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**The Concept Integration of Science and Religion in Education  
and Learning with Transdisciplinary Approach**

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**Abstract**

The article was compiled because there is a gap between general science and religious science in the world of education that is still happening, namely there are still parties who think that general science and religion stand alone so that they cannot be integrated in the education and learning process. This will certainly have an impact on the learning process and lead to a dichotomy of science models so that an idea is needed on the integration of general science and religion to overcome these problems. The purpose of making this article is so that readers are able to understand how the concept of integrating science and religion in education and learning can then be applied in life, especially in the learning process as a teacher. The method used in making this article is the library method, namely by taking references from various sources of scientific work, namely books, journals and theses to examine the material that will be discussed in the article. Furthermore, this article concludes that the integration of science and religion in education and learning with a transdisciplinary approach really needs to be applied considering the dichotomy of science has occurred, and also as a step in solving various problems in education and learning, besides the essence of the integration of science and religion in education. and learning is to restore human divine values in order to be able to understand knowledge which he then applies as a form of obedience to Allah SWT.

**Keywords: Integration of Science and Religion(;) Education(;) Learning(;) Transdisciplinary Approach.**

**Konsep Integrasi Ilmu dan Agama dalam Pendidikan  
dan Pembelajaran dengan Pendekatan Transdisipliner**

**Abstrak**

Artikel ini disusun karena melihat adanya sebuah kesenjangan yang terjadi antara ilmu pengetahuan umum dan ilmu agama dalam dunia pendidikan yang masih banyak terjadi, yakni masih ada pihak yang menganggap bahwa ilmu umum dan agama itu berdiri sendiri sehingga tidak bisa dipadukan dalam proses pendidikan dan pembelajaran. Hal seperti ini akan memberikan dampak terhadap proses pembelajaran dan menimbulkan model dikotomi ilmu sehingga dibutuhkan suatu sistem mengenai gagasan integrasi ilmu umum dan ilmu agama guna mengatasi masalah yang ada tersebut. Tujuan dari pembuatan artikel ini ialah agar pembaca mampu memahami bagaimana konsep integrasi ilmu dan agama dalam pendidikan dan pembelajaran yang kemudian dapat diterapkan dalam kehidupan terutama dalam proses pembelajaran sebagai seorang guru. Dalam penulisan artikel ini metode yang digunakan adalah metode kepustakaan (library research) yaitu dengan mengambil referensi dari berbagai sumber karya ilmiah yakni buku, jurnal dan tesis untuk menelaah materi yang akan dibahas pada artikel. Selanjutnya, artikel ini menyimpulkan bahwa integrasi ilmu dan agama dalam pendidikan dan pembelajaran dengan pendekatan transdisipliner sangat perlu diterapkan mengingat dikotomi ilmu sudah banyak terjadi, dan juga sebagai langkah dalam



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memecahkan berbagai permasalahan dalam pendidikan dan pembelajaran, selain itu esensi dari integrasi ilmu dan agama dalam pendidikan dan pembelajaran ialah mengembalikan nilai-nilai ilahiyah manusia agar mampu memahami ilmu yang kemudian ia terapkan sebagai wujud ketaatannya kepada Allah SWT.

**Kata Kunci: Integrasi Ilmu dan Agama; Pendidikan; Pembelajaran; Pendekatan Transdisipliner.**

## **PRELIMINARY**

Islam is a religion that is believed by Muslims to be the most perfect religion, so that in its teachings all forms of separation between religion and science or what is commonly referred to as the dichotomy of science must be avoided. Islam considers the universe and all the contents contained in it are the creation of the Creator, which is also a tangible proof of His creation. In this case, nature which contains messages and various signs of greatness from the Divine is also a revelation from God which is also unwritten so that it can show its presence in the unity of the global system. So that if a researcher or scientist deepens knowledge, he must also deepen the true meaning of religion. Therefore, if humans absorb various knowledge and technologies that are currently developing without being based on religion, it will lead humans to human wickedness itself. (Nurjannah 2018)

