**Think-Pair-Share: A Cooperative Learning Procedure to Improve Student’s Academic Content and Social Skills**

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The Think-Pair-Share procedure is designed to give students time and structure to think about a given topic, followed by pairing with peers to discuss responses to the topic, and finally during the third step, they synthesize and share their ideas with a group or class. The purpose of this study was to illustrate the improvement of Islamic Cultural History learning outcomes through the use of Think-Pair-Share cooperative learning methods for students. This classroom action research on seventh-grade students used the R&H classroom action research model. Participants in this study were seventh-grade class students at one Private Junior High School in Jakarta, Indonesia. The data collection of this research was done through tests, observations, and documents. The data analysis employed text analysis and descriptive statistics. The findings show both student learning outcomes and student T-P-S activities have increased. The Think-Pair-Share method of cooperative learning can improve student learning outcomes, and be able to increase student learning activities in academic content and skills.

**Keywords:** *think-pair-share, pairing, sharing ideas, group, academic content.*

# Introduction

The basis of Cooperative Learning is that students learn with and from each other through structured interdependent relationships (Wallhead & Dyson, 2016). Cooperative learning is learning that conditions students to learn in a small group with different levels of ability. In completing group assignments, each member completes joint assignments, helps and completes material problems, and completes other activities to achieve the learning outcomes that have been done previously. According to Chiu (2004) cooperative learning examines how they affect student assignment time (TOT) and subsequent problem-solving.

Think-Pair-Share (T-P-S) is a cooperative learning procedure that was developed by Frank Lyman precisely at the University of Maryland in 1981. Many educators who support cooperative learning have adopted similar teaching procedures or methods. The Think-Pair-Share procedure is designed to give students time and structure to think about a given topic, followed by pairing with peers to discuss responses to the topic, and finally during the third step, they synthesize and share their ideas with a group or class (Shih & Reynolds, 2015). This learning procedure can improve students' communication skills because students report the results of each other's thoughts and share (discuss) with their partners. Then the couple shares with the whole class.

~~No previous research has examined the learning outcomes of Islamic Cultural History through cooperative learning model Think-Pair-Share types.~~ According to ~~[4]~~ (Bamiro, 2015), the use of Think-Pair-Share strategies had great potential for improving achievement in chemistry and science learning generally.

Therefore the objective of the present work paper is to investigate Think-Pair-Share as a cooperative learning procedure for improving the content and academic skills of students in Islamic Cultural History subjects. According to (Dugal & Eriksen, 2004) in addition to providing a cooperative learning structure, the basis for use in any training, experience-appropriate training can be used as training to help individuals or groups to learn and resolve conflicts.

Cooperative learning can improve the ability of teachers to attract students' learning interests and easier for teachers to prepare students because in each small group there are intelligent students who can help and guide their friends who are struggling. These results support by (Rosfiani et al., 2018) which showed that interest in learning directly also affects student achievement. On the other hand, a correlational study by (Rosfiani et al., 2019) reports that the learning environment directly influenced student learning assessment. According to ~~[8]~~ (Arends, 2012), discusses Think-Pair-Share is an effective way to change the conversation patterns in class. This strategy challenges the consideration of memorizing and discussing what needs to be done in the context of the whole class, also has procedures to give students more to think and respond to and help each other.

# *Cooperative Learning Models*

# Cooperative learning is more than just helping students acquire content and academic skills to meet the needs of important social and human relationships, cooperative learning is developed to achieve at least three goals: academic achievement, tolerance, and acceptance of diversity, and the development of social skills (Arends, 2012). (Abdulwahed et al., 2019) suggested that different cooperative learning and teaching recently attracted much attention because it was considered by educators and teachers to play an important role in motivating students and promoting interactive learning.

# Research on cooperative learning techniques in classrooms, where students work in small groups and receive prizes or awards for their groups, has increased in recent years. The pattern of cooperative learning methods is to improve student achievement, positive relationships in separate schools, mutual attention among students, student self-esteem, and other positive results [10] (Slavin, 1980). Team-based learning is a separate component that is often used in high class, team-based learning can improve grade grades, performance tests, and grade improvement. Team-based learning is interesting, facilitates a deeper understanding of content, and is more effective for understanding and performance of courses [11] (Swanson & Lewis, 2017).

