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APPLICATION OF PROBLEM-BASED LEARNING MODELS TO INCREASE INTEREST IN LEARNING BASIC NATURAL SCIENCES

PENERAPAN MODEL PEMBELAJARAN BERBASIS MASALAH UNTUK MENINGKATKAN MINAT BELAJAR ILMU ALAMIAH DASAR

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Abstract
The problem in this study is that not all students have high activity in learning. Many students have low activity. Low activity shows students' interest in learning basic natural sciences is still low. The author tries to apply a learner-centered learning model, namely Problem Based Learning. Problem Based Learning is a problem-based learning model with several stages of learning. The method used is collaboration and discussion to explore learning concepts critically and creatively using scientific calculator learning media. Scientific calculators work for presentations, affirmations, calculations, and exploration of mathematical ideas, relationships, and problems. The author's initial preparation is to develop a Learning Implementation Plan (RPP) and Student Worksheets (LKPD). The question that is used as a starting point for learning is trigonometry. The instruments used were observation sheets to observe the activities of students during learning and a learning interest questionnaire to express students' interest in learning in activities before, during, and after learning. The data analysis technique used is the percentage technique. Data processing results showed that the average student learning activity increased from the initial condition of 15.47%. The students' learning interest questionnaire results before the learning activities were 80.26%, during the learning activities 76.90%, and after the learning activities 81.14%. Based on the application of the Problem Based Learning model, it can be concluded that the learning interest in learning basic natural sciences increases by using scientific calculator learning media.
Keywords: *Problem Based Learning, Interest, Scientific Calculator*

Abstract
Permasalahan dalam penelitian ini adalah tidak semua peserta didik memiliki aktivitas tinggi dalam pembelajaran. Banyak peserta didik memiliki aktivitas rendah. Aktivitas yang rendah menunjukkan minat peserta didik dalam belajar ilmu alamiah dasar masih rendah. Penulis mencoba menerapkan model pembelajaran yang berpusat pada peserta didik, yaitu Problem Based Learning. Problem Based

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Learning merupakan model pembelajaran berbasis masalah dengan beberapa tahapan pembelajaran. Metode yang digunakan dilakukan secara berkolaborasi dan berdiskusi untuk menggali konsep pembelajaran secara kritis dan kreatif menggunakan media pembelajaran kalkulator saintifik. Kalkulator ilmiah berfungsi untuk presentasi, afirmasi, perhitungan, dan eksplorasi ide, hubungan, dan masalah ilmu alamiah dasar. Persiapan awal penulis adalah menyusun Rencana Pelaksanaan Pembelajaran (RPP) dan Lembar Kerja Peserta Didik (LKPD). Soal yang dijadikan sebagai titik tolak pembelajaran adalah trigonometri. Instrumen yang digunakan adalah lembar observasi untuk mengamati aktivitas peserta didik selama pembelajaran, dan angket minat belajar untuk mengungkapkan minat belajar peserta didik pada kegiatan sebelum, selama, dan setelah pembelajaran. Teknik analisis data yang digunakan adalah teknik persentase. Hasil pengolahan data menunjukkan bahwa rata-rata aktivitas belajar peserta didik meningkat dari kondisi awal sebesar 15,47%. Hasil angket minat belajar peserta didik sebelum kegiatan pembelajaran 80,26%, saat kegiatan pembelajaran 76,90% dan setelah kegiatan pembelajaran 81,14%. Berdasarkan hasil penerapan model Problem Based Learning dapat disimpulkan bahwa minat belajar dalam belajar ilmu alamiah dasar meningkat dengan menggunakan media pembelajaran kalkulator saintifik.
Kata kunci: Problem Based Learning, Minat, Kalkulator Saintifik.

1. INTRODUCTION

Nonetheless, participants were educated before studying knowledge natural foundation at the University of PGRI West Sumatra, which became the basis of this study. Preparation began before learning, which resulted in a low desire among participants to educate for reading Theory or learn Theory before learning began at school. Study cover book writes, book assignments, books exercises, books profession home and tools write other needed student in learning at school later. This is still demonstrated by a participant student who stated in class, "Forget bring book knowledge natural basic, forget bring notes knowledge natural basic, forget read timetable learning." Even if there are participants who teach the same thing, no one knows when it is necessary to study natural knowledge. Preparation begins before very supportive classroom learning success is.

