

## Students' Concept Understanding Through Four Tier Diagnostic Test In Fiqh Subject Of Class XI Madrasah Aliyah

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### ABSTRACT

*The purpose of this study was to determine the students' conceptual understanding through the Four Tier Diagnostic Test in the Fiqh Subject of class XI MA Fattah Hasyim. This study uses descriptive quantitative research. Descriptive research attempts to describe an existing phenomenon, namely the implementation of the four-tier diagnostic test instrument in seeing students' misconceptions. The population and sample of the study used the Purposive Sampling Technique in Class XI F Language MA Fattah Hasyim with a total of 30 students. The collection of research data used the four-tier diagnostic test. This instrument consists of 15 validated questions. The research data were analyzed through normality tests and homogeneity tests. The results of the study of students' conceptual understanding through the four-tier diagnostic in the fiqh subject obtained a conceptual understanding of 74.89%, quite understanding 20.67%, weak concepts 1.11%, and misconceptions 3.33%. Students tend to experience misconceptions in the sub-material of gifts at number 9 with an average of 33.33%, then experience misconceptions again in the sub-material of grants at number 11 with an average of 10.00%, and in the sub-material of nafaqah and sadaqah numbers 1 and 8 with an average of 3.33%.*

**Keywords:** Conceptual Understanding, Four-Tier Diagnostic Test, Fiqh

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### INTRODUCTION

Mastery of concepts is one of the goals of learning at school. Mastery of a person's concept is based on his or her conception. The results that emerge from a person's thinking based on ideas, interactions, and reasoning activities when faced with a problem are called conception (Ginting et al., 2023). This conception can come from intuition, general experience, reading textbooks, students' prior knowledge, the learning process, a theoretical framework, and conceptual appreciation. Each individual's conception will be different and depends on the understanding of each individual's concept. This is the basis for differences in conception which can give rise to misconceptions.

Misconceptions can arise due to misunderstandings in understanding concepts (Azis, 2023). Misconceptions in students can occur when students are trying to build new knowledge by interpreting new experiences in the form of initial conceptions. Misconceptions arise due to students' mistakes in ordering their knowledge to be coherent so that it is easy to understand and remember (Rusilowati, 2015). According to (A. S. U. Putra et al., 2019), misconceptions can arise from everyday experiences that students experience when interacting with their surrounding environment.

Based on survey results in the field, it was found that a large amount of abstract material, ineffective learning delivery, and lack of question and answer time were the three main challenges for learning fiqh. Challenges in learning Fiqh include 1) students who do not understand the meaning of the questions given, which leads to incorrect applications; 2) students who face misunderstandings; 3) students who do not understand the meaning of questions through verbal representation; 4) Students who do not understand the mathematical operations used (Felita, 2022).

In an effort to determine the level of understanding of concepts and prevent misconceptions in students, appropriate assessment instruments are needed. One of them is a Diagnostic Test. Diagnostic

tests can overcome learning difficulties and reduce students' misconceptions (I. A. Putra et al., 2018). The purpose of diagnostic tests is to plan appropriate forms of learning to improve students' understanding of concepts in the future (Suwanto, 2013). This diagnostic test is a solution to finding student misunderstandings (Astuti et al., 2021; Paramitha, 2021). Apart from that, diagnostic tests are tests that can be used to find out precisely and ascertain students' weaknesses and strengths in a particular lesson (Azis, 2023; Zaleha et al., 2017). According to (Jubaedah et al., 2017) diagnostic tests are tests used to find out students' weaknesses so that appropriate treatment can be carried out. This is in line with (Perwitasari et al., 2015) diagnostic tests are tests that are used to determine students' weaknesses so that the results can be used as a basis for providing follow-up in the form of appropriate treatment and in accordance with the students's weaknesses. Therefore, diagnostic test assessments by educators are carried out continuously, which aims to monitor students' learning processes and progress and to increase the effectiveness of learning activities (Roistiya et al., 2019).

