



## Analysis of Cognitive Learning Outcomes of Compliance Personality Students in Solving Mathematical Problems

Didiatma Prambanan<sup>1</sup>, Dila Yathasya<sup>2</sup>, Putri Sakila Amelia Anwar<sup>3</sup>

<sup>1,2,3</sup>Faculty of Teaching and Education, Universitas Jambi, Jambi, Indonesia

### Article Info

#### Article history:

Received Oct 17, 2022

Revised Jan 1, 2023

Accepted Jan 30, 2023

#### Keywords:

Compliance personality

Difficulty in Solving

Learning Outcomes cognitive

### ABSTRACT

**Purpose of the study:** The research aims to analyze the results of the study of cognitive student type compliance personality on solving problem mathematics in Theory geometry and knowing what difficulty student inner compliance type solving problem math.

**Methodology:** Method study this is method study qualitative descriptive. Things analyzed in a study results from learning cognitive students and difficulties students on solving material problem trigonometry subject study student compliance personality in class X senior high school PGRI 2, Jambi City. Instruments used in studying this test compliance personality, sheet duty solving problem math, and transcript interview.

**Main Findings:** The result of study is results study cognitive students good compliance personality, but still many there are difficulties in do questions given, seen from the indicator difficulty learning taken, and indicators results in study cognitive students are taken from bloom taxonomy, average yield study cognitive possession student good compliance personality, this show student compliance personality has aspect good cognitive.

**Novelty/Originality of this study:** This use analysis results study cognitive students with type compliance personality on solving problem math.

*This is an open access article under the [CC BY-NC](#) license*



### Corresponding Author:

Didiatma Prambanan,

Faculty of Teaching and Education, Universitas Jambi, Indonesia

Email: [didiatmapra@gmail.com](mailto:didiatmapra@gmail.com)

## 1. INTRODUCTION

Education is a process to improve the quality of life, as well as acquire and instill skills that are carried out by everyone learners [1]. Education that is able to support future development is education that is able to develop the potential of its students, so that participants students are able to face and solve the educational problems they face [2]. Besides In addition, education must also touch potential conscience nor potency competence participant educate [3]. This because participant educate is subject education, so they are the ones who learn, own goals and future heirs [4]. Draft education the will be much needed when somebody must enter life in society in the world of work, because that is concerned must capable apply what is learned in school for face all problems encountered in life everyday, fine moment this as well as the future come .

Mathematics is one knowledge of its functions and applications needed for many problem life, among other things for development knowledge knowledge and technology (IPTEK) [5]. Because that's math made as eye must lesson studied students in each level education, start from level school base until level school medium even until to college high. This caused mathematics is very necessary and useful in life daily for science, commerce and industry [6]. Remember magnitude role mathematics so government Keep going attempted repair components support education as teacher quality, facilities and infrastructure as well as environment education. According to Heriyanto (2018), purpose from learning mathematics that is for practice method think and reason in interesting

conclusion; develop activity creative involvement imagination, intuition, and invention by developing divergent thinking, originality, curiosity know, create predictions and conjectures as well as try; develop ability solve problem; and develop ability convey information or communicate idea among others through talks verbal, notes, graphs, maps, diagrams, in explain idea [7].

Process or activity learning is something decisive thing results study student. Study results is something results actual achievement by students in effort control prowess physically and mentally at school [8]. Student not only demanded for understand aspect affective and psychomotor just but also pay attention aspect cognitive, deep solving problem especially in life everyday [9]. Study results cognitive is revealing subtaxonomy about original mental activity from knowledge level until the highest level that is evaluation, purpose aspect cognitive ability oriented thinking that includes ability more intellectual simple, ie remember, up to ability solve demanding problem student for connecting and combining some ideas, ideas, methods or learned procedures in solve problem the [10].

Observation results to condition student will produce something conclusion that every student always have difference. Difference must accepted and utilized in learn. Difference it's the easiest observed in Act in demand in a manner real. In Experience Program activities Field Author once look where there is students too active however There are also passive students. active students always want to highlight yourself and be seen want to always be the number one whereas passive students tend to be silent, and not want to noticed by others [11]. Besides it, deep activity study teach The author also saw difference attitude student with method study, there active students in discussion, active in convey ideas seen stand out compared student other, however there are also some real student more tend active if the teacher uses method invention in guide they learn. This is what causes method teach one corresponding for a student but no corresponding for another student.

Difference Act do every individuals, students, and teachers occur because influence from different personalities [12]. Based on reality that personality humans are very diverse, class expert attempted classify man into the types particular, because they argue that method that 's the most effective for know fellow man with ok. In the world of education, for know thinking a participant educate about workmanship to about certain, of course no seen from behavior will but in a manner Specific from results profession student. For could know thinking a students, for one with method invite student for discuss with the teacher, so student want to say what 's there in his mind at the time do about certain, and teachers too could look method think student the [13].

