THE IMPLEMENTATION OF ACTIVE LEARNING-BASED SCIENCE BLOCK TO IMPROVE STUDENTS' ACADEMIC ACHIEVEMENT AND SCIENCE-PROCESS SKILL IN LEARNING MOTION AND FORCE

RESEARCH PAPER

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I do hereby declare that every respect which is written in this research paper entitled "The Implementation of Active Learning-Based Science Block to Improve Students' Academic Achievement and Science-Process Skill in Learning Motion and Force" is genuinely pure result of my own original ideas, effort, research, work and not copied or plagiarized from other papers. The opinion 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 ethical science that applied in scholarly society. This declaration is created truthfully and consciously, when subsequently it is found an infringement 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 academical sanctions correspond to applicable rules.

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Abstract

Indonesian students are categorized as low performer in science based on PISA and TIMSS survey. Eventhough the current curriculum demand a learning environment that is students-centered, for 6 six years there is no improvemnet in students' science performance due to so many factor, for example the teaching strategies that the teacher uses in class. This study is made to investigate the effect of active learning-based science block towards students' academic achievement and science process skill in learning motion and force. This study uses weak experiment method with the sample of 53 students in one of Junior High School in Bandung City. The result of this research indicates medium improvement of students' academic achievement with the N-gain of 0.35. The highest N-gain is on the subtopic of linear motion with the N-gain of 0.85 and the cognitive level of applying (C3) with the N-gain of 0.78. The science process skill of students was found to be inadequate for all aspects that includes observing skill, inferring skill, and communicating skill whilst their measuring skill was found to be needing an improvement. A further research is desired to measure the changes in students' science process skill through the implementation of active learning-based science block.

Keywords: Active Learning, Academic Achievement, Science Process Skill, Motion and Force

IMPLEMENTASI BLOK SAINS BERBASIS PEMBELAJARAN AKTIF UNTUK MENINGKATKAN PENCAPAIAN AKADEMIK SISWA DAN KETERAMPILAN PROSES SAINS DALAM MEMPELAJARI TOPIK GERAK DAN GAYA

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Abstract

Berdasarkan survey PISA dan TIMSS, siswa/i di negara Indonesia termasuk ke dalam kelompok siswa dengan kemampuan sains yang rendah. Meskipun kurikulum yang digunakan saat ini mewajibkan pengajar untuk melaksanakan pembelajaran yang berpusat pada siswa, tidak terdapat peningkatan yang signifikan pada kemampuan sains siswa dikarenakan berbagai macam faktor, seperti strategi pembelajaran yang digunakan oleh guru di dalam kelas. Penelitian ini bertujuan untuk menyelidiki efek penggunaan sain blok berbasis pembelajaran aktif terhadap pencapaian akademik dan kemampuan proses sains siswa dalam mempelajari topik gerak dan gaya. Metode penelitian kuasi digunakan pada penilitian ini dengan sampel sejumlah 53 siswa dari salah satu sekolah menengah pertama di kota Bandung. Hasil penelitian ini menunjukkan adanya peningkatan pada pencapaian akademik siswa dengan N-gain sebesar 0.35. N-gain tertinggi pada hasil tes siswa merupakan topik gerak lurus dengan N-gain sebesar 0.85 dan tingkat kognitif menerapkan (C3) dengan N-gain 0.78. Studi ini menemukan bahwa kemampuan proses sains siswa tergolong tidak memadai dalam hampir seluruh aspek yang meliputi kemmapuan pengamatan, kemampuan pengambilan kesimpulan, dan kemampuan berkomunikasi sedangkan kemampuan mengukur siswa membutuhkan peningkatan. Penelitian lanjutan diperlukan untuk menyelidiki efek penggunaan blok sains berbasis pembelajaran aktif pada kemampuan proses sains siswa.

Keywords: Pembelajaran Aktif, Pencapaian Akademik, Kemampuan Proses Sains, Gerak dan Gaya

CONTENT

Page

SHEET OF LEGITIMATION i
DECLARATION ii
ABSTRACT iii
PREFACE v
ACKNOWLEDGEMENT vi
CONTENTS viii
LIST OF TABLES x
LIST OF FIGURES xi
LIST OF APPENDICES xii

CHAPTER I INTRODUCTION 1
1.1 Background 1
1.2 Research Problem..... 5
1.3 Research Objectives 5
1.4 Research Benefit 5
1.5 Organization Structure of Research Paper 6
1.6 Limitation of Problem 7

CHAPTER II LITERATURE REVIEW 8
2.1 Active Learning Based Science Block 8
2.2 Students' Academic Achievement on Motion and Force 10
2.3 Students' Science Process Skill 14

CHAPTER III RESEARCH METHODOLOGY 17
3.1 Research Method and Research Design 17
3.2 Population and Sample 17

3.3 Research Instrument 18
3.4 Research Procedure 23
3.7 Data Analysis 26
3.8 Assumptions 27
3.9 Hypothesis 27
3.10 Operational Definition 28

CHAPTER IV RESULT AND DISCUSSION 29
4.1. Students' Academic Achievement 29
4.2 Students' Science Proces Skill 48

CHAPTER V CONCLUSION AND RECOMMENDATION 64
5.1 Conclusion 64
5.2 Recommendation..... 64

REFERENCE 66
APPENDICES 76
AUTOBIOGRAPHY 126

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