

# Use of Learning Cycle 5E in Revealing the PAI Conceptual Abilities of Class XI Students at SMA Negeri 1 Makassar

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Abstract. There appears to be a gap between students' understanding and the use of student-centered learning models in the classroom. This research aims to outline the effect of using 5E learning cycle in uncovering the conceptual abilities of the eleventh-grade PAI students at SMAN 1 Makassar. This research is a qualitative study with a case study approach. The key instrument in this study is the researcher herself, using interview guidelines, observations, and documentation. The research was conducted at SMAN 1 Makassar, with a sample of 24 eleventh-grade students from IPS 1 class. The data sources used in this research are primary and secondary data. The data processing and analysis techniques involve data reduction, presentation, verification, and triangulation. The research results show that the effect of using 5E learning cycle in uncovering the conceptual abilities of the eleventh-grade PAI students at SMA Negeri 1 Makassar was evident in three aspects cognitive based on the results of the students basic competency scores which illustrates that the students' scores after using the 5E learning cycle are the students values. is increasing and no one gets a score below the KKM. However, there were some students who did not experience an increase, but more students who experienced an increase so that by using the 5E learning cycle, it shows that the learning process of Islamic religious education using the 5E learning cycle learning model has a positive impact on the acquisition and quality of grades on the cognitive aspects of students. Affective, observed through improved behavior and positive social interactions among students, as well as their enthusiasm in worship; and psychomotor, observed through the achievement of knowledge, attitude formation, and the development of students potential and skills.

Keywords: Conceptual abilities, learning cycle 5E, PAI.

# 1 Introduction

Education is an important factor in determining the future and survival of a nation [1]–[4]. The issue of education is a serious concern for the Indonesian people considering the important role of education in the nation's progress, therefore the government is trying to make improvements and reforms gradually and continuously to form an education system [5]–[9].

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Efforts to improve the quality of education must create a meaningful learning atmosphere [10]–[15]. This is confirmed in Law of the Republic of Indonesia Number 20 of 2003 concerning the national education system article 1 paragraph 1 which states that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and skills that are given to oneself, society and the nation.

In relation to education, the government has set its own educational goals. The aims of Indonesian education as stated in the Republic of Indonesia Law of 2003 concerning the National Education system, are: education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves, society, nation and state [16].

In accordance with the contents of the 2003 Republic of Indonesia Constitution, through education students will develop their potential both from cognitive, affective and psychomotor aspects. Increasing the quality of human resources through education is in accordance with Islamic teachings that with education or knowledge human levels will be raised, Allah SWT says in QS Al-Mujadilah/58: 11.

It means:

O you who believe, when it is said to you "Make room in the assemblies," make room, surely Allah will make room for you. When it is said, "Stand up," (you) stand up. Allah will surely elevate those who believe among you and those who have been given knowledge to several degrees. Allah is careful about what you do

Based on the verse above, seeking knowledge through education is very important and important because it will receive privileges from Allah SWT. Demanding knowledge through education, especially formal education, is technically operational through learning. Learning is a teaching and learning process carried out by teachers with students for certain purposes, one of the subjects at school is Islamic Religious Education.

Because education is an activity that is conscious of purpose [17]. Goals are one of the important things in educational activities, because they will not provide direction as to where to go, but also provide definite provisions in choosing material (content), methods, and evaluation tools in the activities carried out. Interest is the main factor in developing students' potential and has a huge influence on activities and success in learning [18]–[21].

However, it appears that there are mental and cultural attitudes in society that are classified as inhibiting creativity, namely that society views creativity as a trait inherited by people who are exceptionally talented, creativity is assumed to be something that is either possessed or not possessed and not much can be done through education to influence it. Likewise, the development of creativity in learning in formal education is still a cause for concern. Education in schools is more oriented towards developing intelligence than creativity.

There appears to be a gap between students' understanding and the use of studentcentered learning models in the classroom. Therefore, a solution is needed to deal with this problem. Students' conceptual abilities can be trained during the learning process, so a learning process is needed that can support students in conceptual understanding. The learning process can be carried out by applying a learning model that supports students to think creatively, one of which is by using the 5E learning cycle learning model.

The 5E learning cycle learning model is a type of learning that has five learning stages, namely (1) introductory stage (engage), (2) exploration stage (exploration), (3) explanation stage (explanation), (4) concept application stage (elaboration), and (5) evaluation stage. The 5E learning cycle learning model is worth prioritizing because it is in accordance with Peaget's learning theory, a learning theory based on constructivism. Students learn actively, students study material and solve problems meaningfully by working and thinking.

