

RELiance ON ARTIFICIAL INTELLIGENCE IN ETHNOBEAUTY AND WELLNESS LEARNING AND ITS CONSEQUENCES FOR STUDENTS' SELF-REGULATED LEARNING

SHAFIRA DINAR RAHMANDA

S1 Cosmetology Education, State University of Surabaya

25111804076@unesa.ac.id

M. Mamduh Winangun

S1 Cosmetology Education, State University of Surabaya

mwinangun@unesa.ac.id

Sri Usodoningtyas

S3 Vocational Education, State University of Surabaya

sriusodoningtyas@unesa.ac.id

Abstract

The development of digital technology and generative Artificial Intelligence has transformed students' access to learning resources, including in cosmetology, ethnobeauty, and wellness education. Although AI can support information retrieval and learning efficiency, excessive reliance on AI may reduce students' active engagement in planning, monitoring, and evaluating their own learning processes. This study aims to analyze students' reliance on AI in learning and its consequences for Self-Regulated Learning through the perspectives of cognitivism and constructivism, with specific attention to beauty and wellness education. This study uses a qualitative approach with a secondary data-based case study by reviewing scientific publications related to AI in education, Self-Regulated Learning, learning theory, cosmetology education, ethnobeauty, natural beauty practices, and sustainable wellness. The results indicate that unreflective AI use can weaken students' cognitive processing, reduce independent knowledge construction, and limit reflective learning activities. In the context of ethnobeauty and wellness learning, this condition may affect students' ability to critically verify information about traditional beauty practices, natural ingredients, client needs, safety, and sustainability. The findings suggest that AI should be positioned as a learning scaffold rather than a substitute for students' thinking processes. Learning strategies such as problem-based learning, inquiry, reflection, collaborative practice, and guided AI literacy are needed to strengthen students' self-regulation while preserving cultural, ethical, and sustainable values in beauty and wellness education.

Keywords: Artificial Intelligence, Self-Regulated Learning, Cosmetology Education, Ethnobeauty, Wellness Learning, Constructivism.

INTRODUCTION

Digital transformation has changed the pattern of human interaction with knowledge, including in learning activities. The education system has shifted from a conventional approach to the use of artificial intelligence-based technology or Artificial Intelligence (AI). This technology is able to produce text, provide explanations, and solve various academic problems quickly. The presence of generative AI, such as large language models, accelerates access to information while transforming the way students acquire and process knowledge. Research Sulaeman et al. (2024) shows that AI can act as an effective learning tool in improving the efficiency of information search as well as supporting the understanding of certain materials.

In cosmetology education, the use of AI is not limited to general academic assistance. Students may use AI to search for information about skin and hair care, cosmetic ingredients, beauty trends, wellness routines, and traditional beauty practices. This issue is important because beauty and wellness learning requires not only conceptual understanding, but also practical judgment, cultural sensitivity, client safety awareness, and ethical decision-making. Ethnobeauty learning, in particular, is closely related to local wisdom, traditional knowledge, and the cultural meaning of beauty practices. Previous studies on plant-based and traditional cosmetics show that natural ingredients and ethnobotanical knowledge are not merely technical resources, but also part of cultural identity, sustainability, and community-based

knowledge systems (Gamage et al., 2022; Sultan et al., 2024).

The use of AI by students shows a significant increase since the introduction of various artificial intelligence-based platforms. Easy access and quick response make AI the top choice in completing academic assignments. This condition causes a shift in learning orientation, from process to result. Students no longer place the thought process as the main part of learning, but rather focus on completing tasks instantly. Studies conducted by Sarmita et al. (2025) suggests that the use of generative AI has the potential to encourage academic practices that reduce cognitive engagement, especially when students use the technology without critical reflection.

The change in learning pattern is closely related to the concept Self-Regulated Learning (SRL). SRL reviews the ability of individuals to manage learning activities independently through the stages of planning, monitoring, and evaluating the learning process carried out. These individual abilities are the main indicators of academic success because they are related to self-control, motivation, and awareness of the learning process. Mahrufah and Rijanto (2024) explained that students with high SRL levels tend to have more targeted learning strategies and are able to adapt to various learning situations.