Between necessary knowledge known to the teacher or prospective teacher is knowledge psychological closely applied relation with the learning process teach participant educate [14]. In the learning process, that every student own characteristics or Act different behavior. Personality is a signifying word characteristic traits and patterns behavior someone special for personal that alone [15]. Personality covers Act practice, way thinking, feeling, moving heart, effort, action, response to opportunity, pressure, and means daily in interact with others [16]. If the elements personality this state self in repeated combinations in a manner distinctive and dynamic so Thing thus known with name style personality [17]. Every individual own distinctive characteristics, which are not owned individual other. Difference student could in shape level prowess problem, level intelligence or ability think, besides that students can too different in method get, save as well as apply knowledge. They could different in method approach to situation study, deep method they receiving, organizing and connecting experience [18].

At school, differences aspect psychological this no could avoided, because innate environment different among one environment with environment other. Difference child educate no could get the place education traditional. So in modern education problem difference individual child this get attention priority. With notice difference child hopefully the teacher doesn't will repeat same error, and took child the as benchmark size understanding. Besides it, with realize difference conditions in each student, and know difference personality student, then the teacher can give method good teaching for each person student [19]. Method teach will given based on process results learning possessed by students, and one of the results of the process study could investigated based on type personality that has grouped by William Moulton Marston.

With thus know character covering students personality and results study student has an important meaning in the learning process teach for a teacher. This intended for the teacher in teach could give optimal guidance for each student. Because basically results learning and ability in accept Theory lesson that different for each personal student. With difference here, then need for teachers to know type personality student. So the teacher can give maximum guidance to students who have type the personality he has this because of the thought process student influenced by personality student.

William Moulton Marstor share type personality in 4 parts namely: Dominance, Influence, Steady and Compliance [20]. Fourth type personality this have the advantages and disadvantages of each. In context this, there is four type common personality known as DISC or abbreviation from: dominance, influence, steady, and compliance. Compliance, insiders category this including emphasized personality accuracy and thoroughness. They tend like something planned with mature and mature thorough. They are also inclined like with work that refers to procedures and standards standard operation. Insiders category this is critical and passionate thinker do analysis for ensure accuracy. On the other hand, because tend focused on order, personal in type this tend skeptical to ideas radical new. They are also somewhat reluctant accept sudden changes. When they motivated negatively,

they will become cynical or very critical. Optimal treatment for insiders type this is as following: Give Duty where there is to chance for they to demonstrate skill them. Give demanding task accuracy and thoroughness. Give necessary tasks careful and thoughtful planning comprehensive. when delivering instructions, must accompanied with rational and presented data and arguments in a manner systematic. Student with type compliance personality is a thinker analytical and very like analyze, think analytical is subdue something situation, problem subject or decisions on strict checks and logical step by step.

In a class, exists three category ability students, that is student capable tall, capable moderate and capable low. Process results study cognitive Among one student with other students of course different although they You're welcome own ability high. Based on results experience writer taught at senior high school 1 Muaro Jambi when take part in the Experience Program Field, deep a class there is student capable the only height capable write about mathematics or complete about but not enough capable explained and there is also vice versa. For that's what teachers need know the process results study student such, with thus after know the process results study they teachers can determine follow carry on in the learning process for students with type DISC personality.

According to Bloom who stated that ability study emphasizes solving. Theory to in more parts special or small and detectable relations and parts it and the parts that organized. Solving problem math basically could made student think creative, critical and analytical. Theory trigonometry need step by step in finish it Thing this of course could seen from Step results study cognitive student with type inner compliance personality solving given problem. Based on description on so Step results study cognitive is needed in solve problem math, and stages results study cognitive possession corresponding with personality. One type thinking personality analytical is compliance. So that study this aim for need analyze results study cognitive student student with type compliance personality on solving problem math.

## 2. RESEARCH METHOD

Method study this is qualitative descriptive. Study qualitative is one procedure research that produces descriptive data form saying or the writing and behavior of the people being observed [21]. As for the stages study applied qualitative in study this including stages pre field, stage profession field and stage data analysis [22]. Study this held at senior high school PGRI 2 Jambi city. Population in study this is whole student from senior high school PGRI 2 Jambi city. Whereas sample in study this is student class X senior high school PGRI 2 Jambi city.