The separation of religious knowledge from general science has actually been happening for quite a long time, even in the perspective of some people who still think that these two sciences have an entity that is believed to be different so they cannot be brought together. People still think that both have different territorial boundaries, both in terms of formal and material objects, research methods, criteria for truth and the status of the theory of each science. In fact, there are various diseases of separation or dichotomy that view religion as not a science because religion is built on the beliefs of each individual. As a result of this assumption, there is a gap between knowledge that comes from revelation (revealed knowledge) and science that comes from reason (rational knowledge).

Seeing this, it is necessary to make efforts to cultivate Islamic values among Muslims, especially among students who need a program to integrate general lessons and religious lessons by integrating various religious values in every learning activity and teach. Because if you see there are still schools whose education only focuses on general knowledge but does not prioritize religious knowledge, or even some that tend to stay away from various Islamic moral values. Meanwhile, on the one hand, there is education in schools that instead prioritizes and advances only on religious values and knowledge but separates itself from general lessons which are actually very useful in education.

The integration of science and religion is an effort that arose as a result of the emergence of the concept of separation between science and religion which was introduced by people from the west and the culture of modern society. This effort is made because it remembers that general knowledge and religion are equally important for human life, both of which complement each other in order to achieve happiness in this world and happiness in the hereafter. For this reason, it is necessary to integrate Islamic knowledge with science and also utilize technology which must also be applied in education and learning in schools.

In an education and learning process carried out in schools, there must be various obstacles and problems that occur, both those that occur due to educators and students, school internal factors and school external factors, so in overcoming various educational problems that occur, various ways and methods are needed. approach so that problems in learning can be handled properly and wisely. Among the various approaches that can be taken in reducing or overcoming various problems in every educational and learning process carried out in schools is to use a transdisciplinary approach.

## **RESEARCH METHODS**

Research in the articles made is included in library research, namely in the form of sources of data and research information taken through various literature books, as well as journals and other literature related to the implementation of research. In the library method, the author is in direct contact with the data or text, which is not through primary data and directly obtained from the field, in this case it means that the data from library research is ready to be used, the author does not have to go to the field but directly deal with the source of the data. already available. (Khatibah 2011) Here the author collects various literatures related to the material, then processes it by describing the materials contained in the literature into articles, then the author analyzes how the concept of integrating science and religion in the education and learning process with a transdisciplinary approach, just Then the author draws conclusions from various literatures that have been read and also from this article.

Technically, the literature research method is appropriate to be used by the author because in writing this article, the author does not go directly to the field but only obtains data through various literatures analyzed by the author so that the appropriate research method is literature and the approach that the author uses is a qualitative approach. In the data collection process, the author must be able to re-explain the literature studies from these various sources and relate them to the articles written, which in turn make this article worth reading. So that in writing this article the authors hope that they can provide input for educators in the application or application of the integration of science and religion in the education and learning process with a transdisciplinary approach in schools and in general for Islamic educational institutions can also be useful in developing and advancing Islamic education, so that these institutions can move together in building educational progress that is useful for the achievement of the benefit of Muslims, especially in building Islamic civilization in the world of education.

## **RESULTS AND DISCUSSION**

### **The Essence of Education and Learning in the Integration of Science and Religion**

Education is a conscious and planned effort to create a learning atmosphere and learning process that is useful so that students can actively develop the potential that exists within themselves to have religious spiritual strength, self-control, personality, intelligence and noble character as well as the skills that will be needed. for himself, for the community and also the nation and the country. Basically, the education process must be viewed as a process as well as a goal, which then education is seen as an activity in life in order to achieve the realization of a complete human being that lasts a lifetime, so that the essence of education can be meaningful as a human ability to educate himself. The nature of education can be formulated as follows:

