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Mathematical Connection Ability In REACT Learning With RME Approach In Term Of Self-efficacy

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Abstract

Mathematical connection ability is one of the important abilities. The students' self-efficacy also needs to be considered. The purpose of this study was to determine the students' mathematical connection ability in REACT learning with the RME approach in terms of students' self-efficacy. This research uses mix method with a sequential explanatory design. The population in this study were eighth-grade students of Integrated Islamic Junior High School Nurul Islam Tengaran. The research instrument used was a test of mathematical connection ability and a self-efficacy questionnaire. The results of this study are (1) the mathematical connection ability of students with REACT learning using the RME approach achieves the criteria for learning mastery; (2) the average mathematical connection ability of students with REACT learning using the RME approach was better than students with expository learning; (3) there are differences in students' mathematical connection abilities in terms of students' self-efficacy levels in REACT learning with the RME approach; (4) Students with high self-efficacy fulfill the three indicators of mathematical connection ability. Students with medium self-efficacy are sufficient to meet the three indicators of mathematical connection ability but still need more practice. Students with low self-efficacy only fulfilled the second mathematical connection ability indicator.

1. Introduction

Mathematical connection ability is the ability to relate mathematical concepts or rules to each other, to other fields of study, or applications in the real world (Suherman in Lestari and Yudhanegara, 2015; Sumarmo et al., 2017). Mathematical connection abilities are included in higher-order thinking skills (Lefa, 2014). Mathematical connection is a very important ability for students, by understanding the relationship between concepts and topics in mathematics students can complete various solutions correctly and can understand mathematical concepts as a whole and last longer (Ayunani et al., 2020; Ariyani et al., 2020; Leton et al., 2019).

The purpose of learning mathematics as stated in the Regulation of the Minister of National Education Number 58 of 2014 reveals that mathematics subjects are aimed at making junior high school students have several abilities. The objectives of the first point of learning mathematics are: understanding mathematical concepts, is competence in explaining the relationship between concepts, and using concepts and algorithms, in a flexible, accurate, efficient, and precise way in solving problems. In addition, NCTM (2000) suggests that there are five basic mathematical competencies that high school students need to develop, namely, problem-solving, reasoning and proof, communication, connections, and representation.

Siagian (2016) in his research also states that by using mathematical connections, mathematical concepts that have been learned are not left as separate parts, but are used as basic knowledge to understand new concepts. Because mathematics is a structured science, arranged from the simple to the more complex and also related to real-life (Sumarmo et al., 2017; NCTM, 2000; Trisnawati et al., 2018).

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Without a mathematical connection, students have to memorize too many mathematical concepts and procedures (Hazrati et al., 2020). Students who do not understand the relationship between concepts in mathematics will have difficulty solving problems (Mumu & Tanujaya, 2019). Those are some of the reasons why students need to have good mathematical connection skills.

NCTM (2000) classifies mathematical connection abilities into three groups, namely: (1) aspects of connections between mathematical topics; (2) aspects of connection with other disciplines; (3) aspects of connection with students' real-world/connection with everyday life. Mathematical connection ability has indicators. In this study, students are said to have good mathematical connection skills if students can meet the indicators of mathematical connection abilities, namely: (1) the ability to find relationships between mathematical topics; (2) the ability to determine the equivalent representation of a concept or procedure in mathematics; (3) the ability to use mathematics in daily life or other fields of study.

Although mathematical connection skills are very important and listed in the objectives of learning mathematics, in reality, students' mathematical connection skills are still low (Nuraidah et al., 2018; Warih et al., 2016; Saminanto & Kartono, 2015). The low mathematical connection can also be seen in Indonesia's success in the Program for International Student Assessment (PISA) researched by the OECD (Organization for Economic Co-operation and Development). The results of the 2018 PISA study (OECD, 2019) show that Indonesia's mathematics achievement is ranked 73 out of 79 countries with an average score of 379. Students' mathematical connection abilities greatly affect the way students solve PISA problems (Baiduri et al., 2020; Hajar & Rahman, 2020). This fact was also obtained from the results of an interview with one of the mathematics teachers at Integrated Islamic Junior High School Nurul Islam Tengaran. Students have difficulty in answering questions that consist of several concepts or questions that consist of more than one solution step. Students also consider contextual problems as difficult questions to work on. In addition, from the analysis of the answers to the end-of-semester assessment carried out by class VIII students of Integrated Islamic Junior High School Nurul Islam Tengaran, the percentage of students who can answer the mathematical connection questions correctly is only 33%. Therefore, it can be said that the mathematical connection of Integrated Islamic Junior High School Nurul Islam Tengaran students is still very weak.