Deep data collection techniques study this use questionnaire form test compliance personality, duty solving problems and guidelines interview aim for reveal results study cognitive and difficulty student inner compliance personality solve principal problem discussion Trigonometry. For instrument test compliance personality in the form of a search test personality based on DISC codes questionnaire, test this shared Becomes three Step sustainable. For look All type personality, include type compliance personality. Instrument sheet task used in study this is instrument sheet duty solving problem geometry. Task solving problem this composed from two problem mathematics geometry. Instrument sheet duty solving problem shaped about story. Whereas interview on research this use semi structured interview. On research this test the credibility of the data or trust on the result data study conducted with triangulation time, that is use repetition interview, that is look for suitability of the source data from two equivalent problem at different times and triangulation source, that is for test the credibility of the data carried out with method check the data obtained through a number of source.

Deep data analysis study this conducted with through the process of searching and compiling in a manner systematic data obtained from results interview, notes field, and other materials with method organize data to in category, describe to in units, do synthesis, compile to in patterns, choose which ones are important and which will be learn , and create conclusion so that easy self understood alone or someone else.

## 3. RESULTS AND DISCUSSION

First data collection conducted with give sheet test Personality to student class X senior high school PGRI 2 Jambi City totaling 32 students. Writer share questions test personality to all student after that writer give instruction to student in answer questions that have been provided. Test personality this conducted for determine students with compliance personality in class X senior high school 2 Jambi City. In study this, author do study meeting 3 times. Meeting first conducted to third student personality compliance, meetings second and third is triangulation time from study first. Third day researcher observing method study students in class.

Understanding problem is Step beginning in solving problem form student could mention information provided and questions asked. Sixth subject study could convey known information on the problem. However, the information he knew the no explained in a manner written. Whereas for the questions asked in the question first , subject research 1, subject study 3, subject understand problem on the question about Trigonometry. In general, sixth subject study read part important part about form information that can demand in solving problem.

Monitoring indicators are activity advanced from planning indicator kindly written, sixth subject study no decipher with complete and detailed steps solving problem. On solving problem, subject study tend for complete

matter according to him easy for understood and worked on. Important thing for understood on solving problem especially about standard that is also related with its components. One components refer to steps solving problem standard that is process components.

Kindly general, subject study convinced with steps his solution as do checking repeat to steps the solutions presented. Although experience obstacles in understand question. Sixth subject study try for find solution from problem the. Term logic, is terms used subject study for convey method he thought. Third subject study with method delivery alone could convey description and directions question from the questions presented writer. However, by third written language subject study no decipher with clear shape understanding to question and still there is understanding direction less questions right.

Indicator showing difficulty subject study in making sentence Mathematics that is no right and no complete in make sentence (model) mathematics on the problem about trigonometry. Preferably on sheets answer written, sixth subject study decipher with clear the symbols indicate the answer like give explanation each Step from sentence presented mathematics. Indicator showing difficulty subject study in determine the appropriate solution strategy that is no could determine the appropriate solution strategy for solve problem. Difficulty in determine visible strategy when subject study some are confused convey draft what it will apply to the solution problem the. Indicator showing difficulty subject study in do procedure correct math that is no appropriate in do procedure calculation math

#### 4. CONCLUSION

Based on research that has done, results study cognitive in students still have compliance personality not yet skilled meaning on the indicator strategizing 100% yet appropriate explain information from the questions presented in a manner written, as much as 83% have not appropriate understand the things that are asked in the questions, while in the indicators 100% completion is necessary exists enhancement skills on deep process components solve problem mathematics, and on indicators evaluate 100% sure with steps a workable solution, though there are 66.7% who have not convinced with the answers you get from fractions problem the.

#### ACKNOWLEDGEMENT

The researcher would like to thank all stakeholders who have given permission to the researcher to do service and those who helped with this research.