- a. Education is a useful effort to prepare students to face the environment in which they are experiencing various kinds of changes that are increasingly rapidly increasing.
- b. Education must improve the quality of life of students personally and their lives in society.
- c. The education lasts his whole life.(Saryanto 2021)

Learning itself has a meaning, namely the process carried out by students in order to gain knowledge and grow potential in developing themselves and learning new abilities and values in themselves. Meanwhile, learning is the empowerment of the potential that exists in students to make them competent, this activity is carried out in an organized and programmed manner, besides that it will not succeed without other people who help such as a teacher or a teacher. The essence or nature of learning is the emergence of processes in learning and teaching between teachers and students. A learning is interpreted as a change in the personality of a learner to form skills and proficiency in thinking and acting on a problem that arises. The essence or nature of learning is also considered as a combination formed from the elements in it, namely the presence of teachers, students, materials for teaching, teaching materials and the existence of various facilities and adequate infrastructure such as classrooms for learning, learning media, and also a process that will mutually influence one another in achieving the goals that have been set. (Arfani 2016)

The essence of education and learning in the integration of science and religion is to restore the values of human monotheism (human nature) in the learning and teaching process on the basis of the Qur'an and Hadith so that they can become intelligent and well-mannered human beings which are manifested in their obedience to worship Allah. Allah SWT as the owner of nature and knowledge. In simpler terms, the essence of education and learning in the integration of knowledge is the ability to educate oneself to become a man of faith, knowledge and piety so that he is able to live a life based on the Qur'an and Hadith.

The concept of the integration of science and religion in education is to look objectively in the scientific field that does not focus on Islam alone but is grounded in all aspects of science while still prioritizing the power of complete monotheism, how the nation's civilization, and the development of scientific technology must remain in the concept of monotheism. The concept of *wahdatul 'ulum* which is integrated can be used as a guide or guide in behavior that builds good individual character. Character value education itself is an important trait in building individual lives that have an impact on the surrounding environment. (Zebua et al. 2022)

In the development of Islamic sciences (Islamic Studies), the scopes of Islamic sciences must not separate themselves from various Islamic sciences (Islamic Science), on the other hand the development of Islamic sciences (Islamic Science) should not separate or isolate itself from other sciences. Islamic studies (Islamic Studies), because Islamic sciences are knowledge that greatly influences the development of society, especially about how to guide and apply Islamic teachings in life, so Islamic Science and Islamic Studies must be well integrated. Thus, Islamic knowledge originates from Allah SWT, so that in the process of development and application it must also be referred to the natural law system and monotheism that has been taught by Islam, especially its application in the field of education. (Syahrin Harahap 2019).

### **Application of the Transdisciplinary Approach in Curriculum Preparation**

The transdisciplinary approach is an approach in solving a problem by using a review of various sciences that have been relatively mastered by someone with the problem to be solved. Transdisciplinary also means the integration and transformation

of various fields of knowledge through various related perspectives in order to understand, define, and solve complex problems and also to improve the quality of problem solving in order to obtain a better decision and choice than before. (Syahrin Harahap 2019)

The transdisciplinary approach as an educational instrument is used to be able to develop the desired human qualities, namely humans who are intellectually intelligent, emotionally and also have a sense of concern for various problems in society and have the ability to contribute to help solve these problems. Thus, education will not separate itself from society but will continue to develop and interact with the community. The main focus of education and learning in a transdisciplinary approach is an integrative process developed to improve students' life skills through learning activities that emphasize using their disciplinary skills in students' daily lives. Learning in this integrative aspect is developed based on the attention, experience and daily life of students in the family environment, in the school environment or in the community. (Batmang 2016)

In preparing the curriculum using a transdisciplinary approach, there are curriculum models that must be considered, namely the integrated curriculum and the organized curriculum. Connected curriculum is a curriculum model that integrates and links a concept, skill or ability that is grown and developed in a subject or sub-subject in one field of study. Links can be done spontaneously or planned in advance so that learning becomes more effective. Or in other words, this connected curriculum connects one concept to another, one topic to another, and one skill to another. Spiral curriculum is to organize subject matter by sorting from subject matter in general, and then sorting it periodically to teach the same material in a more detailed scope. The approach to structuring the general material into more detailed material with a spiral curriculum model is part of the form of adjustment between the material being studied and the stage of development of the cognitive aspects of students. (Trianto Ibn Badr At-Taubany 2017)

