

Causality of the Artificial Intelligence Paradigm on Constructivist Perspective for Student Academic Ethics

Desi Asmarita¹, Iffah Khoiriyatul Muyassaroh², Idil Saptaputra³

^{1,3}Master of Islamic Religious Education, ²Doctoral of Islamic Religious Education, Faculty of Islamic Education, UIN Sunan Kalijaga, Jl. Marsda Adisucipto No 1 Yogyakarta 55281, Indonesia. Tel. +62-274-540971, Fax. +62-274-519739.

Corresponding author

¹22204011011@student.uin-suka.ac.id

Abstract: Technological innovation is undeniable as the presence of artificial intelligence have shown a deep and equitable impact in various aspects of life. This transformation covers fundamental sectors, including the higher education sector. This research aims to investigate the causality inherent in the paradigm artificial intelligence towards the context of student academic ethics. This research is a qualitative approach with a type of literature study. Data analysis was carried out using techniques of content analysis. The research results show that the paradigm of artificial intelligence is related to moral ethics in carrying out the mission and duties of the tri dharma of higher education, as well as interactions in the learning process. The constructivist perspective looks at paradigms artificial intelligence as a theoretical framework that underlies collaborative learning methods, the active role of students, dynamic interactions between individuals and their learning context, as well as synergistic system interactions artificial intelligence with human intelligence. The context of student academic ethics in the constructivist approach teaches that students not only accept ethical norms as a teaching, but furthermore, they are active in formulating and internalizing moral principles in the academic context, thereby producing students who have critical thinking, socially interactive, and collaborative skills in utilizing artificial intelligence.

Keywords: Causality, Artificial Intelligence Paradigm, Constructivist Perspective, Academic Ethics

Introduction

Artificial Intelligence exists as a product of human intelligence and innovative advances in information and communication technology (Luh Putu Ary Sri Tjahyanti & Dkk, 2022). The presence of artificial intelligence is able to have an impact on all sectors (Utama & Wibawa, 2021), including the higher education sector (Kennedy, 2023). The current reality is that many students in higher education often use artificial intelligence in academic activities. Its use is not only in the positive realm, but misuse is also found artificial intelligence which is done by students in the implementation of academic activities, such as cheating in tests by using chatbot to answer questions, do plagiarism, manipulating the data obtained to become a data source for final project research, carrying out unethical actions, and other bad activities (Amala et al., 2023). These activities

will certainly conflict with student academic ethics.

Student academic ethics refers to a set of values, norms, and principles that govern ethical behavior in the context of higher education. Student academic ethics includes rules and guidelines that regulate the way students should behave and live their academic life. Student academic ethics is a moral foundation that shapes student behavior while pursuing a degree in higher education and engaging in academic activities. The main aspects of student academic ethics are upholding intellectual honor, being honest in all aspects of the education they carry out, ethical cooperation in learning and research, obeying towards institutional rules and guidelines, respect diversity of thought and views, strive to develop the necessary intellectual skills and character, and respect for lecturers and academic staff (Aziz, 2018).

Based on this, student academic ethics is an

important component of higher education, because it helps build student character and integrity and creates an academic environment that is fair and has integrity. Awareness and practice of good academic ethics will help students in pursuing education and prepare students for a successful and moral future (Sagala, 2022). However, abuse of artificial intelligence can be boomerang for students' awareness and practice of academic ethics. This shows that there is a very strong cause and effect between artificial intelligence and student academic ethics. For attendance artificial intelligence does not have a negative impact on students' academic ethics, it is necessary to build a paradigm for artificial intelligence to be used for the better, especially those related to student academic ethics. One perspective that can be used to build a paradigm of artificial intelligence namely through a constructivist perspective.

Materials and Methods

The research carried out applied a qualitative approach with the type of literature study. Data was collected through searching several sources relevant to the research variables studied, both from journal articles, books and other scientific works. After several sources have been collected, selection and filtering of several sources is carried out, where only sources that are relevant to the focus and research questions are taken to be used as research data. Source selection and filtering is carried out using publish or perish. Finally, the research data is then analyzed using techniques content analysis to then be used as research results and discussion. As with qualitative research approaches in general, the researcher acts as the main instrument that collects, analyzes and presents research findings. The results and discussion of this research are presented in the form of descriptive sentences.

