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Building Students' Critical Thinking Skills Through the Development of Teaching Materials Based on Integration, Interconnection, and Research Based Learning

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ABSTRACT

Critical thinking has a critical role for every individual in facing global challenges. However, only some can develop critical thinking skills. This qualitative research with a phenomenological approach aims to explore the experience of lecturers of the Postgraduate Islamic Education Study Program at IAIN Curup in developing students' critical thinking skills. The research informants amounted to 8 people. Data were collected using semi-structured interviews, then analyzed using the Miles and Huberman analysis model. The data validity technique used is source triangulation and interview extension. The results showed that the development of integration-based and interconnection-based teaching materials to develop students' critical thinking skills was carried out through four levels: philosophical, material, methodological, and strategy. In contrast, research-based learning is carried out by giving mini-research assignments to students. The results of the mini-research were analyzed from various perspectives and presented for academic accountability.

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INTRODUCTION

Lately, the development of critical thinking skills has been discussed by many people, both researchers, and academics. Developing critical thinking skills is in line with the demands of the world of work in the current global era (Mardhiyah et al., 2021, p. 21; Sumantri, 2019). Some of the demands of the world of work include the ability to think critically and creatively and problem-solving skills (Puig et al., 2020; Putri et al., 2020; Sulistyanto et al., 2021). Therefore, the ability to think critically is essential for everyone to have in order to compete in facing current and future global challenges (Priawasana & Waris, 2019).

Critical thinking ability is essentially an organized mental process and has a role in decision-making to solve a problem (Lukitasari et al., 2019; Warsah et al., 2021). Critical thinking ability is closely related to the ability to analyze, identify, interpret and evaluate (Bezanilla et al., 2019).

Critical thinking skills are reasoning, and reflective thinking focuses on deciding what things are believed to be done (Wulandari, 2018). Bradley & Price, (2021) explains that critical thinking is an attitude carried out intensely and deeply on various problems and various things within the range of one's experience as well as one's ability to understand and apply various methods of reasoning logically and systematically. Critical thinking requires hard work in analyzing assumptions, knowledge, and beliefs based on concrete evidence and predicting possible consequences (Latif et al., 2019). Another opinion explains that critical thinking skills are a set of skills and tendencies that allow a person to solve a problem logically by utilizing various available sources (Fahmi et al., 2019; Hursen, 2021).

There are at least four indicators that a person is said to have critical thinking skills. First, have analytical skills. Analyzing skills is the ability to describe the structure into components in detail (Djamas & Tinedi, 2021). The second is synthesis skills, combining separate parts to produce something new (Darmaji et al., 2021). Third, have the skills to recognize and solve problems. Fourth, it can conclude quickly and precisely (Zainudin & Pambudi, 2019).

Developing critical thinking skills is one of the goals of education (Annisa & Fitria, 2021), including in higher education. Therefore, lecturers must be able to create learning that can encourage students to train and develop critical thinking skills. With this ability, students can find various learning information independently, actively, and creatively to develop cognitive structures independently (Firdaus, 2020; Nurjaman, 2021; Roviati & Widodo, 2019). Efforts to develop critical thinking skills can be made in various ways and strategies. Educators have different ways and strategies for developing critical thinking skills.

Previous studies show that educators can use several ways and strategies to develop critical thinking skills. The development of critical thinking can be done by developing teaching materials (Annisa & Fitria, 2021), through organized learning experiences (Marlina, 2020), the use of integrated learning media (Nadeak et al., 2020; Rostyanta et al., 2020). The development of student's critical thinking skills can also be done using approaches, media, and learning resources that follow students' developmental characteristics and needs (Hidayah & Ulfah, 2020). The results of previous research also suggest that developing critical thinking can be done using various learning models. Some learning models that can be used to develop critical thinking skills include the Scientific Hybrid Learning Model (Hariadi et al., 2018), problem-based learning (Koroh & Ly, 2020; Satwika et al., 2018), learning methods clinic (Patmawati et al., 2018), problem-based learning model (Suparya, 2020), and guided inquiry learning model (Fitriyah et al., 2021).

