Measuring Religiosity and Other Affective Domain with Likert and Inventory Scales in Teaching and Learning Mathematics

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Abstract—Competence in mathematics learning is not only focused on the cognitive domain, but also on affective domain. In 2013 Curriculum, affective competencies mathematics consist of religiosity and other affective domain, such as self-confidence, discipline, responsibility, curiosity, and so on. One of the assessment technique used to measure religiosity and other affective domain is a self-assessment, which can be measured by a questionnaire. The questionnaire used consisted of the Likert scale and the inventory scale. The purpose of this research is to compare the measurement religiosity and other affective domain by using the Likert scale and the inventory scale. Data analysis is using descriptive analysis, paired sample t test, and Pearson correlation. The results show that (1) the average of religiosity questionnaires by using Likert scale and inventory scale are at very high category, and the average of other affective domain questionnaires by using Likert scale and inventory scale at the high category; (2) based on paired samples t-test, there was no difference between the measurement Likert scale and inventory scale for each religiosity and other affective domain’s questionnaires, and (3) religiosity questionnaire correlation coefficient for Likert scale and inventory scale is 0.675, and other affective domain questionnaire correlation coefficient for Likert scale and inventory scale is 0.692, which means there is a positive correlation between the Likert scale and the inventory scale. These results indicate that measurements using the Likert scale and the inventory scale give the same results, so that it can be used as an assessment instrument in teaching and learning mathematics.

Keywords: measurement, religiosity, likert, inventory, learning mathematics

1. Introduction

Mathematics is the science of the abstract pattern and ideological that exist in the surroundings arranged in a hierarchical, systematic, and tiered. Mathematics courses should be given to students so that students can think logically, critical, analytical, and creative. The purpose of learning mathematics by NCTM (1989) is that the students should have the following capabilities: (1) be able to apply their knowledge to solve problems in mathematics and other disciplines; (2) capable of using mathematical language to communicate ideas; (3) capable of reasoning and analyzing; (4) to know and understand the concepts and procedures; (5) the disposition of mathematics; and (6) to understand about the nature of mathematics; integrate aspects of mathematical knowledge.

To achieve the goals of mathematics learning, mathematics learning should receive serious attention and handling. One of them is related to the assessment should be done by the teacher in the learning of mathematics. Assessment is an extremely important part and can’t be separated from the learning activities. Anderson (2003) explains assessment is the process of gathering information used to make informed decisions. Then, Mardapi (2012) explains assessment is the process of gathering information about the learning achievements of learners, to be used as a basis for making decisions. The main purpose of the assessment is to improve the quality of education, because the assessment can be communicate what was expected and what has been achieved in the learning activities. The assessment results also provide feedback to learners with regard to their learning achievement.
Kellaghan & Greaney (2001) explain the assessment is the activity of collecting information about knowledge, attitudes, and skills of individual or group of learner. This opinion was reinforced by Mardapi (2012) states the assessment process includes gathering evidence about the achievement of learners are not always obtained through testing alone, but can also be collected by observation or self-assessment. This is in accordance with the CCSSO (Mikulec & Miller, 2012) states that the teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher’s and learner’s decision making. Therefore, the implementation of assessment in the classroom, teachers need to use a variety of assessments to measure the level of achievement of learner’s competences. Through the assessment, teachers can contribute to a better theoretical understanding of classroom assessment and can also be useful in a practical manner as a basis for designing professional development and instruments for measuring teachers’ assessment practice (Veldhuis & Heuvel-Panhuizen, 2014).

Assessment of learning mathematics in 2013 Curriculum which can be collected by observation or self-assessment is an assessment of religiosity and other affective domain. Religiosity is the religious attitude, which is a condition that comes to a person who encouraged him to behave in accordance with the level of adherence to religion (Jalaluddin, 2012). Other affective domain leads to social attitudes. Attitude competence is the expression of values or philosophy of life that is owned by someone and manifested in behavior. Other affective domain can be developed is self-confidence, discipline, curiosity, and responsibility.

The problem that occurs in the religiosity and other affective domain assessment is if the number of students in a classroom is too much, then the teacher will have difficulties to carry out an assessment by observation. The difficulty is due to the time wasted learning for observation. Therefore, it would require other assessment techniques are more effective. One technique that can be used assessment is the self-assessment.

