# TABLE OF CONTENTS

## 1 INTRODUCTION  4

## 2 FORMAT  4

2.1 Binding  4
2.2 Length of theses / Dissertation  5
2.3 Paper and Duplication  5
2.4 Typing  5
2.4.1 Typing Quality  5
2.4.2 Spacing  6
2.5 Margins  6
2.6 Pagination  7
2.7 Footnotes, Endnotes and Notes  9
2.8 Tables  9
2.9 Figures  10

## 3 LAYOUT / ARRANGEMENT OF CONTENTS  11

3.1 The Preliminaries  11
1 The Title Page  11
2 Original Literary Work Declaration Form  11
3 Abstract  11
4 Acknowledgement  11
5 Table of Contents  11
6 List of Figures  11
7 List of Tables  11
8 List of Symbols and Abbreviations  11
9 List of Appendices  11

3.2 Main Text  11

3.3 Supplementary  12
3.3.1 Bibliography / References  12
1 Direct Quotations  12
2 Paraphrasing  12
3 Author’s name in text  12
4 Author’s name in parenthesis  12
5 Two authors 12
6 Three, four or five authors 13
7 Six or more authors 13
8 Secondary Sources 13
9 Work listed by title 13
10 Personal communication 13
3.3.2 Appendix /Appendices 14

4 MISCELLANEOUS NOTES / GENERAL INFORMATION 14
4.1 Use of Copyright / Plagiarism 14

5 APPENDICES
Appendices A1 – A3 Sample Covers 15
Appendix A4 Softbound copy for examination 18
Appendix A5 Hardbound copy for final submission 19
Appendices B1 – B2 Sample Spines 20
Appendix C Electronic Soft Copy 22
Appendices D1 – D5 Title Pages 24
Appendices E1 – E2 Original Literary Work Declaration 29
Appendices E3 Sample of a Good Abstract 31
Appendix E4 Sample of Table of Content 32
1. INTRODUCTION

Theses and dissertations of the Faculty of Education, University of Malaya reflect the standards that students need to abide by. As such, the rules and format in this document need to be strictly adhered to.

The guidelines in this document are specifically for the postgraduate students of the Faculty of Education, University of Malaya in the process of preparation of research reports, theses and dissertations. These guidelines follow the American Psychological Association (APA) format.

2. FORMAT

2.1 Binding

A research report/dissertation/thesis submitted shall be bound in one (1) volume. If there is a need for a second volume, special permission must be obtained from the Institute of Graduate Studies.

For the purpose of examination, a research report/dissertation/thesis submitted to the external examiner should be bound in soft cover rexine with the colour indicated below:

- Research report: Ocean blue or Light bright blue
- Dissertation: Dark red or maroon
- Thesis: Dark red or maroon

However, for submission to internal reader, student can choose to use simple binding (colour paper and plastic sheet as cover).

For final submission prior to graduation, a research report/dissertation/thesis submitted should be bound in hard cover rexine with the colour indicated below:

- Research report: Ocean blue or Light bright blue
- Dissertation: Dark red or maroon
- Thesis: Dark red or maroon

The thesis cover must be of A4 size (210mm x 297mm).

The title of a research report/dissertation/thesis, name of author, name of the university and year of submission must be printed in gold block on the front cover. The letters for the Front Cover should be font size 16, font type Arial Narrow, bold and in uppercase letters.

The examples are shown in Appendices A1 – A5

The spine of a research report/dissertation/thesis should show the title of research, name of author, year of submission and name of degree. The year of submission must be in accordance to the year when the research report/dissertation/thesis is submitted.

The examples are shown in Appendices B1 and B2.
### 2.2 Length of Thesis / Dissertation

A Research Report / Dissertation / Thesis should generally be in the range as given follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Word Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Research Report (12 credit hours)</td>
<td>14,000 - 17,000</td>
</tr>
<tr>
<td>b) Research Report (15 credit hours)</td>
<td>17,000 – 20,000</td>
</tr>
<tr>
<td>c) Masters Dissertation (Mixed Mode) (24 credit hours)</td>
<td>20,000 - 25,000</td>
</tr>
<tr>
<td>d) Masters Dissertation (Mixed Mode) (30 credit hours)</td>
<td>25,000 – 30,000</td>
</tr>
<tr>
<td>e) Masters Dissertation (Mixed Mode) (40 credit hours)</td>
<td>30,000 – 40,000</td>
</tr>
<tr>
<td>f) Masters Dissertation (Research Mode)</td>
<td>40,000 - 60,000</td>
</tr>
<tr>
<td>g) PhD Thesis (Mixed Mode)</td>
<td>60,000 - 80,000</td>
</tr>
<tr>
<td>h) PhD Thesis (Research Mode)</td>
<td>80,000 - 100,000</td>
</tr>
</tbody>
</table>

**Justification of Word count:** The Maximum word count for (f), (g), & (h) do follow the maximum limit of word count set by IPS.