Learning with technique discussion in a group is not always as effective as expected. Some students have already sat in groups with researchers, while others have not. Students switch from one group to the next. Join another group with a similar destination and discuss what interests you. This condition causes a decrease in attention and concentration while studying. In a discussion, participants educate one another carefully. As expected, there was no discussion group. Only a few people are involved in the learner. Other students choose silence and silence as participants. Participant educate consider Duty group has already done enough by the representatives' group. Participants only must look at the given question to teach others, without initiative for the given question. Question sheets provided by the researcher were returned to the representative group.

The report is the essential summary of must learn mastered by participants educate so that participants can understand the learning that has occurred. Report discussion could be done well if participants educate themselves by carefully presenting each group. The data recap results show that initial study participant interest in teaching XTB2 is still low. The researcher tries to apply the approach participant - centered learning education to reveal the problem. According to Permendikbud number 22 of 2016, approach learning is a method educators use to create a learning environment and achieve specified competence. Supinah et al. (2021) contend that that well-known approach including a student-centered approach, learning contextual, learning thematic, and so on Small group learning collaborative designed by a researcher Destination formation group in learning so that participants educate could study by

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maximum . Ability participant educate for understand study more fast will shared in group . Discuss with polite and orderly is aspect cognitive development _ in study this . Researcher attempted grow and grow courage participant educate in solve problem in discussion group and discussion class . Participant educate brave appear in front class for convey the ideas and ideas discussed so that attitude the later could implemented in life everyday . Problem contextual need analysis critical from participant educate . Participant educate need time for come to understanding perfect concept . _ Understanding draft could obtained participant educate with method exploration using learning media . Researcher 's learning media Use in study this is calculator scientific Fx -991 EX which is also called class . Calculator scientific can also used for solution end from given problem.

Researcher in study this too want civilize attitude participant educate for evaluate task performed . _ Evaluation the steps used . Activity this The aim is that participants educate could determine attitude and take right decision _ if given same problem . _ Participant educate could apply the experience he got in study on problems contextual in life everyday . Based on difficulties and problems that have described above , researchers _ as a teacher who teaches in class XTB2 it is necessary give solution for could increase interest study participant educate . High interest _ will bring energy positive in study . Awareness participant educate for study . Participant educate think that study knowledge natural base is something must no something necessity . Knowledge natural base no only precondition to go to class . Knowledge natural base of course is knowledge needed _ no only in learning at school but also in stuffy in life . Andi Achru P (2019) stated " Interest " is various the effort made so that someone To do something . When connected with the learning process , then interest could interpreted as whole power mover for To do activity study ".

Awaken interest learning knowledge natural base in the XTB2 researcher class using the learning model based problem . The Problem Based Learning model is a participant - centered learning model educate . The application of the PBL learning model is expected could facilitate and bridge think level tall participant educate . Participant educate could think critical and creative . Think critical and creative is level think needed _ participant educate for face problem moment learn and in life everyday . Use of the model no miss from use method appropriate and supportive learning _ in every step learning . Supinah et al (2021) argue " Learning model" solving problem is design actions taken by the teacher so that the students motivated for accept the challenges that exist in the questions (questions) and directing student in the process of solving it . finish it ".

A number of research ever _ discuss similar models including Melda Ariyanti in the research about Effort Increase Interest Study Knowledge natural base Student Through Problem Based Learning Model. Use of learning models based problem in class get positive result _ so that could increase interest study student class XI Chemical Analysis at SMKN 2 Depok Sleman. Deficiency study this is study still limited to tree straight lines , sequences and series _ no until , and research in progress for 2 cycles . After that there is is Siti Nurmaidah , in herself study Effort Enhancement Interests and Achievements Study Knowledge natural base Student With Problem Based Learning (PBL) Model for Students Class VII B Ponorogo State Junior High School 2018/2019 . Use of learning models based problems at SMP VII B Ponorogo could increase interest learning and achievement study participant educate in learning knowledge natural base . Deficiency from study this is study this in progress for 2 cycles . Eka Putra Wahyu Suminar , in the research Effort Enhancement Interests and Achievements Study Knowledge natural base With Problem Based Learning Model in Online Learning . Learning

