CHAPTER II

LITERATURE REVIEW

2.1 Perception

2.1.1 Definition of Perception

According to Yulianto (2022), perception is the interpretation obtained from a situation, not "understanding a situation". It should be noted that perception depends not only on physical stimuli, but also on ambient stimuli and conditions that exist within the human body. Literally, perception is the impressions one receives from the senses. These impressions are analyzed or organized, interpreted and evaluated. Individuals will gain meaning. In fact, one needs experience to gain perception. This can be learned by interacting with the surrounding environment. Perception has actually been in us since we were little because it is influenced by the environment and our interactions with others, it can be said because of an experience.

Leung, et al. (2023) clarified that perception, in humans, refers to the process by which sensory stimuli are converted into an organized experience. This experience or perception is the combined product of the stimuli and the process itself. The relationship between different types of stimuli (such as light waves and sound waves) and their associated perceptions suggest that inferences can be made about the properties of theories of perception that can be developed based on these inferences. Hardiyanti (2016) explained perception is a process of human

interpretation of a certain phenomenon after they get sensations from the environment through the sensory organs. Perception means forming an opinion or message about something that happens. Likewise, according to Amelta (2023) perception is a process of processing information received by the five senses from the environment and forwarded to the brain to be selected so as to cause an interpretation in the form of an assessment of sensing or previous experience.

According to Shambodo (2020), perception is connected to sensation. Sensation refers to the early detection of energy from the physical environment. The study of sensation is primarily focused with sensory structures and mechanisms, whereas perception requires higher cognition in the interpretation of sensory information. Then sensory stimuli are processed based on our knowledge of the world, society, expectations, and even adjusted to our needs.

Humans, as living beings, are also the subject of philosophical research. Alizamar & Couto (2016) stated if perception is seen as a process of sensing and interpretation from a psychological point of view, then perception can also be seen from a philosophical point of view, namely the philosopher's scientific point of view on the sensations obtained from the senses or information obtained from perception, which is commonly called the common sense of human observation. Among other things, the nature of human nature is the focus of philosophical research. Psychology became separated from philosophy because of the methods it uses, but psychology remains connected to philosophy, especially when it comes to questioning the nature and purpose of psychological science. We can see

from the descriptions below that the philosophers and thinkers have argued this way.

In addition, Oktaviana (2020) stated perception is the process by which we choose, organize, analyze, and draw conclusions about stimuli in our environment in order to obtain experience or knowledge. Stimuli that impact the consumer's senses trigger the perception process. Stimuli, or everything that affects the senses and creates perception, can take many forms, including anything that can be smelt, seen, heard, and touched.

Perception may alternatively be described as a series of mental processes that arrange sensory impulses into a meaningful pattern, so Sugiarto (2016) explained that perception is an internal process in which we choose, analyze, and arrange inputs from the external environment in order for people to behave in accordance with how they prepare their world or environment. Perception is an experience with things, events, or connections that results from inferring information and interpreting signals.

From the several definitions above, it can be concluded that perception is an assessment felt by the five senses by observing an object of problems, trends, environment, relationships, and other activities that can be used as information according to an individual's personal view. That way, if it is related to student perceptions, namely how they process a situation or situation to make certain judgments according to individual understanding that depends on their character,

opinions, experiences, and beliefs, which are seen from their impact, benefits, interests, and environment.

2.1.2 Factors of Perception

According to Yulianto (2022), some of the factors that influence perception are as follows:

1. Physiological factors; a large amount of information enters through the five senses. The information obtained will then influence and complement your activities and give meaning to the environment or reaction. Everyone's sensory ability to perceive something is different, so they interpret the surrounding environment differently.
2. Attention; the factor that influences perception is attention. Everyone needs energy to pay attention or focus on the physical form and mental facilities that exist in an object. Each person also has a different amount of energy so that they focus their attention differently on an object, which will affect their subsequent perception of the object.
3. Interest; in addition, perceptions of objects also vary greatly, according to how much perceptual energy or vitality can be mobilized to perceive the object. Perceived attention refers to a person's tendency to pay attention to certain stimuli, which can also be called interest. Everyone's interests also vary, depending on how they fit into everyday life.

