The Comparison Of Students' Academic Achievement Taught Using Jigsaw Versus Demonstration On Students' Different Self-Confidence

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Abstract : The study investigated the effect of jigsaw cooperative learning method and students' self-confidence on students' academic achievement in fiqih in seventh grade of Junior Islamic High School. Three research questions and three hypothesis guided the study. The study used factorial design 2 x 3 which was a part of quasi experimental design. The subject research was 61 students that was devided into two groups by random assignment sampling. The instruments of study consisted questionaire and test. The questionaire was used to obtain the data of self-confidence, while test was used to gain the data of students' academic achievement (outcomes). The questionaire contained 20 questions in accordance with compatibility and incompatibility of reaserch sample with the existing statement item while the test instrument contained 25 multiple choice questions. Both of instruments were pilot tested on the students to determine its usability as well as to gain its validity and realiability. The independent sample t-test was used to measure the mean scores of differences between achievement scores of experiment group and control group on pretest while the paired sample t-test was used to measure to measure the mean scores differences between achievement scores of experiment and control group on posttest. The two way analysis of varian (two-way anova) was used to measure the main effect (different teaching methods on students' academic achievement) and interaction effect (different teaching methods and self-confidence on students' academic achievement). The risults shew that jigsaw cooperative learning method helps students to obtain higher academic achievement than demontration teaching method. The risult was also revealed that the academic achievement of experiment group that at higer self-confidence gets higher score than another one. Lastly, there was not significant interaction effect between the two variables (teaching methods and self-confidence) on students' academic achievement. Otherwise, it indicated that the two variables had a separate effect. This study recommended that the next study should be done in accordance with these results by adding or changing the independent variables.

Keyword: Jigsaw Cooperative Learning Method, Demonstration Method, Self-confidence.

INTRODUCTION

The learning process is basically to develop and improve the potential of learners in the domain of spiritual, emotional, and physical which indicated relatively permanent change in its domain, so that it will gradually bring the students become better and better human being. In the context of formal education, it is so called learning outcomes or learning achievement. The rezults of the development and improvement of these three domains obtained through a

measurement. Algabare and Dasi stated, achivement is the word preferred in the educational or psychometrics fields, being sometimes characterized by the degree of inference required on the part of the students to give a response, and by the type of reference to a cognitive process.[1] It is the result of the measurement of learners that includes factors of cognitive, affective and psychomotor after the learning process is measured using a test instrument or instruments that are relevant,[2] is the level of student success in learning the subject matter in schools that are expressed in the form of scores obtained from the results of tests on a particular subject matter,[3] is as ablities possessed by learners after receiving their learning experiences.[4]

The main aim of teaching and learning process is achivement in terms of grades, as it sole measures of learning in many cases. To achieve this target teachers use diverse teaching methods, including jigsaw cooperative learning. This study is significant in local context, as previous reseaches carried out in this aspect either deal with population of schools with religous subjects or prospective teachers, while this research is an attempt to prove the same phenomenon if it applied at different grade or level in a subject. Due to this, this study is an effort to give new dimension by providing positive results of cooperative learning activities (jigsaw) on learning outcomes of students with different self-confidence as moderator variable. This study will provide to the teachers, who can use its results to develop attitude towards using cooperative learning methods in prospective teachers'.

It is true that the learning achivement of learners can be influenced by internal and external factors.[5] Both of these factors influence each other so that it determines the quality of academic achievement (learning outcomes). Internal human factors consist of intelligence, interest, talent, motivation; while external factors or those that come from outside the human include the family, school environtment, and society.

The term of academic achievement are statements about what students should be able to do by the end of a teaching session. Learning outcomes are then aligned to assessments, with the teaching and learning activities linking the two.[6] Gronlund and Waugh stated 'assessments used to assess the achievement of undertsandings and skills by actually performing a task or set of tasks (writing a story, giving a speech, conducting an experiment, operating a machine).[7] Academic achievement or learning outcomes, here, means as the same as a goal or objectives in educational learning in the point of view of Bloom.[8] Accroding to him, the three lists cover the learning objcetives in cognitive, affective, and sensory (psychomotor) domains. The cognitive doman list has been the primary focus of most traditional education and is frequently used to structure curriculum learning objectives, asssessments and activities. The cognitive domain (knowledge-based) consists of knowledge, comprehension, application, analysis, systhesis, and evaluation; the affective domains are receiving, responding, valuing, organizing, and characterizing, while psychomotor domains

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[1] Salvador Algarabel and Carmen Dasi, The definition of achievement and the construction of test for its measurement; a review od the main trends. *Psicologia* (2001), 22, 43-66.

[2] Tulus Tu'u, *Peran Disiplin Pada Perilaku Dan Prestasi Siswa*, (Jakarta: Grasindo, 2004), 47.

[3] Muhibbin Syah, 1991

[4] Nana Sudjana, *Penilaian Hasil Proses Belajar Mengajar*, (Bandung: PT. Remaja Rosdikarya, 2007), 22.

[5] Nana Syaodih Sukmadinata, *Landasan Psikologi Proses Pendididkan,* (Bandung: PT. Remaja Losdakarya, 2005), 130.