Because there is a gap between the mathematical connection abilities that students should have with the reality that is happening at this time. Therefore, it is necessary to have an efficient and effective effort to improve mathematical connection skills. One of the efforts to improve the mathematical connection ability is to apply innovative learning that emphasizes the mathematical connection ability. Giving contextual treatment to students in the mathematics learning process will stimulate mathematical connection abilities much better than students who do not get contextual treatment (Saminanto & Kartono, 2015). Freudenthal argued that mathematics is better taught with an approach that emphasizes realistic problems (Nurhadi et al., 2019). So, the combination of REACT learning with the RME approach is the right combination and complements each other.

REACT learning is one of the contextual learning models introduced by the Center of Occupational Research and Development (CORD). CORD (in Sugandi & Akbar, 2019) states that the REACT learning model aims for students to find connections or relationships between abstract concepts through practical applications related to real life. In Prihandhika (2017) CORD conveyed the five main steps in REACT learning including Relating, Experiencing, Applying, Cooperating, and Transferring. Crawford (in Sugandi & Akbar, 2019) explains that Relating is a learning procedure that is based on students' daily experiences and is connected to the subject matter to acquire new concepts; Experiencing is learning that requires students to learn to carry out mathematical activities through the process of exploration, searching, and discovery; Applying is learning that requires students to apply the concepts that have been studied; Cooperating is learning that requires students to learn to work together in teams; Transferring is a learning process that encourages students to transfer concepts that have been learned in new conditions. The REACT learning model is effective for improving mathematical connection abilities (Sugandi & Akbar, 2019; Prihandhika, 2017).

RME is an acronym for Realistic Mathematics Education. The RME approach uses realistic problems as a source to create mathematical concepts or formal mathematical knowledge (Lestari & Yudhanegara, 2015; Rismaratri & Nuryadi, 2018). Wijaya in Alamiah and Afriansyah (2017) explains that the realistic mentioned in the RME approach is not "real-world" as is often misunderstood. But realistic here has a meaning, namely something that is contained in students' lives, which can be easily understood by

students, real, affordable by students' imaginations, and can be imagined. This makes it easier for students to use their mathematical abilities to find solutions to problems. The Realistic Mathematics Education approach is the right approach to train students' mathematical connection skills (Hasbi et al., 2019). Treffers (in Handayani, 2015) formulates five characteristics of the RME approach, namely: (1) phenomenological exploration or the use of contexts; (2) the use of models or bridging by vertical instruments; (3) the use of students own; (4) the interactive character of the teaching process or interactivity; (5) the intertwining of various learning strands. The RME approach helps students think from abstract to concrete or real so that it can be applied in learning mathematics so that students can understand the relationship between mathematics and everyday life and the benefits of mathematics for humans (Chisara et al., 2018; Latipah & Afriansyah, 2018).

In addition to cognitive aspects, there are also affective aspects, namely abilities related to students' psychology. Self-efficacy is one of the affective abilities that students have. Self-efficacy is a self-assessment of the ability to organize and take a series of actions to achieve an expected goal (Prasetyo et al., 2019; Bandura, 1997; Putri & Santosa, 2015). Self-efficacy has a function to assess student success in solving mathematical connection ability questions because with self-efficacy students are confident in their abilities and can find their weaknesses (Adni et al., 2018). Indirectly, students who have high self-efficacy will have the courage to speak confidently, answer questions from the teacher, and collaborate with others. Good self-efficacy enables students to improve and enhance their mathematical connection skills (Hazrati et al., 2020).

Self-efficacy makes a significant contribution to the achievement of cognitive aspects, but sometimes self-efficacy is not considered well. Not many teachers pay attention to the self-efficacy of their students. This can be seen in observations made by researchers at Integrated Islamic Junior High School Nurul Islam Tengaran. The teacher treats all students equally, without regard to their self-efficacy. Students with different levels of self-efficacy need to be considered in different ways. For example, students with low self-efficacy levels need to be more motivated and encouraged to learn than students with high self-efficacy levels.