Results and Discussion

Artificial Intelligence Paradigm for Student Academic Ethics

1. Moral Ethics in Carrying out the Mission and Duties of the Tridharma of Higher Education

Moral ethics plays a central role in implementing the mission and duties of the tridharma of higher education, by covering various moral principles and values which are the moral foundation for the entire university community. This concept of moral ethics deeply involves the three main components of the tridharma of higher education, namely education, research and community service. In each of these components, moral ethics functions as an ethical guide that underlies the actions and decisions taken by all members of the higher education community. The tridharma of higher education includes three main components: education, research, and community service, and in each of these aspects, moral ethics plays a key role (Lestari, 2022).

First, in the educational context, moral ethics plays an important role which includes aspects of integrity in providing high quality education. Universities are expected to provide fair and non-discriminatory education to all students, respecting their rights. Integrity in the learning process is a key pillar that not only avoids fraudulent practices, but also respects copyright and the sources of knowledge used (Suprpto & Sumarni, 2022). The importance of integrity in education illustrates that every action of educators and the learning process must be carried out wholeheartedly and without engineering or manipulation. This process also emphasizes the importance of respecting the plurality of ideas and perspectives in the world of education. In this case, integrity does not only refer to honest behavior, but also to efforts to create an educational environment inclusive, where all students feel respected, given opportunities, and valued for their contributions. Integrity in education is a moral ethical principle that not only guides the behavior of instructors and educational staff, but also forms a strong foundation in maintaining the quality of higher education. This moral ethic ensures that students receive high quality education, in accordance with the principles of honesty, justice, and respect for

copyright and knowledge (Lestari, 2022).

Second, in the research context, moral ethics plays a central role urging researchers to carry out their research with honesty and high morality. This not only includes applying the values of honesty in collecting, analyzing and reporting research data, but also respecting human rights. Ethical principles in human research provide an unshakable foundation for safeguarding the rights and welfare of research subjects. In this context, avoiding actions such as plagiarism and data manipulation becomes essential, maintaining the integrity of all research and the results produced (Nikmah, 2019). Research with integrity is the key to scientific progress. Moral ethics in research forms a strong foundation for the development of knowledge that can be trusted and is beneficial to society. When research is conducted with honesty and morality, the results are reliable and relevant. This also contributes to maintaining the university's reputation as a respected and trusted research center. In the academic world, the importance of moral ethics in research is undeniable, because this not only affects the quality of research and scientific progress, but also maintains the university's reputation and high scientific image. Moral ethics guides researchers to act honestly, respect human rights, and avoid questionable practices. This is an important moral foundation in the entire spectrum of research conducted in higher education environments (Aziz, 2018).

Third, in the community service. Community service is an important component of the university mission. In this context, moral ethics emphasizes the importance of involving students and academic staff in activities that are beneficial to society. This must be done with moral principles such as justice, care and social responsibility as a guide. Universities act as agents of positive change in society, and moral ethics encourage responsible and ethical service (Lestari, 2022). The application of moral ethics in carrying out the mission and duties of the tridharma of higher education is very important. This ensures that universities carry

out their role as educational and research institutions with integrity and responsibility, maintain the quality of higher education, and contribute to the development of society and the nation as a whole. Moral ethics provides a strong moral framework for the entire college community.

2. Interaction in Learning Procces

Artificial intelligence has three paradigms in education, namely directed by artificial intelligence, supported by artificial intelligence, and empowered by artificial intelligence (Ouyang & Jiao, 2021). This paradigm uses artificial intelligence techniques to address educational and learning problems in a variety of ways, including representing knowledge models, directing cognitive learning, and solving domain-independent problems (Burkhard et al., 2021). In the context of interaction in learning procces, artificial intelligence offers new opportunities and challenges for both teachers and students.