[6] https://en.wikipedia.org/wiki/Educational_aims_and_objectives#Learning_outcomes

[7] Norman E. Gronlund and C. Keith Waugh. Assessment of student achievement.ninth edition. Colombus Ohio: Upper Saddle River New Jersey., 2.

[8] Bloom, B. S.; Engelhart, M. D.; Furst, E. J.; Hill, W. H.; Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals*. Handbook I: Cognitive domain. New York: David McKay Company

are presception, set, guided response, mechanism, complex overt response, adaptation, and origination.

Students' learning outcomes are affected by many factors, such as; intellectual, learning process, physical, mental, emotional and social, teachers' personality, and environmental factors.[9] It can be explained as follow; 1) Intellectual factors refer to the individual mental level. Success in school is generally closely related to level of the intellect. Students with low intelligence often encounter serious difficulty in mastering schoolwork. They sometimes do not learn because of special intellectual disabilities. 2) Learning process factors come from owing to lack of mastery of what has been taught, faulty methods of study, and narrowness of experimental background. If the school proceeds too rapidly and does not constantly check up on the extent to which the students are mastering what is being taught, they accumulates a number of deficiencies that interfere with successful progress. 3) Physical factors are important factors. Health, physical development, nutrition, visual and physical defects and gladular abnormality are generally interfere with learning and physical growth as well as seriously handicapped in developing skills. 4) Mental factors as like interest, cheerfulness, affection, prejudice, open mindedness, loyalty are attitudes that are important in the development of personality. It is stimulating effect upon the rate of learning and teaching and upon the progress in school. 5) Emotional and social factors, such as cooperation and rivalry, are diretly related to a complex psychology of motivation. It is a recognized fact that the various responses of the individual to various kinds of stimuli are determined by a wide variety of tendencies. 6) the teacher as an indivual personality is an important element in the learning enviroment or in the failure and success of the learner. The way in which his personality interacts with the personalities of the students being taught helps to determine the kind of behaviour which emerges from the learning situation. 7) Enviromental factors, includes the classrooms, textbooks, equipment, school supplies, and other instructional materials are important to influence the students' learning ourcomes. In the school or at the house, the conditions for learning must be favorable and adequate if teaching is to produce the desired results. It cannot be denied that the type and quality of instructional materials and equipment play an important part in the instructional efficiency of the school.

Based on the theoretical review of learning outcomes above, the researcher uses two methods which will be experimented in this study namely demonstration teaching method (as control method) againts the jigsaw cooperative method (as experimental method) with different level of learners' self-confidence on academic achievement of students. This is intended to measure the effectiveness and suitability of learning methods in accordance with the characteristics of learners.

In teaching through demonstration, students are set up to potentially conceptualize class material more effectively as shown in a study which specifically focuses on chemistry demonstrations presented by teachers.[10] Demonstrations often occur when students have a hard time connecting theories to actual practice or when students are unable to understand application of theories. Teachers not only demonstrate specific learning concepts within the classroom, but they can also participate in demonstration classrooms to help improving their own teaching strategies, which may or may not be demonstrative in nature. Some studies show that the effects of demonstration classroom teachers includes a change of perspective in relating to students, more reflection in the teachers' own classroom strategies, and more

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[9] https://www.yourarticlelibrary.com/learning/7-important-factors-that-may-affect-the-learning-process
[10] yourdictionary.com.*Demonstrating Definition*. http://www.yourdictionary.com/demonstrating

personal responsibility for students' learning.[11] Demonstration method is refered to the type of teaching method in which the teacher is the principal actor while the learners watch with the intention to act later. It means that the teachers do whatever the learners are expected to do at the end of the learning process by showing them to do to and explaining the step-by-tep process to them, is a display or an exhibition usually done by the teacher while the learners watch with keen interest.[12] The gains of using demonstration method lies in the the facts that it bridge the gap between theory and practice, enables learners to become good observers and generate their interest. According to McCabe, it is an attention enducer and a powerful motivator in lesson delivery. It gives a real-situation of course of study as students acquire skills in real-situations using tools and materials. It also helps to motivate students when carried out by skilled teachers and it is good in showing the approriate ways of doing things.[13]

On the other hand, the choice of jigsaw cooperative method is based on the assumtion that this method give a wide space to the students to explore their potencies during the learning process, is still quite new, is rarely practiced in the learning especially in rural area, is able to activate students, and increases cooperation among the students in a small group. As Slavin stated 'Cooperative learning comprises instructional methods in which teachers organize students into small groups, which then work together to help one another learn academic content'.[14]

The cooperative learning model has been used in the term of education, in the form of laboratory groups, task groups, discussion groups.[15] Cooperative learning is defined as an instructional use of small groups through which students work together to capitalize on their own and each other's learning.[16] Cooperative learning exists when students' goal attainments are positively unified. When one student obtains his or her objective, all other students with whom he or she is cooperatively associated obtain their objective. It replaces the mass production, competitive, organizational structure of most classroom and schools with team-building, high performance organizational structure.[17]It also helps to accomplish two important goals as an aducator; increased the academic achievement of gifted and nongifted students, and helped build positive students realtionships and interactions that fostered diversity.

