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2 **INOVATIVE: TO CREATE NEW MODULE FOR**
3 **EFFECTIVENESS IN ADMINISTRATIVE STAFF**
4 **WORKFLOW BY USING FULLY SISTEMIZE**
5 **APPLICATION**

6 **RODNEY PETRUS BALANDONG**

7 **THIS REPORT IS SUBMITTED IN FULFILMENT**
8 **OF THE REQUIREMENT FOR THE**
9 **BACHELOR'S DEGREE IN SCIENCE WITH**
10 **HONORS**

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12 **RESOURCES**
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UNIVERSITI MALAYSIA SABAH

BORANG PENGESAHAN STATUS TESIS

INOVATIVE: TO CREATE NEW MODULE FOR EFFECTIVENESS IN
ADMINISTRATIVE STAFF WORKFLOW BY USING FULLY SISTEM-
IZE APPLICATION

Saya RODNEY PETRUS BALANDONG

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☐ Sulit Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA 1972

☐ Terhad Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan

☐ Tidak Terhad

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31

DECLARATION OF THESIS

32 Title of thesis

INOVATIVE: TO CREATE NEW MODULE FOR EFFECTIVENESS IN
ADMINISTRATIVE STAFF WORKFLOW BY USING FULLY SISTEM-
IZE APPLICATION

33 I RODNEY PETRUS BALANDONG

34 I hereby declare that the content of this thesis is my own work, except for quotations,
35 equations, summaries, and references, which have been appropriately acknowledged.
36 Additionally, if Generative Artificial Intelligence has been used, its application and pur-
37 pose have been transparently disclosed in the disclosure section below

I acknowledge that during the preparation of this thesis, I have utilized Large
Language Models (LLMs) as a supplementary tool to assist in various aspects of
my research and writing process. Specifically, I have used LLMs for paraphrasing
and refining my writing to improve clarity, coherence, and readability while
ensuring the original meaning remains intact. Additionally, I have leveraged LLMs
to generate general ideas and structure my thoughts more effectively, using them
as a brainstorming aid rather than as a replacement for original critical thinking.
38 LLMs have also been helpful in summarizing complex topics, identifying key points
from lengthy articles, and suggesting alternative ways to present information.
Furthermore, I have used LLMs to check grammar and syntax, ensuring that my
writing adheres to academic standards. In some instances, LLMs provided
guidance on citation formats and referencing best practices, although all sources
have been manually verified to maintain academic integrity. Importantly, I have
critically evaluated all AI-generated content and ensured that it aligns with my
own understanding and research findings.

39 Thursday 15th January, 2026

RODNEY PETRUS BALANDONG

Matric No: 2023456

ABSTRACT

40

41 *The acquisition of new vocabulary in a second language requires a series of repeated*
42 *exposures. With emerging digital platforms and games such exposure can easily be*
43 *provided. Due to the prevalence and ease of access of mobile technology, learners*
44 *have demonstrated a high degree of dependence on digital tools such as smartphones*
45 *for learning as compared to traditional approaches. This study is aimed at exploring*
46 *whether a game-based thesaurus app could be used to improve the level of English*
47 *language vocabulary among students in a public university in Malaysia. The findings*
48 *reveal that students have less experience on using thesaurus apps compared to games*
49 *or other language learning apps. Students prefer the use of mobile learning over tradi-*
50 *tional approach, prefer online platforms rather than mobile apps, and acquire or build*
51 *up their vocabulary through watching movies and listening to music. Even though most*
52 *students have adequate experience using mobile apps and games, they rarely use those*
53 *platforms for learning purposes. This suggests that it is crucial to incorporate game el-*
54 *ements into learning platforms particularly in learning English vocabulary to generate*
55 *motivation and engagement to learners. Lecturers should therefore focus more on the*
56 *explicit use of mobile digital technology in their teaching and learning classrooms.*