The maximum length of words includes footnotes, references, appendices, tables, figures and prefaces.

A candidate who wishes to exceed the number of words specified must apply to the Senate through the respective Faculty at least three months before the submission of the research report/dissertation/thesis for examination and provide reasons for the inability to adhere to the prescribed length.

### 2.3 Paper and Duplication

The research report/dissertation/thesis should be printed, single-sided, on high quality white A4 paper (201 × 297 mm; 80 grams). Computer pin-feed printout paper is not permitted.

The research report/dissertation/thesis, in softcover or hardbound copies, must be typed and duplicated by offset printing or good quality photocopying. All copies must be clean and legible.
2.4 Typing

2.4.1 Typing Quality

The research report/dissertation/thesis must be typed using font type **Times New Roman, font size 12** (except for tables and figures) and **justified**, using Microsoft Word version 6.0 or later, or similar word-processing software. Research report/dissertation/thesis in Arabic should be typed using Font type Traditional Arabic in font size 16.

Words in a language that is different from the language of the research report/dissertation/thesis must be typed in italics.

For mathematical texts, the use of **Equation Editor** or **LaTeX** is advisable. Script fonts are not permitted.

Text should be typed on one side of a paper only. A high quality laser should be used for the printing.

2.4.2 Spacing

Double-spacing should be used throughout the text, including abstract. Single-spacing should be used for long tables, quotations, footnotes and bibliographic / reference entries.

2.5 Margins

The stipulated margins for the general text are as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>2.5 cm</td>
</tr>
<tr>
<td>Right</td>
<td>2.5 cm</td>
</tr>
<tr>
<td>Left</td>
<td>4.0 cm</td>
</tr>
<tr>
<td>Bottom</td>
<td>2.5 cm</td>
</tr>
</tbody>
</table>

The following guidelines also need to be followed as far as possible:

- Typing should not extend more than one line below the bottom margin and then only to complete a footnote or the last line of a chapter, subdivision or a caption.

- All tables and figures including their captions should conform to margin requirements.

- A new paragraph at the bottom of a page must have at least two full lines of text or it should begin on the next page.

- There should be only double spacing between paragraphs (the start of a paragraph must be indented).
2.6 Pagination

All page numbers are to be placed without punctuation 1.0 cm from the bottom edge at the right hand side. The recommended Font and size for the page numbers are Font type Times New Roman and font size 10.

In addition, the page numbering system must conform to the following rules:

- **The Preliminaries** include the Title Page, the Original Literary Work Declaration, Abstracts, Acknowledgement, Table of Contents, List of Tables, List of Figures, List of Symbols / Abbreviations / Nomenclature and List of Appendices. The Preliminaries are numbered in consecutive lower case Roman Numerals (i, ii, iii, iv, etc.)
- **The title page is considered as page i, but the number is not typed.** The Roman numeral ii appears on the first page that follows the title page and continues through for all the Preliminaries.
- The whole body of text, the Bibliography / References and the Appendices are numbered consecutively in Arabic numerals (1, 2, 3, etc.) beginning with 1 on the first page of the text.

2.7 Footnotes, Endnotes and Notes

APA does not recommend the use of footnotes and endnotes. Nevertheless, the APA format suggests using footnotes for two types of information: content comments and copyright permission.

2.8 Tables

Tables are useful for presenting a large quantity of information clearly and concisely. They typically display numerical data in columns and rows for easy classification and comparison. Tables do not duplicate text, but rather present information. They should be interpretable without the text.

Basic Presentation and Formatting:

1. **Numbering:** Each table is preceded by the capitalized word “table” followed by an Arabic number (e.g., Table 1.1, Table 1.2, Table 2.1, Table 2.2 and so on according to the Chapter). The number given to a table is determined by the order in which that table is referred to in the text (i.e., the first table discussed is Table 1.1, the second is Table 1.2, and so on). Capitalize “table,” and do not bold or italicize the text.