Through the maintenance of cooperative relationships, students can benefit from each other learning. The students can develop a perceptive of each others' needs and will often provide help when necessary. In relation to the benefit of cooperative learning, the students will learn to engage in processes of shared thinking which help them to not only gain a better undertanding of the perspectives of others but also to build on their contributions to develop new understanding and knowledge.[18] Other benefits of cooperative learning are; gaining across curriculum domains and produces positive interpersonal, behavior, values and

[11] McKee, Erik, Vickie M. Williamson, and Laura E. Ruebush. "Effects of Demonstration Laboratory on Student Learning". *Journal of Science Education and Technology*. 16.5 (2007) 395-400.

[12] Daluba, N. E. (2013). Effect of Demonstration Method of Teaching on Students' Achievement in Agricultural Science. World Journal of Education 3 (6), 61- 67

[13] McCabe, J. A. (2014). Learning and Memory Strategy Demonstrations for the Psychology Classroom. Baltimore: Goucher College

[14] Slavin 2011

[15] Slavin, R. E. (1983). Cooperative Learning. New York, NY: Longman Inc.

[16] Johnson, D. W., & Johnson, F. P. (2000). Joining together: Group theory and group skills. (7 ed.) Boston, MA: Allyn and Bacon

[17] Shachar, H., & Fischer, S. (2003). Cooperative learning and the achievement of motivation and perceptions of students in 11th grade chemistry classes. Learning and Instruction (14), 69-87.

[18] Cohen, E. (1994). Restructuring the classroom: Conditions for productive small groups. Review of educational research, 1-35

skill;[19]acquiring and practicing effective interactions;[20]Finding success in providing help and assistance to their peers, more self-confident and more willing to offer help others, increasing students involvement and interest in learning.[21]

Slavin classified several type of cooperative learning, namely; Students Team Achievement Devision (STAD), Group Investigation (GI), Jigsaw, Team Game Tournament (TGT), Rotating Trio Exchange (RTE), Group Resume (GR), Cooperative Integrated Reading Comprehension (CIRC) and so forth. In accordance with this study, the reasearcher focuses on jigsaw. This focuses on collaboration in small groups to help each other in learning subject matter.[22] Eggen and Kauchak stated, the jigsaw has two main characteristics; building of systematic knowledge and task specialization. It also consists of two groups; original group and expert group.[23] The technicque splits classes into mixed groups to workd on small problems that the group collates into a final outcome. An assignment is devided into topics. In a group of experts, students discuss the same topics with other students. They reconcile points of view and sythesize information. They create a final report. Furthermore, in the original group, the students must explain the content that has been discussed with the expert group to their group friends. The final presentations provides all group members with an understanding of their own material, as well as the findings that have emerged from topic-specific group discussion. It is aimed to sharpen students' insight into the material that has been obtained from the teacher.

The jigsaw method is a method of organizing classroom activity that makes students dependent on each other to succeed. It breaks classes into group and breaks assignments into pieces that the group assembles to complete the jigsaw.[24] Jigsaw method is beneficial for students learning. Here are some steps in designing jigsaw method.[25]

Steps	Instruction
1	Divide the class into teams of three to five people.
2	Devise two to five different team assignments. The number of different assignments depends on how many teams you want to have, because each team will receive a different assignment. You might give teams different reading, different data sets, samples, maps or problems, different issues for discussion, different field sites, and so on.
3	With a small class, give a different assignment to each team. If you have four different assignments, you will have four teams. For a larger class, create several #1 teams, several #2 teams, and so on. Give all the #1 teams the same assignment, etc.
4	Unless you plan to give teams time to work during class, ask each student to prepare individually before class. One effective way to prepare students is to give them focus questions to accompany the assignment and require that students

[19] Baird, J., Hertz-Lazarowitz, R., & Lazorowitz, R. (1994). Learning Science in a Cooperative Setting: Academic achievement and affective outcomes. Journal of Research in Science Teaching, 31, 1121-1131.

[20] Kagan, S. (1994). Cooperative Learning. San Clemente, CA: Kagan Cooperative Learning

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[22] Arronson et all. Aronoson, E. Blaney, N., Sikes, S. & Snapps, M. (1978). The Jigsaw Classroom. Beverly Hills, CA: Sage Publications.