4. Needs; this factor can be seen from the intensity of individuals in seeking objects or information that provide answers according to their expectations, so that they can see things in a positive way.
5. Experience; it can be said that a person's experience is how good his memory is which reflects how a person is able to remember past events. It is known that a broad and complex stimulus produces perceptions that affect him positively.

2.1.3 Types of Perception

According to Purwaningsih (2020), here are two types of perception based on sources, namely:

1. External perceptions are perceptions that arise due to stimuli from outside the individual (such as the environment, social relations and the Internet).
2. Self-perception is the perception that occurs due to stimulation from within a person. In this case, the object is our selves (Sunaryo, 2002).

2.1.4 Process of Perception

Before perception is formed, SAI (2023) explained there are several processes that occur, namely:

1. Receiving sensations; this process begins with the receipt of sensations through our senses while the person got satisfaction from getting confortable

or enjoy. Sensory information such as light, sound, smell, touch and taste are converted into nerve signals and sent to the brain.

2. Selection; since we receive various stimuli all the time, our brain has to choose which stimuli to pay more attention to. Factors such as relevance and relatedness play an important role in the selection process.
3. Organization; once a stimulus is selected, the brain organizes this information using principles such as similarity, continuity, and proximity. This helps group individual elements into more meaningful patterns.
4. Explanation; this process involves understanding information from an organization. Prior experience, context and expectations play a role in shaping our interpretation of stimuli.
5. Reaction; the outcome of the perception process is an individual's reaction to a stimulus. This reaction can be a physical action, feeling, or thought triggered by the perception.

2.2 AI Technology

2.2.1 Definition of AI Technology

AI Technology as media, Safitri (2019) stated that media is one of the most significant tools for students to interact with their interests. The term "media" refers to any forms of communication that convey ideas or thoughts. However, today this term is typically connected with certain media, notably newspapers or newspapers, television, radio, the internet, and graphic

publications. The media's primary aim is to communicate, although it can specialize in many ideologies such as informing, educating, transmitting, entertaining, creating opinions, teaching, monitoring, and so on.

Artificial Intelligence involves learning, reasoning, and self-correction, Lubis (2021) explained artificial intelligence (AI) is one of the most prominent technologies today. This technique has been used in various industries, including healthcare and banking. Not only that, Artificial Intelligence has also been widely used in everyday life. Artificial intelligence is especially useful for communication and location search. Artificial intelligence (AI) is a computer system capable of performing activities that would normally require human intelligence. This technology can provide feedback in the form of judgment by learning and utilizing data stored in the system. These techniques are comparable to the way humans check before making decisions.

According to Copeland (2024), artificial intelligence (AI) is the capacity of machines to do activities that are typically regarded as using human intelligence. Games, language translation, expert systems, and robotics are all examples of common uses for AI. While the possibility of robots emulating intelligence extends back to antiquity, current intelligence in machines did not exist until the 1940s, with the creation of digital computers. The evolution of artificial intelligence, or at least the emergence of intelligence, has coincided with increases in computer processing capacity, which appears to be the primary limiting factor. Early AI initiatives, like as chess and mathematical problem solving, are today

seen as comparatively simple in comparison to more complicated tasks like visual pattern recognition, complex decision making, and natural language processing.

The broad application of AI demonstrates its extraordinary utility and effective in a variety of industries or field, Purwanti (2023) explained that artificial intelligence (AI) is a strong computer science technology that can solve problems and perform tasks with the intellect of a person. AI, such as OpenAI's Chat GPT, has grown in success since its initial release in 2022. This technology has shown to be useful in a variety of situations (flexible), making activities easier and more efficient. It can assist with knowledge retrieval, brainstorming ideas, and locating references for academic tasks. With its sophisticated capabilities, AI has the potential to transform the way we work and live. It allows us to do activities more swiftly and efficiently, so enhancing our performance in daily life.

AI systems often use data to learn from prior events and enhance performance, Fujiyama (2024) stated that artificial intelligence (AI) is a sort of artificial intelligence that was developed by John McCarthy in 1995 and has since grown into a more complicated and complete technology. The origins of artificial intelligence are focused on the desire to make human work more productive and efficient. Artificial intelligence is capable of duplicating the human brain and thought. AI works by evaluating data, recognizing patterns or trends, and then making predictions or taking particular actions based on that knowledge..

In addition, artificial intelligence (AI) has advanced rapidly in recent years and now has a substantial effect in many areas of life, including education.

