



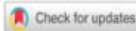
Chunking Techniques to Enhance Learning Outcomes in the Human Body System

Satwika Trianti Ngandoh¹, Riandi^{1*}, Adi Rahmat¹, Muslim¹, Emilia Candrawati², Muhammad Dirham³

¹ Universitas Pendidikan Indonesia, Bandung, Indonesia

² Universitas Bengkulu, Bengkulu, Indonesia

³ Indonesian School of Jeddah, Jeddah, Kingdom of Saudi Arabia



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ABSTRACT

Objective: Chunking is a cognitive method that breaks down complex material into smaller, more digestible pieces, improving comprehension and retention of knowledge. This study aims to assess the efficacy of the chunking strategy in improving student learning outcomes for human body system materials. **Method:** The research method was quasi-experimental with a post-test control group design. The research subjects of eighth-grade students consisted of experimental and control classes. The instrument used was a multiple-choice test to understand the concept of human body systems. **Results:** The study showed that the chunking technique effectively improved learning outcomes because it helped the brain process information better. The chunking technique increases students' understanding of the human body system's material, which impacts better learning outcomes. **Novelty:** This study introduces the chunking technique as a strategy in science learning, especially in understanding the material of the human body system. The chunking technique helps teachers present learning that suits the needs of students. The application of chunking techniques in learning, assisted by learning media, can accommodate the differences in student characteristics in class.

INTRODUCTION

The chunking technique divides complex information into smaller pieces that are easier to remember. The chunking technique is also known as segmentation. In particular, the results of the meta-analysis report that segmentation can improve information retention and transfer (Aalioui et al., 2022). The chunking technique is applied to subject matter with pictures and learning videos to make it easier for students to receive and manage information. The chunking technique can improve understanding of information related to symbols or images (Chen et al., 2024). Students who learn with visual media, for example, videos with chunking techniques, show significant improvements in concept understanding and problem-solving skills (Dewanti & Sulistyaningrum, 2023; van Nooijen et al., 2024; Zhang et al., 2020). Adapting learning videos by breaking them into shorter segments can increase focus so that students can understand material with a high difficulty level. Visual support in the form of images and videos is important in science learning, especially in teaching abstract material that students cannot observe directly in the real world.

Some science materials have abstract and complex concepts, requiring an appropriate approach and strategy in their presentation (Dikmen & Korkmaz, 2020). One example of science material that has an abstract concept is the human body system (Astuti et al., 2020). Students cannot directly observe the processes that occur when body systems work (Smith & Jones, 2023). In pictures or videos, Learning media is

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