[23] Eggen, Paul dan Don Kauchak, 2012, strategi dan model pembelajaran (mengerjakan konten dan keterampilan berfikir) jakart: PT. Indeks

[24] https://en.wikipedia.org/wiki/Jigsaw_(teaching_technique)

[25] https://serc.carleton.edu/sp/library/jigsaws/steps.html

	prepare written responses to those questions. If you don't do something like this, some students won't come prepared to class. Alternatively, you can set aside time during class for students to work in teams to do the reading/analysis (this works if the reading/analysis is short or involves equipment that is not accessible to students outside of class and does guarantee that all students do the reading or analyze the data). If there are several teams of the same number (*e.g.*, four #1 teams), each team should meet separately, not as a large group.
5	Give each team time in class to discuss the preparation and to develop a strategy for teaching the material to members of other teams. It is the responsibility of each team to make sure that all of its members understand the material thoroughly and are prepared to teach it. It helps to provide guidelines for what you mean by "teach".
6	Don't assume that individual teams will head in the right direction without some guidance. You need to make sure that each team is prepared to teach a mixed group and that students will make the points that you want them to make. You or an assistant needs to check in with each team at least once to make sure that the team has not missed the boat. Be gentle and listen – nudge, don't pontificate. Resist the temptation to direct too strongly. As long as the team is on the right track and is prepared to address the main issue adequately, let them digress and explore. What strikes them as significant might open your eyes to something you have missed.
7	When all teams are ready, reassemble the class in groups. There should be enough groups so that each group has one member from each team. Odd numbers may mean that a few groups have one extra member. In a class of 64 with four different assignments, for example, there might have been four team #1's each with four people, four team #2's each with four people, and so on. Each mixed group would have a #1, a #2, a #3, and a #4, for a total of four people. There would be 16 mixed groups in such a class
7	Each member of the group will then teach the rest of the group whatever was discussed or prepared by his/her team. Each person in the group is also responsible for learning from the others in the group
8	Some type of individual assignment should result from the peer teaching effort, and students should have that assignment in mind as they work in their groups. A written assignment might involve comparing work done by a student's own team with that done by a different team. Alternatively, an assignment might ask a student to take all of the information presented by each team and use it to address a new issue
9	If the size of the class permits, evaluate students in the group setting. Sit in on a group session, and evaluate each person's ability to teach the rest of the group. Fill out the evaluation form during the session so that students can have feedback immediately after class. This is a very useful tool for helping students improve, particularly if you outline clearly what your criteria are for assigning each level in your grading scale. Knowing that they could be evaluated at any time gives students a real incentive to come prepared, and a carefully done evaluation gives them suggestions on how to improve. It helps if you and several student assistants can simultaneously evaluate several groups in order to evaluate as many students as possible during a single session, but you can evaluate one group at each session by yourself. In a larger class, you simply won't evaluate any individual as often. If you can work out a way to evaluate everyone at every session early in the course,

	however, you will see faster progress in students' abilities to teach one another.
10	Have each group complete a task that requires the group to bring all of the pieces together to form the "picture". This might be a comparison of information from each team or it might be an entirely new task that requires information from each of the teams to solve. This is a crucial aspect of the jigsaw.Without a culminating group task, the exercise is little more than four mini-presentations by individual students without incentive for students to teach or learn from each other.
11	Bring everyone back together toward the end of the class, and ask each group for its most important point. Make a list of main points on the board, going around a second time to each group if people still have points to make. Use the time to elaborate or to emphasize important issues. You can be sure this way that you drive home the most important points. This also serves to confirm for the students that they have done a good job in recognizing the important points. If you have student assistants, ask them for additional points. This is a way to give your student assistants credibility and also to have a "plant" in the audience in case (and it does happen) one of the important points is not raised by one of the groups. As an aside, keep careful track of those points, because, for one reason or another, students have missed them and will need different reading or direction the next time in order to catch the point, if it is indeed as important as you had originally thought.

Source: https://serc.carleton.edu/sp/library/jigsaws/steps.html

Self-confidence

Bandura poses self-confidence as a common cognitive mechanism for mediating people's motivation, thought patterns, emotional reactions, and behavior.[26]Confidence itself is a state of being clear-headed either that a hypothesis or prediction is correct or that a chosen course of action is the best or most effective. Confidence comes from a Latin word 'fidere' which means "to trust"; therefore, having self-confidence is having trust in one's self.[27]Snyder and Lopez argue that the concept of self-confidence is commonly used as self-assurance in one's personal judgment, ability, power, etc. One's self-confidence increases from experiences of having satisfactorily completed particular activities.[28] It is a positive[29] belief that in the future one can generally accomplish what one wishes to do. Self-confidence is not the same as self-esteem, which is an evaluation of one's own worth, whereas self-confidence is more specifically trust in one's ability to achieve some goals, which one meta-analysis suggested is similar to generalization of self-efficacy.[30] Self-confidence is a positive attitude of the individual that enables himself to againts the environment of situation he faces. Self-confidence is convincing in the ability and self-assessment of the task and it has a practical approach. According to Lenny, self-confidence ia a belief owned by a person that he or she is capable of behaving as needed the desire result.[31] Self-confidence as an individual's expectations of performance and self-evaluations of abilities and prior performance. Finally,

[26] https://en.wikipedia.org/wiki/Confidence

[27] https://en.wikipedia.org/wiki/Confidence

[28] Snyder, C. R.; Lopez, Shane J. (2009-01-01). *Oxford Handbook of Positive Psychology*. Oxford University Press. ISBN 978-0-19-518724-3.

[29] Zellner, M. (1970). "Self-esteem, reception, and influence ability". *Journal of Personality and Social Psychology*. 15 (1): 87–93.