One type of diagnostic assessment is the Four-tier diagnostic test. This assessment instrument is a form of diagnostic assessment of student learning outcomes that consists of 4 levels including a) the first level in the form of questions and answer options, b) the second level in the form of confidence in the first level answers, c) the third level in the form of reasons for the level answers one and d) the fourth level in the form of confidence in the third level answer (Gurel et al., 2015; Pujayanto, 2018; Roistiya et al., 2019).

The four-tier diagnostic test instrument has been studied by various researchers, including research results from (Ginting et al., 2023) show that the results of the content validity of the four-tier diagnostic test instrument were obtained with an average of 0.836 and the high validity category and were applied. From 180 high school students in class, The results of research (Huda, 2021) state that The level of students' misconceptions of the concept of the human excretory system using a four-tier multiple-choice diagnostic test was obtained from the results of the overall analysis of students with an average of 21.76%, and the results of the item analysis showed that the highest student misconceptions were found in question number five with a percentage of 11.6 % and the lowest was in question number four with a percentage of 0%. Apart from that, the 4T-MDT instrument developed received an average validation percentage of 84% with trial results of 15 instrument question items which had high validity, high reliability, good discrimination, and a good level of difficulty so that it could be used. to determine the profile of students' physics misconceptions regarding magnetic fields (Astuti et al., 2021).

The aim of this research is a) to determine the level of students' understanding of Fiqh material and b) to determine the causes of students' difficulties in Fiqh material. The results of this research will be used as a basis for good learning planning to prevent student misconceptions.

## **METHOD**

This research uses descriptive quantitative research. The research focuses on delivering the results of assessing students' conceptual understanding using the Four-Tier Diagnostic Test instrument on Fiqh subject matter. Research sampling uses a purposive sampling technique, where according to (Sugiyono, 2014) purposive sampling is a method of taking research samples that must pay attention to several factors at the research location. Therefore, the research sample was chosen based on the teacher's suggestion at the research location, namely 30 students in class XI F MA Fattah Hasyim Tambakberas Jombang.

The research instruments used to collect data used the following methods: a) interviews, b) location surveys, c) tests with the Four-Tier Diagnostic Test, and d) documentation. Data analysis in this study used the normality test and homogeneity test of the data. Data analysis uses the SPSS 21 application so that it is possible to avoid errors in calculations and the validity of the analysis results. Below we present the Four-Tier Diagnostic Test rubric instrument for Fiqh subject matter as a basis for processing research data (Figure 1).

No	Category	Combination			
		Answers	Confidence Level	Reasons	Confidence Level
1	Understand the Concept (U)	Correct	Sure	Correct	Sure
2		Correct	Sure	Correct	Not Sure
3		Correct	Not Sure	Correct	Sure
4		Correct	Not Sure	Correct	Not Sure
5		Correct	Sure	Incorrect	Not Sure
6	Partial Understanding (PU)	Correct	Not Sure	Incorrect	Sure
7		Correct	Not Sure	Incorrect	Not Sure
8		Incorrect	Sure	Correct	Not Sure
9		Incorrect	Not Sure	Correct	Sure
10		Incorrect	Not Sure	Correct	Not Sure
11		Correct	Sure	Incorrect	Sure
12		Incorrect	Sure	Correct	Sure
13	Not Understand the Concept (NU)	Incorrect	Sure	Incorrect	Not Sure
14		Incorrect	Not Sure	Incorrect	Sure
15		Incorrect	Not Sure	Incorrect	Not Sure
16	Misconception (M)	Incorrect	Sure	Incorrect	Sure
17	Un-Code (UC)	There is "tier" which aren't answered or the answers is more than one available option			

**Figure 1** Combination Category Answers *Four-Tier Diagnostic Test* (Zahra et al., 2020)

## RESULT AND DISCUSSION

### Result

The research data obtained in this study using the Four-Tier Diagnostic Test instrument on Fiqh subject matter is presented in Table 1. This research data has also been tested for normality (Figure 2) and homogeneity test (Figure 3) where this data has been normally distributed and in categories high.