This research aims to determine the use of the 5E learning cycle in revealing students' conceptual abilities in Islamic religious education subjects as well as the impact of using the 5E learning cycle in Islamic religious education subjects. This research is different from previous research regarding the use of the 5E learning cycle which can be applied to PAI subjects, in that generally these subjects are presented using the lecture method only, but this learning model with various variations of learning methods can also be applied to PAI subjects. so that it is easier for students to understand the material presented by the teacher. More precisely, this learning model can be applied to PAI subjects, especially in the Aqidah Akhlak material group

# 2 Methodology

The type of research used in this research is qualitative research. This research aims to describe or illustrate the phenomena that occur from "the use of the 5E learning cycle in revealing the conceptual abilities of class XI students at SMA Negeri 1 Makassar".

Qualitative descriptive research is generally carried out in the form of case studies. This research focuses on a particular unit of various phenomena that occur in people's lives. The characteristics of this research allow this study to be very in-depth and penetrate or dig further into the research targets. Qualitative research is carried out with characteristics that describe an actual situation or fact, but the report made is not just a report of an event without a scientific interpretation [22].

The research will be carried out at SMA Negeri 1 Makassar. The researcher chose this location. The research location in this study was SMA Negeri 1 Makassar. The reason the researcher took this place was because of several considerations, including the implementation of the 5E learning cycle so that it was easy to get data, it did not cost too much money, and the researcher already knew each other with the principal, teachers, students and all elements in the school. The class studied was Class XI IPS 1 with a total of 24 students.

The data sources in this research focused on PAI subject teachers, deputy principals for curriculum and five students in class XI IPS 1 SMA Negeri 1 Makassar. Secondary data sources obtained or collected by researchers from various existing sources. The data collection in this research was carried out in the following way. In

this preparation stage, the researcher prepares everything related to this research, both regarding the preparation of the draft manuscript, the instruments/tools that will be used and the completeness of the correspondence as requirements that will be used in this research. This implementation stage, where the researcher will go through the following stages. The researcher collects data by means of library research, namely the researcher reads literature or books related to the research focus. Researchers go directly into the field in order to obtain the desired data or what is called field research.

This research uses instruments, among others. This Observation Guide relates to the situation and conditions at SMA Negeri 1 Makassar as attached in the attachments, interviews and documentation. Carrying out data analysis in this research requires several stages and steps, namely data reduction, data presentation, and drawing conclusions. Testing the validity of the data in this study used triangulation techniques. Triangulation can be interpreted as checking data from various sources in various ways and at various times.

#### 3 Results and Discussion

# 3.1 Understanding the 5E Learning cycle

Constructivism is a theory that is familiar to the world of education because it is a theory that gives students breadth of thinking and requires them to be able to practice this theory in their daily lives. The learning process is shaped into a process of building knowledge, not just receiving knowledge. So that in the learning process in constructivism theory, students are active in discovering and building their own knowledge and educators only act as facilitators.

Constructivist learning is a PAI learning theory that tries to focus on teaching that is top down, not bottom up. This means that students start with a complex problem to solve, then discover the basic skills needed. Constructivist learning aims to create new understanding by encouraging creative and productive learning in real contexts and then demonstrating it. This is in line with the learning cycle learning model which focuses on students as subjects in learning.

This learning model is a learning model with a constructivist approach. The constructivism approach is a philosophy of knowledge that emphasizes that our knowledge is our own construction (formation). Apart from that, the Learning Cycle 5E learning model is a student-centered learning model. This means that students are given the opportunity to build and optimize their own knowledge. The constructivist theoretical approach basically emphasizes the importance of students constructing their own knowledge through involvement in the teaching and learning process. So that the teaching and learning process is more student centered rather than teacher centered.

According to Santoso, the learning cycle was first introduced by Robert Karplus in the Science Curriculum Improvement Study (SCIS). Learning Cycle is an organization that makes it easy to master new concepts and to reorganize students' knowledge.

The Learning Cycle consists of several stages, namely involve, explore, explain, elaboration and evaluation).

The use of the 5E learning cycle in Islamic religious education learning is a learning activity that has been planned by the teacher through a learning program plan in accordance with the 5E learning cycle syntax. The learning steps are, engagement, exploration, explanation, elaboration, and evaluation. The first step of engagement begins with arousing students' interest and curiosity about the topic being discussed. The second step is exploration, which is marked by the emergence of questions that direct the development of students' reasoning power. The third step is an explanation that begins with students presenting the results of their exploration. The fourth step is application of concepts, which is characterized by understanding new concepts for solving problems in students' lives. The final step is to evaluate knowledge and understanding of concepts in a new context.