Bandura (in Sumarmo et al., 2017) describes self-efficacy indicators, namely: (1) dare to overcome the problems faced; (2) convinced of his success; (3) dare to face challenges; (4) dare to take risks for the decisions he makes; (5) realizing his strengths and weaknesses; (6) able to interact with other people; (7) be tough or not give up easily.

Based on the explanation above, researchers are interested in carrying out research on mathematical connection abilities in REACT (Relating, Experiencing, Applying, Cooperating, Transferring) learning with an RME (Realistic Mathematical Education) approach in terms of self-efficacy. The formulation of the problem in this research are: (1) does the mathematical connection ability of students who receive REACT learning with the RME approach achieve the criteria for learning completeness?; (2) is the mathematical connection ability of students who received REACT learning with RME approach better than students who received expository learning?; (3) are there differences in students' mathematical connection abilities in terms of students' self-efficacy levels in REACT learning with the RME approach?; (4) how is the description of students' mathematical connection abilities in terms of students' self-efficacy in REACT learning with the RME approach?. The purpose of this study was to analyze and describe students' mathematical connection abilities in REACT learning with the RME approach in terms of self-efficacy.

2. Methods

The research method used in this research is mixed methods with sequential explanatory design. In general, sequential explanatory design in combination research is characterized by, in the first stage data collection and analysis of quantitative data are carried out, then followed in the second stage by data collection and qualitative data analysis, to strengthen the results of quantitative research conducted in the first stage (Sugiyono, 2016). This research was conducted at Integrated Islamic Junior High School Nurul Islam Tengaran which is located at Jalan Raya Salatiga – Solo Km 08, RT 11/03, Kaligandu, Semarang Regency, Central Java. This research was conducted in the odd semester of the 2021/2022 academic year, from October to November 2021. The population used in this study were all eighth-grade students of the odd semester of SMPIT Nurul Islam Tengaran in the 2021/2022 academic year. Meanwhile, the sample in

this study was class VIII D as the experimental class and class VIII C as the control class. So that the sampling technique used in this research is cluster random sampling. The steps in sequential explanatory design are shown in the following chart.

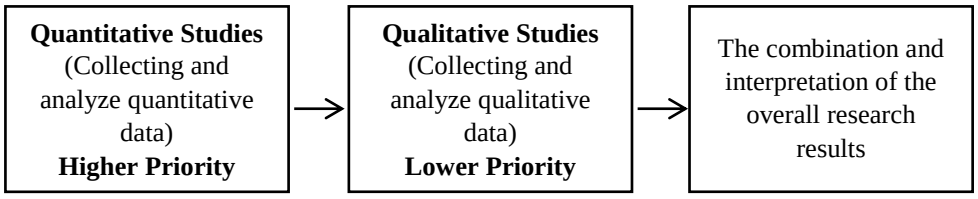

Figure 1. Sequential Explanatory Design

In general, there are two data collection techniques in this research, namely test techniques and non-test techniques. The test technique is a mathematical connection ability test. Meanwhile, the non-test technique includes a self-efficacy questionnaire, interviews, observation, and documentation. The process of observation and documentation is carried out during the learning process. While the interview process was carried out after the mathematical connection ability test and filling out the self-efficacy questionnaire.

The design model used in this quantitative research is The Nonequivalent Posttest-Only Control Group Design. In this design there are two groups, the first group is the experimental group and the second group is the control group. The experimental group was given treatment in the form of applying REACT learning with an RME approach, while the control group was given the usual treatment, namely learning with an expository model. After getting different treatments, both groups were given a posttest. The posttest given to the experimental group was the same as the posttest that was given to the control group. This research design can be illustrated as follows.

Table 1. The Nonequivalent Posttest-Only Control Group Design

Class	Treatment	Posttest
Experiment	X_1	O
Control	X_2	O

Explanation:
X_1 : REACT learning with RME approach
X_2 : Expository learning
O : Mathematical connection ability final test

After obtaining quantitative data from the posttest in the form of the results of the mathematical connection ability test scores. The next process is to find out the self-efficacy level of each student in the experimental class. To find out the level of students' self-efficacy, the researcher distributed a self-efficacy questionnaire to be filled out by students. Then the results of the self-efficacy questionnaire that had been filled out by the students were analyzed by the researcher to determine the level of self-efficacy of each student. The level of self-efficacy in this study is categorized into three, namely: (1) high level of self-efficacy; (2) medium level of self-efficacy; (3) the level of self-efficacy is low.