2. **Titling:** Each table has a unique title written directly below the table number. Titles should be brief yet descriptive. Capitalize each major word in the title (but not of, on, in, and, etc.). Italicize titles. Don’t put a period. Example: Mean Performance Scores of Students with Different College Majors

3. **Spacing:** Tables in the new 6th edition APA format can be double-spaced or single-spaced with readability as the primary consideration. Spacing should be consistent throughout the table.
4. Ruling: Put lines in a table only when they are necessary for clarity. Horizontal lines are permissible; vertical lines are not.

5. There can be notes for the table

An Example:

Table X.X

Kolmogorov-Smirnov and Shapiro-Wilk Tests for Normality Distribution

<table>
<thead>
<tr>
<th>Group</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Control group</td>
<td>0.094</td>
<td>41</td>
</tr>
<tr>
<td>Experimental group</td>
<td>0.106</td>
<td>39</td>
</tr>
</tbody>
</table>

Note. a. Lilliefors Significance Correction
* This is a lower bound of the true significance.

2.9 Figures

The 6th Edition of the APA Publication Manual gives the following guidance in relation to figures: A good figure:

1. Augments rather than duplicates the text, conveys only essential facts, omits distracting material, and is carefully planned.
2. Be certain in figures of all types that lines are smooth and sharp, units of measure are provided, axes are clearly labeled, and elements within the figure are labeled or explained.

An Example:

Figure X.X. Outline of Piaget's (1929) thoughts

©Copyright, Faculty of Education, University of Malaya
3 LAYOUT / ARRANGEMENT OF CONTENTS

The structure of the research project, dissertation or thesis is based on a standard format which contains the three main sections; Preliminary, Main Text and Supplementary.

3.1 Preliminary

This section consists in order of the following:

1. The Title Page : Appendix D1 – D5
2. Original Literary Work Declaration Form: Appendix E1 - E2
3. (a) Abstract : Appendix E 3 (a)
(b) Abstrak : Appendix E 3 (b)

The abstract should be written as one paragraph, double-spaced and should not be more than 500 words.

A good abstract should consist of brief description of the following:

(a) Statement of Problem (this includes the gap in literature briefly)
(b) Objectives of the Study
(c) Methodology (i.e. research design, sample size, and instruments used)
(d) Findings
(e) Conclusion

An Example of a good abstract is shown in: Appendix E3

4. Acknowledgements : Most Research Reports / Dissertations / Theses will include a brief statement of thanks in recognition of any assistance.

5. Table of Contents : Appendix E 4

6. List of Figures : This list should use exactly the same numbers and captions that appear below the figures in the text and the appendices. The numbering system is according to chapter, for e.g.: figures in Chapter 1 are numbered sequentially: Figure 1.1, Figure 1.2 and so on.

7. List of Tables : This list should use exactly the same numbers and captions that appear above the tables in the text and the appendices. The numbering system is according to chapter, for e.g.: tables in Chapter 1 are numbered sequentially: Table 1.1, Table 1.2 and so on.

8. List of Symbols and Abbreviations
and Abbreviations : If necessary to the presentation of the thesis, this list appears after the list of Tables and Figures

9. List of Appendices : This list contains the titles of appendices at the end of the research report/ dissertation / thesis
3.2 Main Text

The text is organized into chapters. There is no restriction on the total number of chapters but has to be agreed upon by the supervisor and the candidate. Opinions of the examiners and examination board can be taken into consideration. Generally, the basic structure of the thesis or dissertation is as follows:

1. Chapter 1: Introduction
   This chapter introduces the problem to be investigated and its background; the aim, the research objectives and research questions must be all aligned logically; the operational definitions; the scope of the study and the limitation of the study.

   Note: The conceptual and theoretical frameworks can be included here or as seen appropriate in other sections of the thesis.

2. Chapter 2: Literature Review
   A critical review of past literature written by accredited scholars and researchers relevant to the study must be discussed carefully. The candidate can review in depth research conducted as necessary from older publications but must include recent/current publications as well.

3. Chapter 3: Methodology
   The research design and procedures of sampling, data collection and analytical procedures must be explained and described in detail with all the necessary justifications and examples for the chosen approach.

