



## Reduction of Students' Biological Misconceptions through the Conceptual Change Model Integrated with Android-Based Quran

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**Abstract:** This research aimed to reduce students' misconceptions using a conceptual change model assisted by the integrated Android-based Quran. The study used a quasi-experimental design with a one-group pretest-posttest design. The study involved 95 eleventh-grade students MAN 1 Bandar Lampung. The research instrument was multiple-choice questions equipped with a certainty of response index (CRI) developed based on the revised Bloom taxonomy indicator. The data collection techniques used were tests (pretest and posttest). The results of the study obtained a reduction value of misconceptions in the pretest, namely understanding the concept of 47 % (moderate), misconception 48 % (moderate), and not understanding the concept of 5 % (low). The posttest score decreased (reduced) the proportion of misconceptions to 42 % (moderate), not understanding the concept to 4 % (low), and understanding the concept to 55 % (moderate). The hypothesis testing employed was the one-sample t-test. Therefore,  $H_1$  was accepted. It means that the conceptual change model (MCC) with Android-based Quran media can reduce students' misconceptions with a criterion of 0.71 (medium interval). Thus, the results of this research can add to the treasury of studies on the reduction of misconceptions through the MCC model based on the Android-based Quran media. Also, as a practical use for teachers to deepen the concept of biology to guide students to understand the concept of the material better correctly.

## INTRODUCTION

Biology occupies very strategic parts for future life. They are critical, creative, competitive, able to solve problems and dare to make decisions quickly and accurately to survive productively during the digital era's global competition (Roswati et al., 2019; Sudarisman et al., 2015).

The relationship between the concept of biology and the scientific process makes biology a complex science (Handayani, 2015; Roswati et al., 2019; Sudarisman et al., 2015). During biology

learning, students bring initial concepts that will be collaborated with the concepts of experts. Students build the initial concept with the initial experiences by observing the sense of sight (Duda et al., 2020; Puspitasari & Yuliani, 2020). Learning biology in class generally starts from the delivery and explanation of teaching material followed by exposure to theories, concepts, and examples. Through this type of learning, the teacher uses hidden assumptions, namely that knowledge can be transferred entirely

from the teacher's mind to the student's mind.

Conventional learning cannot solve problems related to the students' difficulty in understanding concepts. Therefore, as facilitators, teachers must look for learning breakthroughs to promote cognitive conflicts on students' unscientific preconceptions. Even with various learning strategies and learning media used in biology learning, students are still constrained by misconceptions.

Biology learning prioritizes understanding biological concepts, can link concepts to one another and can solve everyday life problems. The importance of achieving this conceptual understanding was reinforced (Dahar, 2012; Duda et al., 2020; Liliarti & Kuswanto, 2018). Understanding the concept of biology is needed in integrating nature, technology, and religion in everyday life so that the meaning is comprehensive.

Conventional learning cannot solve problems related to the difficulty of students' concepts of understanding. Therefore, teachers as creative learning facilitators must always look for breakthroughs in learning innovations that can generate cognitive conflicts against students' unscientific preconceptions (Hadi Wusono, 2013; Suwono et al., 2019). Misconceptions have become a barrier for students to understand the material. They can interfere with the formation of scientific concepts that underlie subsequent concepts (Ramadhani & Asiah, 2016).

Suppose biology learning is packaged with strategies that stimulate thought processes and meaningful learning activities regularly. In that case, innovative media will make students' understanding of concepts vital, and they can develop them into higher concepts. As an example of a misconception on animal classification material, students often assume that all animals that live in water are fish and animals that can fly are

birds. Educational experts find other things that cause misconceptions in students, including understanding the students themselves, teachers, textbooks, and learning methods used in learning. Students who experience misconceptions in biology can also be due to the difficulty in understanding concepts. Misconception becomes a barrier for students to understand the material and interfere with the scientific concepts that underlie subsequent concepts (Ramadhani & Asiah, 2016; Suparno, 2013).