One way students' success in learning can be seen from the suitability of the learning model applied by the teacher. One of the models that has a constructivist understanding is the learning cycle, which is a model centered on students. This learning allows students to observe but also provide conclusions about the concepts being studied. Each stage of learning reflects students' ability to construct thoughts and develop understanding of a concept. Through learning using the Learning Cycle, interest and learning outcomes can be increased. This goal cannot be separated from the ease of absorbing various information related to learning. In general, teachers are the only source of learning and will change their role to become facilitators in building knowledge through the 5 E stages.

# 3.2 5E Learning Cycle

The learning cycle learning model or learning cycle is a series of activity stages (phases) which are organized in such a way that students can master the competencies that must be achieved in learning by playing an active role. The 5E learning cycle (Engagement, Exploration, Explanation, Elaboration and Evaluation) is a development of the learning cycle model of exploration, concept introduction and concept application. The 5E learning cycle model is a learning model oriented to the philosophy of constructivism.

According to Sadia, the learning stages of the 5E learning cycle are as follows:

# Engegement.

Preparing students to be conditioned in the next learning process by exploring students' initial knowledge and misconceptions experienced by students about the concept that is the learning target. In this phase, students' interest and curiosity about the topic to be discussed is attempted to be aroused. In this phase, students are invited to formulate predictions about the phenomena that will be discussed and proven in the exploration stage.

# **Exploration**

At this stage, students are given the opportunity to work together in small groups (4-5 people) without direct learning from the teacher to test the predictions that have been formulated in the engagement phase, by carrying out practical activities or field studies or through literature studies. Students are given the opportunity to inquire by in-

volving all their five senses to interact with the environment and the objects they are studying. Learning activities can take the form of practical activities, analyzing articles, discussing natural phenomena, observing natural phenomena or social behavior. From the learning activities carried out, it is expected that an imbalance will arise in the mental structure of students, which is characterized by the emergence of various questions that lead to the development of high-level reasoning abilities. These questions are a sign or indicator of students' readiness to learn in the next phase.

# Explanation.

At the explanation stage, students present the results of their exploration in class discussions. The teacher's task is to encourage students to explain scientific concepts and principles in their own language. To be more convincing, teachers need to ask for evidence and clarification of their explanations. The teacher's main task in this phase is as a facilitator and learning mediator. It is hoped that in this phase students will have discovered the terms of the concepts being studied. In this explanation phase, it is hoped that there will be a balance between the new concepts learned and the students' cognitive structure.

#### Elaboration.

At the elaboration stage, students are involved in discussions and new things will emerge related to the subject matter that is the learning target. The understanding that has been built is then developed in class discussions. In class discussions, there may be differences in conceptions between one group and another. These differences will actually increase their insight and understanding of a scientific concept and will develop students' critical thinking skills. In this phase the teacher corrects students' misconceptions towards a scientific conception. Students are invited to apply their new conceptual understanding through problem-solving activities to real problems in students' lives. The application of concepts in this phase is expected to increase students' understanding of the concepts being studied.

#### Evaluation.

At this stage, an evaluation is carried out on the effectiveness of the previous phases and also an evaluation of knowledge, understanding of concepts, or mastery of competencies through problem solving activities in a new context or new situation. It is hoped that this evaluation stage can encourage students to further improve their understanding, skills and high-level reasoning abilities. Apart from that, at this evaluation stage students are expected to be able to develop reflective thinking skills and be able to carry out self-evaluation.

The above stages can be used in a cycle form as below:

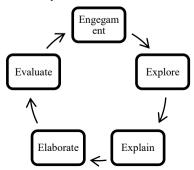


Fig. 1. E Learning Cycle Chart (Learning Cycle 5E)

#### 3.3 Concept of Islamic Religious Education

According to Sagala, a concept is the fruit of thought of a person or group of people which is expressed in a definition so as to produce a knowledge product which includes the legal principles of a theory, the concept is obtained from facts, events and experience through generalization and abstract thinking.

This opinion is in line with Mariana and Praginda who state that a concept is an idea or idea that is generalized from relevant experience. Based on this opinion, it can be understood that the meaning of a concept is a collection of interrelated ideas regarding certain facts or events. So it can be interpreted that concept mastery is an individual's ability to connect these facts so that they become a collection of related ideas about scientific phenomena.