Artificial intelligence (AI) is described as robots' capacity to execute activities that would typically need human intelligence. AI may contribute to education in a variety of ways, including enhancing the learning process and customizing the learning experience. This study will look into the influence of artificial intelligence on schooling (University, 2023; Rifky, 2024).

2.2.2 Types of AI Technology

According to Binus University (2024), there are three forms of artificial intelligence technologies, which include:

1. Artificial intelligence technology organized by skills

   Artificial intelligence comes in a variety of ability levels, including:

a. Narrow artificial intelligence; sometimes known as weak artificial intelligence, is a subset of artificial intelligence that is designed to do specified tasks. This artificial intelligence technology possesses dependable cognitive capacities. However, limited artificial intelligence lacks the ability to learn independently.
b. AGI (Artificial General Intelligence); also known as Strong AI. This artificial intelligence system can learn, think, and execute a variety of tasks much like humans. Its purpose was to construct machines capable of doing a variety of jobs and assisting with daily duties.
c. Artificial super intelligence or Artificial Superintelligence (ASI) or super AI; this is still considered science fiction, with its own degree of awareness and

understanding that beyond human capabilities. This technology is portrayed in several films, notably Terminator, as the technology that will control mankind.

2. AI Technology Organized by Function

Furthermore, you can also recognize the types of AI based on their functions, such as:

a. Reactive machine AI; this AI technology can reply swiftly. They are intended to learn from prior events and enhance their performance. However, reactive machine AI technology does not have the capacity to store data.
b. Limited memory AI; which can store data and utilize it to create predictions. This capacity enables limited memory AI to create a short-term knowledge base and execute a variety of tasks using that information. Limited memory AI is created with deep learning technology that is akin to neurons in the human brain. The working mechanism enables limited memory AI to absorb and use data as learning material.
c. Theory of mind AI; which is an AI idea capable of understanding human emotions. This technology is still in its conceptual stage and has yet to be implemented. Although it has potential benefits, its presence can also be detrimental. Furthermore, the capacity to grasp emotional factors may lead to misunderstanding.
d. Self aware-AI; this AI technology has advanced beyond the theory of mind.

3. AI Technology Organized by Technology

Finally, you may discover the categorization of AI depending on the technologies utilized in its design, which are:

a. Machine learning; this artificial intelligence system is capable of self-learning. This capacity develops as a result of data availability and usage.
b. Deep Learning; this technology is built using numerous layers of neural networks. It is frequently used for large-scale data processing, as well as speech and picture recognition.
c. Natural language processing (NLP); which is intended to help robots comprehend and interpret human language.
d. Robotics; AI in robotics uses both hardware and sensor systems.
e. Computer Vision; this technology functions like a human eye for machines. This technology enables machines to recognize any thing captured in the camera.
f. Expert Systems; this technology can answer inquiries while also solving particular difficulties in various industries.

2.2.3 Artificial Intelligence Benefits in Education

Nowadays, there are many benefits of AI technology in everyday life, especially in the field of education. Here are some of the benefits:

1. AI technology as a translator; considering that English is a necessity nowadays. Translation tools are very useful for the general public and students. The existence of online dictionaries has become a good friend of every individual's cell phone. The biggest advantage is that it is practical and flexible, so translation tools are still the most popular AI technology today. For example, DeepL, Google Translate, etc.
2. AI technology as a reference search tool; in the world of lectures, sometimes students need a lot of references to support making assignments or creating scientific papers. The existence of AI technology is very useful because students can find references accurately, effectively, and efficiently. By only giving one to three words or more, AI technology can display the appropriate references accurately. This is certainly very helpful and beneficial for students. For example, ChatGPT, Perplexity.ai, etc.
3. AI technology as a summarizing tool; this technology is very beneficial for students who have difficulty in summarizing materials or journal articles. In some cases, the existence of this technology is quite negative for some lecturers, because they are worried that it can harm students who can make students not naturally understand related material. For example, Grammarly, QuillBot, Summarizer ai, etc.
4. AI technology as a paraphrasing tool; this is another popular AI technology. This technology is very helpful for students in paraphrasing a sentence or paragraph. This tool is very effective in finding synonyms and changing a few

sentences to avoid plagiarism when creating a scientific work. It is very helpful in creating a quote. For example, Quillbot, Paraphrase Online, etc.