4. Chapter 4: Findings and Discussion
   Findings must be presented via the written text, tables and figures and displayed clearly. The interpretation of the findings must be discussed in a scholarly manner.

   Note: The candidate may choose to separate Findings & Discussion into different Chapters as seen appropriate.

5. Chapter 5: Discussion and Conclusion
   The study findings must be summarized, discussed, the implications, suggestions from the study, suggestions for future research and a conclusion presented.
An example of main text layout is shown as follow:

3.3 Supplementary

This section includes the following:

3.3.1 Table of Content

The following format is only applicable to students’ intake from Semester 1, Session 2017/2018.

The Table of Contents lists the chapters, topics and sub-topics together with their page numbers. Sub-topics and topics should be labelled according to the chapter, for example:

Chapter 1: Title

1.1 Heading 1
   1.1.1 Heading 2
      1.1.1.1 Heading 3
         a. Heading 4
            i. Heading 5
   1.1.2 Heading 6
1.2 Heading 7
   ...
   ...

©Copyright, Faculty of Education, University of Malaya
Chapter 2: Title

2.1 Heading 1
   2.1.1 Heading 2
      2.1.1.1 Heading 3
         a. Heading 4
            i. Heading 5
   2.1.2 Heading 6
2.2 Heading 7

This numbering system provides a clear picture of the relationship between chapters and topics and shows how they are connected.

3.3.2 Bibliography / References

When citing in the text of the thesis (in-text citations), there are several rules to remember:

   In addition to the author and the date, direct quotations must also include the page number (or paragraph number for non-paginated sources). For example, (Smith, 2005, p. 27) or for a non-paginated source, such as online material: (Smith, 2008, para. 4). Use the abbreviation pp. for multiple pages.

2. **Paraphrasing**
   When paraphrasing, you do not need to include page or paragraph numbers. However, the APA Manual states page numbers may be included to help your reader locate the material you used in the original source.

3. **Author’s name in tag line**
   Smith (2009) studied psychomotor ability in football players.

4. **Author’s name in parentheses**
   Complex psychomotor skills were explored by observing numerous football games (Smith, 2009).

5. **Two authors**
   You need to cite both names every time you refer to a work by two authors. If the names are referred to in the text, only the year appears in parentheses; if the names are not referred to in the text, include the names in the parenthetical reference joined by an ampersand (&).
   Smith and Harrison (2007) found a high rate of collaborative learning activity among the participants. A high rate of collaborative learning activity was found among the participants (Smith & Harrison, 2007).
6. **Three, four, or five authors**

You must cite all authors, either in text or parenthetically, the first time they are referenced. From then on, use only the surname of the first author, followed by *et al.* Notice in the following examples that *et al.*, which means “and others,” is not italicized and ends with a period.

*First time authors referred to in the text:* Smith, Harrison, and Nelson (2004) conducted an experiment related to active learning.

*Subsequent references to the same authors in the text:* Smith et al. (2004) found that the subjects found active learning stimulating.

*First time authors referred to in the parenthetical reference:* Participants in the study conducted an experiment related to active learning (Smith, Harrison, & Nelson, 2004).

*Subsequent parenthetical references to same authors:* The subjects in the study found active learning stimulating (Smith et al., 2004).

7. **Six or more authors**

When there are six or more authors, use the last name of the first author followed by *et al.* for the first citation in the text as well as subsequent citations. Follow the same format for the parenthetical reference. Example, Smith et al. (2007)


Cite from original sources whenever possible. If you need to cite something that was mentioned or quoted in someone else’s work, describe the original work in the text of your paper, but cite the secondary source in your parenthetical reference and in the reference list. An example, if Harrison’s work is cited in Smith’s work and you did not read Harrison’s work, you will mention Harrison’s work in the text of your paper, but reference Smith’s work, both parenthetically and in the reference list as follows:

Harrison’s study (as cited in Smith, 2007)

In this example, Smith’s work will be the one listed in your reference list.

9. **Work listed by title**

If no author is given, use the article title (in quotation marks) or book title (italicized) in the text of your paper and in the parenthetical reference. You may use just the first several words, if the title is lengthy. For example, a parenthetical reference to the article “Integrating Technology into Education” which appeared in *New Social Science* without an identified author, can be cited as (“Integrating Technology,” 2010).