There are quite a lot of concepts in Islamic Religious Education learning and they are interconnected between one concept and another, so it requires good conceptual mastery of a subject so that you can master concepts for higher or more complex subjects. This is in accordance with Slameto's opinion "Each concept does not stand, but each concept is related to other concepts, all these concepts together form a network of knowledge in the human head". To find out the extent of students' mastery of concepts and success, evaluation is needed.

According to Santrock, concepts are ideas that can be used to enable someone to group or classify objects, events and characteristics in general. Concepts can be learned by seeing, hearing, discussing, and thinking about various examples to be able to understand a student's lesson first, recognize and understand the concept [23].

Evaluation of concept mastery is very important to measure the extent of students' concept mastery of a subject. This is intended so that learning does not only produce students who only memorize the subject matter, but also master the concepts in the subject matter. Evaluation of concept mastery can be done using a concept mastery test.

Students can be said to have mastered a learning concept if the student can answer correctly at least 75% of the tests given. The test contains 6 categories of cognitive domains as expressed by Sagala, namely: "The main titles of the cognitive field include knowledge and skills and intellectual abilities, the ability to restate knowledge in new words, application (understanding better to be able to use it), analysis (understanding to be able to separate into parts and make connections between ideas explicit), synthesis (the ability to produce an operational plan), evaluation (being able to assess materials for a particular purpose) and creating (the ability to combine several elements into a unified form)".

This was also expressed by Merrill that "learning has 2 dimensions, namely: 1) Content which consists of facts, concepts, procedures and principles, 2) Performance consists of remembering, using and generalizing.

Based on the opinion above, it can be seen that students' mastery of concepts must go through the following categories:

#### - Remember

- 1. The fact of students' ability to recall one or more simple facts.
- 2. The concept of students' ability to prove that they understand simple relationships between factors or concepts. Concepts symbols, events and objects that have the same characteristics and are indicated by the same name. According to Winkel in Suranti, concept mastery is an understanding by using concepts, rules and principles. Mastery of concepts is one aspect of measuring the results of learning. In this research, mastery of the concept in question is cognitive ability. The categories in the concept mastery dimension include, C1 (remembering), C2 (understanding), C3 (applying), C4 (analyzing), C5 (evaluate), and C6 (create).

Cognitive processes in understanding a child's world use schemas (cognitive frameworks or frames of reference). A schema is a concept or framework that exists in an individual's mind that is used to organize and interpret information. John W. Santrock has four steps that must be taken, namely finding and structuring the problem, developing a good problem solving strategy, evaluating solutions, and all the time thinking about and redefining the problem and the solution. Santrock Educational Psychology emphasizes the application of theory to real practice in the classroom.

**3.** Procedures for students' abilities to solve problems or achieve goals Principles of students' ability to explain or predict why something happens in a certain way.

#### Performance

- Considering students' ability to search for certain information or remember certain information.
- 2. Using students' abilities to retrieve information for specific cases.
- 3. Generalize students' ability to use information to obtain new abstractions (concepts, principles, etc.).

The concept in question is how students are able to recognize and recall material, understand, remember, and be able to use several elements to form a unified concept and materials that have been presented by the teacher as a result of the teaching and learning process carried out. Because learning outcomes are a benchmark for the success of a process carried out in learning, of course in this case it is adjusted to the goals to be achieved.

# 3.4 Use of Learning Cycle 5E

Using the 5E Learning Cycle in Islamic Religious Education Learning, the stages of using the 5E learning cycle are as follows:

# - Engagement

This is the initial stage of the learning cycle, at this stage the teacher arouses students' interest in learning and initial understanding of the material to be presented. Before

entering the learning material, the teacher first arouses students' interest in learning. Arouses students' interest in learning by relating the shaja'ah material to students' daily lives as found in a hadith narrated by the Muslim Prophet Muhammad.

It means: Say the truth even if it's bitter. (H.R. Ahmad).

Explaining in his words, say the truth, even if it is bitter, Islam does not like weak/cowardly people. Weak/cowardly people usually don't have the courage to defend their lives so they easily give up hope. These fears include fear of being ostracized from their environment. Fear of having different attitudes from many people or fear of standing up for truth and justice. Courage in Islamic teachings is called Syaja'ah. In Islamic religious learning, at this stage the teacher uses the lecture method to arouse students' interest in learning by conveying the hadith which are related to students' daily lives according to what students experience in their respective environments.

#### Exploration

After students have aroused their interest in learning in the first stage, the next step is the exploration stage. At this stage the teacher presents the material that will be discussed, namely about syaja'ah. Next, students are divided into 4 groups to make maximum use of their five senses in interacting with the environment through literature review activities and the experiences of each student, and the teacher provides opportunities to collaborate or discuss actively in groups and explore the knowledge gained from the material provided. has been determined to search as deeply as possible about the syaja'ah that occurred so as to produce a common conclusion. The material explained is about the importance of having syaja'ah characteristics.

