

**ENHANCING STUDENTS' PROBLEM-SOLVING SKILLS THROUGH
DESIGN THINKING APPROACH IN LEARNING ENVIRONMENTAL
POLLUTION**

RESEARCH PAPER

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**INTERNATIONAL PROGRAM ON SCIENCE EDUCATION
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Skripsi ini diajukan untuk memenuhi salah satu syarat memperoleh gelar Sarjana
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ABSTRACT

Indonesian students are categorized as low achievement in problem-solving skills based on the TIMSS survey. Whereas problem-solving skills is one of 21st-century skill that important for the student to have to compete globally with other countries. Design thinking is an approach that can be implemented in the learning process to improve student's problem-solving skills because design thinking help students to design the solution based on a user perspective. This study is made to investigate the enhancement of student problem-solving skills and students' experience toward design thinking in learning environmental pollution. This study using a Poor Experimental Method with a sample of 42 students in one of the Private Junior High school in Bandung. The result of this research indicates that there is an enhancement for student problem-solving skills in learning environmental pollution with the N-gain of 0.391. The N-gain in four aspects of problem-solving skills based on Polya's statements as follows (1) understanding the problem aspect of 0.33; (2) planning for the problem-solving aspect of 0.59; (3) implementing the problem-solving aspect of 0.83; and (4) reviewing the solution aspect of 0.61. Other thing found that student shows positive experiences towards design thinking. However, group collaboration presents a crushing problem for students to adopt design thinking on online learning.

Keywords: Problem-solving skills, Design Thinking, Environmental Pollution

**MENINGKATKAN KEMAMPUAN PEMECAHAN MASALAH PADA SISWA
MELALUI PENDEKATAN *DESIGN THINKING* DALAM PEMBELAJARAN
PENCEMARAN LINGKUNGAN**

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ABSTRAK

Siswa/i Indonesia berada dalam kategori pencapaian rendah dalam kemampuan pemecahan masalah berdasarkan survei yang dilakukan oleh TIMSS. Sedangkan kemampuan pemecahan masalah merupakan salah satu keterampilan abad 21 yang sangat penting dimiliki siswa untuk dapat bersaing secara global dengan Negara lain. Design Thinking merupakan pendekatan yang dapat diterapkan dalam pembelajaran untuk meningkatkan kemampuan pemecahan masalah siswa, karena design thinking membantu siswa dalam merancang solusi berdasarkan masalah yang ada dalam persepektif pengguna. Penelitian ini dilakukan untuk menyelidiki peningkatan kemampuan pemecahan masalah siswa dan mendeskripsikan pengalaman siswa dalam penggunaan pendekatan design thinking dalam pembelajaran pencemaran lingkungan. Penelitian ini menggunakan metode *Poor Experimental* dengan sample siswa sebanyak 42 siswa dari salah satu Sekolah Menengah Pertama Swasta di Bandung. Hasil dari penelitian ini menunjukkan adanya peningkatan kemampuan pemecahan masalah pada siswa dalam pembelajaran pencemaran lingkungan dengan N-gain sebesar 0,391. N-gain dalam empat aspek pemecahan masalah berdasarkan pendapat Polya diperoleh (1) aspek memahami masalah sebesar 0,33, (2) aspek merencanakan pemecahan masalah sebesar 0,59, (3) aspek menerapkan solusi sebesar 0,83, dan (4) aspek mengevaluasi pemecahan masalah sebesar 0,61. Hal lain ditemukan bahwa siswa memperlihatkan pengalaman positif dalam penggunaan pendekatan design thinking. Namun kolaborasi dalam grup menjadi permasalahan yang paling krusial dialami siswa dalam penerapan pendekatan design thinking dalam kondisi daring.

Kata kunci: Kemampuan pemecahan masalah, *Design Thinking*, Pencemaran Lingkungan

TABLE OF CONTENT

APPROVAL SHEET.....	i
DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
ABSTRACT.....	iv
TABLE OF CONTENT.....	vi
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF APPENDICES.....	ix
CHAPTER I INTRODUCTION.....	1
1.1 Background.....	1
1.2 Research Problem.....	4
1.3 Research Question.....	4
1.4 Limitation of Research.....	4
1.5 Research Objective.....	5
1.6 Research Benefit.....	5
1.7 Organization of the Research.....	6
CHAPTER II LITERATURE REVIEW.....	8
2.1 Student Problem-Solving Skills.....	8
2.1.1 Problem-Solving Skill.....	8
2.1.2 The Aspect of Problem-Solving Skills.....	8
2.1.3 The Important of Problem-Solving Skills.....	9
2.2 Design Thinking Approach.....	10
2.2.1 Design Thinking.....	10
2.2.2 The Implementation of Design Thinking Approach in Learning Process.....	12
2.2.3 Implementation Design Thinking Approach in Environmental Pollution Topic.....	13
2.3 Environmental Pollution.....	14
2.3.1.1 Water Pollution.....	15
2.3.1.2 Air Pollution.....	19
2.3.1.3 Soil Pollution.....	21
CHAPTER III RESEARCH METHODOLOGY.....	26
3.1 Research Method and Research Design.....	26
3.1.1 Research Method.....	26
3.1.2 Research Design.....	26
3.2 Research Subjects.....	27
3.3 Operational Definition.....	27
3.4 Hypothesis.....	28
3.5 Research Instrument.....	28
3.5.1 Objective Test.....	28
3.5.2 Students' Worksheet.....	35
3.6 Data Collection.....	39
3.7 Data Analysis.....	41
3.7.1 Statistical Data Processing.....	41
3.7.2 Descriptive Analysis.....	43
3.8 Research Procedure.....	44

3.8.1 Preparation Stage.....	44
3.8.2 Implementation Stage.....	44
3.8.3 Completion Stage.....	47
CHAPTER IV RESULT AND DISCUSSION.....	48
4.1. Implementation of Design Thinking Approach.....	48
4.2 Students' Problem-Solving Skills.....	64
4.3 Students Experience towards Design Thinking.....	74
CHAPTER V CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS.....	82
5.1 Conclusion.....	82
5.2 Implications.....	83
5.3 Recommendation.....	84
REFERENCES.....	85
APPENDICES.....	89

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