The cooperative learning model has a positive impact on students including students participating in cooperative learning, cooperative learning is very helpful for students who have special and remedial education, and cooperative learning can increase student success [12] (Jenkins et al., 2003). The study of [13] (Hermawan et al., 2020) shows that the cooperative learning model is proven to be able to improve student mathematics learning outcomes, and helps students acquire academic content and skills to discuss the goals and objectives of important social and human relations. Cooperative learning can also improve students' science learning outcomes. Mathematical ideas and identities have the benefit of long-term ethnographic study in classrooms involved in cooperative work. As for the real class students usually know each other well, and groups are not always matched to their gender and previous achievements [14] (Esmonde, 2009). Then, [15] (Raphael et al, 2012) argue that high-quality cooperative learning contributes to the acquisition of citizens' knowledge and skills.

## 2.2 Learning Outcomes

[16] (Urofsky & Bobby, 2012) said that significant and substantive departures, have not yet, existed in the transition to student-based learning outcomes standards for program areas and the requirements for the program to ask for agreed change plans. [17] (Duke & Duke, 2002) discusses the process used to develop learning outcomes and illustrative analysis of students' perceptions as a step in the process of applying learning outcomes to curricular design. [18] (Liao & Cuang, 2007) state that learning outcomes for cognitive style are divided into 4 namely, four different conditions studies, students with analytic cognitive styles in traditional learning modes; analytic cognitive styles in web-based learning modes; holistic cognitive styles in traditional learning modes; and holistic cognitive styles in web-based learning modes.

According to [19] (Kang & Yoo, 2019) based on [20] (Abril, 2006), three categories of world music learning outcomes (music, culture, etc.) as a starting code, and the coding process that emerged was adopted. Through data analysis, four themes emerge that illustrate the learning outcomes of pre-service class teachers: (a) cultural awareness, (b) music basics, (c) association experiences, and (d) teacher education. [21] (Tomcho & Foels, 2008) examines the relationship between learning activities and learning outcomes. Learning outcomes, classroom, and grades as a measure of learning show a moderate increase based on teaching activities and methods. Knowledge, knowledge as a learning measure shows a large increase based on the ToP's teaching activities and methods. Skills/behavior, skills, and behavior as learning measures show a moderate increase based on ToP activities and teaching methods. Attitude, attitude as a learning measure shows a moderate increase based on the ToP's teaching activities and methods.

Cooperative discussed that the demand for measurable learning outcomes revealed the need for ongoing staff training and highlighted the need for cultural change among campus recreation programs. An illustration of a systematic evaluation of the learning outcomes effort can guide campus recreation professionals to make progress towards implementing their system [22] (Cooper et al., 2009). Then, [23] (Huang et al, 2019) suggest that students with learning style preferences must bear a greater cognitive burden to achieve the same learning outcomes as other students.

# Methods

[24] (Flessner & Stuckey, 2014) argues that action research has been aimed at empowering educators, creating lasting change in schools, and impacting student learning outcomes. [25] (Casey & Evans, 2018) says that the action research process and the continuous improvement cycle are used to redesign projects that incorporate new media in contemporary pedagogical approaches to school youth.

[26] (Dick, 2015) draws on the encyclopedia as proof that Dick has claimed that action research is a diverse family of related processes that use various methods and tools to achieve change. Most, though not all, of these changes, are directed at issues of justice and equality, often by trying to engage participants equally. [27] (Eikeland, 2006) said that action research is a starting point for reflection on the very real challenges in creating an inquiry community that conducts action/practitioner research.

Action research is a form of collective self-investigation carried out by participants in social situations to enhance the rationality and fairness of the social or educational practices they undertake, as well as enhance their understanding of the practices and situations in which the practices are carried out.

