

CONTENTS

	Page
SHEET OF LEGITIMATION.....	i
DECLARATION.....	ii
ABSTRACT.....	iii
PREFACE.....	iv
ACKNOWLEDGEMENT.....	v
CONTENTS.....	vii
LIST OF TABLES.....	x
LIST OF FIGURES.....	xii
LIST OF APPENDICES	xiii

CHAPTER I INTRODUCTION

A. Background.....	1
B. Research Problem.....	3
C. Research Objective.....	4
D. Limitations of Problem.....	4
E. Significance of Research.....	5
F. Organization Structure of Research paper.....	5

CHAPTER II LITERATURE REVIEW

A. Imagination in Science Learning	7
B. Visual Representation in Science Learning.....	7
C. Visuo-spatial Abilities.....	9
D. Visuo-spatial Cognitive Taxonomy.....	10
E. Prior Knowledge.....	11
F. Concept Mastery.....	12
G. Gender Differences.....	13
H. Concept of Human Urinary System.....	15
	7

Atikah,2014

ROLE OF VISUO-SPATIAL REPRESENTATION TO IMPROVE STUDENT'S CONCEPTUAL MASTERY BASED ON GENDER IN LEARNING HUMAN URINARY SYSTEM
Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

CHAPTER III RESEARCH METHODOLOGY

A. Research Method and Design.....	21
B. Population and Sample.....	22
1. Research Location and Period.....	22
2. Population and Sample	22
C. Operational Definition.....	23
1. Visuo-spatial Representation.....	23
2. Conceptual Mastery.....	23
3. Students' Impression.....	23
D. Research Instrument.....	24
1. Design of Research Instrument.....	24
2. Instrument Analysis.....	26
a. Validity.....	27
b. Discriminating Power.....	28
c. Difficulty Level.....	29
d. Reliability.....	30
E. Data Analysis	32
1. Data Analysis toward cognitive Aspect	32
a. Quantitive Data Analysis.....	32
1) Scoring test items.....	32
2) Calculation of gain score and normalized gain.....	32
3) Normality test.....	33
4) Homogeneity test.....	34
5) Hypothesis test.....	34
2. Non Test Data Analysis.....	35
a. Qualitative Data Analysis.....	35
1) Data analysis of students' impression.....	35
2) Data interpretation.....	35
F. Research Procedure.....	36
G. Research Scheme.....	38

Atikah,2014

*ROLE OF VISUO-SPATIAL REPRESENTATION TO IMPROVE STUDENT'S CONCEPTUAL MASTERY BASED
ON GENDER IN LEARNING HUMAN URINARY SYSTEM*
Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

CHAPTER IV RESULT AND DISCUSSION	
A. Research Result	40
1. Conceptual Mastery.....	40
2. Normality, Homogeneity, Hypothesis Test.....	47
3. The Profile of Visuo-spatial Representation of Students'	49
4. Students Impressions.....	52
B. Research Discussion	55
1. The Improvement of Students' Conceptual Mastery through Visuo-Spatial Representation.....	55
2. The Difference of Conceptual Mastery Improvement after Learning through Visuo-spatial Representation	60
3. Profile of Students' Impression toward Visuo-spatial Representation	64
CHAPTER V CONCLUSIONS AND RECOMMENDATIONS	
C. Conclusions.....	68
D. Recommendation	69
REFERENCES.....	70
APENDICES.....	74
AUTOBIOGRAPHY.....	160

LST OF TABLES

	Page
Table 2.1 Visual-spatial Cognitive Abilities.....	10
Table 2.2 Applying the Cognitive Taxonomy to Visual-spatial Intelligences	11
Table 2.3 The Cognitive Domain Process.....	12
Table 2.4Gender Differences and Educational Implication.....	14
Table 2.5 The Organ and Function of Human Urinary System	16
Table 2.6 Kidney Structure.....	18
Table 3.1 Research Design: Two Group of Pre-test Post-test Design.....	21
Table 3.2 Blueprint of Objective Test Items before Validation.....	24
Table 3.3 Blueprint of Objective Test Items after Validation.....	25
Table 3.4 Student's Impression Questionnaire.....	26
Table 3.5 Validity Intepretation	27
Table 3.6Classification of Discriminating Power.....	28
Table 3.7 Difficulty level	29
Table 3.8 Reliability Interpretation.....	30
Table 3.9 Summary of Instrument Data Analysis Result.....	31
Table 3.10 Normalized Gain Score Classification.....	33
Table 3.11 Scoring Guideline of Likert scale.....	35
Table 4.1. Summary of student's statistical Test of Girl and Boy Classes.....	41
Table 4.2 The Composition of N-Gain Interpretation.....	44
Table 4.3 Conceptual mastery in Each Concept before Treatment.....	45
Table 4.4 Conceptual mastery in Each Concept before Treatment.....	45
Table 4.5 Recapitulation Students' Cognitive domain of Bloom Taxonomy..	46
Table 4.6 Result of Students' Wimba Model Project Score	50
Table 4.7 Result of Students' Test and Project	51

Atikah,2014

Table 4.8 Summary of student's Response towards Visuo-Spatial Representation as Learning Model	54
---	----

LIST OF FIGURES

	Page
Figure 2.1 The Components of the Urinary System.....	16
Figure 2.2 Kidney Structure.....	18
Figure 2.3 Scheme of Urine formation Mechanism.....	19
Figure 4.1 Average of Students' Pretest Score	42
Figure 4.2 Average of Students' Posttest Score	43
Figure 4.3 Average of Prettets and Postetst in Boy and Girl Classes.....	43
Figure 4.4 Comparison of N-Gain in Boy and Girl Classes.....	44
Figure 4.5 Wimba Model Made by Girl Students'.....	50
Figure 4.6 Wimba Model Made by Boy Students'.....	50
Figure 4.7 N-gain and Project Score of Student	52
Figure 4.8 N-Gain Value of Boys Class and Girls Cognitive Domain achievement	61
Figure 4.9 Comparison of Average Score Between Girls and Boys Class	65
Figure 4.10 Comparison of Percentage Between Girls and Boys Class	66

LIST OF APPENDICES

	Page
A. INSTRUCTIONAL TOOLS	
Appendix A.1 Lesson Plan	75
Appendix A.2 Student's Worksheet.....	85
Appendix A.3Project Planning Worksheet	89
B. RESEARCH INSTRUMENT	
Appendix B.1 Instrument of Test Items Judgments.....	99
Appendix B.2 Instrument Test BeforeValidation.....	114
Appendix B.3 Instrument Test After Validation.....	121
Appendix B.4 Rubric of Model Assesment	126
Appendix B.5 Instrument of Impression	127
C. RESULT OF RESEARCH DATA	
AppendixC.1 Data Processing of Test Item.....	129
AppendixC.2 Data Processing of <i>Likert-scale</i>	140
AppendixC.3 Data of Validation Result.....	143
D. DOCUMENTATION	
Appendix D.1 Documentation	157