[30] Udge, Timothy A.; Erez, Amir; Bono, Joyce E.; Thoresen, Carl J. (2002-09-01). "Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct?". *Journal of Personality and Social Psychology*. 83 (3): 693–710

[31] Lenney, E. (1977). Women's self-confidence in achievement settings. *Psychological Bulletin, 84*, 1-13

Psychology Dictionary Online defines self-confidence as an individual's trust in his or her own abilities, capabilities, and judgments, or belief that he or she can successfully face day by day challanges and demand.[32]

Self-confidence typically refers to general self-confidence. It is different from self-efficacy (refers to specific task). Some social scientists have found ways in which self-confidence seems to operate differently within various groups in society. Self-confidence emerges differently between the children and adults, men and women, employer and employee; and teachers and students. Many students focus on studies in school. In general, students who perform well have increased confidence which likely in turn encourages students to take greater responsibility to successfully complete tasks.[33] Students who perform better receive more positive evaluations report and greater self-confidence.[34] Low achieving students report less confidence and high performing students report higher self-confidence.[35] In one study of UCLA students, males (compared to females) and adolescent with more siblings (compared to thoses with less) were more self-confident. Individual who was self-confidence specfically in the academic domain was more likely to be happy but higher general self-confidence was not correlated with happiness.[36] With greater anxiety, shyness and depression, emotionally vulnerable students feel more lonely due to a lack of general self-confidence.[37] Another study of first year college students found men to be much more self-confidence than women in athletic and academic activities.[38] In regards to inter-ethnic interaction and language learning, studies show that those who engage more with people of a different ethnicity and language become more self-confidence in interacting with them.[39] Self-confidence also brings about more happiness among the students. Typically, when the students are confident in their abilities they are happier due to their successes or when they are feeling better about their capabilities, the more energized and motivated they are to take action and achieve their learning achievement.

Some aspects of self-confidence are: 1) confidence which consists of two indicators: Willingness (efforts) and optimistic, 2) possitive attitudes which consists of three indicators: indipendent, not easily give up, and able to adjust, 3) make use of the advanteges which consists of two indicators: having and utilize excess and having mental and physical support.[40] Lauster (in Ghufron and Risnawita) declared about the aspects of self-confidence, they are: 1) believing in his or her own abilities, 2) acting optimistically, 3) openminded, 4)

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[32] https://positivepsychology.com/self-confidence/

[33] Zimmerman, Barry J.; Kitsantas, Anastasia (2005-10-01). "Homework practices and academic achievement: The mediating role of self-efficacy and perceived responsibility beliefs". *Contemporary Educational Psychology*. 30 (4): 397–417.

[34] Pajares, Frank; Johnson, Margaret J. (1996-04-01). "Self-efficacy beliefs and the writing performance of entering high school students". *Psychology in the Schools*. 33 (2): 163–175.

[35] Zusho, Akane; Pintrich, Paul R.; Coppola, Brian (2003-09-01). "Skill and will: The role of motivation and cognition in the learning of college chemistry". *International Journal of Science Education*. 25 (9): 1081–1094.

[36] https://en.wikipedia.org/wiki/Confidence

[37] Cheng, Helen; Furnham, Adrian (2002-06-01). "Personality, peer relations, and self-confidence as predictors of happiness and loneliness". *Journal of Adolescence*. 25 (3): 327–339.

[38] Lopez, F. G., & Gormley, B. (2002). "Stability and change in adult attachment style over the first-year college transition: Relations to self-confidence, coping, and distress patterns". *Journal of Counseling Psychology*. 45 (3): 355–364.

[39] Noels, Kimberly A.; Pon, Gordon; Clement, Richard (1996-09-01). "Language, Identity, and Adjustment The Role of Linguistic Self-Confidence in the Acculturation Process". *Journal of Language and Social Psychology*. 15 (3): 246–264.

[40] Peter Lauster, 1978. Tes Keperibadian. Terj. DH. Gulo. (Jakarta: Bumi Aksara, 1978), 35-40.

being responsible, and 5) rational and realistic.[41]while factors affecting self-confidence consists of self-concept, experiences, educational background, and environment (family, friend, and social).

The research approach used in this study was quantitative. Here, the reseracher used a quasi-experimental design with cooperative learning as instructional model and regular model group. The design was selected on the basis of nature of the problems and the study hypotheses. This research design was also used because it allowed researcher to perfom the moderator variable that could effect the treatment of independent variable towards dependent variable.[42] The design consists of two groups; treatment group (31 students) and control group (30 students). To obtain the research subjects (groups), the reseacher used random assignment sampling because there were six groups of learning in the same class. The systematic description of the design is shown in figure 1.
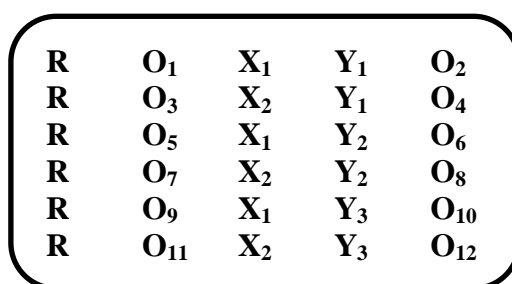
$$
\begin{array}{lllll}
R & O_1 & X_1 & Y_1 & O_2 \\
R & O_3 & X_2 & Y_1 & O_4 \\
R & O_5 & X_1 & Y_2 & O_6 \\
R & O_7 & X_2 & Y_2 & O_8 \\
R & O_9 & X_1 & Y_3 & O_{10} \\
R & O_{11} & X_2 & Y_3 & O_{12}
\end{array}
$$

