

Muhammad Darmawan Dewanto. 2019. **Experimentation of Thinking Aloud Pairs Problem Solving, Two Stay Two Stray, and Discovery Learning Models in Mathematics Learning Achievement and Mathematics Disposition viewed by Adversity Quotient of Vocational High School Students in Gunungkidul Regency, Yogyakarta.** THESIS. Consultant: Prof. Dr. Budiyo, M.Sc., Co-Consultant: Dr. Hasih Pratiwi, M.Si. Master of Mathematics Education Study Program, Faculty of Teacher Training and Education, Universitas Sebelas Maret, Surakarta.

### **ABSTRACT**

This study aims to find out: (1) which results in better mathematics learning achievement, students who are subject to the TAPPS, TSTS or DL model, (2) which mathematics dispositions of students are better, students who are subject to the TAPPS, TSTS or DL models, (3) which learning achievement is better, AQ students climbers, campers, or quitters, (4) which student mathematics dispositions are better, AQ students climbers, campers, or quitters, (5) on each learning model, which learning achievement is better, AQ type climbers, campers, or quitters, (6) on each learning model, which mathematics dispositions are better students, students with AQ types of climbers, campers, or quitters, (7) in each AQ category, which learning achievement is better, the TAPPS, TSTS or DL model, (8) in each AQ category, which student disposition of mathematics is better, TAPPS, TSTS or DL models.

This research is a Quasi experimental  $3 \times 3$  factorial design. The population of this research is all students of class tenth Vocational High School in Gunungkidul Regency. The sampling technique in this study was stratified cluster random sampling resulting in three schools. Data collection techniques were carried out using the documentation method, mathematics learning achievement tests, mathematics disposition questionnaires and AQ. Data analysis techniques using MANOVA analysis of two cell paths are not the same. The next analysis was carried out further tests after MANOVA with two-way ANOVA cells not the same in each of the dependent variables. This study also carried out further post-ANOVA tests using the Scheffe method to find out which differences in the effect were significant on the dependent variable.

Based on the results of the study, it was concluded that: (1) the TSTS model produced better mathematics learning achievement than the TAPPS and DL models, and the TAPPS model produced better learning achievement than the DL model. (2) The TSTS model produces mathematics dispositions as well as the TAPPS model. The TSTS model produces mathematics dispositions better than the DL model, and the TAPPS model produces mathematics dispositions as well as the DL model. (3) AQ climbers students have better mathematics learning achievement than AQ campers and quitters, and students with AQ campers have better learning achievement than AQ quitters students. (4) AQ climbers students produce mathematics dispositions as well as AQ campers. AQ climbers students produce mathematics dispositions better than AQ quitters students, and AQ campers students produce mathematics dispositions as well as AQ quitters. (5a) In the TSTS model, the learning achievement of AQ climbers students is as good as AQ campers and quitters. (5b) In the TAPPS model, the learning achievement of AQ climbers students is as good as AQ campers students, and the learning achievement of AQ climbers students is better than AQ quitters students, and AQ campers student achievement is as good as AQ quitters students. (5c) In the DL model, AQ climbers student achievement is as good as AQ campers students, and AQ climbers student achievement is better than AQ quitters students, and AQ campers student achievement is better than AQ quitters students. (6a) In the TSTS model, AQ climbers students have a mathematics disposition as well as AQ campers students. AQ climbers have better mathematics dispositions with AQ quitters students, and AQ campers students have a mathematics disposition as well as AQ quitters students. (6b) In the TAPPS model, AQ climbers students have

a mathematics disposition as well as AQ campers students. AQ climbers have better mathematics dispositions with AQ quitters students, and AQ campers students have a mathematics disposition as well as AQ quitters students. (6c) In the DL model, AQ climbers students have a mathematics disposition as well as AQ campers students. AQ climbers have better mathematics dispositions with AQ quitters students, and AQ campers students have a mathematics disposition as well as AQ quitters students. (7a) In AQ climbers students, the TSTS model produces mathematics learning achievement as well as the TAPPS model. The TSTS model produces better learning achievement than the DL model, and the TAPPS model produces learning achievement as well as the DL model. (7b) In AQ campers students, the TSTS model produces math achievement as well as TAPPS and DL models. (7c) In AQ quitters students, the TSTS model produces mathematics learning achievement as well as the TAPPS model. The TSTS model produces better learning achievement than the DL model, and the TAPPS model produces learning achievement as well as the DL model. (8a) In AQ climbers students, the TSTS model produces mathematics dispositions as well as students subject to the TAPPS model. The TSTS model produces mathematics dispositions better than students subjected to the DL model, and the TAPPS model produces mathematics dispositions as well as students subject to the DL model. (8b) In AQ campers students, the TSTS model produces mathematics dispositions as well as students subject to the TAPPS model. The TSTS model produces mathematics dispositions better than students subject to the DL model, and the TAPPS model produces mathematics dispositions as well as students subject to the DL model. (8c) In AQ quitters students, the TSTS model produces mathematics dispositions as well as students subject to the TAPPS model. The TSTS model produces mathematics dispositions better than students subject to the DL model, and the TAPPS model produces mathematics dispositions as well as students subject to the DL model.

**Keywords:** Thinking Aloud Pairs Problem Solving, Two Stay Two Stray, Discovery Learning, Adversity Quotient, Mathematics Learning Achievement, Mathematics Disposition.