# CONTENT LIST

<table>
<thead>
<tr>
<th>Legalization Sheet</th>
<th>i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biography</td>
<td>ii</td>
</tr>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>iv</td>
</tr>
<tr>
<td>Contents List</td>
<td>vi</td>
</tr>
<tr>
<td>Figures List</td>
<td>ix</td>
</tr>
<tr>
<td>Tables List</td>
<td>x</td>
</tr>
<tr>
<td>Appendix List</td>
<td>xii</td>
</tr>
</tbody>
</table>

## CHAPTER I INTRODUCTION

1.1. Background 1

1.2. Problem Identification 4

1.3. Problem Statements 4

1.4. Problem Limitations 5

1.5. Research Objectives 6

1.6. Benefits of Research 6

## CHAPTER II LITERATURE STUDY

2.1. Learning Media 7

2.2. Learning Module 9

   2.2.1. Innovative Module With Integration of Experiment 12

   2.2.2. Virtual Laboratory 13

2.3. Chemistry Practicum 16
2.4. The Difficulties of Studying Buffer Solution for Student 17

2.5. Buffer Solution 18

2.5.1. Buffer Solution Composition 18

2.5.2. pH value of the buffer solution 19

2.5.3. Work Principle of Buffer Solution 20

2.5.4. The Influence of Addition Acid And Base in Buffer Solution 20

2.5.5. Choosing Buffer Solution 21

2.5.6. Making Buffer Solution 21

2.5.7. Buffer in Daily Life 22

2.2. Conceptual Framework 23

CHAPTER III RESEARCH METHODOLOGY 24

3.1. Research Location and Object 24

3.2. Research Population and Sample 24

3.3. Design of the Research 25

3.4. Research Procedures 25

3.5. Data Collection 28

3.6. Data Analysis 28

3.6.1 Descriptive Analysis 28

CHAPTER IV RESULT AND DISCUSSION 31

4.1. Survey of High School Chemistry Guide Practicum Text Book 31

4.2. Analysis of High School Chemistry Guide Practicum Text Book 31

4.3. The Development of Innovative Chemistry Module With Integration Of Experiment 42

4.3.1 Standardization of Innovative Chemistry Module With Integration of Experiment By Chemistry Lecturer 44
4.3.2. Standardization of Innovative Chemistry Module With Integration of Experiment by Chemistry Teacher

4.3.3. Standardization of Innovative Chemistry Module With Integration of Experiment by Senior High School Student Grade XI

4.3.4. Standardization of Innovative Chemistry Module With Integration of Experiment by Chemistry Lecturer, Teacher, And Student.

4.3.5. Trial of Innovative Chemistry Module with Integration of Experiment in Senior High School

4.4. Discussion

CHAPTER V CONCLUSION AND SUGGESTION

5.1. Conclusion

5.2. Suggestion

REFERENCES