Figure 1. Factorial (Pre-Test Post-Test Control Group) Design 2 x 3

The sample of study consisted of two groups in seventth grade students enrolled in subject research. This study was carried out in a female groups of students, so there was no diversification in terms of gender. Age range of sample was 13-14 years old. Initially control and experimental group were studying in the same grade. The random assignment method was considered suitable for maintaining homogineity to a certain extent. The instruments of study consisted of two kinds, they were: questionaire and test. The questionaire was used to obtain the data of self-confidence, while test was used to gain the data of students' academic achievement (outcomes). The questionaire instrument based on Lauster's instrument and the test instrument was designed by the researchers themselves with was validated with assistence of expert teachers and the subjects of the study. The questionaire contained 20 questions in accordance with compatibility and incompatibility of reaersch sample with the existing statement item. The answers categorized into five namely strongly agree, agree, rather agree, disagree, and strongly disagree. The test instrument contained 25 multiple choice questions. Both of instruments were pilot tested on the students to determine its usability as well as to gain its validity and realiability. The risult of validity test using product moment pearson (corrected item-total correlation) gained over 0,254 and realiability test using Alpha Cronbach (Cronbach's Alpha Based on Standardized Items) had reached standard 0,60.

In order to deal with the potential pre-existing differences in overall ability between the treatment and control groups a pre-test was cunducted. For controlling the effect of teacher quality both the groups were taught by the researcher himself. Both of groups were taught two units (module) the same content. However the students in treatment group were taught

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[41] Ghufron dan Risnawita, *Teori-Teori Psikologi*. (Yogyakarta: Ar-Ruzz Media, 2011), 23.

[42] Imam Azhar, Metode Penelitian Dan Analisis Data Berbantukan Software SPSS. (Yogyakarta: Insyira, 2018), 67.

through jigsaw cooperative method completed learning activities in small heterogeneous groups while the students in the control group were taught through reguler method (demonstration) over periode of six weeks.

The independent sample t-test was used to measure the mean scores differences between achievement scores of treatment and control group on pretest while the paired sample t-test was used to measure the mean scores differences between achievement scores of treatment and control group on posttest. The two way analysis of varian (two-way anova) was used to measure the main effect (different teaching methods on students' academic achievement) and interaction effect (different teaching methods and self-confidence on students' academic achievement).[43]

Students' Academic Achievement and Self-Confidence

Table 1. Independent Sample T-test; Pre-test

Kelas	Method	Mean	Median	Mode	Std Devias	N
Control Group	Demonstrasi	61.19	65.00	40	14.160	31
Experiment Group	Jiqsaw	62.61	65.00	65	14.737	31

The tabel 1 shows that there was no significant difference in achievement scores of pretest in control group (mean = 61,19; SD = 14,160) and in experiment group (mean = 62,61; SD = 14,737).

Table 2. Independent Sample T-test for Post-test

Kelas	Method	Mean	Median	Mode	Std Devias	N
Control Group	Demonstration	73,16	72.00	72	8,892	31
Experiment Group	Jiqsaw	78,71	78.00	72	11,987	31

The tabel 1 shows that there was a significant difference in achievement scores of posttest between control group (mean = 73,16; SD = 8,892) and in experiment group (mean = 78,71; SD = 11,987). In other words, this means that there was significant difference between the posttest students' academic achievement mean score taught using demontration method and those taught using jigsaw cooperative learning method.

Table 3. Descriptive statistic on self-confidence

Method	Self Confidence	Mean	Std. Deviation	N
Demontration as control group	High	67,30	7,056	10
	Medium	71,40	8,072	10
	Low	80,09	6,595	11
	Total	73,16	8,892	31
Jigsaw as experiment group	High	71,40	7,662	10
	Medium	83,70	11,431	10
	Low	79,30	12,996	10
	Total	78,13	11,747	30

The table 3 shows that self-confidence in both of groups was classified into three levels; high, medium, and low. In control group, there were 10 students (32,25%) gained high level of self-confidence with score 67,30; 10 students (32,25%) obtained medium with score 67,30; and 11 students (35,48%) gained low level with score 67,30. Furthermore, in experiment group, there were 10 students (36,66%) gained high level of self-confidence with

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[43] Kadir, *Statistika*, (Jakarta: Rosemata Sampurna, 2010), 216.

score 71,40; 10 students (36,66%) obtained medium of self-confidence with score 83,70; and 10 students (36,66%) gained low level of self-confidence with score 79,30.

Before doing hypothesis test, the test of normality and test of homogineity are firstly conducted. The risult is shown in table 4 and table 5.