**Table 1.** Test result with the four-tier diagnostic test on fiqh subject matter

Butir Soal	Paham Konsep		Cukup Paham		Lemah Konsep		Miskonsepsi	
	N	%	N	%	N	%	N	%
1	24	80,00%	5	16,67%	0	0,00%	1	3,33%
2	28	93,33%	2	6,67%	0	0,00%	0	0,00%
3	22	73,33%	8	26,67%	0	0,00%	0	0,00%
4	30	100,00%	0	0,00%	0	0,00%	0	0,00%
5	28	93,33%	2	6,67%	0	0,00%	0	0,00%
6	29	96,67%	1	3,33%	0	0,00%	0	0,00%
7	29	96,67%	1	3,33%	0	0,00%	0	0,00%
8	0	0,00%	28	93,33%	1	3,33%	1	3,33%
9	8	26,67%	8	26,67%	4	13,33%	10	33,33%
10	26	86,67%	4	13,33%	0	0,00%	0	0,00%
11	18	60,00%	9	30,00%	0	0,00%	3	10,00%
12	25	83,33%	5	16,67%	0	0,00%	0	0,00%
13	19	63,33%	11	36,67%	0	0,00%	0	0,00%
14	25	83,33%	5	16,67%	0	0,00%	0	0,00%
15	26	86,67%	4	13,33%	0	0,00%	0	0,00%
<b>Rata-rata</b>	<b>74,89%</b>		<b>20,67%</b>		<b>1,11%</b>		<b>3,33%</b>	

One-Sample Kolmogorov-Smirnov Test																
		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006	VAR00007	VAR00008	VAR00009	VAR00010	VAR00011	VAR00012	VAR00013	VAR00014	VAR00015
N		30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Normal Parameter	Mean	,9667	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	,9667	,5333	1,0000	,9000	1,0000	1,0000	1,0000
	Std. Deviation	,18257	,00000 <sup>a</sup>	,00000 <sup>a</sup>	,00000 <sup>a</sup>	,00000 <sup>a</sup>	,00000 <sup>a</sup>	,00000 <sup>a</sup>	,18257	,50742	,00000 <sup>a</sup>	,30513	,00000 <sup>a</sup>	,00000 <sup>a</sup>	,00000 <sup>a</sup>	,00000 <sup>a</sup>
Most Extreme Difference	Absolute	,539							,539	,354		,528				
	Positive	,428							,428	,320		,372				
Negative	Negative	-,539							-,539	-,354		-,528				
	Kolmogorov-Smirnov	2,953							2,953	1,941		2,894				
Asymp. Sig. (2-tailed)		,000							,000	,001		,000				

a. Test distribution is Normal.  
 b. Calculated from data.  
 c. The distribution has no variance for this variable. One-Sample Kolmogorov-Smirnov Test cannot be performed.

Figure 2 .Kolmogorov-Smirnov Normality Test Results

Test of Homogeneity of Variances			
VAR00004			
Levene Statistic	df1	df2	Sig.
0,000	1	58	1,000

Figure 3. Homogeneity Test Results

## Discussion

Based on the research results in Table 1, data analysis was carried out on students' conceptual understanding of fiqh material which consists of sub-materials: a) Nafaqah, b) Sadaqah, c) Prizes, d) Grants, and e) Endowments. This concept understanding analysis aims to determine the level of students' conceptual understanding in studying Fiqh material and can be used as a reference for improving the learning process if misconceptions occur. The following is a description of the results of students' conceptual understanding of data through the Four-Tier Diagnostic Test.

### 1. Understanding the concept of Nafaqah

Table 1 presents the results of understanding the concept of Nafaqah in questions 1 to 3. In question number 1, 1 student experienced a misconception and 5 students gained sufficient understanding. 1 student who experienced a misconception that he was sure of the answer chose answer E, and this was strengthened by choosing answer D even though the correct answer to the question was A "Giving", so that when the respondent chose E "Giving in a noble way", it meant he did not understand the meaning of Nafaqah. Based on the Fiqh book an essay by Nor Aini Safitri and Hidayatur Rohmah states that Nafaqah is giving out, which in Arabic means not being used but showing something that is good.