First, the relationship between teachers and students, along with the interactions that arise and develop within them, is one of the most important elements in the educational paradigm. Technological developments, especially the emergence of the artificial intelligence era, have greatly challenged the traditional teacher-student interaction model that we usually use. Artificial intelligence provides the opportunity to uncover new interaction opportunities, both synchronous and asynchronous, that are free from the time and organizational structures of traditional schools and can focus on the factors that make someone a teacher (Gentile et al., 2023). Interaction between teachers and students is an important element in the educational paradigm. The integration of artificial intelligence has brought about significant changes in this relationship, challenging the traditional model of teacher-student interaction. Some of the ways artificial intelligence impacts the teacher-student relationship such as role transformation where artificial intelligence has led to a shift in the roles of teachers and students. Now, teachers must become collaborators, mentors, and

guides, while students take a more active role in their learning process. Artificial intelligence provides the opportunity to uncover new interaction opportunities, both synchronous and asynchronous, that are free from the time and organizational structures of traditional schools. These new moments and ways of interaction can be an important catalyst for implementing appropriate educational pathways tailored to individual needs (Gentile et al., 2023).

Second, Socio-material perspective, the learning process is highly dependent on the social and material context in which the process takes place. Artificial intelligence can facilitate new modes of interaction that are not limited by traditional constraints, thereby enabling more personalized and contextually relevant learning experiences (Gentile et al., 2023). In the context of artificial intelligence and learning, the social material paradigm emphasizes the complex social, cultural, and material aspects of artificial intelligence and their implications for education. Artificial intelligence in education is understood and build in different ways by different stakeholders, and these differences have significant social and educational implications (Williamson, 2023).

The responsible development and application of the artificial intelligence must take into account the dynamic, complex, non-linear, controversial, subjective and highly qualitative nature of societal contexts. Artificial intelligence can be used to personalize education by responding to different cognitive abilities and considering a student's past performance to adjust plans learning (Chui et al., 2018). This can also enable the development of resources that are responsive to the knowledge and experiences that students bring to their learning, such as their community and cultural assets (Cardona et al., 2023).

Third, new learning frameworks. A paradigm shift in human-machine interactions, driven by artificial intelligence, requires the development of new learning frameworks to acquire the competencies required in the artificial intelligence era (Burkhard et al., 2021). This framework should enable individuals to interact

and collaborate effectively with smart machines while avoiding the negative impacts that come from over-reliance on artificial intelligence. Some important points to note in the framework of the new learning paradigm are learning from humans, learning from curated data, learning from all types of data, and learning from all types of data in a way that can be transferred to new situations. The new learning paradigm framework presents challenges and opportunities. Overcoming barriers in data and human resources, managing risks, and addressing ethical considerations are critical to increasing the use of artificial intelligence in education (Makokha, 2021). However, the potential for personalized and customized learning, improving the quality of education, and developing new software and services are some of the opportunities that artificial intelligence can bring to the field of education.

Constructivist Perspective on the Artificial Intelligence Paradigm

Constructivist perspective is an epistemological view in philosophy (Saputro & Pakpahan, 2021) and an approach in cognitive psychology (Sugrah, 2019) that focuses on how knowledge is constructed by individuals through their interactions with their environment (Khafifah, 2021). When applied to the artificial intelligence paradigm, the constructivist perspective provides a different understanding of artificial intelligence than the traditional paradigm that focuses on explicit computer programming (Utama & Wibawa, 2021). The constructivist perspective views that knowledge is not an objective entity that simply exists outside the individual, but is the result of the individual's mental construction based on subjective experience and understanding (Tabun et al., 2022). There are several aspects to consider based on a constructivist perspective on artificial intelligence paradigm:

1. The Theoretical Framework underlying Collaborative Learning

The constructivist perspective can be a relevant and useful theoretical framework for underlying collaborative learning using artificial intelligence. In this context, the

