STUDENT'S ARGUMENTATION SKILL AND ATTITUDE TOWARD SCIENCE THROUGH SOCIO-SCIENTIFIC ISSUE-BASED LEARNING SUPPORTED BY LUCIDCHART IN ENERGY RESOURCE TOPICS

RESEARCH PAPER

Submitted as a requirement to obtain of Sarjana in International Program on Science Education (IPSE) Study Program

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Skripsi ini diajukan untuk memenuhi salah stau syarat
memperoleh gelar Sarjana Pendidikan
pada Program Studi International Program on Science Education (IPSE)
Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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Universitas Pendidikan Indonesia
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APPROVAL FORM OF RESEARCH PAPER

**STUDENT'S ARGUMENTATION SKILL AND ATTITUDE TOWARD
SCIENCE THROUGH SOCIO-SCIENTIFIC ISSUE-BASED LEARNING
SUPPORTED BY LUCIDCHART IN ENERGY RESOURCE TOPICS**
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DECLARATION SHEET

I do hereby declare that the research paper entitled "Students' Argumentation Skill and Attitude towards Science through Socio-scientific Issue-Based Learning Supported by Lucidchart in Energy Resource Topic" is a genuinely pure result on my work and not copied or plagiarized from other papers. The opinion or finding of others that written in this research has been quoted or referenced with the ethics used in academic society. Thus, I am willing to be responsible and accept academic sanctions correspond to applicable rules if later it is found that there is scientific ethics violation or claims from others towards the authenticity of this research paper.

Bandung, August 2021

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STUDENT'S ARGUMENTATION SKILL AND ATTITUDE TOWARD SCIENCE THROUGH SOCIO-SCIENTIFIC ISSUE-BASED LEARNING SUPPORTED BY LUCIDCHART IN ENERGY RESOURCE TOPICS

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Abstract

Students' argumentation skill as a part of critical thinking needs to be improved since it leads to develop 21st century skills. Unfortunately, the students faced on difficulty in developing argument; learning process at mostly schools in Indonesia has not fully trained the argumentation skill as shown by the low PISA score. However, the implementation of socio-scientific issue-based learning (SSI-BL) by using Lucidchart is expected to improve students' argumentation skill and attitudes toward science. This study was aimed to investigate the effect of SSI-BL by using Lucidchart on students' argumentation skill and attitudes toward science. The pre-experiment method with one group pre-test and post-test design in the form of written essay test and questionnaire were used as the data collection tools. The participants consist of 32 students of a seventh-grade that chosen by convenience sampling technique from one of junior high schools in Bandung, Indonesia. The result found that there is significant difference on students' argumentation skill with a low category. The claim aspect as the highest improvement, while data aspect was in the lowest improvement. Meanwhile, the students' attitude toward science revealed the negative results. However, the control belief was better than other attitudes' sub-scale, while the intention was in the lowest. Even though, the average score of pre-test and post-test categorized as in good category. Based on this research, SSI-BL by using Lucidchart can be one of the alternatives learning approach to improve students' argumentation skill and attitude toward science with some recommendation for further study.

Keywords: SSI-BL, Lucidchart, Argumentation Skill, Attitude toward Science, Energy Resource Topic, Science learning

KETERAMPILAN ARGUMENTASI DAN SIKAP ILMIAH SISWA DENGAN *SOCIO-SCIENTIFIC ISSUE BASED-LEARNING* YANG DIDUKUNG OLEH LUCIDCHART PADA TOPIK SUMBER DAYA ENERGI

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Abstrak

Keterampilan argumentasi siswa sebagai bagian dari pemikiran kritis perlu ditingkatkan karena mengarah pada pengembangan keterampilan abad ke-21. Sayangnya, para siswa menghadapi kesulitan dalam mengembangkan argumen; proses belajar di sebagian besar sekolah di Indonesia belum sepenuhnya melatih keterampilan argumentasi seperti yang ditunjukkan oleh skor PISA yang rendah. Namun, pelaksanaan *Socio-scientific Issue Based-Learning* (SSI-BL) dengan menggunakan Lucidchart diharapkan dapat meningkatkan keterampilan argumentasi siswa dan sikap ilmiah siswa. Penelitian ini bertujuan untuk mengivestigasi pengaruh pembelajaran berbasis sosio-saintifik isu terhadap keterampilan argumentasi dan sikap ilmiah siswa. Metode penelitian yang digunakan ialah pre-experimental dengan one-group pre-posttest design berupa soal uraian dan kuesioner digunakan sebagai alat pengumpulan data. Adapun partisipan penelitian ini terdiri dari 32 siswa kelas tujuh dari salah satu SMP di Bandung yang dipilih dengan teknik *convenience sampling*. Hasil penelitian menemukan bahwa ada perbedaan signifikan pada keterampilan argumentasi siswa dengan kategori rendah. Aspek klaim mengalami peningkatan tertinggi, sementara data mengalami peningkatan terendah. Sementara itu, ditemukan juga hasil negatif dari sikap ilmiah terhadap siswa. Namun, keyakinan kontrol lebih baik daripada sub-skala sikap ilmiah lainnya, sementara niat adalah yang terendah. Walaupun demikian, skor rata-rata *pre-test* dan *post-test* dikategorikan seperti dalam kategori yang baik. Berdasarkan penelitian ini, SSI-BL dengan menggunakan Lucidchart dapat menjadi salah satu alternatif pendekatan pembelajaran untuk meningkatkan keterampilan argumentasi dan sikap ilmiah siswa dengan mengikuti rekomendasi yang diberikan untuk penelitian lebih lanjut.

Kata kunci: SSI-BL, Lucidchart, keterampilan argumentasi, sikap ilmiah siswa, sumber energi, pembelajaran IPA

LIST OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIXES

REFERENCES

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