (have the courage to speak the idea and try to find the material related to the discussion); 2) Showing to have logical thinking ability (logic, rational on the material related to the discussion); 3) Opening his/her mind on new material that is not discussed yet; 4) Being active to ask and answer question of teacher

and other students; 5) Opening his/her mind based on the material being discussed; 6) Enthusiastically completing the task as given by lecturer.

The students from the Science Education Course in ESTED (Elementary School Teacher Education Department) hadn't shown the great inquisitiveness in teaching and learning process in science before this study applied. During the learning process in the classroom, the researcher saw many students who did not pay attention when the lecturer explained the learning material and when asked to ask, the average student was silent. Sciences are subjects that provide many benefits for human survival. It is reinforced by the opinion of Samatowa (2011:6) show that Science has benefits for a nation, the material welfare of a society is highly dependent and determined on the ability of that nation itself in the field of Science because Science is a technological basis. Besides that, Science is also often said to be the backbone of development, because the basic knowledge of technology is Science. Aceska (2016) explained that Science could help students to solve problems in daily life with the principles of education to fulfill sustainable development.

Researchers also conducted interviews with lecturers whose expert in science education. She also confirmed that when the learning process takes place in one direction, the only explanation given by the lecturers alone. As a result, many students who do not pay attention, most of them were chatting, open social media and there were even students who sat in the back until they fell asleep. It makes the class condition passive, and the learning process only happens in one direction. Whereas, active learning is student-centered learning because student-centered learning will make them actively participate in the learning process (Dermawan, 2014).

To prove the problem, the researcher first gave a pre-test in the form of filling out a self-assessment questionnaire and also made observations to students every learning process. The results show that the average score of students' Inquisitiveness reached 64.8, it indicates as "fair" categories with 55% classical percentage and observations show an average score of 64.3, it also indicates as "fair" categories with 55% classical percentage. Indeed, it makes researchers think to be able to apply a learning method that can activate students in the learning process so that students' Inquisitiveness will indirectly appear and increase.

One of the learning methods that can increase students' Inquisitiveness is the *Practice Rehearsal Pairs* (PRP) learning method. It includes the active learning method (Putri, Edidas, & Dewi, 2018; Suprijono, 2011). Psychologically active learning can affect the learning experience (Zhuang & Xiao, 2018). Even Auerbach, Higgins, Brickman, & Andrews (2018) asserted that active learning could improve the ability of students in Science

subjects. Zaini, Munthe, & Aryani (2009:81) revealed that *Practice Rehearsal Pairs* (PRP) is a learning method designed in groups (practice in pairs) consisting of 2-4 members in each group one observes and friends others practice / explain a material given by the teacher.

Practice Rehearsal Pairs (PRP) method giving students the opportunity to practice each other's understand based on the experience formed. Siberman, M (2006:237) explained that one of the most effective and efficient ways to improve student learning outcomes and Inquisitiveness is by dividing them into pairs. The learning process that occurs in this method emphasizes the practice and communication of each group member in order to train students not to be afraid when communicating with others, channel their opinions, increase Inquisitiveness about a topic discussed, train students to think critically, increasing learning motivation, and making students more easily understand and remember learning material. The following are the steps of the *Practice Rehearsal Pairs* (PRP) that researchers use in the learning process.

1. The teacher chooses one topic of skills (learning material) which will be studied by learners.

2. The teacher forms students into pairs groups in the group; two roles are made, namely explanatory or demonstrating and observing.

3. Students who have assignments as explained will explain to their group members about the material being discussed then the other members listen and assess the explanation of the friend so that if there is an opinion that other members will later add.

4. Couples exchange roles. The second demonstrator is given other skills.

5. The process is carried out until all group members have a turn on their respective parts and all group members master the learning material.

Based on the explanation above, the researcher conducts classroom action research with the aim of increasing student Inquisitiveness. This research is expected to enhance Inquisitiveness students of science education course in ESTED (Elementary School Teacher Education Department), Yogyakarta State University so that later they can become competent and qualified teachers

2. Method

This research is a classroom action research. According to Creswell (2012:557), Action research designs are systematic procedures done by teachers (or other individuals in an educational setting) to gather information about and subsequently improve, the ways their particular educational settings operate, their teaching, and their student learning ".

This study starts from March until May in the second-semester academic year 2017/2018 in the course "Science education". Subject of this study consist of 40 students from Science Education Course in ESTED (Elementary School Teacher Education Department), Yogyakarta State University. This research was carried out in two cycles, each cycle consisting of 3 meetings. Each end of the cycle is used by researchers to evaluate learning by filling out questionnaires in the form of self-assessment of each student. Researchers also conducted an assessment in the way of observations assisted by an observer from outside.