This action research uses the R&H classroom action research model which consists of 4 stages, namely the exploration, planning, action and observation, and discussion stages [28] (Rosfiani & Hermawan, 2018). Classroom action research (CAR) is part of the main task of a teacher [29] (Rosfiani & Hermawan, 2019). Classroom action research activities are complex and difficult to complete for some elementary school teachers [30] (Hermawan & Rosfiani, 2019).

**Figure 1.** The R&H Classroom Action Research Model©



## Participant

This action research was conducted on seventh-grade students (1), twenty-six students were made as study participants. This research was conducted in the second semester school year with the subject matter of Islamic cultural history.

## Observation

In this study, the observer collects information directly by observing the teacher's performance based on the think-pair-share procedure he did in seventh grade (1). The observer then records every information he gets from the phases and behavior of the teacher and students on the observation sheet. Observers in this study were research team colleagues, namely research colleagues' teachers.

Peer observation is generally used as a tool to enhance the continuing professional development of teachers {31} (Chamberlain, 2011). Whereas according to [32] (Steinberg & Garrett 2016), classroom observations take a central role in this system, accounting for most of the teacher ratings that form the basis of accountability decisions.

The participant observation approach has become an important component in ethnographic research. But, in general, observations are more emphasized on participation [33] (Jonson et al., 2006). [34] (Gross et al., 2015) argue that participatory action research (PAR) provides a pathway for youth in fostering to share their voices with those who influence policy and implement changes in the systems that govern their lives. Then the participating researchers remained committed to the project for one year, creatively designed the research methodology, and contributed to the interpretation of the findings. According to [35] (Ponciano, 2013) participant reflexivity that emerged as part of a photo-elicitation study of work and life balance, we described the types of reflexive dialogue that participants reported as stimulated by involvement in research.

***Test***

The testing effect is a well-known concept based on advantages in learning and retention that can be done by compilation students taking practice tests on the material being studied before taking the test at the end of the same material. This research proves that students who take practical tests outperform students in non-test learning such as e-learning, training, filler activities, or no presentation material [36] (Adosepe, 2017). [37] (Sireci et al, 2017) state that two findings have been agreed to emerge: Extension of time which requires an increase in all students, while students with an interest in raising scores are relatively higher; and oral tests on mathematics tests about improving test skills for some students.

# Data Analysis and Statistical Methods

[38] (Mert et al., 2016) state that composition data analysis refers to the analysis of relative information, based on the ratio between variables in a data set. The purpose of data analysis is to reveal patterns, trends, and relationships that underlie the contextual situation of a study [39] (Albers, 2017). [40] (Tryon et al., 2017) mentioned that data analysis must be neutral relative to theoretical construction so as not to be biased. Data analysis should not support one form of theoretical construction more than another.

Data analysis techniques used in this classroom action research are qualitative and quantitative. Quantitative data analysis was performed using descriptive statistics using percentages, calculating the average based on the minimum value of the minimum completeness criteria (MCC) of students in the history of Islamic culture at the end of each cycle to find out the improvement in student learning outcomes.

***Triangulation***

In this action research, the triangulation used is observation, test, and documentation. [41] (Kern, 2018) states that researchers use triangulation to increase the validity of inference in qualitative and quantitative research. According to [42] (Howe, 2013) that triangulation accommodates different findings by bringing them under a more comprehensive framework, whereas [43] (Bjurulf, 2013) Measuring Cluster Effects through the Triangulation (MCET) method involves methodological triangulation. Three designs - shadow control, generic control, and process tracking - are combined to explain causal relationships. And according to [44] (Morgan, 2019), triangulation depends on comparing results from qualitative and quantitative research that tries to answer the same research question, so there are three possible outcomes: convergence, complementarity, and divergence.

# Results

# The learning procedure adopted by the teacher as the lead researcher to improve the learning outcomes of Islamic cultural history in one of the junior high schools in West Jakarta is further elaborated

# *Cycle 1*

# Cycle 1 data shown in figure 2 displays the percentage of student learning that has reached the MCC (KKM) score, students who have not yet achieved the MCC score, student T-P-S learning outcomes, and observations on teacher T-P-S actions.

