THE USE OF DIGITAL INTERACTIVE MIND MAP TO ENHANCE STUDENTS' CONCEPT MASTERY AND CREATIVITY IN LEARNING EXCRETORY SYSTEM

RESEARCH PAPER

Submitted as Requirement to Obtain Degree of *Sarjana Pendidikan* in International Program on Science Education (IPSE) Study Program

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INTERNATIONAL PROGRAM ON SCIENCE EDUCATION

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APPROVAL FORM OF RESEARCH PAPER

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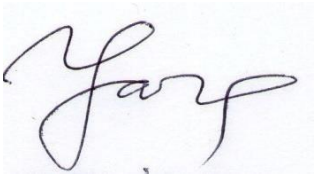

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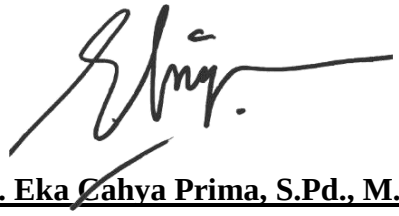

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DECLARATION SHEET

I do hereby declare that every aspect was written in this research paper entitled "THE USE OF DIGITAL INTERACTIVE MIND MAP TO ENHANCE STUDENTS' CONCEPT MASTERY AND CREATIVITY IN LEARNING EXCRETORY SYSTEM" with everything contained on it has been composed personally by myself including idea, effort, and works. The theories, findings of experts, opinions, and others contained in this paper have been quoted or referenced based on scientific code from UPI and in accordance with scientific ethics that applies in scholarly society. This declaration is created truthfully and consciously. I do not plagiarism that not appropriate with ethical science that applies in scholarly society. If there is a claim of any others towards the authenticity of this research paper, hence I am willing to responsible and accept academicals sanctions correspond to the rules.

Bandung, August 2020

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ABSTRACT

Students were raised in different ways in this called "digital natives" era that very familiar with technology. Students need to have the skills that can guarantee their competitiveness in the globalization age, and the skills needed are called 21st century skills. 21st century teacher should be ready to embrace the technology in learning process; one of the teaching media that can be used is Digital Interactive Mind Map. To enhance the quality of education, concept mastery and creativity is very important to be involved as elements of learning outcomes. Thus, this research was aimed to investigate the use of Digital Interactive Mind Map to enhance students' concept mastery and the effects towards creativity in learning excretory system. The method which was used in this research is pre-experiment with one group pretest-posttest design. The population in this research was one class of students in 8th grade in Private Junior High School in Bandung. The sampling technique was Convenience Sampling. The number of participants includes 18 male students. The result shows that the students' concept mastery improved as shown N-gain score is above 0.80 which categorized as high development. For students' creativity gained different result in every indicators but have the same interpretation which is "Good" with the results above 75%. Students' creativity for fluency indicator shows 81% of result, flexibility indicator is 79%, originality indicator is 77%, and elaboration shows 80% of result. Overall, the students show good impression to the implementation of digital interactive mind map in learning about excretory system. Based on the result, it significantly affects to students' concept mastery and creativity in learning excretory system.

Keywords*:* Digital Interactive Mind Map, Students' Concept Mastery, Students' Creativity, Excretory System

PENGGUNAAN *DIGITAL INTERACTIVE MIND MAP* UNTUK MENINGKATKAN PENGUASAAN KONSEP SISWA DAN KREATIVITAS PADA PEMBELAJARAN SISTEM EKSKRESI

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ABSTRAK

Siswa dibesarkan dengan cara yang berbeda di zaman "digital natives" yang erat kaitannya dengan teknologi. Siswa dituntut untuk memiliki kemampuan yang dapat menjamin daya saing mereka di zaman globalisasi. Kemampuan yang dibutuhkan tersebut yaitu *21st century skills*. Guru abad ke-21 harus siap untuk menggunakan teknologi dalam proses pembelajaran, salah satu media pembelajaran yang dapat digunakan *adalah Digital Interactive Mind Map*. Untuk meningkatkan kualitas pendidikan, penguasaan konsep siswa dan kreativitas sangat penting untuk dilibatkan sebagai unsur dari hasil pembelajaran. Maka dari itu, penelitian ini bertujuan untuk mengetahui pengaruh dari penggunaan *Digital Interactive Mind Map* terhadap penguasaan konsep siswa dan kreativitas dalam pembelajaran sistem ekskresi. Metode yang digunakan dalam penelitian ini adalah *pre-experiment* dengan desain with *one group pretest-posttest*. Populasi dalam penelitian ini adalah satu kelas siswa kelas 8 di salah satu Sekolah Menengah Pertama swasta di Bandung. Teknik pengambilan data yang diggunakan adalah *Convenience Sampling*, dengan jumlah siswa yang terlibat yaitu 18 siswa laki-laki. Hasil menunjukan adanya perkembangan dari penguasan konsep siswa ditunjukkan dari skor N-gain yaitu di atas 0.80 yang dikategorikan tinggi dan mengalami perkembangan yang signifikan. Untuk kreativitas siswa, diperoleh hasil yang berbeda pada setiap indikator degan menunjukan hasil interpretasi yang baik yaitu di atas 75%. Kreativitas siswa pada indikator *fluency* adalah 81%, indikator *flexibility* menunjukkan hasil 79%, Indikator *originality* adalah 77%, dan hasil 80% untuk indikator *elaboration*. Secara keseluruhan, siswa menunjukkan kesan yang baik terhadap penerapan *digital interactive mind map* dalam pembelajaran sistem ekskresi. Hasil menunjukkan, penerapan *digital interactive mind map* berpengaruh secara signifikan terhadap penguasaan konsep siswa dan kreativitas dalam pembelajaran sistem ekskresi.

Kata Kunci*: Digital Interactive Mind Map*, Penguasaan Konsep Siswa, Kreativitas Siswa, Sistem Ekskresi

PREFACE

Bismillahirrahmaanirrahiim,

Alhamdulillah, all praises and gratefulness given to Allah SWT because of blessing and mercy, so that the author can finished this research paper entitled "The Use of Digital Interactive Mind Map to Enhance Students' Concept Mastery and Creativity in Learning Excretory System". May the blessing and prosperities always be devoted to our great Prophet Muhammad SAW, to all his family, friend and to all of us until the end of time.

The research paper is the requirements for all university students to finish their study. As the student of International Program on Science Education study program, the author has an obligation to finish the research paper that focused on educational issues. The purpose of this paper is for enhancing concept mastery and creativity of junior high school students after conducting treatment. This paper is consisting of five chapters which are introduction, literature review, research methodology, result and discussion, and conclusion and recommendation.

However, the perfection is only belonging to Allah SWT, the author realizes that this research paper still has a lot of weaknesses that need to be improved. Comment, suggestion and positive critiques are really welcome in order to improve the quality of the research. Hopefully, the result in this research can be useful for the readers, especially whose come from the educational field as reading source and reference to gain more knowledge also insight for the future development.

Bandung, August 2020

The Author

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