The design used in this study uses the Kemmis and Mc Taggart models, through several stages which include: Planning, Implementation, Observation (Observation and Evaluation) and Reflection. Then it is followed by the re-planning stage which is carried out in the form of a new cycle. So on so that it finds answers to the purposes of study (Samuel & Ricky, A, 2013). The planning stage carried out by the researcher is by conducting a series of preparations, among others by compiling the SLP (Semester Learning Plan), EU (Event Unit), and preparing the media needed during the learning process. Researchers collected lecture material about the syntax of the *Practice Rehearsal Pairs* (PRP) learning method. In the lecture process students are divided into groups in pairs to discuss material provided by researchers, students in turn to explain the content. When the discussion takes place, students are given the greatest opportunity to express their opinions related to the learning material. To be able to know the development of students' Inquisitiveness, the researcher observes every meeting assisted by observers and also completes self-assessment questionnaires by students at the end of each cycle.

Data collection techniques and instruments in this study using non-tests in the form of filling out a questionnaire self-assessment of the development of Inquisitiveness during the learning process with a quantitative descriptive analysis of observation, interviews, and documentation. Furthermore, the results are averaged and then interpreted into five categories and calculated to be achieved regarding substantial percentages.

$$\overline{X} = \frac{\sum X}{\sum N}$$

Legend: $\overline{X}$ = Average score of students (Inquisitiveness)

∑X = Total value of students

N = Number of students

(Sudjana, 2014:108)

Then the average results are interpreted into the categorization of student Inquisitiveness, Excellent X> 79.96); Good (66.66) <X ≤ (79.95); Fair (53.36) <X ≤ (66.65); Poor(40.05) <X ≤ (53.35); Very poor/fail X ≤ (40.05). To find out the increasing Inquisitiveness of students before and after the execution of the action, the researcher does the calculation using N-gain <g>. The N-Gain formula (Hake, 1998:65) is:

$$< g >= \frac{M\ Skor\ Post\ test\ -\!\!-\ M\ Skor\ Pre\ test}{SMi\ -\!\!-\ M\ Skor\ Pre\ test}$$

(Kurniawan, 2013:8)

High gain criteria reach a value of 0.70-1.00; Medium reaching 0.30-0.69 and low reaching 0.00-0.29. This research is said to be successful if it has reached the criteria set which is the average value and the minimum observation results reach 66.66 including the good category and the classical percentage reaches 65 %. For the gain value, the researcher does not limit the minimum criteria

3. Findings and Discussion

3.1. Initial condition

The initial condition of the students is known based on the results of observations and interviews with the lecturers of Science Education course Dr. Pratiwi Pujiastuti, M.Pd and also some science education course students on Monday, March 4, 2018. Observations and interviews show a lack of student Inquisitiveness. During the learning process, many students did not pay attention to lecturers' explanations (talking with friends, playing with smartphones and even some students who fell asleep). If this habit is left unchecked, it will undoubtedly have a severe impact on the development of education in Indonesia, and it is scared that it will continue until they become a teacher.

Researchers also conducted a Pre-cycles on March 11, 2018, in the form of self-assessment using a questionnaire that has been provided by the researchers. The results of the Pre-cycles show that the lack of Inquisitiveness of students who were extinguished by learning materials. The average score of students' Inquisitiveness reached 64.8; it indicates as "fair" categories with 55% classical percentage and observations show an average score of 64.3, it also indicates as "fair" categories with 55% classical percentage.

3.2. Cycle I

After doing the learning process use the *Practice* method *Rehearsal Pairs* (PRP) at the end of the meeting, the three researchers asked students to fill out a self-assessment questionnaire on learning that had been carried out. The results of filling out the questionnaire and observation achieved good results with an average score of students' questionnaire reached 67.3, it indicates as "good" categories with 60% classical percentage and observations show an average score of 66.8, it also indicates as "good" categories with 59% classical percentage. The gain score from pre-test to cycle I in the self-assessment questionnaire reached 0.071 (low) and observation reached 0.139 (low), although questionnaire and observation has been in a good category, but this research cannot be said to succeed because the classical percentage level is still in below 65% so that improvements are needed in the learning process and continued with cycle II.

Based on the results of the reflection, there are some inputs from the tutor lecturers that must be corrected in the next cycle, including 1) Lecturers still look enthusiastic when teaching their students, 2) Lecturers have not been able to use the time properly so that they often overlook the specified time. 3) Lecturers must limit the time for each group to hold discussions.

3.3. Cycle II

Cycle II was done the same as in cycle I but by correcting errors and deficiencies that occurred in cycle I. The results of data analysis in cycle II included the average value of filling out student questionnaires reaching 69.7 (good) with a percentage level of 67%, and observations reached 68.9 (good) with a percentage rate of 65%. The gain value before the cycle until the second cycle also increased to 0.070 (low) to gain the self-assessment questionnaire, and the observation gain reached 0.116 (good). The results of the self-assessment and observation questionnaire were as expected, so this study was stopped until cycle II.