# Figure 2. Percentage of student learning outcomes, student T-P-S learning activities, and observations of teacher T-P-S actions in cycle 1

# Cycle 1 data shows that 15 students (57.7%) achieved the minimum completeness criteria score (MCC), while 11 students (42.3%) had not yet reached MCC. Observation data on student learning activities shows 60% of students are involved in think-pair-share (T-P-S) learning. While the observational data on teacher behavior shows 68.3% completeness of the six phases of T-P-S cooperative learning implemented by the teacher. These data indicate that both student learning outcomes and teacher teaching behavior have not shown the expected achievements. Where 80% of students in the class are expected to get an MCC score of 80 for the learning outcomes of Islamic cultural history, and 80% of teacher behavior appears for T-PS learning conducted in class. Based on this data, it is necessary to take action on cycle 2.

# *Cycle 2*

# Figure 3 displays the results of the cycle 2 action results which showed the percentage of student learning reached 84.6%, where there was an increase of 26.9% from cycle 1. Student activity data was 82.5% and observations on the teacher's T-P-S actions were 85%.

# Figure 3. Percentage of student learning outcomes, student T-P-S learning activities, and observations of teacher T-P-S actions in cycle 2

# Comparisons of cycle 1 and 2 actions are illustrated in the graph in Figure 3. In each cycle, student learning outcomes and teachers' T-P-S actions have shown improvement.

**Figure 3.** Comparison of the results of cycle 1 and 2 actions

# Conclusion

Data on the results of the first cycle showed the learning outcomes of students who received an MCC score of 57.7%, while those who had not yet achieved an MCC score of 42.3%. Teacher observation data shows that 60% of T-P-S are implemented by the teacher.

The data of the results of the cycle 2 action show the learning outcomes of students who obtained an MCC score of 84.6%, while the student's T-P-S activity data was 82.5%, and the teacher's observation data showed 85% of the T-P-S were implemented by the teacher.

Data from the results of cycle 1 and cycle 2 show both student learning outcomes and student T-P-S activities, and observations of the teacher's T-P-S actions have increased. This study seeks to draw conclusions based on empirical evidence that the Think-Pair-Share method of cooperative learning can improve student learning outcomes, and be able to increase student learning activities in academic content and skills.

# REFERENCES

Abdulwahed, S., Ismail, A., & Allaq, K. A. (2019). The Nature of Cooperative Learning and Differentiated Instruction Practices in English Classes. *SAGE Open*, *9*(2).

Abril, C. R. (2006). Learning outcomes of two approaches to multicultural music education. *International Journal of Music Education*, *24*(1), 30–42.

Abril, C. R. (2006). Learning outcomes of two approaches to multicultural music education. *International Journal of Music Education*, *24*(1), 30–42.

Adesope, O. O., Trevisan, D. A., & Sundararajan, N. (2017). Rethinking the Use of Tests: A Meta-Analysis of Practice Testing. *Review of Educational Research*, *87*(3), 659–701.

Albers, M. J. (2017). Quantitative Data Analysis—In the Graduate Curriculum. *Journal of Technical Writing and Communication*, *47*(2), 215–233.

Arends, R. I. (2012). *Learning to teach*. The McGraw Hill Education, New York.

Bamiro, A. O. (2015). Effects of Guided Discovery and Think-Pair-Share Strategies on Secondary School Students ’ Achievement in Chemistry. *SAGE Open*, *5*(1).

Bjurulf, S. (2013). A triangulation approach to impact evaluation. *Evaluation*, *19*(1), 56–73.

Casey, G., & Evans, T. (2018). Action research to support the integration of social media in the classroom. *Action Research*, *16*(2), 127–151.

Cassell, C., & Radcliffe, L. (2019). Participant Reflexivity in Organizational Research Design. *Organizational Research Methods*.

Chamberlain, J. M., Artrey, M. D., & Rowe, D. (2011). Peer observation of teaching: A decoupled process. *Active Learning in Higher Education*, *12*(3), 189–201.

