GAMIFICATION CLASSROOM FOR ENHANCING STUDENTS' COMPUTATIONAL THINKING SKILLS IN LEARNING RESPIRATORY 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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GAMIFICATION CLASSROOM FOR ENHANCING STUDENTS' COMPUTATIONAL THINKING SKILLS IN LEARNING RESPIRATORY SYSTEM

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DECLARATION

I do hereby declare that every aspect is written in this research paper entitled "Gamification Classroom for Enhancing Students' Computational Thinking Skills in Learning Respiratory System" is genuinely a result of my original idea, effort, and works. The theories, finding of expert, opinion, and other contained in this paper have been quoted or referenced based on scientific code from UPI and accordance with scientific ethics that applies in scholarly society. This declaration is to create truthfully and consciously. When an infringement towards scientific ethnic subsequently is found or if there is a claim of any other towards the authenticity of this research paper, hence I am willing to responsible and accept academicals sanctions correspond to the rules.

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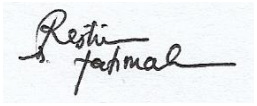

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GAMIFICATION CLASSROOM FOR ENHANCING STUDENTS' COMPUTATIONAL THINKING SKILLS IN LEARNING RESPIRATORY SYSTEM TOPIC

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ABSTRACT

This research aims to analyze the effect of gamification classroom to enhance students' computational thinking skills on the topic of the respiratory system. The method was designed in such a way as to present a variety of information, with diverse representations of the subject of the respiratory system and direct students to interpret information to build their understanding. Some types of representations used in this study are text, images and videos. In this study, the authors use the Classcraft application as a gamification classroom tool. The student learning process results are then measured to get the results of students' computational thinking skills. The method used in this study was the pre-experimental method (n = 40) of 8th-grade students, with a pretest and posttest one group design. The study results indicate that the gamification classroom method helps students to enhance the computational thinking skills, indicated by the t-test and N-gain value. Based on data analysis, it shows that the average computational thinking skills of students fall into the medium category. With value 0.44 for class A and 0.56 for class B. Furthermore, students' computational thinking skills in aspects of decomposition, abstraction, pattern recognition, and algorithms are categorized as medium. Also, the study results showed that students had a positive impression of gamification classroom by using the Classcraft application.

Keywords: *Classcraft Application, Gamification Classroom, Student Computational Thinking Skills.*

GAMIFIKASI KELAS UNTUK MENINGKATKAN KEMAMPUAN BERPIKIR KOMPUTASIONAL SISWA DALAM TOPIK SISTEM PERNAPASAN

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ABSTRACT

Penelitian ini bertujuan untuk menganalisis pengaruh gamifikasi kelas untuk meningkatkan kemampuan berpikir komputasional siswa dalam topik sistem pernapasan. Metode yang dirancang sedemikian rupa agar dapat menyajikan beragam informasi, dengan representasi yang beragam dari topik sistem pernafasan dan mengarahkan siswa untuk menafsirkan informasi untuk membangun pemahamannya. beberapa jenis representasi yang digunakan dalam penelitian ini adalah teks, gambar, dan video. Dalam penelitian ini, penulis mengunakan aplikasi Classcraft sebagai alat gamifikasi kelas. Hasil dari proses belajar siswa kemudian diukur untuk mendapatkan hasil kemampuan berpikir komputasional siwa. Metode yang digunakan pada penelitian ini adalah menggunakan metode pra-penelitian (n=40) terhadap siswa kelas 8, dengan rancangan satu kelompok prates dan postes. Hasil dari penelitian menunjukan bahwa metode gamifikasi kelas membantu siswa meningkatkan kemampuan berpikir komputasional siwa, terindikasi dari t-test dan nilai N-gain. Berdasarkan analisis data, menunjukan bahwa rata-rata keterampilan berpikir komputasional siswa termasuk kedalam kategori sedang. Dengan nilai 0.44 untuk kelas A dan 0.56 untuk kelas B. Lebih lanjut, kemampuan berpikir komputasional siswa pada aspek dekomposisi, abstraksi, pengenalan pola, dan algoritma dikategorikan sedang. Selain itu, hasil penelitian menunjukan, bahwa siswa memiliki kesan positif terhadap gamifikasi kelas menggunakan aplikasi Classcraft.

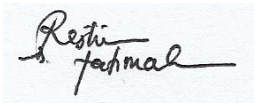
Keywords: *Aplikasi Classcraft, Gamifikasi kelas, Kemampuan berpikir komputasional siswa.*

PREFACE

All the praise belongs to Allah SWT because of His mercy and Grace. The author could finish the research entitled "Gamification Classroom for Enhancing Students' Computational Thinking Skills in Learning Respiratory System Topic. *Shalawat* and *salam* might be sent upon the prophet Muhammad SAW. The research has been conducted to analyze students' computational thinking skills in learning respiratory system. This research paper is a requirement to fulfill the Bachelor Degree in International Program on Science Education.

The Perfection belongs to Allah SWT. The author realizes that many weaknesses or limitations need to be improved. Thus, suggestions and recommendations are welcome for the better quality of students' computational thinking skills and the gamification classroom. Hopefully, this research might benefit for science education, computational thinking skills enhancement, and better teaching implementation.

Bandung, August 2020.



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