Self-assessment is critical to many educational process (Mort & Hansen, 2010). Self-assessment is an assessment technique involves a person to take responsibility from themselves to assess the results of their work experience. Self-assessment is also a process designed to allow a person to collect information about their own performance and compare it with the goals and the criteria for their work (Motycka, 2010). Furthermore, Reys (2009) explain that students are often the best assessors of their own work and feelings. When students evaluate their own work, the responsibility for learning is theirs. Therefore, teachers can begin the process of self-assessment by allowing student to validate their own ideas or answers results of their work.

The instruments are used for self-assessment is a questionnaire. Questionnaire developed consist of the Likert scale and the inventory scale. This paper will describe the comparison between measurement religiosity and other affective domain with the Likert scale and the inventory scale.

### II. Explanation

#### A. Religiosity and Other Affective Domain

Krathwohl (1964) explains affective domain can describe learning objectives that emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. Affective objectives vary from simple attention to selected phenomena to complex but internally consistent qualities of character and conscience. This domain includes the manner in which deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes. The five major categories are listed from the simplest behavior to the most complex, such as receiving, responding, valuing, organizing, and characterizing. Based on the categories of affective domain, affective domain that will be studied in this paper is religiosity and other affective domain, such as self-confidence, discipline, curiosity, and responsibility.

1) Religiosity

Religiosity is a unified comprehensive elements, which make a person called religious people (being religious), and not just claim to have faith (having religion). Anshori (Ghufron & Rini, 2014) explain that religiosity refers to the religious aspects of a person who has lived in the liver. Religiosity can also be interpreted as religious because of their religious internalization into oneself (Dister in Ghufron & Rini, 2014). Another opinion says that religiosity leads to thoughts, words, and actions of a person who strived always based on the values of divinity or religious teachings (Fathurrohman, Suryana & Fatiriani, 2013).

Religiosity realized in various sides of human life. Religiosity does not only occur when performing ritual, but also other activities coming from internal strength. Religiosity not only the activities that can be
seen, but also the activities that can’t be seen and occur in person’s heart (Ancok & Suroso, 2011). According to Glock & Stark (1968), there are five dimensions of religiosity: ideological, ritualistic, experiential, intellectual, and consequential dimension.

2) Other Affective Domain

Other affective domain developed in this paper are self-confidence, discipline, responsibility, and curiosity. Self-confidence is very important and needs to be instilled in a person. Self-confidence is a trait supporting one’s progress. According to Yoder & Proctor (1988), self-confidence is the active, effective expression of inner feeling of self-worth, self-esteem and self-understanding. Furthermore, Anthony (Ghufron & Rini, 2014) argues that self-confidence is an attitude in a person who can accept the fact, can develop self-awareness, positive thinking, to be independent and have the ability to have and achieve everything to be desired. The confidence of someone giving someone an opportunity for them to develop themselves in order to achieve something to be desired. This was confirmed by Manning & Curtis (2003) explains that confidence is one's ability gives the leader inner strength to overcome difficult tasks.

Self-confidence is a faith or belief in one self and one’s own abilities to succeed (McElmeel, 2002). It is the belief that one will act in a right, proper, or effective manner. Then, Lauster (Ghufron & Rini, 2014) explains that the confidence obtained from life experience. Self-confidence is one aspect of personality that form of belief in the ability of a person that is not influenced by others and may act according to the will, excited, optimistic, tolerant, and responsible. Someone who believes in yourself will be able to resolve the problems faced and obtained from the experience of everyday life. Based on some opinions about self-confidence, it can be concluded that self-confidence is to believe in them, bold, and not influenced by others in order to overcome or deal with the problems being faced in appropriate conditions.

Related with discipline, Freire (Yang, 2009) explain that discipline is a necessary condition for effective action in the social world. According to Savage & Savage (2010), discipline is defined as actions that facilitate the development of self-control, responsibility, and character. The definition of discipline by Savage & Savage reinforced by Martella (2012) which states that training to act in accordance with rules, instruction, and exercise design to train proper conduct or action, behavior in accordance with rules of conduct, and a set of system of rules and regulations.

According by Moenir (1987), there are two dominant types of discipline in an attempt to produce something that desired. It is discipline in terms of time and discipline in terms of deed. Both of these disciplines is an inseparable unity and mutual influence. Then, Lickona (2004) divided discipline falls into two categories, prevention and correction. Better prevention strategies will reduce the frequency of the behavior of student discipline problems, but if the problem still arises character-building strategies will be needed to overcome them. Based on some definitions about discipline, it can be concluded that the discipline is any behavior or act in accordance with the rules or the regulations, both in terms of time and deeds.