2.2.4 AI Tools Commonly Used by University Students

The following are some of the most commonly used AI tools for students:

1. ChatGPT; natural language model created by OpenAI. It employs Generative Pre-trained Transformer (GPT) technology to produce responsive text and respond to user inquiries. ChatGPT is taught by evaluating a huge quantity of text from a variety of sources, including articles, books, and webpages. ChatGPT is driven by GPT-3.5, one of the most sophisticated AI systems available today. ChatGPT is intended to deliver relevant and useful responses based on the user's question or inquiry. It has a wide range of applications, including text-based virtual assistant, idea and content generator, and language translator. The model may be used for a number of reasons, including as assisting users with inquiries and difficulties, offering advice, producing creative material, and partaking in discussions. ChatGPT may react to queries by creating text based on the provided context and linguistic style (UMNAdmin, 2023).
2. Perplexity; a free AI search engine that aims to transform the way you find information. Ask any query, and this search engine will search the internet for accessible, communicative, and reliable responses. Consider Perplexity to be a research partner who is always available and saves you time by giving the

information you require. Perplexity has the same usability as ChatGPT, the advantage is that it always includes the related source data, so we can use the citations (Perplexity, 2024).

3. QuillBot; an internet tool for paraphrasing sentences to minimize plagiarism, summarizing large statements, and improving grammar to make them more succinct and professional. Unlike other grammar check services, QuillBot allows you to paraphrase phrases. The website, which was created in 2017, offers various fascinating features, including grammar checking, editing tools for academic and essay writing, and a plagiarism detector (Administrator, 2023).
4. Grammarly; this English grammar checker website has become a staple for many individuals. Grammarly is not only free to use, but it also boasts a comprehensive feature set and is simple to use. This website not only checks for typos, but it also reports punctuation mistakes and the compatibility of the language style to the sort of material being typed. Grammarly also gives feedback in the form of scores, allowing you to improve your writing. If you want to use Grammarly, first create an account. The second step is to establish your target audience and the sort of content you wish to edit. Following that, you can either copy and paste your desired text or submit it directly to Grammarly for rapid correction (Administrator, 2023).
5. DeepL; an AI-based translation tool that can catch any variation, context, or subtlety in a phrase and include it into the translation output. DeepL uses

neural networks and cutting-edge machine translation techniques to provide the most detailed and contextualized AI-based translations (Fahrani, 2023).

Thus, the indicators of this study are based on several theories, namely, Purwanti (2023) which explained that Artificial Intelligence (AI) is a technology that has proven useful in various situations because of its flexible use, making activities easier and more efficient. The advantages of AI technology, which is able to solve problems and perform tasks like human intelligence, show that its use is very effective in various fields It enables us to do tasks more quickly and efficiently, thereby improving our performance in daily life. This is also reinforced by the theory of Lubis (2021) that AI technology is very useful in communication and problem solving because AI technology is able to provide accurate feedback or assessment of a problem by studying data that involves learning, reasoning, and self-correction. Then Fujiyama (2024) also explained that Artificial Intelligence (AI) was developed by John McCarthy in 1995 to help humans become more productive and efficient because the technology is able to evaluate data, follow patterns or trends, and predict or make certain actions. Other indicators involved based on perception are also explained by the theory of SAI (2023) which explained the process of perception due to several things such as, getting a sensation after interacting that is comfortable, enjoyable, unique, and not boring can lead to feelings of satisfaction.

2.3 Previous Study

Ayu Annisa conducted this research in 2024 with the title "*Student Perceptions of the Utilization of Artificial Intelligence (AI) ChatGPT as a Source of Course Assignment Information*," which was published by the Faculty of Da'wah UIN Prof. K.H. Saifuddin Zuhri Purwokerto. The context of this study emphasizes the rapid progress of digital technology, which has permeated many sectors of life, including the field of education. ChatGPT, an artificial intelligence platform that students frequently utilize to seek references while completing schoolwork, is one technological innovation that has garnered notice. The purpose of this study is to examine how students perceive the use of ChatGPT, both in terms of the benefits and obstacles that arise in the academic context.