Self-Regulated Learning is particularly relevant in beauty and wellness education because students are required to make careful decisions before applying beauty procedures, selecting cosmetic ingredients, interpreting client needs, and evaluating treatment outcomes. Students with strong self-regulation are more capable of setting learning goals, monitoring their understanding, reflecting on mistakes, and revising their strategies. In the context of AI-assisted learning, these abilities become essential because AI-generated information may appear fluent and convincing, but still requires verification, contextual interpretation, and professional judgment. Zimmerman (2002) emphasizes that self-regulated learners actively manage their learning through forethought, performance control, and self-reflection, while Pintrich (2000) explains that self-regulation involves the control of cognition, motivation, behavior, and learning context.

The reliance on AI has the potential to affect key components in Self-Regulated Learning. Students who are used to relying on AI in completing tasks tend to reduce planning activities, as answers can be obtained directly without adequate preparation. The monitoring process for material comprehension has also decreased, because students no longer evaluate the extent to which information is understood independently. Self-evaluation becomes limited because learning outcomes

do not come entirely from the internal processes of students. The use of automation-based technology correlates with a decrease in self-regulation skills in learning.

This phenomenon can be analyzed through the perspective of learning theory. Cognitivism places mental activity at the core of the learning process, including attention, understanding, and information processing. When students rely on AI to obtain answers instantly, those mental processes don't take place optimally. Constructivism emphasizes that knowledge is built through the active involvement of individuals in the learning experience. Reliance on AI has the potential to reduce such engagement, so that the knowledge construction process does not occur optimally. Research by Satrio (2025) suggests that the use of AI without proper pedagogical design can hinder the formation of deep understanding in students.

Based on this description, there are several problem formulations that need to be studied. First, what form of AI dependence occurs in student learning. Second, how learning theory explains the phenomenon. Third, what are the consequences of AI dependence on students' Self-Regulated Learning. Fourth, how to approach the appropriate handling based on learning theory.

Therefore, the issue of AI reliance should not be understood only as a general educational problem, but also as a specific concern in cosmetology, ethnobeauty, and wellness learning. If students use AI merely to obtain instant answers, they may fail to develop the ability to connect scientific knowledge, traditional beauty values, natural ingredient literacy, and sustainable wellness principles. This concern is consistent with the need to develop beauty education that is not only technologically adaptive, but also culturally grounded, ethically responsible, and oriented toward holistic health.

This study aims to analyze the dependence of AI in learning and examine its consequences on students' Self-Regulated Learning. The analysis was carried out using the perspectives of cognitivism and constructivism as theoretical foundations. The results of the study are expected to contribute to the development of learning practices that maintain student independence in the midst of the use of artificial intelligence-based technology.

METHOD

This study uses a qualitative approach with a type of case study that focuses on the phenomenon of dependency Artificial Intelligence in learning and its consequences on Self-Regulated Learning students. The qualitative approach was chosen because it provides space to understand social phenomena in depth through

the interpretation of the available data. Case studies are used to examine specific phenomena in specific situations that are relevant to technology-based learning practices. Creswell and Poth (2016) Explains that the qualitative approach aims to understand the meaning of a phenomenon through descriptive and interpretive analysis of data.

The data source used is in the form of secondary data obtained from various scientific publications and official documents. The main data comes from journal articles that discuss the use of Artificial Intelligence, student learning behavior, and the concept of Self-Regulated Learning are used as support to strengthen the empirical picture related to technological developments in education. The use of secondary data allows researchers to obtain a broad picture and avoid limitations in data collection.

The secondary data were not limited to literature on AI and learning theory, but were also directed toward sources related to cosmetology education, ethnobeauty, natural cosmetics, traditional beauty knowledge, and sustainable wellness practices. The inclusion of these sources was intended to contextualize the phenomenon of AI reliance within beauty and wellness education. Therefore, the analysis examined not only how AI affects students' cognitive and self-regulatory processes, but also how such reliance may influence students' ability to understand cultural beauty practices, natural ingredient use, client-centered care, and sustainability issues in the beauty field.