ABSTRAK

Pemerolehan perbendaharaan kata baharu dalam bahasa kedua memerlukan satu siri pendedahan berulang kali. Melalui platform digital dan permainan yang baru, pendedahan tersebut boleh disediakan dengan mudah. Oleh kerana kelaziman dan akses teknologi mudah alih adalah senang, pelajar telah menunjukkan tahap kebergantungan yang tinggi terhadap alat digital untuk belajar, seperti melalui telefon pintar berbanding dengan pendekatan tradisional. Kajian ini bertujuan untuk meneroka sama ada aplikasi tesaurus berasaskan gamifikasi boleh digunakan untuk memperbaiki tahap penguasaan perbendaharaan kata dalam Bahasa Inggeris dalam kalangan pelajar universiti awam di Malaysia. Hasil kajian menunjukkan bahawa pelajar mempunyai pengalaman yang kurang dalam menggunakan aplikasi tesaurus berbanding pembelajaran bahasa berasaskan permainan atau aplikasi lain. Pelajar lebih suka menggunakan pembelajaran mudah alih berbanding pendekatan tradisional, lebih suka platform dalam talian dan bukannya aplikasi mudah alih, dan memperoleh atau membina perbendaharaan kata mereka melalui menonton filem dan mendengar muzik. Meskipun fakta menyatakan bahawa kebanyakan pelajar mempunyai pengalaman yang mencukupi dalam penggunaan aplikasi mudah alih dan permainan, namun mereka jarang menggunakan platform tersebut untuk tujuan pembelajaran. Ini menunjukkan bahawa adalah penting untuk menggabungkan elemen permainan ke dalam platform pembelajaran khususnya dalam pembelajaran perbendaharaan kata Bahasa Inggeris sebagai satu cara untuk menjana motivasi dan penglibatan pelajar. Oleh yang demikian, pensyarah perlu memberi tumpuan lebih kepada penggunaan yang jelas terhadap teknologi digital mudah alih dalam pengajaran dan pembelajaran di bilik darjah.

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ACKNOWLEDGMENT

81 It is good to tha

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89

LIST OF ABBREVIATIONS

90

AVT

Auditory Vigilance Task

91

92

List of Symbols

CHAPTER 1

INTRODUCTION

95 A container with an initial volume of 10 L expands to 10.5 L when its temperature is
96 increased from 9 K to 10 K. Calculate the coefficient of volume expansion of the con-
97 tainer's material.

98 Sleepiness is defined as the increased sleep propensity due to decrease in physiological
99 arousal (**Lal_2005as; Vassalli2009**). Sleepiness is a term that indicates the per-
100 ceived need or readiness to sleep (**Amso_2015**).

101 The introduction chapter of a thesis sets the stage for the entire research, providing
102 the reader with essential background information, the context of the study, and a clear
103 outline of the research objectives and significance. Each section within the introduction
104 builds upon the previous one, gradually guiding the reader toward understanding the
105 research problem and the purpose of the study. This section can be divided in multiple
106 subsection to organize the information logically.

107 **1.1 Background**

108 In this section, you aim to provide the reader with the foundational knowledge neces-
109 sary to understand the broader context of your research. This includes explaining key
110 concepts, relevant terminology.

111 **1.2 Importance and Relevance**

112 In this subsection, explain why the topic is important and relevant. Include statistics,
113 the impact of the topic on society, and any related government policies or initiatives.
114 This helps to justify why your research is necessary and valuable.

115 **1.3 Motivation**

116 The motivation section of a thesis is crucial as it articulates the rationale behind the
117 research, highlighting its importance and relevance. This section will help connects the