4. Discussion

Research in the course "Science Education" by applying *Practice Rehearsal Pairs* (PRP) in fact can increase student Inquisitiveness. This can be reflected in the indicators contained in the table below

Cycle	Curosity												Average of Curosity				Classical Percentage	
	Questionnaires						Observation						Questionnaires		Observation		Questionnaires	Observation
	Ak	Log	Pem	Akb	Mbb	Amt	Ak	Log	Pem	Akb	Mbb	Amt	Average	Category	Average	Category		
Pre-cycles	64.5	66.5	65.0	65.5	63.8	63.5	64.0	65.8	67.0	63.6	64.6	61.3	68.8	Fair	64.3	Fair	55%	55%
Cycle I	66.6	70.1	65.6	67.3	68.0	66.3	66.1	68.3	67.7	66.3	67.1	65.7	67.3	Good	66.8	Good	60%	59%
Cycle II	69.3	71.0	69.0	68.6	69.0	71.6	68.4	69.5	68.9	68.8	69.7	68.3	69.7	Good	68.9	Good	67%	65%

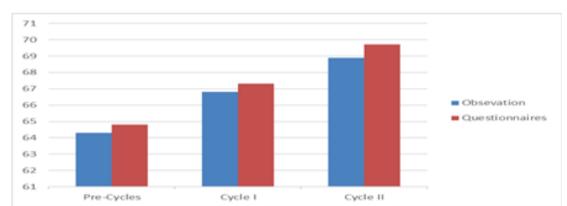| Gain	Pre-Cycle		Cycle I		Cycle II	
	Questionnaires	Observation	Questionnaires	Observation	Questionnaires	Observation
	-	-	0.071 (Low)	0.070 (Low)	0.139 (Low)	0.115 (Low)

Legend:

Ak: Being active in teaching and learning (have courage to speak the idea and try to find the material related to the discussion)

Log: Showing to have logical thinking ability (logic, rational on the material related to the discussion)

Pem: Opening his/her mind on new material that is not discussed yet.

Akb: Being active to ask and answer question of teacher and other students.

Mbb: Opening his/her mind based the material being discussed

Amt: Enthusiastically completing the task as given by lecturer

From the results above, this research shows that the *Practice Rehearsal Pairs* (PRP) learning method can increase students' Inquisitiveness. Students who initially didn't care about learning in the "Science Education" course became excited by showing an effort to find various information related to the material they would explain to their group members. Because of the application of the *Practice Rehearsal Pairs* (PRP) method, it requires students to demonstrate in solving problems alternately in pairs. So that from the learning process will arise activeness when learning, students can show logical thinking skills, students 'minds are open with new things (learning material), actively asking questions and answering questions posed by lecturers and themes, opening students' minds to the material being discussed and students also showed enthusiasm and feel happy when given the task by the lecturer (Kurniawan, 2013). This is also in Hamalik

(2008:83) states that learning is not just remembering, but broader than that, namely experiencing. In this case, each student has direct experience in the learning process. In addition, Reza, T, Amalhayati, & Wati, S, (2017) also confirmed that the *Practice Rehearsal Pairs* (PRP) method improves speech ability and Inquisitiveness about learning material.

5. Conclusions and Suggestions

The five-stage implementation of the *Practice Rehearsal Pairs* (PRP) in science education courses has been carried out well and by applicable regulations. The application of this method can increase students' Inquisitiveness towards learning. Students are more active than before. Based on the results of the research that has been done, it can be suggested before using the *Practice* method *Rehearsal Pairs* (PRP):

1. The lecturer first explains the learning process with the *Practice* method *Rehearsal Pairs* to students.

2. Lecturers determine the length of time for discussion activities so that the learning process is appropriate according to the time set.

3. All students must participate in the learning process.

4. Lecturers reinforce successful students and students who have not succeeded in explaining the material to their group friends.