Furthermore, responsibility is one of the important character values developed in education. Stevenson (2006) explains that being responsible means that you answer for your actions. If you say, you will do something; you follow through on your promise. If you make a mistake, you admit it and take responsibility for the consequences. Another opinion expressed by Samani & Hariyanto (2012) states that responsibility means responding in a way that is proper and decent, responsible for their actions. Then, responsibility means doing the task whole-heartedly, working with high work ethics, strive to achieve the best performance, able to control themselves and cope with stress, and accountable to the choices and decisions made (Samani & Hariyanto, 2012).

According Azzet (2014), responsibility is to carry out the obligations as it should be, both toward God, oneself, society, social environment, natural surroundings, the nation and the state. It can be said that the element of responsibility is seriousness (Mu'in, 2013). Based on the above opinion, someone said to be responsible when carrying out the task of learning, seriously perform their duties, and acknowledging the wrong done.

Other developed affective is curiosity. Curiosity can provide stimulation and encouragement of students to be interested and participate in learning activities that build knowledge and training expertise (skills). Elliot (2000) explains that youngsters are naturally curious, and if their curiosity is encouraged, it will probably last a lifetime. Then, Schmitt & Lahroodi (2008) explores the value of curiosity for inquiry and knowledge. Curiosity is the desire to learn and learn something in order to get information or new
knowledge. Learning is not simply knowing yet to explore to find out more so as to give meaning to what is obtained in the learning process. This is according with the statement McElmeel (2002) argues that curiosity is a desire to learn, investigate, or know. It is an interest leading to exploration or inquiry.

Curiosity marked with the feedback that has not shown consistency in the knowledge base of students so that they will be motivated to understand what they do not know (Matheson & Spranger, 2001). Curiosity often described by various terms, but all have the intention or the same meaning. Loewenstein (Elliot, 2000) explains curiosity is a cognitively based emotion that occurs when a student recognizes a discrepancy or conflict between what he or she believes to be true about the world and what turns out actually to be true. Students are believed to feel curious about events that they can neither make sense of nor explain fully. In addition, curiosity occurs when students encounter unexpected, novel, and unpredictable objects. Together with Loewenstein’s opinion, Stones (1984) explains in various experiments the satisfaction of curiosity has been found to be reinforcing, so that there does really seem to be justification for viewing the need to explore the environment as real and legitimate reinforce.

Based on the various opinions, it can be concluded that curiosity is a cognitive emotion when someone gets or conflict that led to the desire to learn, investigate, and find out widely and deeply. In behavior can be demonstrated by the activity or activities to explore, manipulate, or coordinate existing cognitive structure with a new way to understand a broader knowledge and deeper.

B. **Likert Scale and Inventory Scale**

1) **Likert Scale**

A Likert scale is a psychometric scale commonly involved in research based on survey questionnaires. Here, the respondents specify their level of agreement or disagreement on a symmetric agree-disagree scale for a series of statements while responding to a particular Likert questionnaire item. The range of Likert scale captures the intensity of their feelings for a given item. However, the result of analysis of multiple items reveals a pattern that has scaled properties (Barua, 2013).

McCoach, Gable & Madura (2013) defined the Likert response format has been used extensively for affective instruments. The typical 5-point agree continuum consists of ordered response alternatives such as: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD). Likert scales provide a range of responses to a statement or series of statements. Usually, there are 5 categories of response ranging from 5 = strongly agree to 1 = strongly disagree with a 3 = neutral type of response (Croasmun & Ostromt, 2011). Then, Likert item has two parts: the ‘stem’ statement and the ‘response scale’ (the answering options offered to respondents). Each item consists of a single statement of demand. There are two kinds of statements are positive statements (statements which are expected to be approved by the respondent) and negative statements (statements which are not expected to be approved by the respondent).

According by Oppenheim (1966), to produce a Likert scale we proceed as follows: first, as usual, we compose an item pool. However, for the Likert procedure it is best not to have many neutral items not many extreme items at either end of the continuum. Next, we need a sample of respondents on whom to try the items. Each respondent will be asked, not merely whether he agrees or disagrees with each statement, but to check one of the five positions given above. Respondents should be similar to those on whom the scale will be used. Next, we score the record of each respondents. To do this, we must decide whether we want a high scale score to mean a favorable or an unfavorable attitude. It does not matter what we decide, but from then on we must be consistent.