Tabel 4. Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Self_confidence	,088	62	,200[*]	,974	62	,216
Hasil belajar	,091	62	,200[*]	,975	62	,226

Based on the table Test of Normality, it is known that either the data of self confidence or the data of students' academic achievement are in upper than the level of significance 0,05 or K-S > 0.05. This means that the data of self-confidence and students' academic achievement gained normal distribution. Furthermore, levene's Test of Equality of Error Variances shows that at 0,05 level of significance and df1 = 40 sf2 = 20, the p value is 0,001 which is lower than the level of significance. This obviously meant that variances of data are identical (homogineous). The risult of the test is shown on table 5 below.

Table 5. Test of Homogineity using Levene's Test of Equality of Error Variances[a]

F	df1	df2	Sig.
3,641	41	20	,001

Test of Hypothesis

Table 6. Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2465,733[a]	6	410,955	4,815	,001
Intercept	99269,318	1	99269,318	1163,145	,000
X1	669,808	2	334,904	3,924	,026
X2	1208,728	2	604,364	7,081	,002
X1 * X2	445,975	2	222,988	2,613	,082
Error	4694,009	55	85,346		
Total	364664,000	62			
Corrected Total	7159,742	61			
a. R *Squared* = ,344 (*Adjusted* R *Squared* = ,273)					

The table 5 shows: X1); the data shows that at 0,05 level of significance and 2 df, F socre is 3,924 is upper than f-table (3,150), the p-value is 0,026 which is lower than the level of significance 0,05. This means that there was significant difference in the mean score of students taught using demontration method and those taught using jigsaw cooperative learning method. The null hypothesis was therefore rejected. X2); The data shows that at 0,05 level of significance and 2 df, F socre is 7,081 is upper than f-table (3,150), the p-value is 0,002 which is lower than the level of significance 0,05. This means that there was significant difference in the mean score of students' self-confidence either in control group or in experiment group.

The null hypothesis was also rejected. X1*X2); The data shows that at 0,05 level of significance and 2 df, F socre is 2,613 is lower than f-table (3,150), the p-value is 0,82 which is upper than the level of significance 0,05. This means that there was no significant interaction effect in the mean score of students' self-confidence and learning methods (demonstration and jigsaw) on students'academic achievement. The null hypothesis was received.

DISCUSSION

The study was carried out to explore the effect of jigsaw cooperative learning method versus demonstration teaching method on students' academic achivement with different self-confidence. The study revealed that students who were taught using jigsaw cooperative learning method achieved higher post-test score than those taught using demonstration teaching method. This could be as a risult of activities taht were incorporated in jigsaw cooperative learning method, which strengthened the cognitive ability of students, gave a positive effect on learning circumtances and learning atmosphere, the learning process became more flexible and comfortable.[44]The students themselves revealed a possitive attitude on the learning process, became more respectful to others.[45] This risult was in line with the statements of Hamdani[46] and Tim Didaktik[47] which argued that using jigsaw cooperative learning method would motivate students in engaging the learning process, being more enthusiastical, taking part in doing a thing collaboratively.

This risults of study were also consent with the previuos reserach findings of Islami[48] and Febriani[49] which reported respectively that jigsaw could significantly effect the students' academic achivement; of Abidin and Riswanto stated that it could increase the critical thinking, independant learning, social skill and improve the academic achievement; and of Tok[50] Bölükbas et al.,[51] and Al Odwan[52] which concluded that jigsaw cooperative learning method could improve students' cognitive skill as well as students' academic outcomes.

Student's self-confidence - in the position of becoming moderator variable, was classified into three levels; high, medium, and low. As it is revealed before that the students in control group obtained mean score lower than students in experiment one. It is true that the students with lower self-confidence would get lower score, on the contrary the students with

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[44] Slavin, R.E. 1997. Cooperative Learning among Students. *Active learning for students and teachers*, 159-173.

[45] Rusma, *Model-Model Pembelajaran Mengembangkan Profesionalisme Guru,* (Jakarta: PT. Raja Grafindo), 218.

[46] Hamdani, *Strategi Belajar Mengajar,* (Bandung: CV PUSTAKA SETIA, 2011), 70.

[47] Tim Didaktik Metodik Kurikulum IKIP Surabaya, *Pengantar Didaktik Metodik Kurikulum PBM,* (Jakarta: CV Rajawali, 1989), 54.

[48]Saiful Islami, dkk, *Perbedaan Hasil Belajar Siswa Dalam Pembelajaran Kooperatif Tipe Jigsaw Dan Konvensional Pada Mata Pelajaran MRL Kelas X SMK N Payakumbuh,* (Jurnal: Fakultas Teknik Universitas Negeri Padang, 2013), 65.

[49]Nur Anisa Febriani, *Perbedaan Hasil Belajar IPA Antara Kelas Yang Diajar Dengan Menggunakan Metode Inkuiri Terbimbing Dan Metode Demonstrasi Siswa Kelas SD Gugus Diponegoro Karangkobar Banjarnegara Jawa Tengah,* (S1 Thesis, Universitas Negeri Yogyakarta: 2012), 26.