The next step is qualitative research in the form of interviews and analysis of descriptions of mathematical connection abilities. Subjects in this qualitative study were selected from the experimental class. Furthermore, the research subjects will be analyzed in-depth mathematical connection abilities through posttest answer analysis and interviews. Two students were selected for each category of student self-efficacy level. This selection is made with two students who have the highest scores in each self-efficacy group. This subject selection was carried out to show a significant difference between the three levels of self-efficacy in solving mathematical connection abilities.

The self-efficacy questionnaire uses a Likert scale. Before the mathematical connection ability test instrument and self-efficacy questionnaire were given to the experimental class and control class, a trial was conducted first. The trial was conducted in the test class to determine the validity, reliability, discriminatory power, and level of difficulty of the research instruments used. So that the research instrument is declared feasible to determine students' mathematical connection abilities and students' self-efficacy levels.

The researcher gave 10 questions to be tested. The test results for the mathematical connection ability test can be explained as follows. All questions have good validity. With a reliability value of 0.907, the item is said to have very reliable criteria. Mathematical connection ability test questions consist of questions with medium and easy difficulty levels. The distinguishing power of each question also meets the criteria sufficient to distinguish upper and lower grade students. So, all of them were feasible to use.

The questionnaire that was tested consisted of 28 statement items. Each item of the self-efficacy questionnaire statement is derived from the self-efficacy indicator. All statement items have good validity. With a reliability value of 0.921, the questionnaire is said to have very reliable criteria. It can be said that all statement items in the self-efficacy questionnaire can measure the level of student self-efficacy, so they can be given to the research sample class. So, all of item in the self-efficacy questionnaire that was tested, were feasible to use.

Before conducting the research, the researcher determined in advance the Actual Completion Limit (ACL) of mathematical connection abilities. The Actual Completion Limit is based on the actual average score achieved by the student group (Sudjana, 2009). The following is the formula for determining the actual completion limit and its calculation based on the students' initial mathematical connection abilities.

$$ACL = \overline{X} + 0.25SD \quad (1)$$

Explanation:

$\overline{X}$ = The average initial ability of students' mathematical connections

SD = Standard deviation

Determination of the Actual Completion Limit of Mathematical Connection Capability:

$$\begin{aligned} & ACL = \overline{X} + 0.25SD \\ \Leftrightarrow\ & ACL = 60 + 0.25(17) \\ \Leftrightarrow\ & ACL = 64.25 \\ \Leftrightarrow\ & ACL = 65 \end{aligned} \quad (2)$$

By calculating using the Actual Complete Limit formula and rounding up, the Actual Complete Limit value for the mathematical connection ability is 65.

3. Results & Discussions

3.1. Study Completeness Test

Learning mastery is categorized into two, namely individual mastery and classical mastery. The criteria for mastery learning are to meet both categories. The criteria for individual learning completeness are marked by students who have reached the Actual Complete Limit of the specified mathematical connection abilities. Meanwhile, the classical learning completeness criteria are achieved if at least 75% of the students in the class have reached the Actual Complete Limit of mathematical connection abilities (Mulyasa, 2013).

3.1.1. Individual Completeness Test

Individual completeness tests were conducted to find whether the average value of students' mathematical connection abilities using the REACT learning model with the RME approach reached ACL mathematical connection abilities or not. The test used is the one-sided average test (right side test) with an ACL mathematical connection ability is 65. The test is carried out using the t statistic. Based on the

calculation, the value of t_{count} is 15.282. For the significant level (α) 5% and degrees of freedom 31, the value of $t_{(0.95)(31)}$ is 1.696. Because $15.282 > 1.696$, the average mathematical connection ability of students using the REACT learning model with the RME approach is more than or equal to 65. This means that the students' mathematical connection ability with the REACT learning model with the RME approach has achieved individual learning mastery.

3.1.2. Classical Completeness Test

A classical completeness test was conducted to find out whether REACT learning with the RME approach to students' mathematical connection abilities was classically complete or not. Learning is said to be complete if it meets the classical completeness criteria, namely the percentage of students who achieve individual mastery reaches at least 75% of the total number of students (Mulyasa, 2013). The test used is the one-sided proportion test (right) using the z test. Based on the calculation, the value of z_{count} is 3.266. For the significant level (α) 5%, the value of $z_{(0.45)}$ is 0.174. Because $3.266 > 0.174$, the percentage of students who completed individually on the mathematical connection ability with the REACT learning model with the RME approach was more than or equal to 75% of the total number of students in the class. This means that students' mathematical connection skills with the REACT learning model with the RME approach have reached classical completeness.