Nafaqah in number 2 there were 2 students who gained sufficient understanding where in the first answer they were sure to choose D "Nafaqah" so that the answer was in accordance with the question, but it turned out that when reinforced with the second question they chose A "Aris doesn't need to do that" and not sure about the answer so the answer is wrong, because the correct answer is C "Infaq or living must be given to the wife and children", meaning he does not understand the reasons why he is called nafaqah. Based on the Fiqh book an essay by Nor Aini Safitri and Hidayatur Rohmah states that family relationships are the nafaqah of a person who is obligated to give to his or her children or parents.

Nafaqah in number 3 there were 8 students who gained sufficient understanding, where one of the students had the correct first answer, which he was sure chose C "Wajib" but when reinforced with the second question he chose C "It has been explained in the Al-Qur'an Surah Sajdah verse 12" so the answer is wrong because the correct answer is A "It has been explained in the Al-Qur'an, Surah Ath-Thalaq verse 6", meaning it shows that he does not understand the law of carrying out nafaqah which is included in the propositions of the Al-Qur'an. Based on the journal Concept of Living in Islamic Law an essay by Syamsul Bahri states that nafaqah is a husband's obligation to his wife (even if the wife is rich or capable), which is stated in one of Allah's words, Surah Ath-Thalaq verse 6.

### 2. Understanding the concept of Sadaqah

Table 1 presents the results of understanding the concept of shadaqah in questions number 4 to number 8. In question number 5 there were 2 students who gained sufficient understanding where the student was not sure about the answer, even though the answer he chose was correct. For in the question "We give alms according to..." he answered E "Ability" he was sure, and in the strengthening question he answered B "Allah never burdens a person according to his ability" This answer was also correct, but he was not sure so he had enough in understanding the question, it shows that he cannot be sure about the

answer regarding shodaqah. Based on the journal *Almsgiving Habits for the Formation of Empathetic Character in Early Childhood from the Al-Qur'an Perspective* an essay by Anik Rochmani states that every Muslim should try to always give charity according to his ability, both in broad and narrow circumstances, so that life can be meaningful and benefit the people around him.

In question number 6, there was 1 student who gained sufficient understanding where the student was confident in his answer, answering D "Oral" even though the correct answer was C "Action" but in the question reinforcement he correctly chose D "Doing something that can help animals to survive", then shows that he cannot be sure about understanding the examples of shadaqah. Based on the Islamic journal *Islamic Education Management and Humanities* an essay by Enny Nazrah Pulungan and Ali Akbar shows that various types of alms are divided into 2 forms, namely material and non-material while helping with actions includes non-material alms with one's energy.

In question number 7, there was 1 student who gained sufficient understanding where he was correct in choosing the answer, namely by answering D "Teaching knowledge" but he was not sure about the answer to the question so he experienced sufficient understanding, even though when reinforcing the question he also had correctly answered E "When we have sufficient knowledge, we should channel our knowledge to others" and he was confident in that answer, then it shows that he was not sure about understanding the examples of shodaqah. Based on the Islamic journal *Islamic Education Management and Humanities* an essay by Enny Nazrah Pulungan and Ali Akbar shows that verbal almsgiving is like teaching knowledge, including non-material almsgiving and even almsgiving, meaning that you will always get rewards from the knowledge that has been conveyed to other people.

In question number 8, 1 student had a misconception and 1 student did not understand. 1 student who experienced a misconception where he was sure of the answer chose A "People who are close" even though the correct answer was B "People who are weak", and was strengthened by choosing answer A "Shadaqah to people who don't need it" even though the correct answer was E "People who receive charity must really be done by people who need it," thus showing that he does not yet understand the types of shadaqah that are recommended. Based on the journal *Cultivating Generous Character through Sadaqah* an essay by Fifi Noviaturrahmah shows that almsgiving is recommended for cultivating aspects of sensitivity towards other people and each other, creating a virtuous heart, practicing self-awareness, and social care, especially towards people in need.