constructivist approach emphasizes several principles that can be applied in the design and implementation of collaborative learning systems supported by artificial intelligence (Jaenudin, 2023). *First*, active learning. In this case, constructivism emphasizes the active role of students in their learning (Muspida et al., 2023). When artificial intelligence is used in collaborative learning, students can interact directly with this technology to access information, generate solutions, and collaborate with their peers (Hastini et al., 2020). *Second*, problem based learning. Constructivism theory puts forward learning that is centered on problem solving (Arini & Umami, 2019). Artificial intelligence can help by providing relevant tools or resources to solve complex problems, as well as facilitating collective discussion and reflection (Kennedy, 2023). *Third*, social interaction. Social constructivism emphasizes the importance of social interaction in the formation of knowledge (Purnamasari, 2019). In the context of collaborative learning, artificial intelligence can play a role in facilitating communication and collaboration between students (Sahabudin, 2023), for example, by providing a communication platform or tool that allows them to discuss and share ideas. *Fourth*, collective leadership. The application of constructivism theory can stimulate the concept of collective leadership (Muzakki, 2021), where students contribute in leading and directing their own and their group's learning. Artificial intelligence can be used to support these initiatives by empowering students to take an active role in organizing collaborative learning. *Fifth*, context and meaning. Constructivism emphasizes the importance of learning that is rooted in context and meaning (Yusuf & Arfiansyah, 2021). Artificial intelligence can help in presenting learning material that is relevant to students' context and interests, and help them relate these concepts to real-world situations (Hadian et al., 2023). In the constructivist view, artificial intelligence can create continuous learning. Artificial intelligence can be used to track student progress, provide feedback based on

their performance, and customize learning materials to suit individual levels of understanding and needs.

Constructivism views that knowledge in artificial intelligence does not only come from existing data, but also from the understanding provided by humans who design and develop artificial intelligence systems. Computer scientists and artificial intelligence engineers build models and algorithms based on their understanding of the world and how artificial intelligence systems should behave (Putro et al., 2023). In this case, constructivism emphasizes the creative and interpretive role of humans in developing artificial intelligence. Although constructivism can provide a strong theoretical framework, the use of artificial intelligence in learning contexts must still consider ethical, privacy and security aspects to protect students' rights and welfare.

2. Demand an Active Role From Students

The use of artificial intelligence in education can be designed to increase student participation, understanding and independence (Hastini et al., 2020). However, it is important to balance the role of artificial intelligence with the role of educators who support and guide students in the effective use of this technology to achieve learning goals. Constructivism encourages students to become active problem solvers (Hamid et al., 2019). In the context of artificial intelligence, students can be actively involved in formulating and solving problems relevant to their field of study, and artificial intelligence can be used as a tool that helps in data analysis, gathering information, and providing solutions. Students must have control over their learning process. In the context of artificial intelligence, students can take the initiative to plan, organize and manage their own learning with the help of artificial intelligence (Putro et al., 2023). They can choose appropriate learning materials, adjust the learning pace, and determine personal learning goals. Students can choose how they experience learning, decide what resources they will use, and determine how they will explore learning material.

Students are invited to reflect on their

experiences and discuss their understanding with others. Artificial intelligence can help in this process by providing analysis tools, visualizations, and forums for sharing thoughts and ideas (Arifah et al., 2022). Constructivism values the role of creativity and critical thinking in learning. Artificial intelligence can provide students with opportunities to develop their creative ideas, think critically about the information they receive, and test their understanding through artificial intelligence based exercises and projects. Students do not just receive passive information from artificial intelligence, however they are active in the process of assimilating, interpreting, and understanding the information provided by artificial intelligence. They can create meaning through reflection, discussion, and practical application. Students can use this data and feedback to improve their understanding.

3. Dynamic interaction between individuals and learning

Constructivism emphasizes that knowledge is a personal construction formed by individual (Khafifah, 2021). In the use of artificial intelligence, students can access various resources and tools that can help them build knowledge that suits their own interests, needs and context. Constructivism encourages students to become independent learners. Artificial intelligence can play a role in providing targeted feedback, recommending relevant learning resources, and providing appropriate guidance to help students develop independence in their learning (Manongga et al., 2022). This means that artificial intelligence must be a tool that supports, not replaces, the active role of individuals in the formation of their own knowledge.

Artificial intelligence can provide interesting learning materials, support thought and reflection processes, and stimulate collaboration and communication between students to facilitate more effective and meaningful learning (Hadian et al., 2023). Social constructivism emphasizes the importance of social interaction in the formation of knowledge. In learning with artificial

intelligence, interactions between individuals and artificial intelligence can create virtual social situations where individuals can discuss, collaborate, and share. Through interaction with artificial intelligence, individuals can experience active learning using tools, simulations, or scenarios provided by artificial intelligence.