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based problems with online learning can be increase interests and achievements study student class X AKL 2 SMK Negeri 2 Pacitan . Deficiency from study this is study this held in three cycle one cycle consist from one time meeting . Classroom Action Research conducted with action taken _ online . because of that , research this character this and worth it for researched

2. METHODS

Type study this is Classroom Action Research (CAR), which aims to for solve problem real things that happen in class that are experienced by direct in interaction between teachers and students who are study . According to IGAK and Kuswaya (2008) that study action class is research conducted by the teacher in his class alone through reflection self , with destination for increase performance as a teacher, so results study student increase . Subject study this is student Class X Catering 2 years the 2020/2021 academic year, totaling 19 people, consisting of of 2 students boys and 17 students female . By general characteristics the class used sample is class that has ability heterogeneous intellectual . _

Preparation beginning study researcher is arrange Plan Implementation Learning (RPP). Preparation of research lesson plans based on the Circular Ministry of Education and Culture No. 14 of 2019 regarding Simplification of RPP. The core component of simplification rpp include : goals learning , activities learning and assessment . Rpp inti core activities is core activities in learning with apply the learning model based problem . Learning model based problem consist of 5 phases , namely : orientation participant educate on problems , organizing participant educate for learn , guide investigation individuals and groups , develop and present works , and analyze and evaluate the solving process problem . Learning model based problem develop learning think level high so that participants educate active and creative . Learning think level tall starting at phase second , that is phase organizing participant educate for study . Participant educate in phase this identify and manage tasks related learning _ with problem .

Questionnaire interest study participant educate in learning given at the end learning . Questionnaire interest study disclose activity before learning , while learning , and after learning study . Action taken in learning is doing learning in accordance with RPP. Researcher in study this assisted by an observer to observe moderate learning _ take place . Participant educate at the end learning fill in questionnaire interest learning provided . _ Activity learning upgraded in accordance with interest data study and observation observer . Reflection is assessment carried out during the learning process teach in form written and used as guidelines for researcher in doing learning in cycles next .

Data analysis performed with analysis qualitative and analysis quantitative . Qualitative data analysis used for knowing improvement of the learning process , especially as actions taken by the teacher. Analysis started with review data from collector data to data collected for reduced based on researched problem , continued _ with data presentation and finally on withdrawal data conclusion . Quantitative data analysis used for knowing enhancement interest study participant educate in learning knowledge natural base as influence from every action taken _ participant educate . Results of the learning process in the form of answer data sheet participant educate and question interest study participant educate on every end cycle . The results of the data analysis next used as ingredient reflection on cycle next

3. RESULTS AND DISCUSSION

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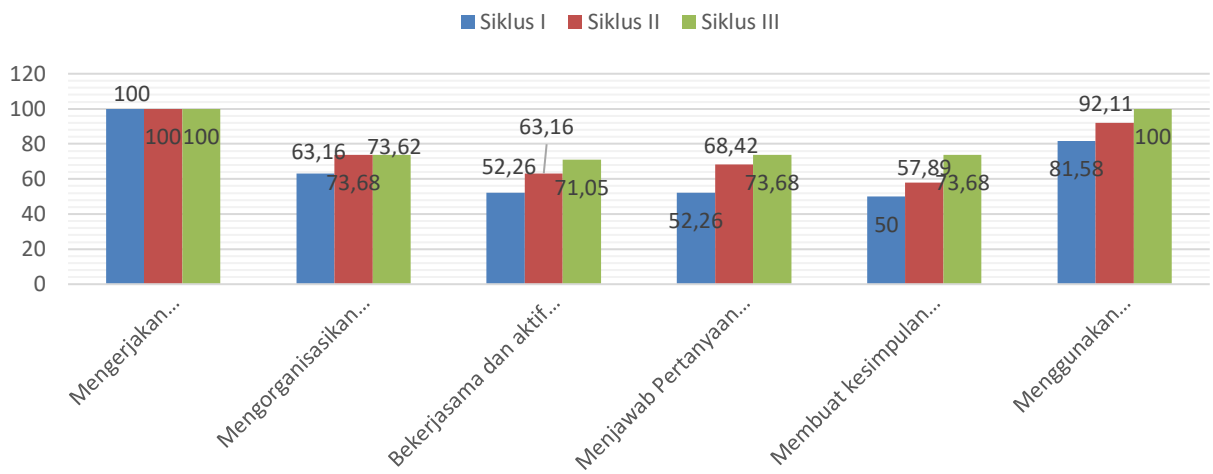
Activity study participant educate