The recapitulation of students' concept mastery results based on the multiple-choice pretest instrument with CRI obtained a mean value of 54 % for misconceptions, 34 % mean value for understanding the concepts, and 12 % mean value those who do not understand the concept. It can be seen that the percentage of misconceptions occupies the highest position compared to the percentage of understanding the concept and not understanding the concept. Some examples of misconceptions were pretest question number 2 regarding cell functions. The correct answer should be a functional unit, the smallest structural unit.

One of the efforts to minimize the number of students' misconceptions can be made using a learning model accompanied by media. According to Hasanah et al., The media will make the teaching and learning process more effective and efficient. A teacher increasing the effectiveness of his learning will experience difficulties if he does not have complete and efficient media. Likewise, students without complete media will experience learning difficulties (Bahar, 2003; Hasanah et al., 2020; Lukša et al., 2016).

In the end, if they are not corrected immediately, these misconceptions will become obstacles for students in the next learning process. Therefore, it is necessary to research to reduce misconceptions in students. To reduce

these misconceptions, it is necessary to have the right strategy. One of the strategies is the conceptual change model based on the Android-based Quran.

The concept change model is more suitable for straightening a misconception by reconstructing concepts that do not fit between the initial conception and the necessary/scientific concept (Duda et al., 2020; Handayani, 2015; Posner et al., 1982; Suparno, 2013). Based on interviews with biology subject teachers and students in one of senior high school Bandar Lampung, android is used only for looking. The purpose of the Quran values in the media is to shape knowledge in the spiritual aspect properly. Biological concepts in the media are presented simply. The integration of science and the Quran in education can produce comprehensive knowledge and analyzing process. Someone who understands the concept integrated with Quran will study and apply the knowledge that can form good spirituality.

Misconceptions in students significantly affect the understanding and reasoning abilities because misconceptions can hinder the acquisition of an understanding of biological concepts. Biology material has sub-concepts that are closely related, one of which is the reproductive system material. There are many misconceptions about the sub-concept of the reproductive system, including the process of gamete formation, ovulation, menstruation, fertilization, gestation, childbirth, and lactation. The highest misconception level is menstruation (Chaniarosi, 2014; Supriyadi et al., 2019; Surahman & Surjono, 2017; Trotskovsky & Sabag, 2015).

Misconceptions significantly affect the decrease in understanding of students' concepts and reasoning abilities (Handayani, 2015). Misconceptions can conceptualize understanding of biological concepts (Reiss & Tunnicliffe, 1999; Suwono et al., 2019) because they have

sub-concepts closely related to the system material they have. There are many misconceptions, including; gamete order process, ovulation, menstruation, fertilization, gestation, childbirth, and lactation. The highest misconception level is menstruation (Bahar, 2003; Bardini et al., 2014; Chaniarosi, 2014; Kathleen M. Fisher, 1985; Kumandaş et al., 2019; Mataka & Taibu, 2020; Vebrianto et al., 2016).

This research was conducted to improve students' conceptual understanding of changes in biology subjects and reduce misconceptions maximally when studying biology. This research has a renewal value because it includes a learning model that focuses on changing concepts with up-to-date learning media and related to the Quran as an essential value for all knowledge on earth.

## THEORETICAL SUPPORT

The conceptual change learning model is needed to rebuild misconception (Posner et al., 1982; Reiss & Tunnicliffe, 1999). The conceptual change learning model is suitable to reduce misconceptions (Mataka & Taibu, 2020) because it starts by exploring information and conceptions before students participate in classroom learning. It requires students to enhance the knowledge they already have and change, rearrange, or replace the wrong knowledge they have with new and correct knowledge (Bahar, 2003; Ozkan & Topsakal, 2020).

According to Burner's theory (Dahar, 2012; Roswati et al., 2019), when students starting to learn at school, they already have ideas formed about various material and topics, including when they are seeing, interpret, and explain the surrounding environment (Bardini et al., 2014; Pertiwi, 2012). Concept changes will occur when students are faced with an unbalanced state, namely, a mismatch between the concepts they have and the

surrounding environment. It causes conflict in their minds. If there is an imbalance, students are encouraged to find a balance (equilibrium) through accommodation. The equilibrium process will make students unify external experiences with their knowledge, and new concepts will emerge. When the students are in a balanced state, they are already at a higher intellectual level than before.

