# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER NO.</th>
<th>TITLE</th>
<th>PAGE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>(i)</td>
</tr>
<tr>
<td>1</td>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1</td>
<td>BACKGROUND AND MOTIVATION</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>EVOLUTION OF E-LEARNING</td>
<td>2</td>
</tr>
<tr>
<td>1.3</td>
<td>PROBLEM OUTLINE</td>
<td>4</td>
</tr>
<tr>
<td>1.4</td>
<td>SOLUTIONS TO THE PROBLEM</td>
<td>5</td>
</tr>
<tr>
<td>1.4.1</td>
<td>EVOLUTION OF AN EFFECTIVE E-LEARNING FRAMEWORK</td>
<td>5</td>
</tr>
<tr>
<td>1.4.1.1</td>
<td>E-LEARNING FRAMEWORK</td>
<td>5</td>
</tr>
<tr>
<td>1.4.1.2</td>
<td>INCORPORATION OF SOCIAL NETWORKING</td>
<td>8</td>
</tr>
<tr>
<td>1.4.1.3</td>
<td>COURSE INTERACTION MODEL</td>
<td>9</td>
</tr>
<tr>
<td>1.5</td>
<td>RESEARCH CONTRIBUTIONS</td>
<td>10</td>
</tr>
<tr>
<td>1.6</td>
<td>CURRENT E-LEARNING TRENDS</td>
<td>11</td>
</tr>
<tr>
<td>1.6.1</td>
<td>LMS and KMS</td>
<td>11</td>
</tr>
<tr>
<td>1.6.2</td>
<td>MOODLE VS BLACKBOARD</td>
<td>15</td>
</tr>
<tr>
<td>1.6.2.1</td>
<td>COMPARISON OF BLACKBOARD AND MOODLE</td>
<td>17</td>
</tr>
<tr>
<td>1.6.3</td>
<td>ADDIE MODEL</td>
<td>18</td>
</tr>
<tr>
<td>1.6.3.1</td>
<td>ANALYSIS</td>
<td>19</td>
</tr>
<tr>
<td>1.6.3.2</td>
<td>E-LEARNING COURSE DEVELOPMENT</td>
<td>19</td>
</tr>
<tr>
<td>1.6.3.3</td>
<td>LEARNING SEQUENCING</td>
<td>22</td>
</tr>
</tbody>
</table>
1.6.3.4 ASSESSMENT
1.6.3.5 CONSTITUTIONS OF AN ONLINE COURSE
1.6.3.6 COURSE LAUNCHING
1.6.3.7 LEARNING PROCESS
1.6.3.8 COURSE COMPLETION
1.7 MASSIVE OPEN ONLINE COURSES
1.8 WEB 2.0
  1.8.1 WEB 3.0
1.9 LEARNING THEORIES
  1.9.1 BEHAVIORISM
  1.9.2 COGNITIVISM
  1.9.3 CONSTRUCTIVISM
  1.9.4 CONNECTIVISM
1.10 UML MODELING
  1.10.1 DOMAIN MODEL
  1.10.2 ACTIVITY DIAGRAM
  1.10.3 SEQUENCE DIAGRAM
  1.10.4 STATE MACHINE DIAGRAM
1.11 LIMITATIONS AND PRACTICAL IMPLICATIONS
1.12 ORGANIZATION OF CHAPTERS

2 REVIEW OF LITERATURE
  2.1 E-LEARNING – STATE OF THE ART
  2.2 PROBLEMS IN E-LEARNING
  2.3 E-LEARNING FRAMEWORKS
  2.4 SELF-REGULATED LEARNING
2.5 OPINION MINING AND SENTIMENT ANALYSIS

2.5.1 FACULTY-STUDENT INTERACTION

2.5.2 SENTIMENT ANALYSIS

2.6 WEB USAGE PATTERN ANALYSIS

2.7 SOCIAL NETWORKING

2.7.1 WORD-OF-MOUTH

2.7.2 ELECTRONIC WORD OF MOUTH

2.7.3 EVOLUTION OF OSN

2.7.4 ADVANCES IN OSN

2.7.5 OSN APPLICATIONS

2.8 RECENT TRENDS

2.9 MOOC RETENTION

2.10 RESEARCH GAP

3 OBJECTIVE

3.1 PRIMARY OBJECTIVES

3.2 SECONDARY OBJECTIVES

3.3 SELF-REGULATING E-LEARNING FRAMEWORK

3.3.1 CONTINUOUS IMPROVEMENT MODEL

3.3.2 DESIGN

3.3.3 MULTI-FACULY E-LEARNING MODEL

4 MATERIALS AND METHODS

4.1 EXPERIMENTAL DESIGN

4.1.1 EXPLORATORY FACTOR ANALYSIS

4.1.2 SENTIMENT ANALYSIS

4.1.3 WEB USAGE ANALYSIS
4.1.4 SOCIAL NETWORK ANALYSIS 76
4.1.5 DESIGN OF SEM BASED MODEL 77
4.2 EXPERIMENTAL PROTOTYPE-I 78
4.3 EXPERIMENTAL PROTOTYPE-II 80
4.4 STATISTICAL TOOLS USED 83
  4.4.1 DESCRIPTIVE STATISTICS 84
  4.4.2 INFERENTIAL STATISTICS 85
  4.4.3 ANALYSIS OF VARIANCE 86
  4.4.4 STRUCTURAL EQUATION MODELING 87
  4.4.4.1 MEASUREMENT MODEL 87
  4.4.4.2 STRUCTURAL MODEL 89
  4.4.4.3 SEM IMPLEMENTATION PHASES 89
  4.4.5 STATISTICAL SOFTWARE USED 90
4.5 DATA COLLECTION AND DEMOGRAPHICS
  OF PARTICIPANTS 90

5 RESULT 91
5.1 SRL ANALYSIS RESULT 91
  5.1.1 SURVEY OF SRL BEHAVIOR 91
  5.1.2 RESULT 91
5.2 SENTIMENT ANALYSIS RESULT 94
  5.2.1 SENTIMENT ANALYSIS 94
  5.2.2 N-GRAM ANALYSIS 94
  5.2.3 SENTIMENTS USING WORDCLOUDS 97
5.3 WEB USAGE ANALYSIS RESULTS 99
  5.3.1 WEB ANALYTIC CHARTS 99
5.4 SOCIAL NEWORKING ANALYSIS 102
  5.4.1 EXPLORATORY STUDY 102
ANNEXURE I

A. ABBREVIATIONS
B. LIST OF TABLES
C. LIST OF FIGURES
D. SRQ
E. SOCIAL NETWORKING SURVEY
F. GOOGLE SITES
G. QUIZ
H. SAMPLE DATA SET
I. DOCUMENTATION MOOC DATASET
J. DATA COLLECTION AND DEMOGRAPHICS OF PARTICIPANTS

ANNEXURE II

A. LIST OF PUBLICATIONS