3.2. Similarity Test of Two Averages

The similarity test of two averages was carried out to find out whether the mathematical connection ability of students who received REACT learning using the RME approach was better than students who received expository learning. This test is carried out using a similarity test of two averages or a t-test. Based on the calculation, the value of t_{count} is 3.715. For the significant level (α) 5%, the value of $t_{(0.95)(62)}$ is 1.669. Because $3.715 > 1.669$, the average mathematical connection ability of students in the experimental class is more than the average mathematical connection ability of students in the control class. It means that the average mathematical connection ability of students with REACT learning using the RME approach is better than the mathematical connection ability of students who receive expository learning.

3.3. Differences in Mathematical Connection Ability Viewed from the Level of Self-efficacy

The One Way Anova test was conducted to determine whether there were differences in students' mathematical connection abilities in terms of students' self-efficacy levels in REACT learning with the RME approach. One Way Anava analysis calculations were carried out using excel software tools and SPSS 25 software. With excel software tools and SPSS 25 software, the F_{count} value was 22.693. For a significant level (α) 5%, the value of $F_{(0.95)(2.29)}$ is 3.33. Because $22.693 > 3.33$, there is a difference in the average mathematical connection ability of students at the high, medium, and low self-efficacy levels. To find out which self-efficacy groups have different mathematical connection abilities, further Scheffe's test is carried out. So that the following explanation is obtained.

Table 2. Average Score Based on Self-efficacy Level

Average Score Based on Self-efficacy Level				
Grup	N	1	2	3
Low Self-efficacy	11	76.18		
Medium Self-efficacy	12		83.08	
High Self-efficacy	9			88.56

The significance value between groups of students with high and medium levels of self-efficacy was 0.019, where $0.019 < 0.05$. This means that the average mathematical connection ability of students at the high level of self-efficacy with the average mathematical connection ability of students at the medium

level of self-efficacy is significantly different. It can be seen in the calculation table that the average mathematical connection ability of students at a high level of self-efficacy is 88.56 while the average mathematical connection ability of students at a medium level of self-efficacy is 83.08. Thus it can be said that the average mathematical connection ability of students at a high level of self-efficacy is better than the average mathematical connection ability of students at a medium level of self-efficacy.

The significance value between groups of students with medium and low levels of self-efficacy is 0.002, where $0.002 < 0.05$. This means that the average mathematical connection ability of students at the medium level of self-efficacy with the average mathematical connection ability of students at the low level of self-efficacy is significantly different. It can be seen in the calculation table that the average mathematical connection ability of students at a medium level of self-efficacy is 83.08 while the average mathematical connection ability of students at a low level of self-efficacy is 76.18. Thus it can be said that the average mathematical connection ability of students at the medium level of self-efficacy is better than the average mathematical connection ability of students at the low level of self-efficacy.

The significance value between groups of students with high and low self-efficacy levels was 0.000, where $0.000 < 0.05$. This means that the average mathematical connection ability of students at high self-efficacy levels with the average mathematical connection ability of students at low self-efficacy levels is significantly different. It can be seen in the calculation table that the average mathematical connection ability of students at high self-efficacy levels is 88.56 while the average mathematical connection ability of students at low self-efficacy levels is 76.18. Thus it can be said that the average mathematical connection ability of students at high self-efficacy levels is better than the average mathematical connection ability of students at low self-efficacy levels.

3.4. Analysis of Mathematical Connection Ability Based on Self-efficacy Level

The results of the research at this stage are in qualitative form to describe students' mathematical connection abilities. Data obtained from interviews based on the level of self-efficacy of six students in the class with the application of REACT learning with the RME approach in the experimental class, namely class VIII D. Based on the results of the students' final mathematical connection ability test, the average obtained by this class was 82.25, The highest score of the final mathematical connection ability test results was 92 while the lowest score was 69. Based on the results of the analysis on the self-efficacy questionnaire, the students' grouping power was obtained as follows.