Learning that involves changing a person's concept and adding new knowledge with the knowledge they have is called the conceptual change model (Chakraborty & Hazarika, 2011; Posner et al., 1982; Subramaniam, 2014). Conceptual change models based on the constructivism paradigm help students bridge the gap between knowledge about everyday phenomena and scientifically correct concepts. The conceptual change learning model has six learning syntax, namely; 1) presentation of conceptual and contextual problems, 2) confrontation of misconceptions related to these problems, 3) confrontation of denials along with demonstration strategies, analogies, or examples of counterexamples, 4) confrontation of scientific proof of concepts and principles, 5) confrontation of material and contextual examples, 6) confrontation of questions to broaden the understanding and application of knowledge meaningfully (Bahar, 2003; Reiss & Tunnicliffe, 1999; Taber, 2013).

Mobile learning is the development of e-learning. The term mobile learning refers to handheld and mobile IT devices, namely PDAs (Personal Digital Assistants), cell phones, laptops, tablet PCs, and many others (Fitria Suci Arista, 2018; Shabrina & Kuswanto, 2018; Zulham & Sulisworo, 2017). Mobile learning is a unique learning because learners can access learning material. Mobile learning makes it easier for students to learn anytime and anywhere. This strategy makes it easier for students to master complete material competencies

faster than any other learning media (Astiningsih & Partana, 2020; Surahman & Surjono, 2017). To make learning media based on mobile learning, we need a program that supports its development and application. There are many programs or software that can be chosen to make mobile learning, Adobe Flash CS6.

The Android mobile learning media has been developed within one year of development, has been validated by nine experts in the media, material content, and language fields with very decent results (87 – 92 %) (Widad, 2019). It passed field tests in schools (90 – 93 %). It has several advantages, including design and background, so students who use it are interested in learning the material. The next advantage is that students in an offline mode can access this media. It is very appropriate to be used as a learning medium that helps students learn at home during the COVID-19 pandemic.

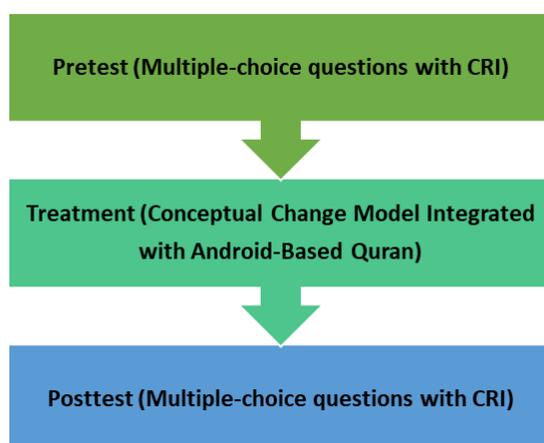
Misconception means misunderstanding. According to Novak (Suparno, 2013), the misconception is an unacceptable statement's interpretation of concepts. Brown defines misconception as a naive view and defines it as an idea incompatible with currently accepted scientific understanding. Feldstein also speaks of misconception as an error and incorrect relationship between concepts. Meanwhile, Fowler states that misconception is an inaccurate understanding of a concept, the use of wrong concepts, wrong classification of examples, chaos of different concepts, and hierarchical relationship of concepts that are not correct (Suparno, 2013).

Based on these experts, misconceptions can be expressed as a misunderstanding of a concept in interpreting the relationship between different concepts that influence one another. This mistake causes a concept to be untrue and meaningless when linked to other concepts. The misconception is one of the obstacles to constructing scientific concepts in mind (Dahar, 2012).

The material in this research was the human reproductive system. The reproductive system material is one of the materials in the 2013 curriculum. It is one of the materials taught in the even semester of MAN 1 Bandar Lampung's eleventh-grade. The material is contained in the Android mobile learning integrated with Quran. It was hoped that students understand the reproductive system material and reduce misconceptions.