#### REFERENCES

- [1] S. M. Husna, L. Siahaan, U. Saniyyah, and AM Kurniawan, "Analysis of differences in learning motivation of class xi ipa 1 and xi ipa 2 at man 1 Merangin," *J. Educator. MIPA*, vol. 11, no. 2, pp. 168–174, 2021.
- [2] M. Aspi, "Teacher professionals in facing challenges to the development of educational technology," *Adiba J. Educ.*, vol. 2, no. 1, pp. 64–73, 2022.
- [3] A. Musthofiah, "The application of group investigation cooperative learning methods in improving student learning outcomes in the subject of islamic cultural history," *Teach. J. Inov. kegur. and Educator Science.*, vol. 2, no. 1, pp. 85–98, 2022.
- [4] S. R. D. Rahmatia, "The concept of humanism education in the development of islamic education," *J. Educator. Ar-Rashid*, vol. 7, no. 1, pp. 1–9, 2022.
- [5] U. Arifin, R. Purwasih, and FDT Santana, "Transfer of ICT-based science and technology mathematic realistic worksheets to sdit teachers in order to improve mathematical skills in geometric concepts," *JPM (Journal of Empowerment. Society)*, vol. 5, no. 1, pp. 380–387, 2020, doi: 10.21067/jpm.v5i1.3548.
- [6] F. Romansyah and Nurhamdiah, "Profile of understanding elementary school students' concepts in solving area and circumference problems," *J. Educator. Tambusai*, vol. 2, no. 6, pp. 1703–1709, 2018.
- [7] H. Heriyanto, "Efforts to improve students' mathematics learning achievement through the discovery learning method assisted by the algebraic block material for algebraic computing operations," *J. Kegur Profession.*, vol. 4, no. 1, pp. 28–36, 2018.
- [8] S. Waryanti., and L. Diner, "The influence of japanese language extracurriculars on student learning outcomes at sman 1 Ambarawa," *CHIE J. Educators. Bhs. Japan*, vols. 7, no. 2, pp. 91–98, 2019, doi: 10.15294/chie.v7i2.30219.
- [9] F. A. Sofyan, "Implementation of hots in the 2013 curriculum," *J. Inven. Vol*, vol. 3, no. 1, pp. 1–17, 2019, doi: 10.36456/inventa.3.1.a1803.
- [10] D. G. Utama., and H. P. Heldisari, "Learning dynamics in guitar ensembles viewed from affective, cognitive, and psychomotor aspects," *J. Music Educ. perform. Arts*, vol. 1, no. 1, pp. 16–22, 2021.
- [11] I. Nurhamida, "Problematics of teacher pedagogic competence against student characteristics," *J. Teor. and social studies learning praxis*, vol. 3, no. 1, pp. 27–38, 2018, doi: 10.17977/um022v3i12018p027.
- [12] N. Nurfirdaus., and Risnawati, "Studies on the formation of students' habits and social behavior (case study at sdn 1 windujanten)," *J. Lens Pendas*, vol. 4, no. 1, pp. 36–46, 2019
- [13] A. Awi., U. Mulbar., and S. Sahriani, "Description of students' mathematical problem solving ability in view of personality type according to keirse," *Issues Math. educ.*, vol. 5, no. 1, pp. 18–31, 2021, doi: 10.35580/imed19908.
- [14] G. Christopher, "The role of psychology in student learning processes in schools," *J. War.*, vol. 58, pp. 63–72, 2018.

- [15] M. Fadilah., S. Zuhri., and I. Iwan, "Teacher personality competence and its influence on learning motivation in the study field of pai class x students at ma'arif bulakamba high school, brebes regency," *Al-Tarbawi Al-Haditsah J. Educator . Islam* , vol. 2, no. 2, pp. 35–53, 2017, doi: 10.24235/tarbawi.v2i2.2078.
- [16] A. Asiyah., A. Walid., and RGT Kusumah, "The effect of confidence on student achievement motivation in science subjects," *Sch. J. Educator. and Kebud.* , vol. 9, no. 3, pp. 217–226, 2019, doi: 10.24246/j.js.2019.v9.i3.p217-226.
- [17] S. Rahim, "The existence of career women on the formation of children's personality in state civil apparatuses in the office of the ministry of religion in Gorontalo city," *J. Ilm. AL-Jauhari* , vol. 2, no. 2, pp. 144–158, 2017.
- [18] A. Nasriadi, "Profile of mathematics problem solving for middle school students in view of reflective and impulsive cognitive styles," *Maju J. Ilm. Educator. Matt.* , vol. 2, no. 2, pp. 1–27, 2015.
- [19] I. Warsah., and M. Uyun, "Educator's personality: islamic psychology study," *Psychic J. Psychologist. Islam.* , vol. 5, no. 1, pp. 62–73, 2019, doi: 10.19109/psikis.v5i1.3157.
- [20] M. Herlinda, Aripin, and N. Siregar, "Critical thinking processes and student errors in solving mathematical problems in terms of dominance-influence personality types," *Mathline J. Mat. and Educators. Matt.* , vol. 5, no. 2, pp. 154–171, 2020.
- [21] Susiati., A. Y. Tenriawali., S. Mukadar., J. Nacikit., and Nursin, "A yusdianti tenriawali," *Uniqbu J. Soc. sci.* , vol. 1, no. 3, pp. 176–183, 2020.
- [22] A. B. Priyambodo, "Implementation of national spirit and love of the motherland character education in schools with an islamic background in pasuruan city," *J. Psychological Science.* , vol. 6, no. 1, pp. 9–15, 2017.