This study used a qualitative strategy to collect data, including observation techniques, in-depth interviews with students in the Islamic Broadcasting Communication studies program, and documentation. The findings revealed that most students value ChatGPT for its practical capacity to offer material promptly and relevantly. Despite this, students recognize the importance of verifying the information obtained to ensure data accuracy and authenticity. The debate in this study focuses on how ChatGPT might help increase the efficiency of the student learning process while also posing difficulties such as plagiarism and reliance on technology. As a result, it is vital to combine the use of this technology with an educational strategy that fosters digital literacy, ethical behavior, and critical thinking abilities. This study suggests that, while ChatGPT contributes significantly to coursework support, its use must be used with caution to protect academic integrity and the long-term viability of an effective learning process.

This research was conducted by Muhammad Tarmizi and Yahfizham in 2024 with the title "*Student Perspectives on the Use of ChatGPT Artificial Intelligence in Preparing Final Assignments*", which was published in Indiktika: Journal of Mathematics Education Innovation. The background of this research focuses on the role of technology, especially artificial intelligence, in education, with ChatGPT as an innovation that offers efficiency and convenience in preparing academic assignments. This study aims to explore the perspectives of UINSU Mathematics Education students regarding the benefits and challenges of using ChatGPT in preparing final assignments.

The study employed a qualitative method with a descriptive approach, utilizing a phenomenological design. Data were gathered by observation, detailed interviews with ten students, and documentation. The findings revealed that students consider ChatGPT as a tool for accessing information, enhancing work efficiency, and preparing final tasks. However, they are also aware of potential concerns such as incorrect information, plagiarism, a lack of expertise, and a loss of critical thinking skills. The research discussion demonstrated that students valued ChatGPT's ability to complete assignments quickly and provide new perspectives. However, maintaining academic excellence necessitates a critical attitude toward the material generated. Students are urged to use ChatGPT as a tool rather than a primary source, combining it with authentic academic references and demonstrating a thorough comprehension of the content. This study suggests that ChatGPT has enormous potential to help education, but its use must be balanced with academic responsibility and digital literacy.

Eva Fitriani Syarifah and Afief Fakhruddin did this study in 2024 and published it in the Journal of English Language Learning (JELL) under the title "Exploring Students' Experience in Using AI to Assist Their Writing". The context of this study emphasizes the difficulties experienced by university students in acquiring academic and professional writing skills, as well as the potential of artificial intelligence (AI) technology in assisting the process. This study seeks to investigate the benefits and applications of artificial intelligence in boosting students' writing skills.

The study used a qualitative methodology using a descriptive approach. Observation, open-ended questionnaires, and interviews were used to collect data from five Majalengka University English Education students in their second semester. The study discovered that students used AI applications such as ChatGPT, QuillBot, Grammarly, Jenni AI, and StoryAI for a range of objectives, including grammar checking, brainstorming writing ideas, and receiving early feedback. ChatGPT was recognized as the most important tool by all participants because to its ease of use.

The discussion of this study demonstrated that using AI into writing teaching can improve writing quality, motivation, and student involvement. AI gives prompt individualized feedback, assists in error detection, enhances phrase structure, and makes appropriate suggestions. However, teachers' advice is necessary to ensure ethical and original writing. This study suggests that AI is a valuable tool for supporting writing skills, but it must be utilized intelligently and

responsibly in order to deliver maximum benefits to students in an academic setting.

This study employs descriptive qualitative methods and focuses on student perceptions of the application of AI technology in the context of thesis writing, a more complex final project than regular coursework or articles. This focus contrasts with Tarmizi & Yahfizham's (2024) study, which likewise investigated students' impressions of the use of AI (ChatGPT) in thesis writing but was limited to UINSU Mathematics Education students, with findings emphasizing difficulties such as plagiarism and a lack of critical thinking. Meanwhile, Syarifah & Fakhruddin's (2024) study was broader, focusing on students' experiences with several AI programs (ChatGPT, Grammarly, QuillBot, etc.) for developing academic writing skills in general, rather than final tasks in particular. Their findings underlined the advantages of AI in providing rapid feedback and enhancing writing quality. In contrast, Annisa's (2024) research focuses on students' impressions of ChatGPT as a source of information for homework, rather than a formal writing tool. Overall, the study on students' impressions of AI use in thesis writing identified distinct problems to the research process and the need for in-depth critical analysis that were not addressed in the other three studies.