The data analysis technique is carried out through several stages. The first stage is in the form of identifying phenomena related to the use of AI in student learning. The collected data is analyzed to find behavioral patterns that indicate a dependence on technology. The second stage is in the form of analysis using learning theories, especially cognitivism and constructivism, to explain how these phenomena occur. Theory is used as a framework to understand the relationship between the use of AI and the student learning process. The third stage is in the form of an interpretation of the relationship between AI dependence and Self-Regulated Learning. The analysis is focused on changes in learning behavior related to planning, monitoring, and self-evaluation.

The interpretation process was conducted by connecting three analytical dimensions. The first dimension was the educational dimension, which focused on AI reliance and Self-Regulated Learning. The second dimension was the theoretical dimension, which used cognitivism and constructivism to explain students' learning processes. The third dimension was the contextual dimension, which linked the findings to

cosmetology, ethnobeauty, and wellness learning. This analytical structure was used to ensure that the discussion remained relevant to both learning theory and the specific scope of beauty and wellness education.

The analysis process is carried out systematically through data grouping, interpretation of meaning, and association between empirical findings and theoretical frameworks. This method is in line with the thematic analysis approach that aims to identify patterns of meaning from the available data. Thematic analysis is used to organize data in a structured manner so as to produce consistent and academically accountable interpretations.

RESULTS AND DISCUSSION

Patterns of Artificial Intelligence Dependence in Student Learning

The use of Artificial Intelligence in learning activities shows significant changes in student learning behavior. AI-based technologies, especially generative models such as educational chatbots, have become a major source of information acquisition. Students use this technology to compile answers, complete assignments, and understand the subject matter. These activities are often carried out without an in-depth review process of the information obtained.

Kasneji et al. (2023) explains that generative AI provides a fast and structured response, so users are more likely to receive information directly without additional verification or analysis. There is a shift from exploration-based learning to instant learning. The use of generative AI is related to reduced involvement in high-level thinking activities, such as critical analysis and information evaluation.

The phenomenon of dependence can be seen from the pattern of repeated and unreflective technology use. Students tend to use AI directly when facing difficulties, without trying to understand the material through other sources. Activities such as reading books, looking for scientific references, or discussing with friends are becoming less and less frequent. Tlili et al. (2023) suggests that the use of AI in learning is often associated with time efficiency, but is associated with reduced active engagement with the material.

These changes are also related to the characteristics of the digital learning environment that provide quick access to information. Students are used to getting answers in a short time, so there is a tendency to avoid the learning process that requires more effort. The digital environment can affect the way students manage learning activities, especially when they are not accompanied by adequate self-regulation skills.

Another factor that contributes to the emergence of dependency is academic pressure. Students are faced with the demands of completing assignments in a limited amount of time, so the use of AI is considered an efficient solution. This condition is strengthened by the habit of using technology in daily life. Students who are used to using technology for various needs tend to apply the same habits in learning.

The reliance on AI has to do not only with the frequency of use, but also with the way it is used. Students who use AI as a tool to understand the material exhibit different learning patterns than students who use AI as a substitute for the learning process. In the first pattern, AI is used as an additional resource that supports understanding. In the second pattern, AI is used to obtain answers without an adequate learning process. This difference shows that the use of technology does not always have a negative impact, but depends on how it is used.

Consequences for Students' Self-Regulated Learning

The change in learning patterns shown through the use of AI is related to Self-Regulated Learning. SRL includes students' ability to manage the learning process through planning, monitoring, and self-evaluation. When students rely on AI, all three components undergo significant changes.

At the planning stage, students no longer develop a systematic learning strategy. Tasks are completed through AI-assisted learning without a clear set of learning objectives. Learning activities become reactive and unstructured. Baker (2017) explained that planning is the initial stage that determines the direction of the learning process. When this stage is not carried out, the learning process loses its systematic framework.