[50] TOK, S. 2008. Effects of Cooperative Learning Method of Pairs Check Technique on Reading Comprehension. *Elementary Education Online*, 7 (3), 758.

[51] Bölükbas, F., Keskin, F., & Polat, M. 2011. The Effectiveness of Cooperative Learning on the Reading Comprehension Skills in Turkish as a Foreign Language. *The Turkish Online Journal of Educational,* 10 (4), 330.

[52] Al Odwan, T.H. 2012. The Effect of the Directed Reading Thinking Activity through Cooperative Learning on English Secondary Stage Students' Reading Comprehension in Jordan. *International Journal of Humanities and Social Science,* 2 (16), 139-151.

higher self-confidence would get higher score. It is because self-confidence will help students to overcome the learning problem creatively, they will feel free to express their idea and opinion to others, they are being confident to face any duties.[53] Self-confidence is often interrelated to to other people, is also connected to individual's prior experiences of life and the situation or condition around him/her since childhood.[54] The risluts of this study are relevant to the previous study. Dewi reported her past study that self-confidence could improve students' learning competences.[55] Sholihah shew her research finding that self-confidence could give significant effect on students' academic achievement.[56]

In accordance with the third hypothesis, the study revealed that there were no significant interaction effect between teaching methods (demontration and jigsaw) and students' self confidence on the students' academic achievement. It was proven by p-value 0,082 gained which is lower than 0,05 the level of significance. This study was relevant to the findings of Mas'adah, where *p-value was upper than the level of significance score (0,556 > 0,05).*[57]Otherwise, It was not consent with the findings of Sugiarti dkk.[58]

The absence of interaction effect between the two variables indicated that the two variables had a separate effect. This is as argued by Kerlinger, in which the interaction effect can not occur if there are more than one indipendent variable has an effect or an impact separately or individually, or each variable has a significant main effect.[59] The same argument came from Hair et. all.[60]

> "The interaction term represents the joint effect of two treatments and is the effect that must be examined first. If the interaction effect is not statistically significant, then the effects of the treatments are independent. Independence in factorial designs means that the effect of one treatment is the same for each level of the other treatment(s) and that the main effects can be interpreted directly".

The fact the interaction effect was weak as explained above, it shew that the learning achievement of group that was taught using demonstration teaching method at higher self-confidence was getting lower score than those taught using jigsaw cooperative learning method at higer self-confidence. Furthermore, the same case occured in group that was taught using demonstration teaching method at lower self-confidence was getting lower score than those taught using jigsaw cooperative learning method at lower self-confidence. This such interactions were called ordinal interactions.

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[53]Tarsis Tarmuji, *Pengembangan Diri,* (Yogyakarta: Liberty, 1998), 47.

[54]Zakiah Darajat, *Kesehatan Mental,* (Jakarta: CV. Haji Masagung, 1990), 26.

[55]Peter Lauster, *Tes Kepribadian,* Terj. D. H. Gulo, (Jakarta: Bumiaksara, 1985), 14.

[56]Mar'atus Sholihah, *Pengaruh Percaya Diri Siswa Dan Manajemen Kelas Terhadap Hasil Belajar Pada Mata Pelajaran Fikih di MA Ma'arif 17 Tarbiyatus Shibyan Kemantren Paciran Lamongan Tahun Pelajaran 2014-2015,* (Skripsi: STAIDRA, 2014)*, 106.*

[57]Inayati Mas'adah, Studi Komparasi Penerapan Strategi Pembelajaran Konvensional Dan Kooperatif Tipe Jigsaw Terhadap Hasil Belajar Siswa Yang Memiliki Self Regulated Learning Berbeda Pada Mata Pelajaran Fikih Di Kelas X Madrasah Aliyah Tarbiyatus Shibyan Kemantren Paciran Lamongan Tahun Pelajaran 2013-2014, (*Skripsi*: STAIDRA, 2014), 98.

[58] Rini Sugiarti, dkk, *Perbedaan Penerapan Model Pembelajaran Kooperatif Tipe Numbered Head Together (NHT) Dan Jigsaw Terhadap Peningkatan Keterampilan Sosial Pada Siswa SMA,* (Jurnal: Fakultas Psikologi Universitas Semarang), 102.

[59] Kerlinger, F.N. 1986. *Asas-asas Penelitian Behavioral*. Terjemahan oleh Landung R. Simatupang. 1990. Yogyakarta: Gajah Mada University Press.

[60] Hair, J.F., William, C.B. & Barry J.B. 2006. *Multivariate Data Analysis*. 6th edition. New Jersey: Prentice-Hall

CONCLUSION

Based on the findings of the study, it was concluded that jigsaw cooperative learning method helps students to obtain higher academic achievement than demontration teaching method. This means that jigsaw cooperative learning method is an effective methode for improving students' academic achievement on the subject of *sholat sunnah muakkadah dan ghoiru muakkadah.* Therefore, it should be adopted in the teaching and learning of certain subject on Fiqih lesson. The risult is also revealed that the academic achievement of experiment group that at higer self-confidence gets higher score than another one. In relation to the absence of interaction effect between the two variables indicate that the two variables have a separate effect.

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