10. **Personal communications (APA Manual, p.179)**

Personal communications that are not recoverable, such as personal or phone interviews, email messages, and memos are cited in the text only and are not included in the reference list. (A. M. Smith, personal communication, September 8, 2011)

For more detail referencing style on multiple authors, authors of different ethnicity (e.g. Malay, Chinese, Indian, Punjabi, etc.), please refer to “APA Formatting and Style Guide by the University of Malaya Library” at:


©Copyright, Faculty of Education, University of Malaya 13
3.3.3 Appendix / Appendices

The Appendix section supports the main written text of the thesis. The Appendices may consist of research instruments, raw data, letters of consent, long results tables, photographs and such. Appendices can be labelled as APPENDIX A, APPENDIX B and so on.

4 MISCELLANEOUS NOTES / GENERAL INFORMATION

4.1 Use of Copyright / Plagiarism

Postgraduate candidate of the University of Malaya are expected to produce original academic work. Plagiarism is defined as the use of original work, ideas or actual texts created by others, without acknowledging the original source. Hence, failure to acknowledge the work of others in their work means the candidate is guilty of plagiarism and may be subjected to disciplinary action under the University of Malaya (Discipline of Students) Rules 1999. Postgraduate candidates are strongly advised to read the “How to Avoid Plagiarism: A Handbook for Postgraduate Students”, which outlines the rules and regulations pertaining to acts of plagiarism. The University also highly recommends the usage of Turnitin, an online web-based plagiarism detection application to avoid plagiarism and ensure academic integrity. The similarity index percentage should equal to or less than 15% (≤15%)
5. APPENDICES

A 1

Example of the Front Cover of a Research Report / Dissertation / Thesis

- Front Cover colour of Dissertation or Thesis (Maroon/ Dark Red)
- Front Cover colour of Research Report (Ocean Blue)

```
TITLE OF RESEARCH REPORT / DISSERTATION / THESIS

NAME OF CANDIDATE

FACULTY OF EDUCATION
UNIVERSITY OF MALAYA
KUALA LUMPUR

Font: Arial Narrow (Gold Lettering)
Size: 16, Bold
Spacing: 1.5
```

©Copyright, Faculty of Education, University of Malaya
Title of Research approved by the Faculty and Senate

Name of candidate as registered with the University

Faculty of Education as the student is registered here

Year of submission
THE NATIVE SPEAKER PROGRAMME: A QUALITATIVE STUDY ON NOVICE ESL TEACHER KNOWLEDGE, IDENTITY AND PRACTICE

FATIHAK BINTI SENOM

FACULTY OF EDUCATION
UNIVERSITY OF MALAYA
KUALA LUMPUR
2016
For PhD. Thesis for examination, the softbound copy must be in soft red rexine.

For Masters Dissertation for examination, the softbound copy must be in red

**Note: For Internal Examiner, the copy can be just simple binding, with colour paper and plastic sheet as cover.**
Example of hardbound thesis / dissertation (dark red/ maroon)

Example of hardbound research report (ocean blue)
B 2 – SAMPLE OF SPINE FORMAT FOR FINAL HARD COPY
C – ELECTRONIC SOFT COPY

The submitted electronic copy of the research report / dissertation / thesis in the form of a CD (in PDF format), is required to be labelled with the following details:

Name (Nama):
Matric Number (Nombor Matrik):
Name of Faculty (Nama Fakulti):
Year of Submission (Tahun Penyerahan):

Example:

<table>
<thead>
<tr>
<th>Name</th>
<th>Matric Number</th>
<th>Title</th>
<th>Faculty</th>
<th>Year of Submission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: SELECT ONLY ONE LANGUAGE
PILIH HANYA SATU BAHASA

©Copyright, Faculty of Education, University of Malaya 22
The Title Page is the first page after the front cover and should include:

a) The final research title which has been approved by the Faculty;
b) Name of candidate according to the registration records;
c) The statement as the following (according to mode of programme):

