THE IMPLEMENTATION OF DISCOVERY LEARNING SUPPORTED BY SOLAR SYSTEM SCOPE APPLICATION TO ENHANCE STUDENTS' CONCEPT MASTERY AND CURIOSITY IN LEARNING SOLAR SYSTEM

RESEARCH PAPER

Submitted as Requirement to Obtain Degree of *Sarjana Pendidikan* in

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DECLARATION SHEET

Hereby, I declare that every respect which is written in the research paper entitled "The Implementation of Discovery Learning Supported by Solar System Scope Application to Enhance Students' Concept Mastery and Curiosity in Learning Solar System" is genuinely pure result of my own original ideas, efforts, research, work and not a copy or plagiarized from other papers. The opinions or findings of others which is contained in this research paper have been quoted or referenced based on scientific code of conduct and accordance with an ethical science that is applied in scholarly society. This declaration is created truthfully and consciously, when subsequently it is violation towards scientific ethics, or 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 applicable rules.

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ABSTRACT

Industrial Revolution 4.0 in education refers to put students in front to complex situations to develop critical thinking and complex problem solving by involving technology. The aim of this research is to investigate the effect of implementing discovery learning supported by Solar System Scope application to enhance students' concept mastery and curiosity in learning solar system. The method used in this research was a weak experimental research. The one group pre-test post-test is used in this research as research design. The sample was taken by convience sampling. Participants were 31 7th grade students at one Junior High School in Bandung, Indonesia. Students learnt using discovery learning supported by Solar System Scope application. The result of students' concept mastery after the treatment were enhance from pre-test to post-test with N-Gain 0.48 which categorized as medium. Implementing the treatment also enhance the passing rate 70.96%. The result shows the highest improvement in the subtopic of Eclipse. There is also improvement in cognitive domain of C4 with N-Gain 0.63. This shows that there is no statiscally significant difference in students' gender after implementing the treatment. The result of students' curiosity that learnt using discovery learning supported by Solar System Scope application were enhance with N-Gain 0.38 which categorized as medium. The treatment also shows highest improvement in science and embrace aspects with N-Gain 0.39. Based on this results showed that discovery learning supported by Solar System Scope application can be an alternative learning tool to enhance students' concept mastery and students' curiosity.

Keyword: Discovery Learning, Solar System Scope application, Students' Concept Mastery, Students' Curiosity, Solar System

PENERAPAN *DISCOVERY LEARNING* DENGAN BERBANTUAN APLIKASI *SOLAR SYSTEM SCOPE* UNTUK MENINGKATKAN PENGUASAAN KONSEP DAN RASA KEINGINTAHUAN SISWA DALAM PEMBELAJARAN TATA SURYA

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ABSTRAK

Revolusi industri 4.0 dalam pendidikan mengacu kepada menempatkan siswa untuk dapat menghadapi situasi yang rumit untuk mengembangkan cara berpikir kritis dan menyelesaikan permasalahan yang rumit dengan melibatkan teknologi. Tujuan dari penelitian ini adalah untuk menyelidiki pengaruh penerapan *discovery learning* yang didukung oleh aplikasi *Solar System Scope* untuk meningkatkan penguasaan konsep dan rasa ingin tahu siswa dalam mempelajari tata surya. Metode yang digunakan dalam penelitian ini adalah penelitian eksperimental. Satu kelompok *pre-test* dan *post-tes*t digunakan dalam penelitian ini sebagai desain penelitian. Sampel diambil dengan menggunakan *convience sampling*. Partisipan berjumlah 31 siswa kelas tujuh di satu SMP di Bandung, Indonesia. Hasil penguasaan konsep siswa setelah diberikan perlakuan meningkat dari *pre-test* ke *post-test* dengan N-Gain 0,48 yang dikategorikan sedang. Dalam penerapan tersebut juga terdapat peningkatan dari Kriteria Ketentuan Minimum (KKM) sebesar 70,96%. Hasil penelitian menunjukan peningkatan tertinggi pada subtopik gerhana. Terdapat juga peningkatan pada penguasaan konsep siswa dengan peningkatan tertinggi pada ranah kognitif di C4 dengan skor N-Gain 0,63. Penelitian ini menunjukan bahwa tidak terdapat perbedaan secara statistik pada jenis kelamin siswa setelah diberikan perlakuan. Hasil dari keingintahuan siswa yang belajar *discovery learning* yang didukung oleh aplikasi *Solar System Scope* meningkat dengan N-Gain 0,38 yang dikategorikan sedang. Hasil penelitian menunjukan peningkatan pada aspek *science* dan *embrace* dengan N-Gain 0,39. Berdasarkan hasil ini menunjukkan bahwa *discovery learning* yang didukung oleh aplikasi *Solar System Scope* dapat menjadi alat pembelajaran alternatif untuk meningkatkan penguasaan konsep siswa dan keingintahuan siswa.

Kata kunci: *Discovery Learning, Solar System Scope app*, Penguasaan Konsep , Rasa Ingin Tahu Siswa, Sistem Tata Surya

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