4. Synergistic Interaction of Artificial Intelligence Systems with Human Intelligence

Interaction between artificial intelligence systems and human intelligence in a constructivist perspective creates a dynamic and meaningful learning environment (Pambayun & Permassanty, 2021). Constructivism emphasizes that knowledge is the result of active interaction between individuals and their environment, and in this context, can act as a component of the learning environment that facilitates the process of knowledge construction by humans. Constructivism emphasizes that knowledge is not only received but also co-constructed. Artificial intelligence can contribute to the process of knowledge co-construction by presenting information, data, or arguments that spark discussion and deeper understanding between humans. Discussions between humans and artificial intelligence can produce deeper understanding (Putro et al., 2023).

In interacting with artificial intelligence, individuals must develop critical thinking skills to assess the information provided by the artificial intelligence system. Constructivism encourages individuals to evaluate, criticize, and interpret information carefully, so that it becomes a source that stimulates critical thinking (Unwakoly, 2022). Artificial intelligence provides feedback on individual learning progress. By monitoring performance and progress, artificial intelligence can provide tailored recommendations to help individuals design more effective learning experiences. Artificial intelligence can support human interactions with fellow humans through shared learning platforms, online discussions, and project collaboration. Artificial intelligence can play a role in simulating social interactions for learning purposes (Putro et al., 2023).

In a constructivist perspective, synergistic

interaction between humans and artificial intelligence enables a more powerful and in-depth knowledge construction process. This creates a learning environment that combines the potential of human intelligence with the capabilities of artificial intelligence, enabling more effective and relevant learning. It is important to carefully design artificial intelligence systems to support these constructivist principles and ensure that artificial intelligence serves as a tool that supports the active role of humans in knowledge generation. Artificial intelligence enables powerful personalization of learning (Jaenudin, 2023). In a constructivist perspective, personalization is key because each individual has a unique way of building knowledge (Thaariq, 2021). Artificial intelligence can design learning experiences tailored to each individual's needs and preferences.

Student Academic Ethics in A Constructivist Perspective

Academic ethics is a set of moral norms and principles that apply in the world of education and the academic environment (Lestari, 2022). This ethics aims to regulate the behavior and actions of individuals, especially students and academic staff, firmly emphasizing integrity, honesty and responsibility which must be in accordance with the moral standards applicable in the educational context. This includes various aspects, such as honesty in writing academic assignments, respect for copyright, and fair assessment quality (Aziz, 2018). Academic ethics are the basic principles that lead to the formation of a healthy academic culture and integrity, maintaining the quality of higher education and supporting the development of character and professionalism in the academic world (Nikmah, 2019).

Through academic ethics, students and educational practitioners are taught to uphold morality and ethical principles in the learning and research process. This ensures that education occurs fairly, honestly and in accordance with moral values, creating an environment conducive to the growth and development of knowledge and strong character. Academic ethics also creates a

solid basis for ethical interactions between individuals in the educational environment and plays an important role in maintaining the trust and integrity of educational institutions (Lestari, 2022). In an undergraduate course, a student is faced with the task of writing a complex paper about ethics in scientific research. While conducting research, the student found a relevant research article that could provide strong support for his argument. However, the article was not accompanied by proper attribution. In facing this situation, the student decided to follow the principles of academic ethics. He contacted the lecturer to ask for their views and discuss the best way to acknowledge the source of the article. These actions reflect the student's commitment to the moral values and ethical principles that underlie academic ethics, so that he can complete his assignments with integrity and honesty.

The first theory with a constructivist approach in the context of academic ethics refers to the understanding that knowledge is not only received by students, but is also actively constructed by them through interaction with subject matter and the learning environment. Students' academic ethics can be seen as an integral part of their knowledge construction process (Dawson, 1991).

In Islamic Education, ethics is interpreted with many meanings such as morals, which refers to temperament and behavior in acting. Students who apply Islamic ethics will always adhere to the principle of honesty. They will not plagiarize other people's work or research results and will provide appropriate sources when citing or referring to other people's work. Islamic ethics also emphasizes the importance of complying with the rules and norms that apply in the academic world, such as lecture schedules, testing procedures, and university codes of ethics.