<table>
<thead>
<tr>
<th>Master's Degree</th>
<th>Doctoral Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Report (Coursework mode)</td>
<td>Dissertation (Mixed mode)</td>
</tr>
<tr>
<td>RESEARCH REPORT SUBMITTED TO THE FACULTY OF EDUCATION, UNIVERSITY OF MALAYA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF (Name of Programme)</td>
<td>DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF (Name of Programme)</td>
</tr>
<tr>
<td>Dissertation (Research mode)</td>
<td>Thesis (Mixed mode)</td>
</tr>
<tr>
<td>DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF (Name of Programme)</td>
<td>THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF (Name of Programme)</td>
</tr>
<tr>
<td>Thesis (Mixed mode)</td>
<td>Thesis (Research mode)</td>
</tr>
<tr>
<td>THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF (Name of Programme)</td>
<td>THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF (Name of Programme)</td>
</tr>
</tbody>
</table>
D 1 – TITLE PAGE FOR RESEARCH REPORT

TITLE OF RESEARCH REPORT
TAJUK LAPORAN PENYELIDIKAN

NAME OF CANDIDATE
NAMA CALON

SUBMITTED TO THE FACULTY OF EDUCATION, UNIVERSITY OF MALAYA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF COUNSELING
DISERAHKN KEPADA FAKULTI PENDIDIKAN, UNIVERSITI MALAYA SEBAGAI MEMENUHI SEBAHAGIAN KEPERLUAN BAGI IJAZAH SARJANA KAUNSELING

201...

Font: Arial Narrow
Size: 12
Spacing: 1.5

NOTE: SELECT ONLY ONE LANGUAGE
PILIH HANYA SATU BAHASA

©Copyright, Faculty of Education, University of Malaya
TITLE OF DISSERTATION
TAJUK DISERTASI

NAME OF CANDIDATE
NAMA CALON

DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION (LANGUAGE EDUCATION)
DISERTASI DISERAHKAN SEBAGAI MEMENUHI SEBAHAGIAN KEPERLUAN BAGI IJAZAH SARJANA PENDIDIKAN (PENDIDIKAN BAHASA)

FACULTY OF EDUCATION
UNIVERSITY OF MALAYA
KUALA LUMPUR
FAKULTI PENDIDIKAN
UNIVERSITI MALAYA
KUALA LUMPUR

201...

Font: Arial Narrow
Size: 12
Spacing: 1.5

NOTE: SELECT ONLY ONE LANGUAGE
PILIH HANYA SATU BAHASA
D 3 – TITLE PAGE FOR THESIS BY MIXED MODE

TITLE OF THESIS
TAJUK TESIS

NAME OF CANDIDATE
NAMA CALON

THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
TESIS DISERAHKAN SEBAGAI MEMENUHI SEBAHAGIAN KEPERLUAN BAGI
IJAZAH DOKTOR FALSAFAH

FACULTY OF EDUCATION
UNIVERSITY OF MALAYA
KUALA LUMPUR
FAKULTI PENDIDIKAN
UNIVERSITI MALAYA
KUALA LUMPUR

201...

Font: Arial Narrow
Size: 12
Spacing: 1.5

NOTE: SELECT ONLY ONE LANGUAGE
PILIH HANYA SATU BAHASA
TITLE OF DISSERTATION
TAJUK DISERTASI

NAME OF CANDIDATE
NAMA CALON

DISSERTATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF EDUCATION
DISERTASI DISERAHKAN SEBAGAI MEMENUHI KEPERLUAN BAGI IJAZAH
SARJANA PENDIDIKAN

FACULTY OF EDUCATION
UNIVERSITY OF MALAYA
KUALA LUMPUR
FAKULTI PENDIDIKAN
UNIVERSITI MALAYA
KUALA LUMPUR

201...

Font: Arial Narrow
Size: 12
Spacing: 1.5

NOTE: SELECT ONLY ONE LANGUAGE
PILIH HANYA SATU BAHASA
TITLE OF THESIS
TAJUK TESIS

NAME OF CANDIDATE
NAMA CALON

THEESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY
TESIS DISERAHKAN SEBAGAI MEMENUHI KEPERLUAN BAGI IJAZAH
DOKTOR FALSAFAH

FACULTY OF EDUCATION
UNIVERSITY OF MALAYA
KUALA LUMPUR
FAKULTI PENDIDIKAN
UNIVERSITI MALAYA
KUALA LUMPUR

201...