## METHOD

This research was a quantitative study of quasi-experimental design. The conceptual change model using Android mobile learning was applied to three practical classes because it was difficult to find learning comparable to a model whose application requires a lot of time and effort. The researcher wanted to focus on the three classes. The researcher repeated the treatment in the other two classes as the replication class (Fraenkel, 2010; Sugiyono, 2017). The measurement of the reduction of misconceptions was carried out through pretest and posttest. Therefore, the research design used was the one-group pretest-posttest design. The research design is presented in Figure 1.



**Figure 1.** The Research Design

This research population were the eleventh-grade students of MAN 1 Bandar Lampung in the academic year of 2019/2020. The research sample was taken from 3 classes (XI IPA 1, XI IPA 2,

and XI IPA 6) consisted of 95 students. The samples were selected using random cluster sampling.

The research instrument used in this research was a misconception test accompanied by CRI (Certainty of Response Index). The research instrument used had passed the empirical test, including; validity, reliability, discrimination index, difficulty level, and distractor.

The test consisted of multiple-choice questions with five answer choices accompanied by a CRI. It can reveal which students understand the concept, students who do not understand the concept, and students who experience misconceptions about the reproductive system material. The questions were made based on the instrument grid that refers to core competencies and essential competencies.

The data analysis techniques used were prerequisite tests (normality and homogeneity tests). The tests were then followed by a one-sample t-test assisted by SPSS version 17. The hypothesis proposed in this research are:

$H_0$  : There is no effect of the conceptual change model assisted by android mobile learning media integrated with the Quran on the eleventh-grade students' misconceptions.

$H_1$  : There is an effect of the conceptual change model assisted by android mobile learning media integrated with the Quran on the eleventh-grade students' misconceptions.

## RESULT AND DISCUSSION

As one of the learning media, the conceptual change model has not been widely used in MAN 1 Bandar Lampung. The Android mobile learning media has been included with learning videos and verses of the Quran to help reduce students' misconceptions. The followings are the displays of the Android mobile learning media used in the learning process (Widad, 2019).



**Figure 2.** The Android Mobile Learning Media

During online learning, learning goes as expected, even though there were constraints regarding not enough time to cover all the material that must be presented and technical errors. Teacher control is essential. Giving scaffolding for the formative stage when giving confrontation in the form of cognitive conflict must always be done. Therefore, teachers must always be active in online discussion forums by providing written feedback on the main concepts of the

reproductive system, especially the menstrual process, the formation of eggs for unmarried women, and the use of jeans thought to make sperm unproductive. Expert confrontation is needed at this stage. Scientific studies of journals and articles are influential in building a correct understanding of the concept. Elaboration with questions and other examples presented by the teacher to students helps understand the concept.

Contradictory confrontation is provided with material exposure, examples, analogies, and videos to compare preconception assimilation. The students are guided towards current scientific views and incorporate them into their cognitive schemas (Makhrus et al., 2014). Posner and Hewson added that if conceptual changes occur, the students must initially be dissatisfied with the existing ideas (Bahar, 2003; Bardini et al., 2014; Dahar, 2012; Kathleen M. Fisher, 1985; Kumandaş et al., 2019; Posner et al., 1982). This disequilibrium condition requires students to explore their initial knowledge with new (conflicted) information. The conflict can be called a false belief. The contradictory process occurs because there is a gap between the preconception and the conception obtained through learning experiences. When students feel that the confrontation of denials is fruitful (giving something useful) (Posner et al., 1982), they will try to validate the acquisition of new expanded concepts to carry out the process scientifically.

Android mobile learning helps students expand the acquisition of new concepts. In this media, proof of concept is presented through integrated material of Quranic verses and interpretations, contextual information, and new examples to help students construct a correct understanding of the concept. For example: "Quran discusses the law of sperm banks and the opinion of the scholars that sperm stored in a sperm bank should be donated to a legitimate recipient, in this case, the wife". In this case, Shaykh Mahmud Saltut, Ahmad Al-Ribashy, and Zakaria Ahmad al-Barry allow the transfer of sperm from a husband to his wife. MUI (Indonesian Council of Ulama) justifies it because it is a form of endeavour based on religious principles. Furthermore, the teacher provides confrontation questions to expand understanding of the example; "In the view of Islam, what if the wife still

wants to carry out the process of inserting sperm cells that have been stored in the sperm bank into her womb while the husband has died for five months?". Students were asked to discuss with their group to discuss and review scientific examples and supporting scientific literature (Supriyadi et al., 2019; Widad, 2019).