Based on previous studies, no specific studies have been found that discuss the development of students' critical thinking skills through the development of integrated teaching materials, interconnections, and research-based learning. This study explores the development of teaching materials for integration, interconnection, and research-based learning conducted by lecturers of the Postgraduate Islamic Education Study Program of IAIN to develop students' critical thinking skills. With this research, it is hoped that it can contribute ideas to teachers and lecturers, especially in developing critical thinking skills in students and students.

RESEARCH METHODOLOGY

This is qualitative research with a phenomenological approach (Creswell, 2019). The phenomenological approach is a qualitative research approach that reveals the experiences of a person or group of people in natural social settings (Creswell, 2015). The research informants comprised 8 lecturers from the Postgraduate Islamic Religious Education Study Program at IAIN Curup. Data collection using semi-structured interviews. Semi-structured interviews are a type of interview where researchers only use interview guidelines that are outlined and still need to be developed when conducting interviews (Abdussamad, 2022). The interview results were then analyzed using the Miles and Huberman analysis model (Miles et al., 2018). This analysis model consists of three stages: data collection, data display, and conclusion drawing/verifying (Miles et

al., 2018). Checking the validity of the data was carried out by triangulating sources and extending interviews. Source triangulation is done by checking data from one source with another (Sugiyono, 2017). Meanwhile, the interview was extended if the data obtained from the first or second interview needed to be more sufficient and had not answered the problem formulation. The researcher conducted the next stage of interviews so that the data obtained were what was expected (Sugiyono, 2017).

RESULTS AND DISCUSSIONS

Based on the research results, it can be seen that there are several things that lecturers of the Postgraduate Islamic Education Study Program do to develop students' critical thinking skills, namely:

Development of teaching materials based on integration and interconnection

The results of the study found that the lecturers of the Postgraduate Islamic Religious Education Study Program at IAIN Curup developed teaching materials to develop students' critical thinking skills. The development of teaching materials carried out is the development of integrated and interconnection-based teaching materials (Idris, personal communication, September 10, 2022). The development of teaching materials consists of four stages. First, the philosophical level, at this level, materials are developed based on fundamental values, then associated with various scientific disciplines and humanistic values (Deriwanto, personal communication, September 11, 2022). Second, the material level. At this level, learning materials are developed with universal truth values and courageous values originating from Islamic teachings (Hendra Harmi, personal communication, September 12, 2022). Third, the level of methodology. The development of teaching materials is carried out using a methodology that has been tested for its validity (Idi Warsah, personal communication, September 13, 2022). Fourth is the level of strategy. This level is the implementation level which refers to the interconnection paradigm. Learning with various types of active learning models is a learning model in line with the paradigm of interconnection (Dewi Purnama Sari, personal communication, September 14, 2022).

The development of teaching materials is integrated and connected with various scientific disciplines, both religious and general sciences. The development of teaching materials is carried out and analyzed from various scientific perspectives. Analysis like this, besides being able to develop insight and knowledge, can also develop students' critical abilities (Fakhruddin, personal communication, September 15, 2022). Asri further (personal communication, September 15, 2022) explained that the development of teaching materials is also integrated with learning media. One of them is integrated with Canva media. Integrating teaching materials with Canva media aims to make the teaching materials presented more interesting, and students are not bored participating in learning. There are several types of Canva media used in integrating teaching materials, namely graphics, posters, presentations, and flyers. Integrating teaching materials with Canva media is expected to train and develop students' abilities in analyzing teaching materials integrated with Canva media. The ability to analyze is an important element in relation to students' critical thinking skills (Deriwanto, personal communication, September 11, 2022).

More Amrullah (personal communication, September 16, 2022). argues in order for the developed teaching materials to improve students' critical thinking skills, the learning process must be supported by various approaches based on 4C'S (Critical Thinking, communication, collaboration, and creativity). In practice, students are trained to convey what is in their minds and are trained to solve problems related to learning material. On the other hand, students are trained to collaborate, cooperate and communicate both verbally and non-verbally (Ahmad Dibul, personal communication, September 16, 2022).