Font: Arial Narrow
Size: 12
Spacing: 1.5

NOTE: SELECT ONLY ONE LANGUAGE
PILIH HANYA SATU BAHASA
UNIVERSITI MALAYA

ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: ____________________________
(I.C./Passport No.: ____________________________)

Registration/Matrícul No.: ______________________

Name of Degree: _______________________________

Title of Project Paper/Research Report/Dissertation/Thesis ("this Work"): ____________________________

Field of Study:

I do solemnly and sincerely declare that:

(1) I am the sole author/writer of this Work;
(2) This Work is original;
(3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyright work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work;
(4) I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work;
(5) I hereby assign all and every rights in the copyright to this Work to the University of Malaya ("UM"), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM having been first had and obtained;
(6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate's Signature __________________________________________ Date: __________

Subscribed and solemnly declared before,

Witness's Signature __________________________________________ Date: __________

Name: ____________________________

Designation: ____________________________
E2– ORIGINA L LITERARY WORK DECLARATION FORM
(BAHASA MALAYSIA)

UNIVERSITI MALAYA
PERAKUAN KEASLIAN PENULISAN

Nama: (No. K.P/Pasport: 

No. Pendaftaran/Matrik:

Nama Ijazah:

Tajuk Kertas Projek/Laporan Penyelidikan/Disertasi/Tesis ("Hasil Kerja ini"): 

Bidang Penyelidikan:

Saya dengan sesungguhnya dan sebenarnya mengaku bahawa:

(1) Saya adalah satu-satunya pengarang/penulis Hasil Kerja ini;
(2) Hasil Kerja ini adalah asli;
(3) Apa-apa penggunaan mana-mana hasil kerja yang mengandungi hakcipta telah dilakukan secara urusan yang wajar dan bagi maksud yang dibenarkan dan apa-apa petikan, ekstrak, rujukan atau pengeluaran semula daripada atau kepada mana-mana hasil kerja yang mengandungi hakcipta telah dinyatakan dengan sejelasnya dan secukupnya dan satu pengiktirafan tajuk hasil kerja tersebut dan pengarang/penulisnya telah dilakukan di dalam Hasil Kerja ini;
(4) Saya tidak mempunyai apa-apa pengetahuan sebenar atau patut semunasabahnya tahu bahawa penghasilan Hasil Kerja ini melanggar suatu hakcipta hasil kerja yang lain;
(5) Saya dengan ini menyerahkan kesemua dan tiap-tiap hak yang terkandung di dalam hakcipta Hasil Kerja ini kepada Universiti Malaya ("UM") yang seterusnya mula dari sekarang adalah tuan punya kepada hakcipta di dalam Hasil Kerja ini dan apa-apa pengeluaran semula atau penggunaan dalam apa jua bentuk atau dengan apa juga cara sekalipun adalah dilarang tanpa terlebih dahulu mendapat kebenaran bertulis dari UM;
(6) Saya sedar sepenuhnya sekiranya dalam masa penghasilan Hasil Kerja ini saya telah melanggar suatu hakcipta hasil kerja yang lain sama ada dengan niat atau sebaliknya, saya boleh dikenakan tindakan undang-undang atau apa-apa tindakan lain sebagaimana yang diputuskan oleh UM.

Tandatangan Calon Tarih

Diperbuat dan sesungguhnya diakui di hadapan,

Tandatangan Saksi Tarih

Nama: 

Jawatan:

©Copyright, Faculty of Education, University of Malaya 30
Issues about low problem solving and mathematics performance in Malaysia has led to the need of deep understanding about factors that affecting mathematical problem solving among Malaysian students. This study examined the effects of metacognitive and problem solving strategies training on mathematical problem solving of lower secondary school students in Kuala Lumpur. A quasi-experimental research design was adopted. Three intact classes were randomly assigned into treatment group, comparison group and control group. The total number of participants in all the three groups was 86 where they were pre-tested and post-tested on mathematical problem solving. Prior to inferential testing, preliminary checks were conducted to ensure that there was no violation of the ANCOVA assumptions. After adjusting for mathematical problem solving pre-test scores, ANCOVA results reveal that metacognitive and problem solving strategies training has significant effect on mathematical problem solving, at p<.05 level for between the groups $[F(2,82)=19.635, p=.000, partial eta squared=.324]$. This result is consistent with the theories. Furthermore, planned contrasts for ANCOVA were conducted using Bonferroni adjusted alpha levels of .017 (.05/3). The finding reveals that problem solving strategies training only has no significant effect on mathematical problem solving. This means that the significant increase in mathematical problem solving is merely due to metacognitive and problem solving strategies training. In addition, the interaction effect of gender is not significant, with $F(2,82)=.047, p>.05$, which suggests that gender did not give effect to the training. Thus, it can be concluded that metacognitive and problem solving strategies training is more effective than problem solving strategies training only; and it is applicable and effective for both gender.