The characteristic of the transdisciplinary approach in curriculum preparation is that the curriculum is organized on the basis of the students' concerns and questions, they develop life skills as they apply skills in real life contexts. There are two ways to implement this transdisciplinary integration, namely project based learning and curriculum negotiation. In project based learning activities, students are invited by the teacher to solve a problem. The transdisciplinary approach begins with a real-life context, it does not begin with a discipline or with a shared concept or skill. What is usually considered the most is the relevance that the learner understands. Then in curriculum negotiations in a transdisciplinary approach, students' questions can form the basis for curriculum implementation, students are free to develop their own curriculum, teaching methods and assessments for themes that interest them. (Prastowo 2019)

The integration of the transdisciplinary approach is carried out by means of educators setting up a curriculum where the focus is on problems or things that attract the attention of students. Learners can develop a variety of life skills by applying disciplinary skills into a real life approach. The learning model used must also be considered so that the transdisciplinary approach can be carried out properly. In this approach the way that can be taken is by means of problem based learning. There are

three steps in planning this problem-based learning, namely: (1) educators and students choose research topics based on students' interests, curriculum standards and local resources. (2) educators find out what students already know and help them to raise questions to explore. (3) students share their work with others in the last activity. The final step is that students display the results of exploration and review and evaluate the projects they have worked on. (Lukman Hakim 2020)

Thus, the application of a transdisciplinary approach in curriculum preparation must pay attention to aspects within students, because in this preparation the potential of students is the main goal of the preparation of the curriculum, students who must be more active so that students are able to develop their potential both cognitive , affective and psychomotor so that they are able to find problems as well as solve these problems in the learning process using a transdisciplinary approach that has an impact on their usefulness in everyday life, namely at home, school and society.

### **Application of Transdisciplinary Approach in Learning Strategy**

Learning strategy is any activity or activity carried out by educators in providing assistance to students so that the learning process occurs in the direction of achieving a certain learning expected for students. In this context, educators must be able to implement an appropriate strategy so that learning objectives can be achieved as expected. In the use of learning strategies there is a general principle that not all learning strategies are appropriate to be used in achieving all objectives in all learning situations. The use of learning strategies is important in order to facilitate the learning process so that students get optimal learning outcomes. So that without a clear learning strategy, a learning process cannot be directed and the previously prepared learning objectives will be difficult to achieve optimally, and the learning process will also not be effective nor can it be efficiently carried out. (Sutikno 2021)

In the learning process carried out with a transdisciplinary approach, there is the concept of learning. In the application of the concept of learning, learning will be emphasized on active learning, where students are given the opportunity to play a major role in the learning process, namely the process of discovering knowledge, experience, and expertise which are important aspects that students must possess. Furthermore, education in this transdisciplinary approach is also very concerned with 6 keys of learning, namely: problem solving, honing students' creativity, building community participation, self-regulation, and community knowledge. These six learning keys emphasize the importance of student-centered learning or also known as student-centered learning. (Syahrin Harahap 2019)

Student-centered learning (student centered learning) is a process in which learning activities are centered on students so that this strategy is expected to encourage students to be willing and able to be actively involved in the process of building knowledge, attitudes and behavior. In this case, the teacher has a role as a motivator, facilitator and mediator who guides students to find answers to the problems they find in the learning process. (Sutikno 2021)

In the learning process, this student centered learning strategy is certainly relevant if it is associated with a transdisciplinary approach, this can be seen from its implementation in learning. Student centered learning focuses learning on students to be

more active, while the transdisciplinary approach is used to solve a problem by integrating several sciences, here students can learn to solve a problem or find an answer to a question from the knowledge they have and experience. learn what he has done to identify and solve the problem.