The advantages of measurement Likert scales are the Likert scales have been frequently used because they are relatively easy to construct, can be highly reliable, and have been successfully adapted to measure many types of affective characteristics (Nunnally in McCoach, Gable & Madura, 2013). While the weakness of the Likert scale is the presence of positive and negative statements, statements made can lead to a good answer or not good, especially if the statement made patterned. In a Likert scale, respondents is asked to read carefully every statement is presented, then he was asked to assess these statements. Assessment of the statements of the subjective nature, depending on the condition of the attitude of each individual.

2) **Inventory Scale**

Inventory is essentially not many different from the questionnaire. Inventory contains a number of questions that are arranged in a frame-aware of the attitudes, opinions and feelings of students to the
process of conducting learning activities. Data as general information has been provided in the form of multiple choice, which should be chosen by the student.

According by Oppenheim (1966), an inventory is a list that the respondent is asked to mark or check in a particular way. It may consist of a list of interests, and the task may be to check those things that interest you a lot. In the better types of inventory, in particular those that can be properly described as personality test the items are selected after careful pilot work, and the grouping into areas is done on a statistical basis by means of correlations, so that those items that are scored together really belong together.

In contrast to measurement using the Likert scale of negative and positive statements, the inventory scale made only one question (not a statement of the positive or negative statement), which already represents the answer to the question of positive and negative statements. The inventory scale was made of five possible answers. The answer choices are given a value from 1 to 5. Techniques of value is based on a specific selection. For example, choice answers with a positive statement by a score of 5, and the answer choices with negative statements were given a score of 1.

The advantages of measurement inventory scale is a question that made does not lead to an answer is right or wrong, so that students can choose the appropriate answers to the option that best suits him. While the weakness of the inventory scale is not all the answers are in the answer choices, so that students can only choose the answer choices are approached with a choice of answers.

C. Measuring Instrument Religiosity and Other Affective Domain with Likert and Inventory Scale

The instrument used was a questionnaire religiosity and other affective domain by using the Likert scale and the inventory scale. Religiosity questionnaire with the Likert scale consists of 14 items and the inventory scale consists of 7 items. Other affective questionnaire with the Likert scale consists of 40 items and the inventory scale consists of 20 items.

Here is an example of religiosity and other affective questionnaire by using the Likert scale and the inventory scale.

- Examples of religiosity questionnaire using the Likert scale
  Positive statements: With prayer, I believe can work quietly repeat
  Negative statement: I feel no difference between praying or not praying before working on restating

- Examples of religiosity questionnaire using the inventory scale
  Before working tests, the benefits of praying for me is ....
  (a) note with subject matter that I have learned
  (b) it quiet in working on restating
  (c) not having any influence on me
  (d) creating reduced time in doing restating
  (e) only tradition or habit that must be done

- Examples of other affective questionnaire using the Likert scale
  Positive statement: I go to class before the bell rings
  Negative statement: I'm late to class after recess

- Examples of other affective questionnaire using the inventory scale
  Habits that I did after the recess bell is finished ....
  (a) go to class after the teacher walked into the classroom
  (b) remain in the cafeteria and was late getting to class
  (c) immediately spend on food and immediately walked into the classroom so as not to be late
  (d) stay in the cafeteria and did not go to class
  (e) immediately spend on food but did not immediately go to class

Questionnaires have met the criteria of valid and reliable. Questionnaires valid criteria based on the expert validation and construct validity, while the questionnaire reliable criteria based on the coefficient of reliability using Alpha formula. Religiosity questionnaire reliability coefficient for the Likert scale and the inventory scale is respectively 0.715 and 0.675. While other affective domain questionnaire reliability coefficient for the Likert scale and the inventory scale is respectively 0.897 and 0.789.
Questionnaires were developed subsequently tested to 1103 high school students in the city of Yogyakarta, which uses 2013 Curriculum in the second semester of the school year 2014/2015. Based on tryout results, it can be seen comparative measurements of religiosity and other affective domain by using the Likert scale and the inventory scale. Data analysis used descriptive analysis, paired sample t-test and Pearson correlation.

1) **Descriptive Analysis**

This analysis is done by describing the average result of religiosity and other affective domain questionnaire by the Likert scale and the inventory scale. Data description is done by converting the quantitative data into qualitative data of five scale, with reference to the formula that was adapted from Azwar (1996) in the following table.