### **3. Understanding the Concept of Gifts**

Table 1 presents the results of understanding the concept of gifts in questions number 9 to 10. In number 9 there were 10 respondents who experienced misconceptions and 4 respondents did not understand. One of the students who experienced a misconception where he was sure of the answer chose C "Pledge" even though the correct answer was E "Ijab and Qobul", and was strengthened by choosing answer D "Promising something seriously" even though the correct answer was A "Both are included as well as selling buy", then shows that he does not understand the principles of gifts. Based on the journal *Implementation of Gift Giving at Hijrah Prima Savings with Prizes according to the DSN-MUI Fatwa* an essay by Mujibno and Ulfa Nur Sakinah states that the pillars of gifts according to the *jumhur ulama'* are divided into 4, including Giving gifts (Al-Waahib), People who are given gifts (Al-Mauhuub lah), Objects given (Al-Mauhuub), Ijab and Qabul (Handover).

In question number 10, there were 4 respondents who obtained sufficient understanding, where one of the 4 respondents was sure of his answer, answering A "It should not be accepted" and that answer was correct, but in strengthening the question he answered D "Strengthening ties between each other" even though The correct answer A is "There are doubts about his assets", indicating that he cannot be sure about his answer regarding the law on receiving gifts. Based on the journal *Competition Prize Law from Registration Fees in an Islamic Perspective*, an article by Adhipramana Amin, Mochammad Wahyu Nugroho, and Siti Madina Dzulhiyani shows that according to Islamic views, competitions with prizes are permitted as long as the competition is not related to gambling and the prizes are not haram. If participants pay a fee and the winner will get money, then they are not allowed to take part in the competition because it is considered gambling.

### **4. Understanding the concept of grants**

Table 1 presents the results of understanding the concept of grants contained in question number 11 where there were 3 respondents who experienced misconceptions where one of the 3 respondents was sure of his answer, answering A "Alyfah sold his laptop" even though the correct answer was E "Ryan gave money to fans", and reinforced by the fact that he was sure that he answered D "Giving something to someone else in return" even though the correct answer was E "Giving something to someone else

without asking for something in return, then it shows that he doesn't understand gifts. Based on the book *Fiqh Grants and Inheritance*. An essay by Muhammad Ajib shows that according to the *Al-Qur'an Science Dictionary*, a gift is a gift to someone during their lifetime, without expecting a return or commitment either verbally or in writing.

### **5. Understanding the concept of Waqaf**

Table 4.1 presents the results of understanding the concept of waqaf contained in questions number 12 to number 15, wherein number 12 there were 5 respondents who obtained sufficient understanding, one of which was correct in answering question C "Al-Waqif is required to be mature and wise" but he was not sure about the answer, and in strengthening the question he was also correct and confident in his answer, answering B "A wakif must be of sound mind, have assets, not be under the amnesty of the law and his pledge of freedom is not written", thus showing that he was not sure about the answer about the terms of waqf so that they are sufficiently understood. Based on the journal *Waqf: Review of Fiqh, Legal Basis and Implementation in Indonesia* an essay by Yudi Permana and Meirani Rahayu Rukmanda which shows that the conditions for waqf are divided into 6, including Al-Waqif (the person who donates), Mauquf bih (Waqaf property), Mauquf alaih (recipient of waqaf), Sighat (Lafadz) / Pledge waqaf, Nadzir (Waqaf Manager), and Waqaf Period.

In question number 13, there were 11 respondents who obtained sufficient understanding, one of whom was not sure of the answer and was wrong in answering D "Wall clock" even though the correct answer was C "Food" but Ian was correct and confident in the reinforcing answer, namely answering B "Waqf assets are assets that have a long shelf life or have economic value," indicating that he was not yet sure about the answer regarding several assets that met the waqf requirements. Based on the journal *Elements and Conditions of Waqf in the Study of Ulama and Laws in Indonesia* an article by Maskur and Soleh Gunawan shows that if the use of assets is not lasting like food, then the waqf is invalid. Apart from that, both movable assets such as cars and livestock, as well as immovable assets such as houses and plants, can be donated.