In part this , researcher will convey activity study participant educate start from cycle I, cycle II, and cycle III. Activity participant educate observed with use sheet observation . Activity participant educate observed by Observer during learning . Activity participant educate could read in graph 1 below this .

Grafik 8. Aktivitas Belajar Peserta Didik XTB2 Siklus I, Siklus II, Siklus III



Activity work the question given to participant students in cycle I, cycle II, and cycle III are very good . Participant educate as many as 19 people, did exercises given on the sheet answer . Enhancement activity organizing Duty study participant educate cycle II with the first cycle of I0.52%. Occur enhancement activity organizing Duty study two participant educate . In Cycle I two mercy participant educate at the end cycle II becomes four mercy participant educate . Decrease activity organizing Duty study participant educate cycle III with cycle II, by 0.06%. Decrease activities that occur no significant so that at the end cycle III activity student organize Duty study as much four mercy participant educate .

Enhancement collaboration and activity discussion group cycle II with the first cycle of I0.90%. . In Cycle I ten participant work same and active in discussion group . At the end cycle II becomes two mercy participant educate . Enhancement collaboration and activity discussion group participant educate cycle III with cycle II is by 7.89%. There is an increase interest in two participant working students _ same and active in discussion group . At the end cycle III amounted to two mercy participant educate . Enhancement activity in answer question and appear in front class participant educate cycle II with cycle I of I6.16%. There is an increase activity answer question and appear in front class third participant educate . Cycle I consists of 10 participants educate . At the end cycle II becomes three mercy participant educate .

Enhancement activity in answer question and appear in front class participant educate cycle III with cycle II of 5.26%. Occur enhancement activity answer question and appear in front participant educate class I in cycle II three mercy participant educate . In cycle III it becomes four mercy participant educate . Enhancement activity taking conclusion from learning cycle II with the first cycle of 17.89%. There is an increase three participant educate . In the second cycle of activities make conclusion learning Becomes three mercy participant educate . Enhancement activity make conclusion from learning cycle III with the second cycle

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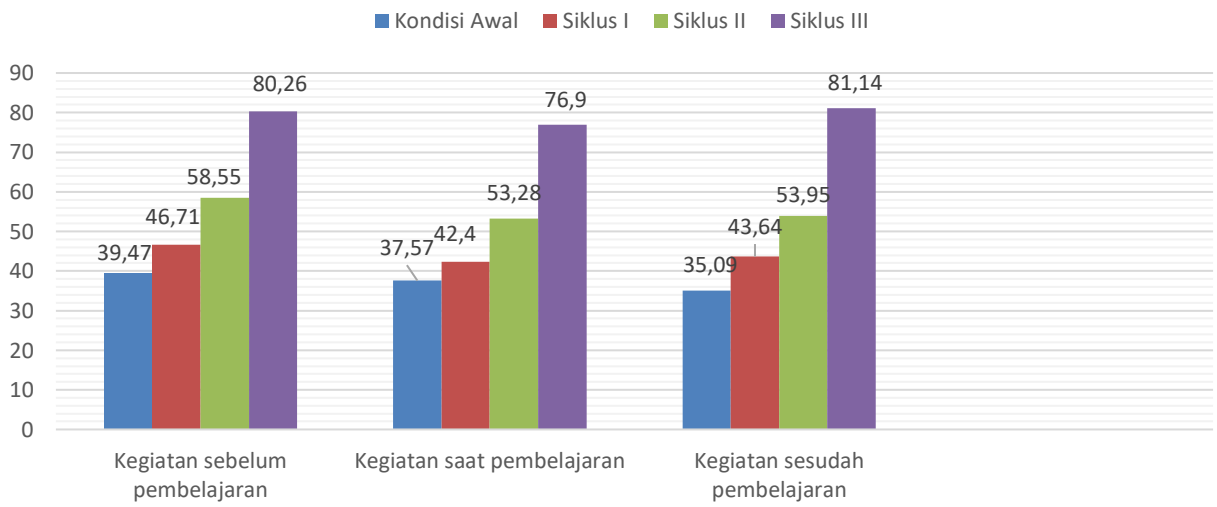
of 15.79 %. There is an increase three participant educate . In the third cycle of activities make conclusion learning Becomes six mercy participant educate .