In the learning process that uses a transdisciplinary approach, 5 important elements are developed to build learning strategies that are of real benefit to students, the five elements are: knowledge, concepts, skills, attitudes and actions. In this case, the main reference for learning refers to the four pillars of education, namely:

1. Learning to know, namely learning to know.
2. Learning to do, namely learning to do.
3. Learning to be, namely learning to act.
4. Learning to live together, learning to live together, interact, and cooperate.(Syahrin Harahap 2019)

Learning to know or learning to know is a learning process carried out to know, understand and appreciate various ways of obtaining knowledge from which elements will emerge a scientific attitude, namely an attitude that wants to know a science as a driving force to seek answers from various problems that will be faced scientifically so that they are finally able to support various technological and scientific developments as part of their personal lives and also those that have an impact on their environment. Furthermore, the element of learning to do or learning to do, namely a learning process that is useful for doing or doing something in the learning process. In this learning to do process, the learning process provides various abilities or skills to solve real problems using science and technology. This process is often referred to as the learning by doing phase or learning to do and do, in this case of course learning to do and carry out various aspects of activities that support the progress of the learning process.

Furthermore, there is learning to be or learning to be, in this context the learning process is carried out by students in order to develop themselves to form independent personalities, have good intellectual and emotional intelligence and be consistent in their efforts to achieve a much better personality level than before. Then learning to live together or learning to live together is a learning process that provides awareness that leads humans to provide awareness that no human can live alone without help from others or in other words that humans are social beings who are interrelated and need each other. one another. Therefore, the higher the level of learning and knowledge gained by students, the higher the peace of life, the high tolerance between fellow living things and the ability to create a balance in the ecosystem of the environment. Sharing knowledge and utilizing technology together to achieve a harmonious level of social life is one manifestation of this learning to live together. (Hadion Wijoyo 2020)

The four pillars of education are the basis or foundation that must be included in every learning process because it refers to the cognitive, affective and psychomotor aspects which are the main goals of students in learning. In developing cognitive potential, students need to go through the stages of learning to know, namely learning to find out the knowledge and knowledge they need. In the development of psychomotor aspects, students need to do the stages of learning to do and learning to be, namely learning to do or apply the knowledge that they already have so that they have skills that are useful for their lives. Furthermore, the affective aspect through the stages of learning to live



together, students learn to be able to live together or socialize with the people around them as a manifestation of the results of the knowledge that they have learned and applied so that they can be useful for those around them.

## CONCLUSION

The integration of knowledge in education is an educational process that unites science and religion so that there is no separation of knowledge in the learning process which can have an impact on changing the behavior of students into human beings with commendable morals which can be realized in the form of dedication to the owner of knowledge, namely Allah SWT. The essence of education and learning based on wahdatul 'ulum is to restore human divine values so that they are able to understand the knowledge which they then apply as a form of obedience to Allah SWT.

The main focus of wahdatul 'ulum-based education and learning is a transdisciplinary approach that is applied in overcoming various problems in the education and learning process that is useful for improving students' life skills, both in cognitive, affective and psychomotor aspects while still based on the values of monotheism. In compiling a curriculum with a transdisciplinary approach, there are three important foundations to consider, namely systems theory, a transdisciplinary curriculum and the existence of a curriculum model.

In the learning process carried out with a transdisciplinary approach, there is the concept of learning. In the application of the concept of learning, learning will be emphasized on active learning, where students are given the opportunity to play a major role in the learning process, namely the process of discovering knowledge, experience, and expertise which are important aspects that students must possess. Furthermore, education in this transdisciplinary approach is also very concerned with 6 keys of learning, namely: problem solving, honing students' creativity, building community participation, self-regulation, and community knowledge. These six learning keys emphasize the importance of student-centered learning or also known as student-centered learning.

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