The learning videos in the application, such as; male reproduction and its disorders, female reproduction and its disorders, the menstrual process, and fertilization, will be a new conception. Thus, if students are not satisfied with the old conceptions, the new conceptions can explain the events. Thus, the conceptual change process took place. This happens because in constructing new knowledge, students are assisted by cognitive conflicts in their cognitive (Hasanah et al., 2020) through discussion and question and answer interactions with peers and assisted by case solving and additional material. Interconnectivity with the verses of the Quran and the study of Islamic studies make the discussion of the concept of the reproductive system intact (Aslamiyah et al., 2017; Bahar, 2003; Pebriyanti et al., 2017; Reuven Lazarowitz and Sofia Penso, 2010; Supriyadi et al., 2019). This will also relate to character building after studying the reproductive system. It is hoped that besides reducing misconceptions, it can also teach sex education from the Quran's perspective.

Misconceptions are one of the causes of not achieving optimal learning outcomes. Therefore, misconceptions cannot be ignored. If misconceptions in students are not reduced immediately, it will disrupt the next material's learning process. Misconception reduction tests in the form of pretest and posttest, which are equipped with CRI, were given at the beginning and end of the lesson. The test data was the primary data in the study. The test consisted of 50 items with CRI. The questions were mapped for the non-

equivalent pretest and posttest, each of which consisted of 25 questions.

The students' concept mastery in the three replication classes was known from comparing the percentage of posttests compared to the pretest

percentage. Meanwhile, the percentage of students who understood the concept in the posttest increased compared to the pretest. The following figures are the percentage of pretest and posttest.