Enhancement activity use calculator scientific in solving problem participant educate cycle II with the first cycle of 10.53%. Enhancement activity use calculator scientific in complete problem two participant learn in cycle II. At the end cycle III becomes eight mercy participant educate . Enhancement activity use calculator scientific in complete question cycle III with cycle II is 8%. There is an increase one participant educate . At the end cycle III activities use calculator scientific in complete problem nine mercy participant educate . Enhancement activity use calculator scientific in complete question cycle III with cycle II is 8%. There is an increase one participant educate . At the end cycle III activities use calculator scientific in complete problem nine mercy participant educate .

learn Interest Learner

In part this , researcher will convey results questionnaire interest study participant educate through the learning model based problem . Researcher display results start from condition beginning , cycle I, cycle II and cycle III. Questionnaire results interest participant educate could seen in the table read in graph 2 below this .

Grafik 9. Kondisi Awal , Siklus I, Siklus II, Siklus III Minat Belajar Peserta Didik XTB2



Enhancement interest activity participant educate before learning cycle I with condition beginning by 7.24%. There is an increase interest one _ participant educate in activity before study . On condition beginning seven participant educate interested To do activity before learning at the end cycle I activities learning Becomes eight participant educate . Enhancement interest activity participant educate before learning cycle II with the first cycle of 11.84%. There is an increase interest two participant educate in activity before study . Eight participant interested students _ To do activity before learning at the end cycle II activities learning Becomes ten participant educate . Enhancement interest activity participant educate before learning cycle III with cycle II is by 21.71%. There is an increase four participant educate on activities before learning . Participant educate To do activity before learning at the end cycle III to 14 participants educate .

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Enhancement interest activity participant educate During learning cycle I with condition beginning by 4.83%. There is an increase interest one _ participant educate in activity During learning . On condition beginning seven participant educate interested To do activity moment learning at the end cycle I activities Becomes eight participant educate . Enhancement interest activity participant educate moment learning cycle II with cycle I is 10.88%. There is an increase interest two participant educate During activity learning . Participant interested students _ To do activity During learning at the end cycle II becomes ten participant educate . Enhancement interest activity During learning cycle III with the second cycle of 23.62 %. There is an increase four participant educate in activity During learning . Participant educate To do activity During learning at the end cycle III to four mercy participant educate .

Enhancement interest activity participant educate after learning cycle I with condition initial 8.55%. There is an increase interest two participant educate in activity after study . On condition beginning seven participant educate interested To do activity after learning at the end cycle I activities learning Becomes nine participant educate . Enhancement interest activity participant educate after learning cycle II with the first cycle is 10.31%. Occur enhancement interest two participant educate after conducted activity learning . Participant educate interested To do activity after learning at the end cycle II to eleven students . The increase in interest activity after cycle III of learning with cycle II was 27.19%.

Occur enhancement interest fifth participant educate on activities after learning . Participant educate To do activity after learning at the end cycle III to six mercy participant educate . Data obtained from graph 9 above , happened enhancement interest study participant educate on activities before , during , and after learning . Increase interest study early _ condition beginning , cycle I, cycle II, and cycle III. Amount participant students who do activity before learning at the end cycle III is four mercy participant educate . Participant educate To do activity During learning as much four mercy participant educate . Participant educate To do activity after learning six mercy participant educate . Based on criteria interpretation interest study participant educate in study succeed if interest study participant educate During one cycle said tall when the data is filled in participant educate Fulfill strong average criteria .