The level of monitoring has also decreased. Students do not conduct a review of the understanding gained from AI. The resulting answers are received without an evaluation process of their truth or relevance. This condition causes students to have no awareness of their level of understanding.

The self-evaluation stage is limited because the learning outcomes do not come entirely from individual efforts. Students do not reflect on the process that has been carried out. As a result, the ability to improve learning strategies becomes low. The use of automation-based technology can reduce engagement in reflection activities.

Analysis based on cognitivism shows that mental processes do not take place optimally when students rely on AI. Cognitivism emphasizes that learning involves processing information through attention, memory, and understanding. When students receive answers directly, the process does not occur optimally. Information does not go through the stages of analysis and synthesis.

Luckin et al. (2022) explained that AI-based technology should be used to support cognitive activities, not replace thought processes.

Constructivism provides an explanation related to student involvement in building knowledge. Knowledge is formed through experience and active interaction with the material. The reliance on AI reduces such engagement, so that students do not experience the knowledge formation process independently. Zawacki-Richter et al. (2025) suggests that the use of AI without a proper learning approach can hinder the formation of deep understanding.

This condition shows that the use of undirected AI is related to the decline in the quality of Self-Regulated Learning. Students become less independent, have no control over the learning process, and rely on technology to acquire knowledge. These changes have the potential to affect critical thinking skills and the quality of long-term understanding.

Relevance of AI Reliance to Ethnobeauty and Wellness Learning

The consequences of AI reliance become more complex when viewed in the context of ethnobeauty and wellness learning. Beauty education does not only transfer technical skills, but also develops students' ability to understand cultural values, local wisdom, body care traditions, natural ingredients, and holistic well-being. In ethnobeauty, knowledge about beauty practices is often transmitted through cultural experience, community tradition, and practical interaction with practitioners. Therefore, when students depend heavily on AI-generated information, they may receive decontextualized explanations that do not fully represent the cultural meaning, ethical considerations, or local practices behind traditional beauty knowledge.

Traditional and natural cosmetic practices require careful interpretation because they involve cultural sources, ingredient safety, preparation methods, and sustainability considerations. Gamage et al. (2022) explain that plant-based cosmetics are connected to biodiversity, inherited traditional knowledge, quality control, and sustainable development. Similarly, Sultan et al. (2024) show that traditional cosmetic practices may reflect cultural identity and community knowledge, particularly through the use of local plants for skin, hair, and body care. These findings indicate that beauty and wellness students need to evaluate AI-generated information critically rather than accepting it as complete knowledge.

From a constructivist perspective, ethnobeauty knowledge cannot be built only through instant digital answers. It requires interaction with learning materials, teachers, peers, clients, cultural references, and practical experiences. Vygotsky's concept of social interaction

and scaffolding supports the view that knowledge develops through guided participation within a social and cultural context (Vygotsky, 1978). Therefore, AI can be useful as a preliminary source of information, but it cannot replace the social, cultural, and practical processes required in beauty and wellness learning.

From a cognitivist perspective, excessive AI reliance may also increase superficial processing. Students may copy AI-generated explanations about natural ingredients, skin care routines, or wellness practices without analyzing the scientific basis, contraindications, or client suitability. This condition is related to cognitive load because students are exposed to abundant information but may not organize it into meaningful knowledge structures. Sweller (1988) explains that learning becomes ineffective when cognitive resources are not directed toward schema construction. In beauty education, this means that students must be guided to transform AI-generated information into verified, contextual, and professionally accountable knowledge.

AI use in ethnobeauty and wellness learning should therefore be designed as a reflective and inquiry-based activity. For example, students can be asked to compare AI-generated explanations about traditional cosmetic ingredients with scientific articles, local cultural sources, and teacher feedback. They can also be required to write reflective notes explaining how they verified the information, what cultural or safety issues were considered, and how the information could be applied responsibly in beauty practice. This strategy maintains the benefits of AI while strengthening students' Self-Regulated Learning, critical thinking, and professional responsibility.

