

ABSTRAK

Reza Mawaddah Lubis. Perbedaan Kemampuan Komunikasi dan Penalaran Matematik Siswa dengan Menerapkan Model Pembelajaran *Think-Talk-Write* (TTW) dan Pembelajaran Langsung. Tesis. Medan: Program Studi Pendidikan Matematika Pascasarjana Universitas Negeri Medan, 2016.

Penelitian ini bertujuan untuk mendeskripsikan: (1) Apakah terdapat perbedaan kemampuan komunikasi matematik antara siswa yang diberi model pembelajaran *Think-Talk-Write* (TTW) dengan siswa yang diberi pembelajaran langsung, (2) Apakah terdapat perbedaan kemampuan penalaran matematik antara siswa yang diberi model pembelajaran *Think-Talk-Write* (TTW) dengan siswa yang diberi pembelajaran langsung, (3) Apakah terdapat interaksi antara model pembelajaran dengan kemampuan awal matematika siswa (tinggi, sedang, rendah) terhadap kemampuan komunikasi matematik siswa, (4) Apakah terdapat interaksi antara model pembelajaran dengan kemampuan awal matematika siswa (tinggi, sedang, rendah) terhadap kemampuan penalaran matematik siswa. Penelitian ini merupakan kuasi eksperimen, dengan populasi siswa pada MTs S. Darularafah. Pemilihan sampel dilakukan secara random dengan mengacak kelas. Instrumen yang digunakan terdiri dari: (1) Tes Kemampuan Awal Matematika siswa, (2) Tes kemampuan komunikasi matematik, (3) Tes kemampuan penalaran. Data penelitian ini dianalisis dengan menggunakan analisis dengan analisis varians (Anava) . Dalam penelitian ini telah dikembangkan beberapa perangkat pembelajaran seperti RPP, LKS dan instrumen penelitian. Tes yang digunakan berbentuk uraian yang berhubungan dengan materi kubus dan balok dan telah dinyatakan valid dan reliabel. Hasil penelitian ini menunjukkan bahwa: (1) Terdapat perbedaan kemampuan komunikasi matematik antara siswa yang diberi model pembelajaran *Think-Talk-Write* (TTW) dengan siswa yang diberi pembelajaran langsung, hal ini terlihat dari hasil anava untuk $F_{hitung} = 193,473$ lebih besar daripada $F_{tabel} = 4,020$, (2) terdapat perbedaan kemampuan penalaran matematik antara siswa yang diberi model pembelajaran *Think-Talk-Write* (TTW) dengan siswa yang diberi pembelajaran langsung, hal ini terlihat dari hasil anava untuk $F_{hitung} = 117,312$ lebih besar daripada $F_{tabel} = 4,020$, (3) Terdapat interaksi antara model pembelajaran dengan kemampuan awal matematika siswa (tinggi, sedang, rendah) terhadap kemampuan komunikasi matematik siswa, hal ini juga dapat dilihat dari hasil anava untuk $F_{hitung} = 3,720$ lebih besar daripada $F_{tabel} = 3,168$. Dengan kontribusi model pembelajaran TTW lebih besar daripada KAM yaitu 76,2 %, (4) Terdapat interaksi antara model pembelajaran dengan kemampuan awal matematika siswa (tinggi, sedang, rendah) terhadap kemampuan penalaran matematik siswa, hal ini juga dapat dilihat dari hasil anava untuk $F_{hitung} = 4,344$ lebih besar daripada $F_{tabel} = 3,168$. Dengan kontribusi model pembelajaran TTW lebih besar daripada KAM yaitu 65,9 %

Kata Kunci: Model Pembelajaran *Think-Talk-Write* (TTW), kemampuan komunikasi matematik, kemampuan penalaran matematik.

ABSTRACT

Reza Mawaddah Lubis. Differences in Communication Ability and Mathematical Reasoning Students with Implementing Learning Model *Think-Talk-Write* (TTW) and Learning Direct, Mathematics Education Thesis. Medan: Mathematics Education Post graduated, State University of Medan, 2016.

The aims of this study were to describe: (1) Is there a difference between students' mathematical communication ability by learning model *Think-Talk-Write* (TTW) with students who were given direct instruction. (2) Is there a difference between students' mathematical reasoning ability by learning model *Think-Talk-Write* (TTW) with students who were given direct instruction, (3) Whether there is an interaction between the learning model with the capability of beginning math students (high, medium, low) on the ability of students' mathematical communication, (4) Whether there is an interaction between the learning model with the capability of beginning math students (high, medium, low) on the ability of students' mathematical reasoning. This study is a quasi-experimental research. Population are students of MTs S. Darularafah. Sample selection is done randomizing the class. The instrument used consisted of: (1) Test of the initial of mathematic ability (2) Test of mathematics communication ability, (3) Test of mathematics reasoning ability. The research data was analyzed using the analysis of variance (Anova). In this research has developed several learning tools such as learning plans, students worksheet, and research instrument. The test were used analyze form that connected to cubes and blocks and were clarified valid and reliable. The result of this research showed that. (1) There are differences between students' mathematical communication ability by learning model *Think-Talk-Write* (TTW) with students who were given direct instruction, it seems from anova result for $F_{\text{value}} = 193,473$ is higher than $F_{\text{table}} = 4.020$, (2) There are differences between students' mathematical reasoning ability by learning model *Think-Talk-Write* (TTW) with students who were given direct instruction, it seems from anova result for $F_{\text{value}} = 117,312$ is higher than $F_{\text{table}} = 4.020$ (3) There is an interaction between the learning model with the capability of Initial math students (high, medium, low) on the ability of students' mathematical communication, it seems from anova result for $F_{\text{value}} = 3,720$ is higher than $F_{\text{table}} = 3,168$. With the contribution of learning model *Think-Talk-Write* (TTW) is greater than the initial ability of mathematics is 76.2% (4) There is an interaction between the learning model with the capability of Initial math students (high, medium, low) on the ability of students' mathematical reasoning, it seems from anova result for $F_{\text{value}} = 4,344$ is higher than $F_{\text{table}} = 3,168$. With the contribution of learning model *Think-Talk-Write* (TTW) is greater than the initial ability of mathematics is 65,9% .

Keywords: Learning Model *Think-Talk-Write* (TTW), mathematical communication ability, mathematical reasoning ability.