4. CONCLUSION

Use of learning models based problem could increase interest study West Sumatra PGRI University students in study knowledge natural base . Advice in study this is so that the parties school could apply learning based problem as a learning model alternative in learning knowledge natural suitable base _ applied in identical SMK with involvement student in understand draft Theory learning . Besides that , science teacher natural base expected always innovate in implementation learning one _ with apply an interactive and appropriate learning model with character students on each class taught _ especially in science learning with hope could interesting interest students . and achievements study will increase .

5. REFERENCES

Achru , Andini . P.2019. Development Interest Study in Learning . Journal Idaarah . VOL. III, NO. 2. Accessed June 13 , 2021

Afandi , Muhammad. 2011. *Effective Way Write Creation Scientific* . Bandung: Alphabeta Bandung.

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Published By. Haqi Publishing Service.
This An Open Journal System

Ariyanti Melda. 2016. Effort Increase Interest Study Knowledge natural base Student Through *Problem Based Learning* Model . Yogyakarta: Journal ISBN.978-602-73403-1-2. Retrieved 26 June 2021.

Center for Language Development and Development . Edition , Ed . 2 , cet . 10 . *Publishing , Jakarta : Balai Pustaka, 1999*

Culture . 2017. Compilation Higher Order Thinking (HOTS) questions. Directorate construction school medium above , DG education medium , Ministry of Education and Culture .

Culture . 2019. Circular Number 14 of 2019 About Simplification Plan Implementation Learning . Jakarta: Ministry of Education and Culture

Eka Putra Wahyu Suminar . 2020. Effort Increase Interests and Achievements Study Knowledge natural base With Learning Model Based on Problems in Online Learning . Gresik: JTIEE, Volume 4 No 2, 14 December 2020. Accessed 26 June 2021.

Elfi, S. Z., Elmiati, E., & Suharni, S. (2020). STUDENTS'PERCEPTION ABOUT ENGLISH TEXTBOOK "WHEN ENGLISH RINGS A BELL" CLASS VII USED IN CURRICULUM 2013 AT SMP 12 PADANG. *Journal of Asian Studies: Culture, Language, Art and Communications*, *1*(2), 71-78.

Kemdikbud . (2016). Regulation of the Minister of Education and Culture Republic of Indonesia Number 22 of 2016 Regarding Primary and Secondary Education Process Standards . Jakarta: Director General Regulation Legislation Ministry of Law andRights basic Man Republic of Indonesia

Kemal, E., Rahmat, W., & Damayanti, M. (2020). Conflict of Parents on Social Media Towards Their Children Online School Assignments During The Covid 19 Pandemic. *Curricula: Journal of Teaching and Learning*, *5*(3), 161-170.

Kurniawan, W., Kemal, E., & Suharni, S. (2020). TRANSLATING LEXICAL EQUIVALENCE FROM INDONESIA INTO ENGLISH AT WEST INDONESIAN. *Journal of Asian Studies: Culture, Language, Art and Communications*, *1*(1), 10-18.

Ministry of National Education .2001. Big Indonesian Dictionary . https://www.kkbi.web.id/minat. Retrieved June 14 , 2021 .

Ninggutomo Restu .(2014) . What it's PROBLEM BASED LEARNING. https://guraru.org/guru-berbagi/apa-itu-problem-based-learning. Accessed June 25 , 2021.

Nurmaidah Siti. 2018. Effort Increase Interests and Achievements Study Knowledge natural base Student With a *Problem Based Learning* (PBL) Model for Students Class VII B SMP Negeri Ponorogo Year Teaching 2018/2019. Ponorogo . 1. FRONT PAGE.pdf (umpo.ac.id) . Retrieved 26 June 2021.

Riadi , Muchlisin . 2020. Interest Learning (Definition , Elements , Types , Indicators and How to Grow) - KajianPustaka.com . Accessed July 1 , 2021

Supinah . Sumardyono . Enung Sumarni . 2021. *Learning KBTT* . Yogyakarta: PPPPTK Science natural base .

Sumanto (2014), Psychology General , Cet. 1; Jakarta: PT. Book Exciting

Sardiman , *Interaction and Motivation Study Teaching ,* (Jakarta: Rajawali Press, 2001), p .

Wibowo Rudi et al. 2016. Guidelines Writing Creation Scientific . Guidelines-Writing-Scientific-Works-UNEJ.pdf . Accessed June 22 , 2021

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