Approach to Handling AI Dependency Based on Learning Theory

Efforts to handle AI dependence require an approach based on learning theory. Cognitivism provides direction for developing learning activities that involve active thinking processes. Teachers can design assignments that require analysis, evaluation, and problem-solving. Tasks that focus on the thought process encourage students to be actively involved in understanding the material. Luckin et al. (2022) explained that the integration of AI in learning needs to be directed to strengthen cognitive activity.

The constructivist approach emphasizes student involvement in building knowledge through experience. Problem-based learning can be used to encourage exploration as well as discussion. Students are directed to find solutions through interaction with the material and the learning environment. Tlili et al. (2023) suggests that the use of AI will be more effective when combined with active learning that engages students directly.

Strengthening Self-Regulated Learning is the main part in handling this phenomenon. Students need to be trained to develop metacognition skills, which are awareness of thought processes. Reflection activities need to be carried out in a structured manner so that students are able to evaluate understanding. The development of self-regulation is related to improving the quality of technology-based learning.

The role of teachers has a strategic position in directing the use of AI. Teachers can set rules for the use of technology and design learning that emphasizes process. Assessments focus not only on the final outcome, but also on how students obtain answers. This strategy aims to maintain student involvement in the learning process. The use of AI can still be used as a tool if it is accompanied by proper management. Technology is used to support understanding and expand insights, not to replace learning activities. This approach maintains a balance between the use of technology and the development of student learning independence.

In cosmetology, ethnobeauty, and wellness learning, teachers can design AI-assisted assignments that require students to verify, compare, and contextualize information. For instance, students may be asked to use AI to generate initial explanations about a traditional beauty ingredient, but the final task must include validation from scientific literature, cultural sources, and safety considerations. This approach prevents AI from becoming a shortcut and instead positions it as a scaffold for inquiry. UNESCO's guidance on generative AI in education also emphasizes the need for human-centered use of AI, including the protection of learner agency, cultural diversity, and ethical responsibility (Miao & Holmes, 2023).

Assessment should also be adjusted to evaluate the learning process rather than only the final answer. In beauty and wellness education, students can be assessed through reflective journals, source verification reports, practical demonstrations, peer discussion, and client-case analysis. These forms of assessment require students to show how they plan, monitor, and evaluate their learning. In this way, AI can support learning without weakening students' independence, cultural awareness, and professional judgment.

Conclusion

Reliance on Artificial Intelligence in learning has significant consequences for students' Self-Regulated Learning. The analysis shows that unreflective AI use may reduce students' ability to plan learning strategies, monitor their understanding, and evaluate their own learning outcomes. From the perspective of cognitivism, excessive reliance on AI can weaken attention,

information processing, and meaningful schema construction. From the perspective of constructivism, AI dependence may reduce students' active involvement in building knowledge through experience, interaction, reflection, and social scaffolding.

In the context of cosmetology, ethnobeauty, and wellness education, this issue becomes especially important because learning in this field is not limited to theoretical knowledge. Students are required to understand technical procedures, natural ingredients, client needs, cultural beauty values, ethical responsibility, and sustainability. AI-generated information can support learning, but it should not replace critical verification, practical experience, cultural interpretation, and professional judgment.

Therefore, AI should be positioned as a supportive learning tool rather than a substitute for students' cognitive and reflective processes. Learning strategies such as problem-based learning, inquiry learning, collaborative practice, reflective journals, and guided AI literacy are needed to strengthen students' Self-Regulated Learning. These strategies can help beauty and wellness students use AI responsibly while maintaining independence, cultural awareness, client safety, and sustainable beauty values.

Future studies are recommended to examine AI use directly among cosmetology students, beauty practitioners, and wellness educators. Empirical research is needed to understand how AI affects practical competence, cultural understanding, natural ingredient literacy, and professional readiness in the beauty and wellness field.

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Reliance On Artificial Intelligence in Ethnobeauty and Wellness Learning and Its Consequences for Students' Self-Regulated Learning

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