ABSTRAK

PENGGUNAAN STRATEGI MULTIPEL REPRESENTASIDALAM UPAYA MENGENDALIKAN BEBAN KOGNITIF PESERTA DIDIK SMA PADA PEMBELAJARAN FILUM PLATYHELMINTHES

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Multipel representasi merupakan strategi untuk menyampaikan kembali suatu konsep melalui berbagai mode verbal maupun mode visual dengan menggunakan bantuan media pembelajaran. Penelitian bertujuan untuk menganalisis penggunaan strategi multipel representasi dalam mengendalikan beban kognitif peserta didik dalammateri filum Platyhelminthes.Penelitian ini penting dilakukan karena masih jarangnya dilakukan penelitian terkait penggunaan strategi multipel representasi dalam pembelajaran Biologi. Subjek dalam penelitian ini melibatkan 50 peserta didik SMA kelas X MIA, yang dibagi menjadi kelas kontrol dan kelas eksperimen.Terdapat tiga komponen beban kognitif yang diukur yaitu *intrinsic cognitive load*(ICL) diukur berdasarkan kemampuan menerima dan mengolah informasi (MMI) dijaring dengan menggunakan *task complexity* yang disusun dalam bentuk lembar kerja, *extraneous cognitive load*(ECL) diukur berdasarkan usaha mental (UM) peserta didik yang dijaring dengan kuesioner*subjective rating scale* menggunakan skala Likert, serta *germane cognitive load*(GCL) diukur berdasarkan hasil belajar (HB) yang dijaring dengan menggunakan soal tes pilihan ganda berdasarkan pada indikator pembelajaran.Hasil analisismenunjukkan terdapat perbedaan signifikan pada beban kognitif antara kelas eksperimen (dengan strategi multipel representasi) dan kelas kontrol (dengan strategi konvensional). Korelasi antar tiga komponen beban kognitifsecara umum menggambarkan kelas eksperimen memiliki beban kognitif ICL, ECL dan GCL yang lebih rendah dibandingkan kelas kontrol.

Kata kunci : multipel representasi, beban kognitif, media pembelajaran, filum Platyhelminthes

ABSTRACT

USE OF MULTIPLE REPRESENTATION'S STRATEGIESIN EFFORTS TO CONTROL THE COST OF COGNITIVE SENIOR HIGH SCHOOL STUDENTS ON LEARNING PHYLUM PLATYHELMINTHES

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Multiple representations is a strategy to represents a concept through the various modes of verbal and visual mode with the help of instructional media. The study aims to analyze the use of multiple strategies of representation in controlling the cognitive load of learners in subjects phylum Platyhelminthes. This research is important because of the scarcity of research related to the use of multiple strategies of representation in learning biology. The subject in this research involves 50 high school students of class X MIA, which is divided into a control class and experimental class. There are three components of cognitive load measured, consists of intrinsic cognitive load (ICL) which is measured by the information proccessing captured by using task complexity arranged in the form of worksheets, extraneous cognitive load (ECL) was measured by mental effort (ME) participants students were captured by questionnaire of subjective rating scale using a Likert scale, and germane cognitive load (GCL) which is measured based on learning outcomes were captured using a multiple-choice test questions based on indicators of learning. The analysis showed significant differences in the cognitive load between the experimental class (with the strategy of multiple representations) and the control class (with a conventional strategy). The correlation among the three components of cognitive load generally describes the experimental class have cognitive load ICL, ECL and GCL lower than the control class.

Keywords: multiple representation, cognitive load, instructional media, phylum Platyhelminthes