In question number 14 there were 5 respondents who obtained sufficient understanding, of which one respondent was not sure about the answer and he answered the question incorrectly, namely A "Syirkah" even though the correct answer was D "Jariyah", in strengthening the question he was correct. answered the question, namely A "The reward will continue to flow to the person who gives the waqf" but he is not sure about the answer, so it shows that he is not sure about the answer about what waqf can also be called alms, so that he gets sufficient understanding. Based on the book *Traces of Waqf Friends: from Sedekah Jariyah to Waqf*, Ali Iskandar's essay shows that waqf is one part of alms Jariyah, shadaqah has the aim of providing assets for the benefit of the people where the reward will always flow to the person who makes the waqaf.

In question number 15, there were 4 respondents who obtained sufficient understanding, where one of the respondents was not sure about the answer and he answered the question incorrectly, namely D "1,2,3,6" even though the correct answer was C "1,2,3, 4", but in strengthening the question he was sure and correctly answered the question, namely A "The procedures for carrying out waqf sequentially, if one is not implemented, then the implementation of the waqf is invalid", thus showing that he was not sure about his answer regarding the pillars. waqf so that he can gain sufficient understanding. Based on the book *Waqf Fiqh*, written by Ahmad Sarwat, it shows that waqf according to the *jumhur ulama'* is divided into 4, including Shighah / pledge (Wakf statement), Waqif (The person who gives the waqaf), Mauquf bih (The assets donated), and Mauquf alaih (Recipient of the benefits of the waqaf).

Based on the results of research data and analysis of conceptual understanding of Fiqh material, it can be said that the Four-tier diagnostic test can help evaluate students' level of conceptual understanding based on the correctness of answers and confidence in answer choices. This is in accordance with the results of research from (Astuti et al., 2021; Paramitha, 2021; Zahra et al., 2020) where through the four-tier diagnostic test instrument you can determine the level of understanding of students' concepts and can be analyzed to prevent misconceptions in students.

The results of this research also show that the causes of students' difficulties in Fiqh material include: a) Students are too confident in the concepts they have but students misunderstand the concepts, b) Students understand the concepts but have difficulty solving existing problems, c) Students have difficulty in determining the answer even though it can solve the existing problem, and d) Students just guess using their intuition.

The advantages of the Four-tier diagnostic test are: a) digging deeper into students' conceptual understanding, including those who understand the concept but do not understand the concept and

misconceptions, b) diagnosing the misconceptions experienced by students more deeply, c) determining the parts of the material that require more emphasis, and d) planning better learning to help reduce student misconceptions (Fariyani et al., 2015; Paramitha, 2021; Shefityawan et al., 2018).

## CONCLUSIONS

The four-tier diagnostic test is a tool to help teachers determine students' ability to understand concepts in detail. This assessment instrument allows students' answers to be at the level of understanding, quite understanding, not understanding, and experiencing misconceptions based on the correctness of the answer and the confidence of the answer choices (I. A. Putra et al., 2018). This aims to train students' critical thinking in solving existing problems and improving their ability to analyze phenomena.

The results of this research show that students' conceptual understanding through the four-tier diagnostic test at MA Fattah Hasyim class .33%. Students experiencing misconceptions tend to be in the prizes sub-material with an average of 33.33%, in the grants sub-material with an average of 10.00%, and in the nafaqah and shadaqah sub-material with an average of 3.33%.

In the future, this research will be carried out by increasing the number of research subjects and various research locations to make it possible to find out whether other factors influence students' understanding of concepts. Apart from that, this research needs to be studied again regarding questions based on High Order Thinking Skill (HOTS). Researchers would like to thank the Islamic Religious Education Study Program and LPPM KH University. A. Wahab Hasbullah who has supported the implementation of this research.

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