Research Proposal Flow Chart

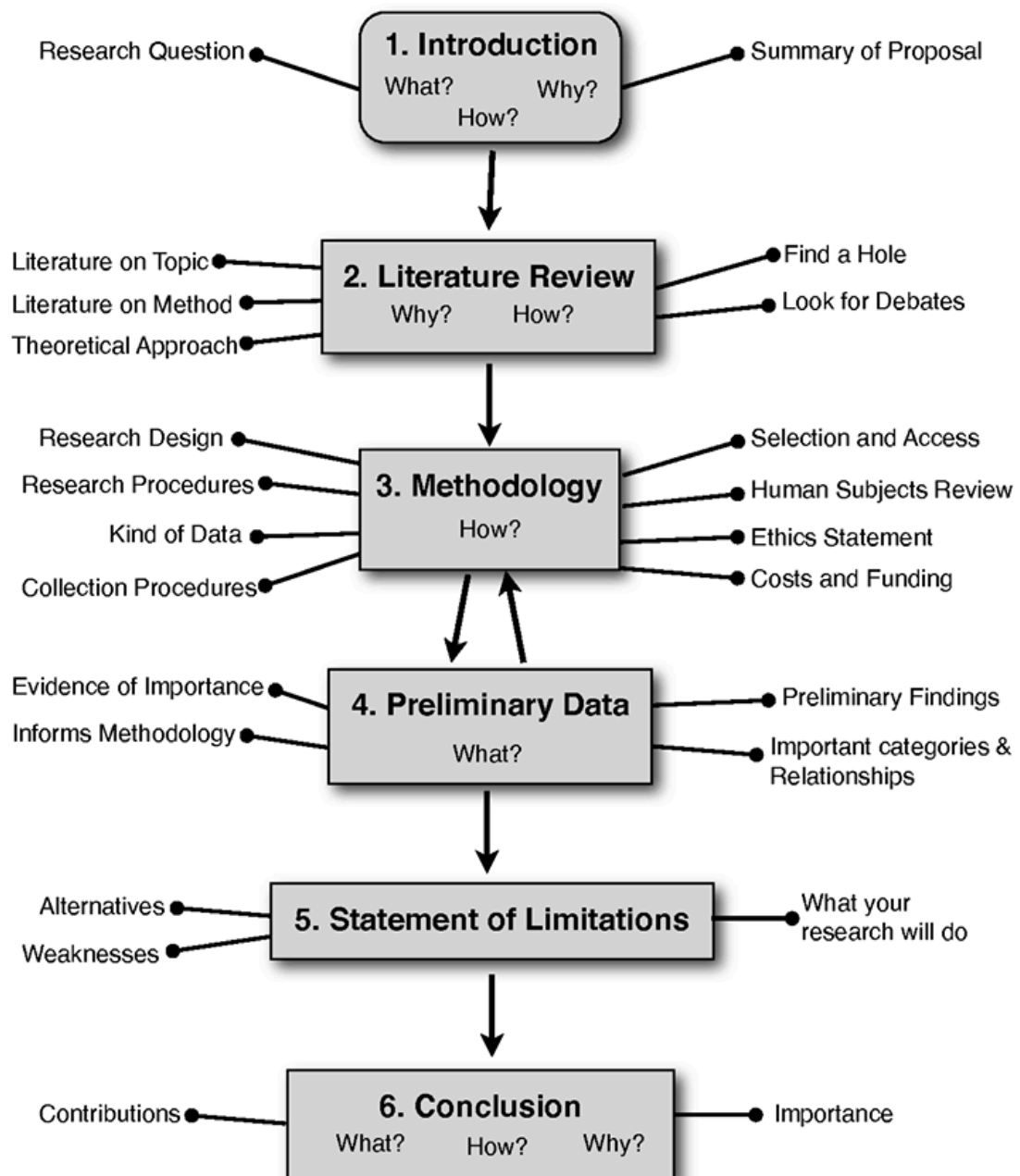


Figure 1.1. The image is a flow chart titled "Research Proposal Flow Chart," designed to guide the development of a research proposal through six key stages: Introduction, Literature Review, Methodology, Preliminary Data, Statement of Limitations, and Conclusion. Each stage addresses specific questions like "What?", "Why?", and "How?", ensuring a comprehensive and structured approach. The chart outlines the progression from defining the research question and reviewing relevant literature, to detailing the methodology, presenting preliminary data, discussing limitations, and concluding with the significance of the research. This visual tool is essential for researchers in planning and articulating their study in a coherent and logical manner.. Figure adapted from Dorsett2010. 2