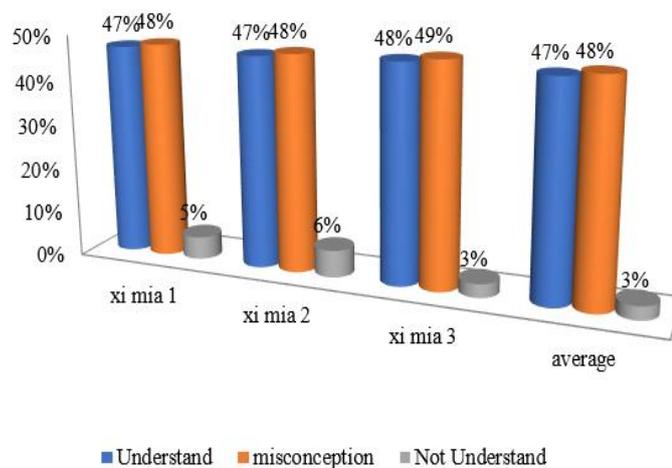


Figure 3. The Percentage of Understanding the Concept in Pretest

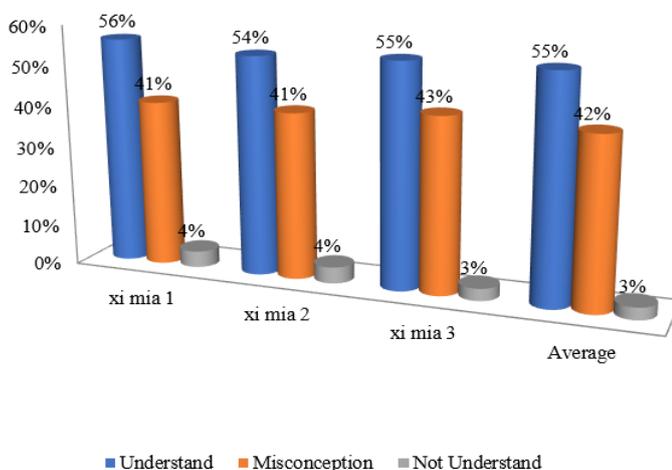


Figure 4. The Percentage of Understanding the Concept in Posttest

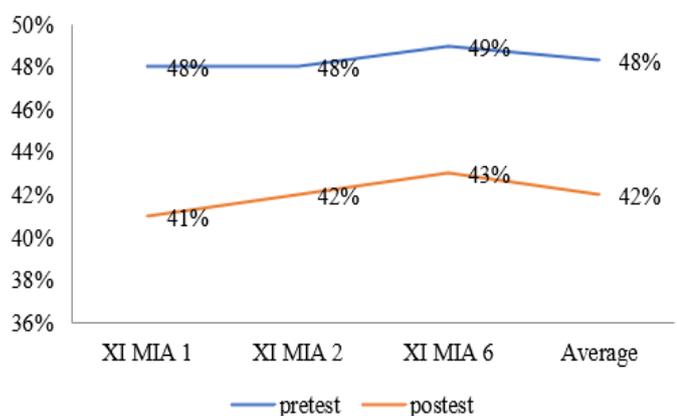
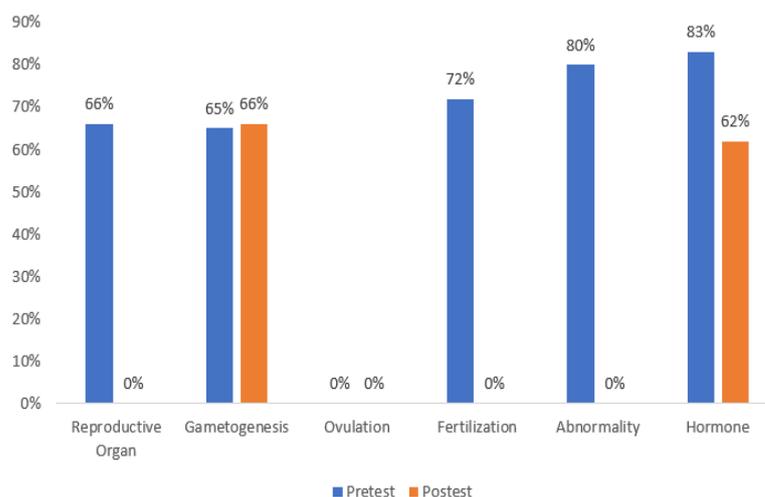


Figure 5. The Comparison of the Misconceptions Reduction of the Three Classes

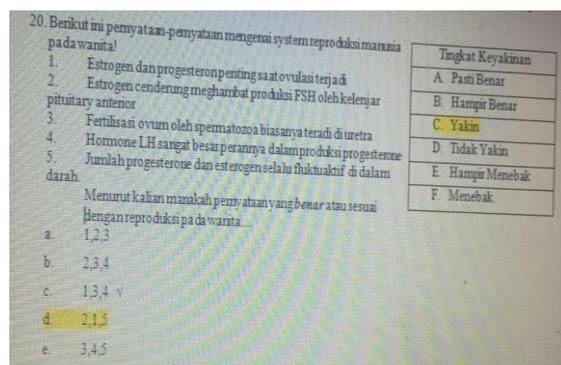


**Figure 6.** Misconception Reduction of Each Material Indicator

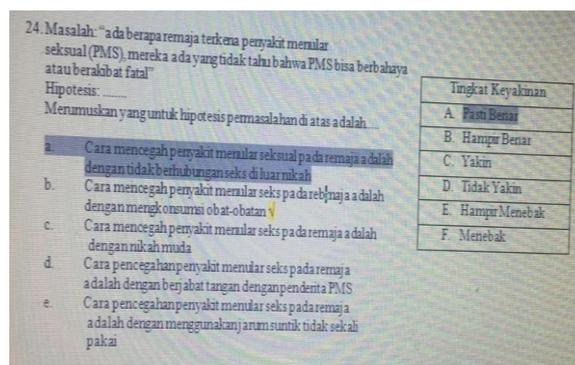
Figures 3 and 4 show an increase in the percentage of understanding the concept. There was a decrease in the percentage of misconceptions and not understanding the concept. Figure 5 shows that there is a difference of 6 % reduction of misconceptions.