References

[1] Aceska, N. (2016). New Science Curriculum Based on Inquiry Based Learning - A Model of Modern Educational System in Republic of Macedonia. *Journal of Education in Science, Environment and Health*, *1*(2), 1–12. Retrieved from https://files.eric.ed.gov/fulltext/EJ1105370.pdf

[2] Auerbach, A. J., Higgins, M., Brickman, P., & Andrews, T. C. (2018). Teacher Knowledge for Active-Learning Instruction: Expert-Novice Comparison Reveals Differences. *CBE - Life Sciences Education*, *1*(17), 1–14. https://doi.org/10.1187/cbe.17-07-0149

[3] Christine, V. R., & Volker, E. (2017). Teaching inquiry with a lens toward Inquisitiveness. *PRIMUS*, *1*(27), 148–164. http://dx.doi.org/10.1080/10511970.2016.1176973

[4] Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. *Educational Research* (Vol. 4). https://doi.org/10.1017/CBO9781107415324.004

[5] Dermawan, A. (2014). Keefektifan collaborative learning berbasis quiz edutainment terhadap ketuntasan hasil belajar. *Chemistry in Education*, *1*(3), 58–63. Retrieved from https://journal.unnes.ac.id/sju/index.php/index

[6] Grossnickle, E. M. (2014). Disentangling Inquisitiveness: dimensionality, def initions, and distinctions from interest in educational contexts. *Educational Psychology Peview*, *1*(28), 23–60. http://dx.doi.org/10.1007/s10648-014-9294-y

[7] Hake, R. R. (1998). Interactive-engagement vs traditional methods: A Sixthousand-student survey of mechanicstest data for introductory physics course. *The American Journal of Physics Research*, (66), 2–3.

[8] Hamalik, O. (2008). *Studi Ilmu Pengetahuan Sosial*. Bandung: Mandar Maju.

[9] Kemendiknas. (2010). *Bahan Pelatihan: Penguatan Metodologi Pembelajaran Berdasarkan Nilai - Nilai Budaya untuk Membentuk Daya Saing dan Karakter Bangsa*. Jakarta: Balitbang Puskur.

[10] Kratochwill, T. R., Cook, J. L., Travers, J. F., & Elliott, S. N. (2000). *Educational psychology: effective teaching, effective learning* (3rd ed.). New York: McGraw Hill.

[11] Kurniawan, S. (2013). *Pendidikan karakter: konsepsi & implementasinya secara terpadu di lingkungan keluarga, sekolah, perguruan tinggi dan masyarakat*. Yogyakarta: Ar-Ruzz Media.

[12] Levy, O. S., Baruch, Y. K., & Mevarech, Z. (2011). Science and scientific Inquisitiveness in pre-school—the teacher's point of view. *International Journal of Science Education*, *13*(35), 2226–2253. http://dx.doi.org/10.1080/09500693.2011.631608

[13] Putri, A. E., Edidas, E., & Dewi, I. P. (2018). Pengaruh model active learning tipe Practice Rehearsal Pairs terhadap hasil belajar siswa x tkj dalam mata pelajaran simulasi digital di smk negeri 3 pariaman. *Jurnal Vokasional Teknik Elektronika & Informatika*, *1*(6), 1–9. Retrieved from http://ejournal.unp.ac.id/index.php/voteknika/article/view/10006

[14] Reza, T, F., Amalhayati, & Wati, S, O. (2017). The Practice Rehearsal Pair Strategy towards students' Speaking Abilityat The Tenth Gradestudents Of SMAN 2 Lubuk Alung. *Jurnal Curricula*, *3*(2), 42–47. http://doi.org/10.22216/jcc.2017.v2i3.1679

[15] Samatowa, U. (2011). *Pembelajaran IPA di Sekolah Dasar*. Jakarta: PT. Indeks.

[16] Samuel, S. L., & Ricky, A, N. (2013). *Asyiknya Penelitian Ilmiah dan Penelitian Tindakan Kelas*. Surabaya: CV. ANDI.

[17] Siberman, M, L. (2006). *Active Learning: 101 Cara Belajar Siswa Aktif* (3rd ed.). Bandung: Nuansa media.

[18] Sudjana, N. (2014). *Penilaian Hasil Proses Belajar Mengajar*. Bandung: PT Remaja Rosdakarya.

[19] Suprijono, A. (2011). *Cooperative Learning*. Yogyakarta: Pustaka Pelajar.

[20] Utami, K, N., & Mustadi, A. (2017). Pengembangan Perangkat Pembelajaran Tematik Dalam Peningkatan Karakter, Motivasi, Dan Prestasi Belajar Siswa Sekolah Dasar. *Jurnal Pendidikan Karakter*, *1*, 14–25. Retrieved from https://journal.uny.ac.id/index. php/jpka/article/view/15492/9688

[21] Voss, H. G., & Keller, H. (1983). *Coriosity and exploration: Theoris and results*. Germany: Academic press.

[22] Zaini, H., Munthe, B., & Aryani, S. A. (2009). *Strategi pembelajaran aktif*. Yogyakarta: Pustaka Insan Madani.

[23] Zhuang, W., & Xiao, Q. (2018). Facilitate active learning: The role of perceived benefits of using technology. *Journal of Education for Business*, *3*(93), 88–96. https://doi.org/ 10.1080/08832323.2018.1425281