Research Proposal Flow Chart

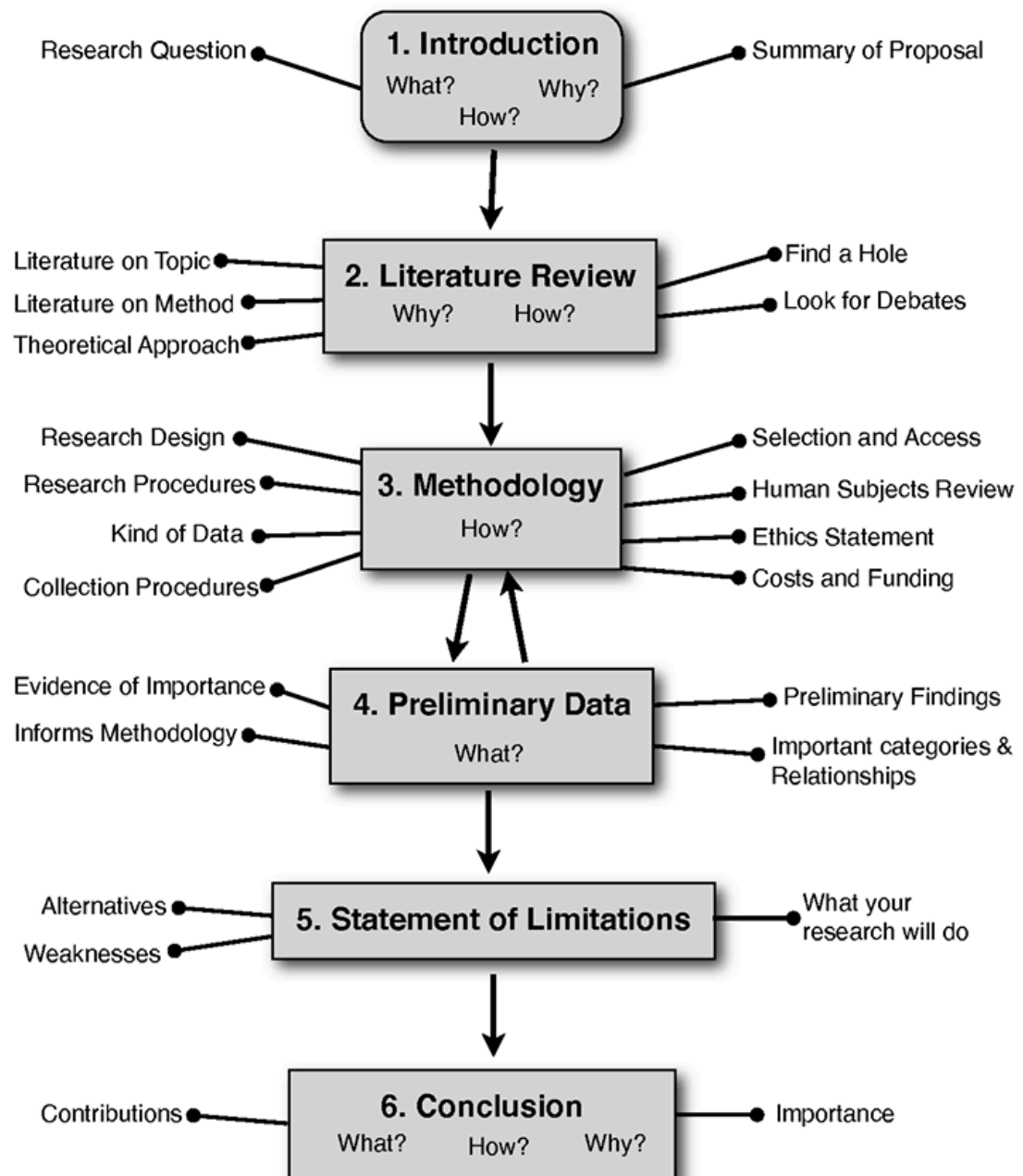


Figure 1.2. DKLFDLKSFHASLDHKJS

118 background information with the research objectives by explaining why the study is
119 necessary and what gaps it aims to fill.

120 This section (and its subsection) builds a compelling case for the research by discussing
121 the potential benefits and impact of the findings, thereby justifying the effort and re-
122 sources invested in the study. The motivation section ensures that the reader under-
123 stands the significance of the problem being addressed and the value that the proposed
124 solutions can bring to the field.