<table>
<thead>
<tr>
<th>Value</th>
<th>Score Interval</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>( X &gt; \frac{x_i}{3} + 1.5Sbi )</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>( \frac{x_i}{3} + 0.5Sbi &lt; X \leq \frac{x_i}{3} + 1.5Sbi )</td>
<td>Good</td>
</tr>
<tr>
<td>C</td>
<td>( \frac{x_i}{3} - 0.5Sbi &lt; X \leq \frac{x_i}{3} + 0.5Sbi )</td>
<td>Fairly</td>
</tr>
<tr>
<td>D</td>
<td>( \frac{x_i}{3} - 1.5Sbi &lt; X \leq \frac{x_i}{3} - 0.5Sbi )</td>
<td>Poorly</td>
</tr>
<tr>
<td>E</td>
<td>( X \leq \frac{x_i}{3} - 1.5Sbi )</td>
<td>Not Good</td>
</tr>
</tbody>
</table>

With \( \frac{x_i}{3} \) = ideal mean score = \( \frac{1}{2} \) (maximum score ideal + ideal minimum score), \( Sbi \) = standard deviation ideal = \( \frac{1}{6} \) (maximum score ideal-ideal minimum score), \( X \) = total actual score (Azwar, 1996).

The following is a descriptive analysis of religiosity and other affective domain questionnaire.

**a) Religiosity questionnaire**

Data conversion of religiosity questionnaire with Likert scale can be seen in Table 2.

<table>
<thead>
<tr>
<th>Score (( X ))</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>( X &gt; 36 )</td>
<td>Very high</td>
</tr>
<tr>
<td>( 46.67 &lt; X \leq 36 )</td>
<td>High</td>
</tr>
<tr>
<td>( 37.33 &lt; X \leq 46.67 )</td>
<td>Medium</td>
</tr>
<tr>
<td>( 28 &lt; X \leq 37.33 )</td>
<td>Low</td>
</tr>
<tr>
<td>( X \leq 28 )</td>
<td>Very low</td>
</tr>
</tbody>
</table>

Based on the calculation, the average of religiosity questionnaire by using the Likert scale is 61.255, that are in the category of "very high".

Furthermore, data conversion of religiosity questionnaire with inventory scale can be seen in Table 3.

<table>
<thead>
<tr>
<th>Score (( X ))</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>( X &gt; 28 )</td>
<td>Very high</td>
</tr>
<tr>
<td>( 23.33 &lt; X \leq 28 )</td>
<td>High</td>
</tr>
<tr>
<td>( 18.67 &lt; X \leq 23.33 )</td>
<td>Medium</td>
</tr>
<tr>
<td>( 14 &lt; X \leq 18.67 )</td>
<td>Low</td>
</tr>
<tr>
<td>( X \leq 14 )</td>
<td>Very low</td>
</tr>
</tbody>
</table>

Based on the calculation, the average of religiosity questionnaire by using the inventory scale is 32.296, that are in the category of "very high".
b) Other affective domain questionnaire

Data conversion of other affective domain questionnaire with Likert scale can be seen in Table 4.

**TABLE 4. Data Conversion of Other Affective Domain Questionnaire with Likert Scale**

<table>
<thead>
<tr>
<th>Score (X)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>X &gt; 160</td>
<td>Very high</td>
</tr>
<tr>
<td>133.33 &lt; X ≤ 160</td>
<td>High</td>
</tr>
<tr>
<td>106.67 &lt; X ≤ 133.33</td>
<td>Medium</td>
</tr>
<tr>
<td>80 &lt; X ≤ 106.67</td>
<td>Low</td>
</tr>
<tr>
<td>X ≤ 80</td>
<td>Very low</td>
</tr>
</tbody>
</table>

Based on the calculation, the average of other affective domain questionnaire by using the Likert scale is 146.040, that are in the category of “high”.

Furthermore, data conversion of other affective domain questionnaire with inventory scale can be seen in Table 5.

**TABLE 5. Data Conversion of Other Affective Domain Questionnaire with Inventory Scale**

<table>
<thead>
<tr>
<th>Score (X)</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>X &gt; 80</td>
<td>Very high</td>
</tr>
<tr>
<td>66.67 &lt; X ≤ 80</td>
<td>High</td>
</tr>
<tr>
<td>53.33 &lt; X ≤ 66.67</td>
<td>Medium</td>
</tr>
<tr>
<td>40 &lt; X ≤ 53.33</td>
<td>Low</td>
</tr>
<tr>
<td>X ≤ 40</td>
<td>Very low</td>
</tr>
</tbody>
</table>

Based on the calculation, the average of other affective domain questionnaire by using the inventory scale is 77.677, that are in the category of “high”.