Chiu, M. M. (2004). Adapting Teacher Interventions to Student Needs During Cooperative Learning: How to Improve Student Problem Solving and Time On-Task. *American Educational Research Journal*, *41*(2), 365–399.

Cooper, N., Flood, J., & Gardner, E. (2009). Establishing a Learning Outcomes Plan for Campus Recreation. *Recreational Sports Journal*, *33*(1), 12–24.

Dick, B. (2015). Reflections on the SAGE Encyclopedia of Action Research and what it says about action research and its methodologies. *Action Research*, *13*(1), 431–444.

Dugal, S. S., & Eriksen, M. (2004). Understanding and Transcending Team Member Differences: A Felt-Experience Exercise. *Journal of Management Education*, *28*(4), 492–508.

Duke, C. R., & Duke, C. R. (2002). Learning Outcomes: Comparing Student Perceptions of Skill Level and Importance. *Journal of Marketing Education*, *24*(2), 203–217.

Eikeland, O. (2006). Condescending ethics and action research: Extended review article. *Action Research*, *4*(1), 37–47.

Esmonde, I. (2009). Ideas and Identities: Supporting Equity in Cooperative Mathematics Learning. *Review of Educational Research*, *79*(2), 1008–1043.

Flessner, R., & Stuckey, S. (2014). Politics and action research: An examination of one school’s mandated action research program. *Action Research*, *12*(1), 36–51.

Gross, J. M. S., Blue-banning, M., Iii, H. R. T., & Francis, G. L. (2015). Identifying and Defining the Structures That Guide the Implementation of Participant Direction Programs and Support Program Participants: A Document Analysis. *Journal of Disability Policy Studies*, *26*(1), 12–23.

Hermawan, C. M., & Rosfiani, O. (2019). Pelatihan penelitian tindakan kelas guru sekolah dasar di pamulang tangerang selatan. *Prosiding Seminar Nasional Pengabdian Masyarakat LPPM UMJ*, 1–7. http://Jurnal.Umj.Ac.Id/Index.Php/Semnaskat*.*

Hermawan, C. M., Rosfiani, O., Suheti., & Susanti, S. F. (2020). STAD Type Cooperative Learning Model: An Action in Learning Mathematics. *International Journal of Scientific & Technology Research*, *9*(4), 1871–1875. <http://www.ijstr.org/research-paper-publishing.php?month=apr2020>

Howe, K. R. (2012). Mixed Methods, Triangulation, and Causal Explanation. *Journal of Mixed Methods Research*, *6*(2), 89–96.

Huang, C. L., Luo, Y. F., Yang, S. C., Lu, C. M., & Chen, A. (2019). Influence of Students’ Learning Style, Sense of Presence, and Cognitive Load on Learning Outcomes in an Immersive Virtual Reality Learning Environment. *Journal of Educational Computing Research*.

Jenkins, J. R., Antil, L. R., Wayne, S. K., & Vadasy, P. F. (2003). How Cooperative Learning Works for Special Education and Remedial Students,. *Exceptional Children*, *69*(3), 279–292.

Johnson, J. C., Avenarius, C., & Weatherford, J. (2006). The Active Participant-Observer: Applying Social Role Analysis to Participant Observation. *Field Methods*, *18*(2), 111-134 Issue published: May 1, 2006.

Kang, S., & Yoo, H. (2019). American preservice elementary teachers’ self-reported learning outcomes from participating in Korean percussion lessons in a music-methods course. *Research Studies in Music Education*, *41*(3), 327–342.

Kang, S., & Yoo, H. (2019). American preservice elementary teachers’ self-reported learning outcomes from participating in Korean percussion lessons in a music-methods course. *Research Studies in Music Education*, *41*(3), 327–342.

Kern, F. G. (2018). The Trials and Tribulations of Applied Triangulation: Weighing Different Data Sources. *Journal of Mixed Methods Research*, *12*(2), 166–181.