Based on Figure 6, before the learning implementation, the misconceptions' percentage was 66 %. Furthermore, after being given treatment using Conceptual Change Learning Media assisted by Android mobile learning integrated with Quran, there was a decrease in students' misconceptions on each indicator. The decreases were in the reproductive organs' indicator in breastfeeding with no misconception (0 %). In explaining sex cell formation (gametogenesis), there was an increase in the percentage (66 %). In the indicators of linking the ovulation process, the

menstrual cycle, the fertilization process, gestation, and childbirth, there were no misconceptions or 0 %. In the diseases of the reproductive system, there were also no misconceptions. On the indicator of gathering information on hormones that affect the reproductive system, there was a decrease in the percentage of misconceptions by 62 %. The average percentage decrease of students with misconceptions was 21 %. Also, there was a difference in the percentage of the number of students who experienced misconceptions by 40 % between before and after using the Conceptual Change learning model assisted by the Android mobile learning integrated with the Quran. The CRI test questions were in the form of multiple-choice using the Likert scale. The results of students' answers to the CRI test questions contained misconceptions.



(a)



(b)

**Figure 7.** Respondent Answers Containing Misconceptions

The reduction of students' misconceptions was calculated by calculating the value of the proportion (P) with the difference in the number of students with misconceptions at pretest and posttest divided by the number of students with misconceptions at pretest. Therefore, for question number 20 (Figure 7a), 88 students had misconceptions at the pretest, and there were 20 students with misconceptions at posttest. Thus, the reduction level was 0.77 (high category). It means that reducing students' misconceptions for indicators of gathering information on hormones that affect the reproductive system has decreased in a high category. Likewise, for question number 24 in Figure 7b, there were 94 students with misconceptions at pretest for indicators of analyzing the process of fertilization, gestation, and childbirth. In the posttest, none of the students had misconceptions. So it was known that the reduction level was in the high category. It can be concluded that the students' misconceptions had been decreased.

Mobile learning media have many benefits, including easy access and easy to carry everywhere. The mobile learning media contains system material that is integrated with verses of the Quran (Bahar, 2003; Duda et al., 2020; Grospietsch & Mayer, 2018; Hasanah et al., 2020; Kumandaş et al., 2019; Supriyadi et al., 2019; Surahman & Surjono, 2017). The mobile learning media is equipped with evaluation questions to practice independent questions. It also has an animal system practicum guide. Besides, there is also the latest information about the latest cases to add insight to students. In this case, the discussions between students are also completed to review and provide solutions to the cases previously described. Mobile learning media is also equipped with instructional videos on system material to clarify the material presented. Also, the advantages in terms

of design and application background are very diverse. Students who use it are interested in learning the material. The next advantage is that students in offline mode can access this mobile learning media (Bahar, 2003; Bardini et al., 2014; Duda et al., 2020; Grospietsch & Mayer, 2018; Kathleen M. Fisher, 1985; Reiss & Tunnicliffe, 1999; Vebrianto et al., 2016; Widad, 2019; Zulham & Sulisworo, 2017).

The normality test was performed using the Kolmogorov-Smirnov formula assisted by SPSS ver.17 with a significant value of 5 %. If  $\text{sig} > \alpha$ , then the data is usually distributed. If the significant is  $< \alpha$ , the data is not normally distributed.

**Table 1.** The Results of the Normality Test

Variables	N	Sig	Criteria
Pretest Misconception XI MIA 1	95	0.20	Normal
Posttest Misconception XI MIA 1	95	0.13	Normal
Pretest Misconception XI MIA 2	95	0.12	Normal
Posttest Misconception XI MIA 2	95	0.20	Normal
Pretest Misconception XI MIA 6	95	0.20	Normal

Based on Table 1, the pretest and posttest for each class were  $> 0.05$ . It can be concluded that the average pretest and posttest from the three research classes were normally distributed. The homogeneity test on the pretest and posttest values is displayed in Table 3.

**Table 2.** The Results of the Homogeneity Test

Homogeneity Test of Variance			
Levene Statistic	Df1	Df2	Sig.
0.183	2	147	0.833

The researchers tested the hypothesis using the one-sample t-test using the SPSS Version 17.0. This test was conducted to answer the research hypothesis (Fraenkel, 2010). The replication classes were used to minimize data bias because there was no control class as a comparison. By looking at the

significant level (t-value), the level of misconception reduction was 0.71. The value of 0.71 was obtained from the moderate criteria for the reduction of misconceptions. Table 3 contains the results of the t-test.