Table 3. Grouping of Students Based on Level of Self-efficacy

Level of Self-efficacy	The number of Students	Presentase
High Self-efficacy	9	28%
Medium Self-efficacy	12	37.5%
Low Self-efficacy	11	34.5%
Quantity	32	100%

It can be seen from the table above that from class VIII D students there are 9 students with high self-efficacy levels, 12 students with medium self-efficacy levels, and 11 students with low self-efficacy levels. The selection of research subjects was chosen by 2 students each to analyze their mathematical connection abilities in-depth during the learning process. Based on the results of the calculation of scores on the self-efficacy questionnaire, each selected research subject was then coded to facilitate the presentation of mathematical connection ability data. The coding of the research subjects can be seen in the following table.

Table 4. Code of Qualitative Research Subjects

***Self-efficacy* Category**	**Subject Code**	**Mathematical Connection Ability Test Score**
High Self-efficacy	ET-1	92
	ET-2	92
Medium Self-efficacy	ES-1	90
	ES-2	87
Low Self-efficacy	ER-1	82
	ER-2	80

This selection is with two students who have the highest score in each self-efficacy group. This subject selection was carried out with the aim of showing a significant difference between the three levels of self-efficacy in solving mathematical connection abilities. The two subjects with high self-efficacy had a mathematical connection ability test score of 92. While the medium self-efficacy subject had a value of 90 and 87. Then, the subject of low self-efficacy had a mathematical connection ability score of 82 and 80.

3.4.1. Analysis of Mathematical Connection Ability on Subjects with High Self-efficacy Level

Analysis of mathematical connection ability in subjects with a high level of self-efficacy is based on the analysis of answers to the subject's mathematical connection ability test and subject interviews conducted by researchers. The following is an analysis based on indicators of mathematical connection abilities possessed by each subject with high self-efficacy.

Table 5. Analysis of Mathematical Connection Ability on Subjects with High Self-efficacy Level

Subject Code	**Mathematical Connection Ability Indicator**		
	Ability to find relationships between math topics	The ability to determine the equivalent representation of a concept or procedure in mathematics	Ability to use mathematics in everyday life or other fields of study
ET-1	√	√	√
ET-2	√	√	√

Class VIII D or experimental class students who were selected as research subjects in the category of high self-efficacy level was coded ET1 and ET2. Both subjects have excellent mathematical connection skills. The results of the mathematical connection ability test scores obtained by ET1 and ET2 subjects are both 92. Judging from the results of the work and interviews of ET1 and ET2 subjects, the abilities of the two subjects are not too different in each indicator of mathematical connection ability.

Students with high self-efficacy can solve problems correctly. Based on research, most students with high self-efficacy can determine the relationship between topics in mathematics. The average student with a high level of self-efficacy will write down the information contained in the question completely. Students also coherently and regularly write down the steps to solve a problem so that the connection or relationship between the topics in the problem will be clearly visible.

Students with high levels of self-efficacy have no difficulty in determining the equivalent representation of a concept or procedure in mathematics. Students catch and interpret easily the information contained in the questions. To use mathematics in solving problems in everyday life or other fields of study, students with high levels of self-efficacy do not experience difficulties. Although there are students who briefly write down the steps for solving them, their thinking concepts are correct, and are able to explain completely and coherently orally.

Based on the description of the three indicators of mathematical connection ability, it shows that subjects with a high level of self-efficacy have no problems in solving problems using their mathematical

ideas in the form of mathematical connections. Students with high levels of self-efficacy can meet the three indicators of mathematical connection ability.

3.4.2. Analysis of Mathematical Connection Ability on Subjects with Medium Self-efficacy Level

Analysis of mathematical connection ability in subjects with medium self-efficacy levels was based on the analysis of answers to the subject's mathematical connection ability test and subject interviews conducted by researchers. The following is an analysis based on indicators of mathematical connection abilities possessed by each subject with medium self-efficacy.

Table 6. Analysis of Mathematical Connection Ability on Subjects with Medium Self-efficacy Level

Subject Code	**Mathematical Connection Ability Indicator**		
	Ability to find relationships between math topics	The ability to determine the equivalent representation of a concept or procedure in mathematics	Ability to use mathematics in everyday life or other fields of study
ES-1	√	√	×
ES-2	√	√	√

Students with medium levels of self-efficacy can solve problems correctly. Although there are still students who are less careful in solving problems. There are still students who have difficulty solving problems completely. The average student with a medium level of self-efficacy can solve questions with the correct answer, but the steps that are written are sometimes incomplete and some students are still not thorough.