In the context of academic ethics, being a student who is responsible for solving problems collaboratively is an important aspect in developing morals and integrity in Islamic education. Academic ethics in the constructivist perspective, including in the context of Islamic education, encourages students to be actively involved in the learning process and developing their character, in line with their understanding of

knowledge and applied ethics. *Deontological approach theory*, this approach is related to moral and ethical obligations that are absolute (Kneupper, 1981).

Deontological theories emphasize adherence to ethical principles without taking into account the consequences. In the context of academic ethics, this means that students and academic staff have a moral obligation to follow ethical norms and principles without considering possible outcomes. The following are student academic ethics: Sosial interaktif



Figure 1. Student academic ethics.

Interactive social in the student academic ethics: interactive social in the student academic world refers to the social relationships and interactions that exist between fellow students in the educational environment. It includes various forms of collaboration, communication, and interaction that occur during the learning process. Interactive social plays a key role in enriching students' learning experiences by enriching their social development, increasing understanding of material, and forming social networks that are useful in their career development (Lestari, 2022).

Collaboration or collaborative utilizing artificial intelligence: collaborative ability is the ability to work together with other people to achieve common goals. In an academic environment, collaborative skills are important because students often have to work in groups or teams. Utilization of artificial intelligence technology in this context refers to the use of artificial intelligence-based tools and platforms to facilitate and improve collaboration between students. This involves the use of artificial intelligence technology for effective communication, division of tasks, project management, and increasing group productivity (Aziz, 2018).

Critical thinking: critical thinking is the ability to analyze, evaluate, and formulate thoughts rationally and logically. In the student environment, critical thinking is a very important

intellectual skill. Students are expected to undergo a deep thought process, question, and analyze information carefully and objectively. Critical thinking skills enable students to develop a deep understanding of a subject, make better decisions, and overcome academic and everyday life challenges day (Dawson, 1991).

1. Students do not only accept ethical norms as teachings

Students in the context of Islamic education are required to have a deeper understanding of ethical norms rather than simply accepting them as rules to be followed. They are expected to deeply understand the background and moral basis underlying ethical norms, especially in the academic environment. In this process, students are invited to critically explore the meaning and relevance of ethics in everyday life and interpret it in accordance with the principles of the Islamic religion they adhere (Aziz, 2018).

Apart from understanding, it is important for students to implement ethical norms in their daily actions, especially in academic contexts. They are required to practice values such as honesty, discipline, hard work, and other ethical principles in all aspects of academic activities, including research, writing, and interactions with lecturers and fellow students. Thus, the implementation of ethics is not just a formality, but an integral part of their academic journey (Nikmah, 2019).

Furthermore, students in Islamic education are expected to integrate ethical norms with the Islamic values they believe in. This means that they not only comply with ethical rules due to university policy, but also due to their religious beliefs and commitments. In this way, ethics are not only formal rules, but also a reflection of the way of life and values they adhere to. Academic ethics is one important aspect of this, which ensures that the learning and research process is carried out with high integrity and morality in accordance with Islamic teachings (Lestari, 2022).

2. Students actively formulate and internalize moral principles in an academic context

Students who actively formulate and internalize moral principles in an academic context are an

important characteristic of education that focuses on developing character and ethics. In the learning process, students not only accept ethical norms as teachings, but also play an active role in formulating moral principles that are relevant to the situations and challenges they face. They are invited to participate in discussions, debates, and ethical analyzes that encourage critical thinking about the values involved. Thus, they can understand the basics of ethics, such as honesty, integrity, responsibilities, and apply them in concrete academic context (Dawson, 1991).

Furthermore, the process of internalizing moral principles is important because students learn to make these values an integral part of their behavior in the academic environment. This is not just a theoretical understanding, but also a practical implementation of ethical values in everyday actions. Through self-reflection and experience, students learn how to face complex ethical challenges and make sound moral decisions. Finally, internalizing moral principles helps create an ethical educational environment, where students and academic staff alike behave with a high level of integrity and ethics. Three steps that need to be taken when students are active in internalizing academic moral principles are as follows:

a. Interactive Social

Interactive social in the academic context of students refers to the dynamics of relationships and social interactions that exist between fellow students in the educational environment. It includes various forms of collaboration, communication, and interaction that occur during the learning process. Interactive social plays a key role in enriching students' learning experiences because it not only enriches their social development but also helps in a deeper understanding of the subject matter, and even forms social networks that have significant value (Nikmah, 2019).