#### Explanation

At this stage the teacher organizes the discussion, encouraging and asking students to present the results of their respective group discussions to explain the types of honesty that exist in the surrounding environment, both at home and at school or in the community, discussing the relationship between behavior resulting from honest behavior and setting an example. honest behavior towards God, towards others and towards oneself. The aim is to see whether students really understand syaja'ah and critically listen to each other's explanations so that learning discussions occur between students, teachers and their classmates.

#### Elaboration

At this stage, the teacher's role is to straighten out students' understanding of the results of discussions that have been carried out to help students build a broader understanding of the material being discussed. Students expand the concepts they have learned, can explain their application, and add positive examples in everyday life.

At this stage, the role of the teacher is not only to straighten out students' understanding if something is incorrect, but the role of the teacher is also to provide moral teaching that is in accordance with the scope of Islamic religious education,

namely moral teaching in the form of teaching that leads to the formation of the soul and the individual's way of behaving in life. This teaching means having the aim that those taught have noble character, and the experience gained during the learning process on this material can be applied in everyday life. So this learning is not just material that students must understand, but students must also apply it in their daily lives in order to form good morals as creatures created by Allah SWT.

#### Evaluation

At this stage the teacher observes and assesses the students' ability to understand the types of honesty that exist in the surrounding environment, both at home and at school or in the community. What has been discussed as well as gaining understanding from new information received as knowledge experience or students' understanding of the experiences gained in applying an honest attitude in everyday life.

# 3.5 The impact of using the 5E Learning Cycle in revealing students' conceptual abilities in PAI learning at SMA Negeri 1 Makassar.

The use of the 5E learning cycle in Islamic religious education learning has a good impact on students' conceptual understanding. As with any learning, of course, the hope is that it will have an impact on cognitive aspects, affective aspects and psychomotor aspects, as follows:

# - Cognitive Aspect

The cognitive aspect is an aspect that can be seen from the value obtained by students in the learning process.

Based on the results of the students' basic competency scores, it shows that after using the 5E learning cycle, the students' scores increased and no one got a score below the KKM in basic competencies in syaja'ah material. However, there are some students who do not experience improvement, but more students experience improvement so that by using the 5E learning cycle. This shows that the Islamic religious education learning process using the 5E learning cycle learning model has a positive impact on the acquisition and quality of grades in the cognitive aspects of students.

# Affective Aspect

The affective aspect is everything related to the feelings and attitudes of an individual which includes behavioral traits such as feelings, interests, emotional attitudes and values. There are many things that educators or teachers do to achieve learning that can shape student behavior. One of the things that teachers at SMA Negeri 1 Makassar do, especially in PAI learning, is to use the 5E learning cycle method.

# - Pcychomotor Aspect

The psychomotor aspect places more emphasis on the practice or skills possessed by students. The psychomotor domain is a domain related to skills or the ability to act

after a person receives certain learning experiences. Psychomotor learning outcomes were put forward by Simpson (1956) who stated that psychomotor learning outcomes appear in the form of individual skills and ability to act. These psychomotor learning outcomes are actually a continuation of cognitive learning outcomes (understanding something) and affective learning outcomes (which only appear in the form of behavioral tendencies). Cognitive learning outcomes and affective learning outcomes will become psychomotor learning outcomes if students have demonstrated certain behavior or actions in accordance with the meaning contained in the cognitive domain and affective domain. So students' psychomotor skills are a manifestation of insight, knowledge and awareness as well as mental attitudes.

#### 4 Conclusion

The conclusion of this research is that the use of the 5E learning cycle model proves to be effective in enhancing the conceptual understanding and abilities of eleventh-grade students in the subject of Islamic religious education at SMAN 1 Makassar. The study results demonstrate a positive impact on the cognitive aspect, as evidenced by a significant improvement in students' basic competency scores, with no scores falling below the minimum passing grade (KKM). While a minority of students did not experience improvement, the majority showed increased comprehension of the concepts. Moreover, the utilization of the 5E learning cycle model also positively influenced the affective aspect, with improved behavior, positive social interactions among students, and heightened enthusiasm for worship. The psychomotor aspect was also evident through knowledge attainment, attitude formation, and the development of students' potential and skills. Consequently, the 5E learning cycle model has proven to have a positive impact on the quality of learning and academic achievements of students in the context of Islamic religious education.

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