NOTE: If the thesis is written in English the English Abstract need not have a title. The Bahasa Malaysia title needs to be shown in the BM Abstract.

If the thesis is written in Bahasa Malaysia the BM Abstract need not have a title. The English title needs to be shown in the English Abstract.

Both the ABSTRACT/ABSTRAK and the TITLE must be in Capital letters and in Bold Font.
E4– SAMPLE OF TABLE OF CONTENTS FOR QUANTITATIVE RESEARCH

(Note: Students are encouraged to discuss with the supervisors on the relevant sub-topics that need to be included in the write up. This is just an EXAMPLE only)

CONTENTS

<table>
<thead>
<tr>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Literary Work Declaration Form</td>
<td>i</td>
</tr>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Abstrak</td>
<td>iii</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>iv</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>vi</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xiv</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xvi</td>
</tr>
<tr>
<td>List of Symbols and Abbreviations</td>
<td>xix</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>xx</td>
</tr>
</tbody>
</table>

Chapter 1: Introduction

1.1 Introduction ................................................................................. 1
1.2 Rationale of the Study ................................................................. 3
1.3 Statement of Problem .................................................................. 6
1.4 Purpose of the Study ................................................................... 9
1.5 Objectives of the Study ............................................................... 9
1.6 Research Questions .................................................................... 10
1.7 Research Hypotheses (if any) ...................................................... 11
1.8 Significance of the Study ........................................................... 12
1.9 Limitations of the Study ............................................................. 14
1.10 Scope of the Study ................................................................. 15
1.11 Operational Definitions ............................................................. 17
1.12 Summary .................................................................................... 18

Chapter 2: Literature Review

2.1 Introduction ................................................................................. 19
2.2 Related Theories and Models ......................................................... 19
2.3 Theoretical Framework of the Study ............................................ 25
2.4 Review of Constructs and Concepts Involved .................................. 27
2.5 Review of Past Studies ............................................................... 45
2.6 Conceptual Framework ............................................................... 64

©Copyright, Faculty of Education, University of Malaya 32
Chapter 3: Methodology

3.1 Introduction ............................................................................................................. 66
3.2 Research Design ....................................................................................................... 66
3.3 Population of the Study ......................................................................................... 68
3.4 Sample of the Study ............................................................................................... 68
3.5 Sampling Method .................................................................................................. 68
3.6 Location of the Study ............................................................................................. 69
3.7 Instruments of the Study ...................................................................................... 69
3.8 Validity and Reliability of Instruments .................................................................. 75
3.9 Data Collection Techniques .................................................................................. 78
3.10 Intervention Plan (for Experimental Study only) ................................................... 78
3.11 Controlling of Threats to Internal Validity (for Experimental Study only) ........ 80
3.12 Procedure of the Study ....................................................................................... 83
3.13 Ethical Concerns ................................................................................................... 86
3.14 Pilot Test .............................................................................................................. 88
3.15 Data Analysis ........................................................................................................ 90
3.16 Summary ............................................................................................................... 92

Chapter 4: Findings

4.1 Introduction ............................................................................................................. 93
4.2 Reporting of Findings (based on Research Questions) ......................................... 93
4.3 Summary ................................................................................................................ 100

Chapter 5: Discussion and Conclusion

5.1 Introduction ............................................................................................................. 101
5.2 Summary of Findings (not Summary of Research) ............................................... 101
5.3 Discussion .............................................................................................................. 102
5.4 Implications of the Study ..................................................................................... 112
5.5 Recommendations from the Study ........................................................................ 114
5.6 Recommendations for Future Research .............................................................. 116
5.7 Conclusion ............................................................................................................. 120

References:
Guidelines for the Preparation of Research Project, Dissertations and Theses (2017). Institute of Graduate Studies, University of Malaya


Purdue Online Writing Lab (OWL): APA Formatting and Style Guide. Retrieved from https://owl.english.purdue.edu/owl/resource/560/01/