Liao, C., & Chuang, S. H. (2007). Assessing the Effect of Cognitive Styles with Different Learning Modes on Learning Outcome. *Perceptual and Motor Skills*, *105*(1), 184–190.

Liao, C., Cuang, S-H. (2007). Assessing the Effect of Cognitive Styles with Different Learning Modes on Learning Outcome. *Perceptual and Motor Skills*, *105*(1), 184-90.

Mert, M. C., Filzmoser, P., Endel, G., & Wilbacher, I. (2016). Compositional data analysis in epidemiology. *Statistical Methods in Medical Research*, *27*(6), 2018.

Morgan, D. L. (2019). Commentary—After Triangulation, What Next? *Journal of Mixed Methods Research*, *13*(1), 6–11.

Ponciano, L. (2013). The voices of youth in foster care: A participant action research study. *Action Research*, *11*(4), 322–336.

Raphael, C., Bachen, C. M., Hernández-Ramos, P. F. (2012). Flow and cooperative learning in civic game play. *New Media & Society*, *14*(1), 1321–1338.

Rosfiani, O., & Hermawan, C. M. (2018). *R&H Classroom Action Research Model* (Patent No. 000130825, 2018).

Rosfiani, O., & Hermawan, C. M. (2019). Peningkatan profesionalisme guru melalui pelatihan penelitian tindakan kelas bagi guru Madrasah Ibtidaiyah di Tangerang Selatan. *Prosiding Seminar Nasional Pengabdian Masyarakat LPPM UMJ*, 1–8. <http://Jurnal.Umj.Ac.Id/Index.Php/Semnaskat>.

Rosfiani, O., Akbar, M., & Neolaka, A. (2018). The effect of learning environment, inquiry and student learning interest on student social studies learning assessment. *ICTES First International Conference on Technology and Educational Science*. DOI 10.4108/eai.21-11-2018.2282251

Rosfiani, O., Akbar, M., & Neolaka, A. (2019). Assessing student social studies learning: Effects of learning environment, inquiry, and student learning interest. *TARBIYA Journal of Education in Muslim Society*, *6*(1), 45–56. [https://doi.org/doi:10.15408/tjems.v6i1.11593](https://doi.org/doi%3A10.15408/tjems.v6i1.11593)

Shih, Y., & Reynolds, B. L. (2015). Teaching Adolescents EFL by Integrating Think-Pair- Share and Reading Strategy Instruction : A Quasi- Experimental Study. *RELC Journal*, *46*(3), 221–235.

Sireci, S. G., Scarpati, S. E., & Li, S. (2017). Test accomodations for students with disabilities: an analysis of the interaction hypothesis. *Review of Educational Research*, *75*(4), 457–490.

Slavin, R. E. (1980). Cooperative Learning. *Review of Educational Research*, *50*(2), 315–342.

Steinberg, M. P., & Garrett, R. (2016). Classroom Composition and Measured Teacher Performance: What Do Teacher Observation Scores Really Measure? *Educational Evaluation and Policy Analysis*, *38*(2), 293–317.

Swanson, E., & Lewis, N. S. (2017). The effect of team-based learning on content knowledge: A meta-analysis. *Active Learning in Higher Education*, *20*(1), 39–50.

Tomcho, T. J., & Foels, R. (2008). Assessing Effective Teaching of Psychology: A Meta-Analytic Integration of Learning Outcomes. *Teaching of Psychology*, *35*(4), 286–296.

Tryon, W. W., Chajewski, M., & Lewis, C. (2017). Theory construction and data analysis. *Theory & Psychology*, *27*(1), 126–134.

Urofsky, R. I., & Bobby, C. L. (2012). The Evolution of a Student Learning Outcomes Focus in the CACREP Standards in Relation to Accountability in Higher Education,. *Journal Counseling Outcome Research and Evaluation*, *3*(2), 63–72.

Wallhead, T., & Dyson, B. (2016). A didactic analysis of content development during Cooperative Learning in primary physical education. *European Physical Education Review*, *23*(2), 311–326.