**Table 3.** The Results of the One-Sample T-Test

One-Sample T-Test					
Test Value = 0.71					
95% Confidence Interval of the Difference					
	t	df	Sig. (2-tailed)	Lower	Upper
Pretest1	-4.040	24	.000	-.3427	-.1109
Posttest1	-15.430	24	.000	-.3428	-.2620
Pretest2	-4.715	24	.000	-.3324	-.1300
Posttest2	-11.871	24	.000	-.3461	-.2435
Pretest3	-4.611	24	.000	-.3173	-.1211
Posttest3	-13.580	24	.000	-.3285	-.2419

From the test results, the sig. (t-tailed)  $0.000 \leq 0.05$ , then  $H_1$  was accepted. There was an effect of the conceptual change model using the integrated Quran Android mobile learning media to reduce misconceptions within moderate criteria (0.71).

All confrontations that involve cognitive conflict reduced misconceptions significantly. There are two essential components in conceptual change, namely the condition of students and conceptual ecology, providing conceptual changes that help reduce misconceptions. After the confrontation, the rebuttal is given with material exposure, examples, analogies, and videos to compare preconception assimilation. This stage aims to be guided towards current scientific views and incorporate them into their cognitive schemas. Posner and Hewson added that if the conceptual change occurs, the student must initially feel dissatisfied with the existing ideas (Dahar, 2012). This disequilibrium condition requires students to explore their initial knowledge with new (conflicted) information. When a cognitive conflict occurs, that is represented in an idea. It can be called a

false belief. The contradictory process occurs because there is a gap between preconception and conception obtained through learning experiences. When learners feel the confrontation disclaimer fruitful (usability), then they will attempt to validate the acquisition of a new concept (Dahar, 2012; Posner et al., 1982). Misunderstanding is the notion of inconsistency with scientific ideas or the interpretation of inappropriate conceptual relationships. Misconceptions also occur in students because they do not fully understand the concept and relate one other concept to partial understanding to make wrong conclusions.

The misconception is a severe problem faced by high schools. Through the application of the inquiry learning model, there is a moderate reduction in students' misconceptions about material thermochemistry by 47.53 % after the learning model is applied (Bardini et al., 2014; E. Trotskovsky and N. Sabag, 2015; Grospietsch & Mayer, 2018; Kathleen M. Fisher, 1985; Kurniasih & Haka, 2017; Lukša et al., 2016; Maria Erna, 2020; Ozkan & Topsakal, 2020; Suwono et al., 2019).

Based on a review of the results of research and discussion, it can be revealed that research using the conceptual change learning model assisted by Android mobile learning media, which is the result of innovation from previous research, has many advantages, including providing opportunities for students to express thoughts, opinions, his understanding of a concept before formal learning. Thus, students are involved in planning. It provides students opportunities to care about initial conceptions (especially early conceptions that are not following scientific concepts). Thus, students are expected to be aware of their mistakes and be willing to correct these mistakes. It can create a lively classroom atmosphere because students are required to discuss with friends and teachers actively. The students are allowed to discover

knowledge through the initial conception. Teachers must be creative because they have to find alternatives to straighten students' initial conceptions that are not in line with scientific concepts. This learning model is very feasible to be applied in all materials that require reducing misconceptions.

## CONCLUSION

Based on the results of the research and discussion, it can be concluded that the conceptual change learning model assisted by Android mobile learning media integrated with the Quran influence students' misconceptions within moderate criteria (0.71). Factors that can lead to misconceptions in this research are inefficient learning. The system often prohibits access. When the disequilibrium occurs, the teacher cannot immediately apply scaffolding or scientific confrontation. Furthermore, language usage in everyday life affects students' preconception and concept analysis. Understanding preconceptions through social media and internet literature cannot be proven scientifically. Supporting material or books do not explain the concept of the system in detail.

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