Some students with medium levels of self-efficacy have no difficulty in determining the equivalent representation of a concept or procedure in mathematics. However, some others still have difficulty in determining the equivalent representation. To use mathematics in solving problems in everyday life or other fields of study, students with self-efficacy levels are having difficulty making conclusions. The average student still gives conclusions in mathematical form.

Based on the description of the three indicators of mathematical connection ability, it shows that subjects with medium self-efficacy levels are good enough in solving problems by using their mathematical ideas in the form of mathematical connections. But on the other hand, students with medium levels of self-efficacy still need to practice and be more thorough. So it can be concluded that students with medium levels of self-efficacy are sufficient to meet all three of the indicators of mathematical connection ability.

3.4.3. Analysis of Mathematical Connection Ability on Subjects with Low Self-efficacy Level

Analysis of mathematical connection ability in subjects with low self-efficacy levels is based on the analysis of answers to the subject's mathematical connection ability test and subject interviews conducted by researchers. The following is an analysis based on indicators of mathematical connection abilities possessed by each subject with low self-efficacy.

Table 7. Analysis of Mathematical Connection Ability on Subjects with Medium Self-efficacy Level

Subject Code	**Mathematical Connection Ability Indicator**		
	Ability to find relationships between math topics	The ability to determine the equivalent representation of a concept or procedure in mathematics	Ability to use mathematics in everyday life or other fields of study
ER-1	×	√	×
ER-2	×	×	√

Students with low self-efficacy still have difficulty in solving problems correctly. Based on the research, most students with low self-efficacy are still confused to determine the relationship between topics in mathematics. On average, students with low levels of self-efficacy are not coherent in writing the steps for solving a problem so that the connection or relationship between topics in the problem is not clearly visible.

There are students with low self-efficacy who have difficulty in determining the equivalent representation of a concept or procedure in mathematics. But there are also those who have no difficulty in finding equivalent representations of concepts or procedures in mathematics. Students do not fully understand the use of mathematics in the process of solving problems in everyday life or other fields of study. So that students still have not written the notations and descriptions in the completion. Students also have not automatically explained conclusions in the form of contextual sentences.

Based on the description of the three indicators of mathematical connection ability, it shows that subjects with low self-efficacy levels still have difficulty in solving problems using their mathematical ideas in the form of mathematical connections. Students with low self-efficacy levels met the second mathematical connection ability indicator, but not enough to meet the first and third mathematical connection ability indicators.

Through the results and discussion above, it is known that providing contextual treatment to students will further stimulate students' mathematical connection abilities. This is by the results of research by Saminanto and Kartono (2015). In addition, this study also proves the results of research belonging to Nurhadi et al., (2019) which states that mathematics will be better if it is taught with an approach that emphasizes realistic problems. The results of the analysis in this study also further support the results of research by Chisara et al., (2018) and Afriansyah (2018) which state that the RME approach helps students understand the relationship between mathematics and everyday life. On the affective aspect, this study is in line with the research conducted by Hazrati et. al., (2020) which states that good self-efficacy allows students to improve students' mathematical connection abilities. It is proven that the average mathematical connection ability of students with high self-efficacy is better than the average mathematical connection ability of students with low self-efficacy.

4. Conclusion

Based on the results of the study, the conclusions of this study are (1) the mathematical connection abilities of class VIII students of Integrated Islamic Junior High School Nurul Islam Tengaran who received REACT learning with the RME approach achieved the criteria for mastery learning; (2) the average mathematical connection ability of class VIII students of Integrated Islamic Junior High School Nurul Islam Tengaran who received REACT learning using the RME approach was better than the average score of students' mathematical connection ability who received expository learning; (3) there are differences in students' mathematical connection abilities in terms of students' self-efficacy levels in REACT learning with the RME approach, with the explanation that the average mathematical connection ability of students with a high level of self-efficacy is better than the average mathematical connection ability of students with medium and low level of self-efficacy; (4) the description of students' mathematical connection abilities in terms of self-efficacy levels is as follows. Students with a high level of self-efficacy can meet the three indicators of mathematical connection ability, so they do not experience problems in solving mathematical connection problems. Students with medium levels of self-efficacy are sufficient to meet the three indicators of mathematical connection ability, with a note that students still need to hone their mathematical connection skills by practicing more. Students with low levels of self-efficacy meet the second mathematical connection ability indicator, but not enough to meet the first and third mathematical connection ability indicators, so students still need to hone their mathematical connection skills with teacher guidance.

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