



## Are Argumentation Skills Can Describe Understanding Concepts?

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### ABSTRACT

**Objective:** Based on the several aspects, one aspect is quite important in the process of learning science, namely communicating. Argumentation is one of communication skills. Are argumentation can describe understanding concepts? **Method:** This study uses a literature review method from thirteen articles. **Results:** Argumentation skills can describe understanding concepts. Interpretation of the correlation coefficient shows that argumentation skills strongly correlate with understanding concepts. It is because argumentation skills positively correlate with critical thinking and logic skills. Argumentation skills can improve students' critical thinking level and logical skills in the thinking process. Everyone has good argumentation skills if has good critical thinking and good logic skills. **Novelty:** Argumentation skills are one of the communication skills that improve understanding of concepts. Argumentation skills are moderators for high-order thinking skills. It can occur because the components of argumentation skills are claim, evidence, and reasoning. Someone can meet all the argumentation skills components with good thinking.

## INTRODUCTION

Science is defined as three main pillars, namely, science as an attitude, science as a process, and science as a product. Concepts are the product of science. The concept is a collection of stimuli with the same attributes for organizing knowledge and experience into categories. Understanding concepts in science learning is an important aspect. Every student must have an understanding of concepts, namely scientific concepts. The Southeast Asian Ministers of Education Organization (SEAMEO) webinar in September 2022 explained that six skills are needed in 21st-century education: character, citizenship, critical thinking, creativity, collaboration, and communication. Three of the six skills critical, creative, and communication are higher-order thinking skills (Baguma et al., 2019; Kwangmuang et al., 2021; Lu et al., 2021; Nahar et al., 2022; Suherman et al., 2020; Supena et al., 2021). Higher-order thinking skills are the ability to think strategically to use information in solving problems, analyzing arguments, negotiating issues, or making predictions (Al-Husban, 2020; Alsaleh, 2020; Lu et al., 2021; Munawati, 2019; Quinn et al., 2015).

Learning is directed at creating an active, critical, analytical, and creative atmosphere in problem-solving through developing thinking skills. This thought process includes several aspects such as observing, classifying, measuring, looking for relationships, conducting experiments, and communicating (Alsaleh, 2020; Dökmecioğlu et al., 2022; Eslami et al., 2019; Henriksen et al., 2020; Lacerda et al., 2020; Lu et al., 2021; Munawati, 2019; Quinn et al., 2020; Radianti et al., 2020; Setiadi & Elmawati, 2019; Taques et al., 2021;

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