There are several important aspects of social interaction in the academic context of students that are worth paying attention to. First, collaboration in group projects is an

important element. Students are often given the opportunity to work in groups to complete academic assignments. It involves collaboration, sharing ideas, and solving problems together the same. Interactive social in this context allows students to learn from their peers, explore diverse points of view, and hone communication and collaboration skills (Danny et al., 2022).

Furthermore, classroom discussions and online forums also play an important role in creating an interactive learning environment. In-class discussions provide students the opportunity to participate in dialogue with the instructor and fellow students, allowing them to clarify understanding, ask questions, and discuss ideas relevant to the course material. In the digital era, the use of online forums and social media platforms also facilitates interaction outside the physical classroom, providing flexibility in sharing ideas and learning resources. Overall, interactive social in an academic context not only deepens understanding and improves students' academic performance but also helps them build social networks and professional contacts that are valuable in their future career development. Interactive socials in the academic world are not just a fun addition to a student's learning experience; This is an integral component in the formation of individuals who develop and are ready to face challenges in the world of work which increasingly requires strong communication and collaboration skills (Baginda et al., 2022).

b. Collaboration or collaborative

Collaborative skills are the ability to work together with other people to achieve common goals (Wargadinata, 2016). In an academic student environment, collaborative skills are especially important because students often have to work in groups or teams, whether in group projects, joint research, or class discussions. The use of artificial intelligence in this context refers to the use of artificial intelligence technology to facilitate and improve collaboration between

students. Understanding collaborative skills utilizing artificial intelligence. Collaborative skills that utilize artificial intelligence in the context of academic students include the ability to work together with other students with the help of artificial intelligence technology to achieve certain academic goals. This involves the use of artificial intelligence-based tools, platforms, or applications designed to facilitate teamwork, share information, and increase group productivity. These skills include the ability to communicate effectively, distribute tasks, manage projects, and contribute positively to collaboration with the help of artificial intelligence technology. Collaborative skills by utilizing artificial intelligence in the academic student environment (Afdal, 2015).

c. Critical Thinking

Critical thinking is the ability to analyze, evaluate, and formulate thoughts rationally and logically. This involves a process of deep thinking, questioning, and being critical of the information, arguments, or situations faced (Fakhriyah, 2014). In the context of students, critical thinking is a very important intellectual skill, because they are expected to pursue knowledge, solve problems, and make informed and evidence-based decisions. The following is the definition and several examples of critical thinking in the student environment. Critical thinking in the student environment is the student's ability to investigate, assess, and interpret information carefully and objectively. This involves thinking critically about the text, subject matter, or situation, and not just passively receiving information. Critical thinking allows students to develop a deeper understanding of a particular subject, make better decisions, and overcome academic and daily life challenges (Filsaime, 2008).

Overall, interactive social, collaborative or collaboration, and critical thinking are three important elements in students' academic and social development. Applying these skills in an educational context provides significant benefits in enriching the learning experience, preparing

students for challenges in the world of work that require strong communication and collaboration skills, and developing critical and analytical thinking.

Conclusions

Based on the research findings and discussion, it can be concluded that the paradigm artificial intelligence towards students' academic ethics, namely wanting to realize its implementation artificial intelligence to students by always paying attention to academic ethics, both in relation to students' academic ethics towards their institution in the form of moral ethics when carrying out the mission and objectives of the tri dharma of higher education, as well as students' academic ethics towards other individuals such as when interacting in the learning process. A constructivist perspective on paradigms artificial intelligence will be the theoretical framework that underlies student collaborative learning, demanding an active role from students, establishing dynamic interactions between individuals in the learning process, and always implementing synergistic integration artificial intelligence with student intelligence. So, students don't just depend on attending artificial intelligence but rather being able to take advantage of existing phenomena and form a progressive person. By having awareness in understanding and implementing student academic ethics, it will create students who remain ethical in this progressive era.

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