Based on descriptive analysis, the average result of religiosity questionnaire using the Likert scale and the inventory scale are at very high category, and the average results of other affective domain questionnaire using the Likert scale and the inventory scale at the high category. This shows that there is no difference between measurements using the Likert scale and the inventory scale, both for religiosity and other affective domain questionnaire.

2) Paired Sample t-test

To test whether there is a difference between measurement the Likert scale and the inventory scale for each religiosity and other affective domain questionnaire, used paired samples t-test with the formula:

\[
t_0 = \frac{\bar{d} - d_0}{s_d / \sqrt{n}}
\]

With \(t_0\) = value of \(t\), \(\bar{d}\) = rated from \(\sum d / n\), \(d\) = value of the different between the Likert scale and the inventory scale, \(s_d\) = standard deviation of \(\bar{d}\), \(n\) = many members of the sample (Walpole, 2012).

This different test is performed using SPSS 21.0 for windows. Different test results can be seen in Table 6.

**TABLE 6. Significant Value between the Likert Scale and the Inventory Scale**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religiosity</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Based on Table 6 was obtained that measurement of religiosity questionnaire with the Likert scale and the inventory scale significance value 1.000. This means there is no difference between the measurement of the Likert scale and the inventory scale on religiosity questionnaire. Furthermore, measurements of other affective domain questionnaire with the Likert scale and the inventory scale significance value 1.000. This means there is no difference between the measurement of the Likert scale and the inventory scale on other affective domain questionnaire.

3) Pearson Correlation

To test how the relationship between measurement the Likert scale and the inventory scale for each religiosity and other affective domain questionnaire, used Pearson correlation formula:

\[
r = \frac{S_{xy}}{\sqrt{S_{xx}S_{yy}}}
\]

With \( r \) = correlation coefficient, \( S_{xy} = \sum (X - \bar{X})(Y - \bar{Y}) \), \( S_{xx} = \sum (X - \bar{X})^2 \), \( S_{yy} = \sum (Y - \bar{Y})^2 \), which \( X \) = value of the Likert scale, \( Y \) = value of the inventory scale (Walpole, 2012).

This correlation test was performed using SPSS 21.0 for windows. Correlation test results can be seen in Table 7.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Correlation Coefficient</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religiosity</td>
<td>0.675</td>
<td>0.000</td>
</tr>
<tr>
<td>Other affective domain</td>
<td>0.692</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Based on Table 7 obtained information that correlation coefficient between measurement the Likert scale and the inventory scale of religiosity questionnaire is 0.675 with significance value 0.000. This means there is a positive correlation between measurement the Likert scale and the inventory scale on religiosity questionnaire. Furthermore, the correlation coefficient between measurement the Likert scale and the inventory scale of other affective domain is 0.692 with significance value 0.000. This means there is a positive correlation between measurement the Likert scale and the inventory scale on other affective domain questionnaire.

### III. CONCLUSION AND SUGGESTION

Assessment techniques used to measure religiosity and other affective domain is self-assessment. Self-assessment can be measured using a questionnaire. The questionnaire used consisted of the Likert scale and the inventory scale. Based on the tryout, the result that (1) the average of religiosity questionnaires by using the Likert scale and the inventory scale are at very high category, and average of other affective domain questionnaires by using the Likert scale and the inventory scale at the high category. (2) with paired samples t-test, there was no difference between measurement the Likert scale and inventory scale for each religiosity and other affective domain’s questionnaires, and (3) correlation coefficient between the Likert scale and the inventory scale for religiosity questionnaire is 0.675 and correlation coefficient between the Likert scale and the inventory scale for other affective domain questionnaire is 0.692, which means there is a positive correlation between the Likert scale and the inventory scale. This results means that there was no difference between measurement the Likert scale and the inventory scale, so that the self-assessment by Likert scale and inventory scale’s questionnaire can be used by teachers.
In this founding, because the measurement by using Likert scale and inventory scale provide the same results, teachers can choose one type of scale that used in mathematics learning, particularly in assessing religiosity and other affective domains. However, there are some things need to be considered in preparing of the Likert scale and the inventory scale’s questionnaire, namely (1) pay attention to the weakness for each questionnaire’s type that the questionnaire is to give consistent results, (2) a statement questionnaire adjusted to students' thinking skills, and (3) the use of selection questionnaire’s type, which meet the criteria of easy and practical.

References