Based on the results of the interviews as stated above, it can be seen that the development of teaching materials based on integration and interconnection is used by lecturers of Postgraduate Islamic Education at IAIN Curup to develop students' critical thinking skills. The results of this study are in line with the results of research conducted by Suparni, (2016), which shows that the development of teaching materials based on integration and interconnection can increase students' critical thinking skills by 17.5%. On the other hand, by using teaching materials based on integration and interconnection, students can understand learning material comprehensively from various points of view, broaden student insights, increase mastery of concepts, generate new ideas and be able to train students to draw conclusions correctly (Rofdli & Suyadi, 2020; Yuni et al., 2021). Another opinion explains that using integration-based teaching materials can train students to distinguish between information and opinions, connect one concept to another and develop communication skills (Diu, 2018; Rahmat & Kurniadi, 2020; Siregar et al., 2019; Tanjung, 2022).

Research-based learning

Research-based learning has a crucial role in developing students' critical thinking skills. This is done by giving students assignments to analyze or review journal articles following the material discussed (Deriwanto, personal communication, September 11, 2022). The article review results were then discussed and analyzed from various points of view, and a conclusion was drawn (Asri, personal communication, September 15, 2022). Research-based learning is also carried out by giving students assignments to carry out mini-research related to various theories that have been studied (Fakhruddin, September 17, 2022). The results of the mini-research were then discussed and analyzed from various perspectives, and a conclusion was drawn (Dewi Purnama Sari, personal communication, September 14, 2022).

Apart from that, developing students' critical thinking skills are also carried out by applying several learning methods that can support the development of critical thinking. Some learning methods applied include the brainstorming method (outpouring opinions), the debate method, the discussion or sharing method, the discovery method, inquiry, question, and answer, problem-solving, Problem Based Learning (Idris, personal communication, September 12, 2022). Some lecturers also sometimes use cooperative, accelerated, and quantum learning (Idi Warsah, personal communication, September 13, 2022).

The research results, as mentioned above, are in line with the results of research conducted by Hasan & Syatriandi, (2018) ; Idris, (2020), which explain that the development of critical thinking skills can be done by training students to solve various problems. According to Sihotang, (2019; Suciono, (2021), the development of critical thinking can also be done by applying appropriate learning models to develop students' critical thinking skills, such as debate and discussion methods, question and answer, problem-solving, and problem-based learning.

In addition, students critical thinking skills can be developed by making the most of available learning resources (Idris, personal communication, September 10, 2022). For the learning resources used to develop students' critical thinking skills, the learning resources must be multi-author and multi-interactive (Dewi Purnama Sari, personal communication September 14, 2022)) Learning using multi-authors can increase knowledge and insight, and it can also increase power student critical. Students can compare one opinion with another (Anisa et al., 2021). Look for similarities and differences (Azhar, 2020) and find common ground from different opinions (Rochmatika & Yana, 2022).

According to Amrullah (personal communication, September 16, 2022), developing students' critical thinking skills through multi-authors is carried out by utilizing online and library learning resources. The internet and libraries are used as media to find references to support and strengthen learning materials. Various books, research results, and journal articles can now be found in the library and accessed via the internet. These learning resources are printed or pdf, both in Indonesian and English (Liana, 2020; Permana, 2018; Sasmita, 2020). Utilizing learning resources

like this can not only add comprehensive insight and knowledge to students but can also increase student creativity in finding various learning resources.

CONCLUSION

Based on the research results, it can be seen that several things are done by the lecturers of the Postgraduate Islamic Religious Education Study Program at IAIN Curup to develop students' critical thinking skills. First, the development of integration and interconnection-based teaching materials. The development of teaching materials based on integration and interconnection is carried out in several steps, namely the development of teaching materials at the philosophical, material, methodological and strategic levels. The development of teaching materials based on integration and interconnection is carried out through integration and interconnection with various disciplines and learning media. Integration and interconnection of teaching materials with various disciplines will give rise to a comprehensive understanding and critical thinking. Second, through research-based learning. Students are tasked with reviewing various journal articles, analyzing them, presenting them, and drawing conclusions. In addition, presumptive research-based learning is carried out by giving assignments to students to carry out mini-research. Mini-research results are discussed, analyzed, and presented, and a conclusion is drawn.

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