125 You can give a brief overview or compact explanation from the literature review, what
126 is there, but what is still missing. or the justification of why you insist of using some
127 technique

128 **1.3.1 Some subsection to decompose your explanation**

129 **1.4 Problem Formulation**

130 **1.4.1 Research Gap**

131 The identified gap based on your literature review

132 **1.4.2 Problem Statement**

133 Based on the research gap, the following problems have been identified:

- 134 1. **Definition of the Problem:** The problem statement clearly defines the issue
135 that the research aims to address. It should describe the gap in knowledge, real-
136 world challenges, or theoretical inconsistencies that necessitate investigation.
- 137 2. **Relation to Hypotheses:** The problem statement serves as the foundation for
138 formulating hypotheses. It outlines the research issue, while the hypotheses pro-
139 vide testable predictions based on this problem.
- 140 3. **Best Practices for Writing a Problem Statement:**
 - 141 • **Be clear and concise:** The problem statement should be straightforward,
142 avoiding unnecessary jargon while effectively communicating the research
143 issue.
 - 144 • **Explain the research gap:** Clearly identify what is missing in existing re-
145 search and why addressing this gap is important.
 - 146 • **Define the scope:** Specify the boundaries of the problem, ensuring that it
147 is neither too broad nor too narrow.

- 148 • **Highlight significance:** Explain why solving this problem is important, in-
149 cluding its potential impact on the field, industry, or society.
- 150 • **Use evidence to support the problem:** Reference previous studies, statis-
151 tics, or real-world examples to justify why the problem exists and why it
152 requires investigation.
- 153 • **Ensure alignment with research objectives:** The problem statement
154 should align with the study's aims, ensuring consistency throughout the re-
155 search process.

156 **1.5 Hypotheses of Study**

157 Based on the depicted problem statement, the following have been hypothesised:

- 158 1. **Hypotheses:** A hypothesis is a testable statement or assumption that predicts
159 the relationship between variables in a study. It serves as the foundation for
160 research by providing a direction for investigation.
- 161 2. **Relation to Problem Statement:** The problem statement defines the research
162 issue and its significance, while hypotheses emerge from it as specific, testable
163 propositions. The hypotheses offer potential explanations or solutions to the prob-
164 lem and guide data collection and analysis.
- 165 3. **Best Practices for Writing Hypotheses:**
 - 166 • **Be clear and specific:** A hypothesis should be precise and unambiguous,
167 defining the variables and their expected relationship.
 - 168 • **Ensure testability:** A good hypothesis should be measurable and testable
169 using empirical methods.
 - 170 • **Base it on existing knowledge:** Formulate hypotheses based on prior
171 research, theories, or observations.
 - 172 • **Use an "If-Then" structure (if applicable):** For causal relationships, use
173 an "If X, then Y" format to establish a clear cause-and-effect relationship.
 - 174 • **Make it falsifiable:** A hypothesis should be structured in a way that allows
175 it to be proven false if the evidence contradicts it.
 - 176 • **Keep it simple and focused:** Avoid overly complex hypotheses by keeping
177 them concise and to the point.

178 **1.6 Research Question**

179 **RQ3** - Is there any significant correlation between social presence and course satis-
180 faction among third-year Malaysian undergraduates undertaking a BL course in
181 UMS?

182 **RQ4** Is there any significant correlation between cognitive presence and course sat-
183 isfaction among third-year Malaysian undergraduates undertaking a BL course in
184 UMS?

185 **RQ5** Which factor of teaching, social, and cognitive presence is dominant in determin-
186 ing course satisfaction among third-year Malaysian undergraduates undertaking
187 a BL course in UMS?

188 **1.7 Study Objectives**

189 Based on the hypotheses, the following research objectives have been formulated:

- 190 1. You may refer to online sources about SMART objectives, which define a goal that
191 is specific, measurable, achievable, relevant, and time-bound.

192 **1.8 Scope Of Work**

193 The scope of work for this thesis are:

- 194 1. Placeholder for scope of work.

195 **1.9 Organisation Of Thesis**

196 The organisation of this thesis is elaborated in the following:

197 Chapter 1 serves as an introduction, providing an overview of the study and emphasizing
198 the importance of You may elaborate more

199 Chapter 2 discusses relevant background information on.. . You may elaborate more

200 Chapter 3 details the development of the proposed method. You may elaborate more

201 Chapter 4 presents the experimental analysis and validation of the proposed . You may
202 elaborate more

203 Chapter 5 summarizes key findings from each chapter, highlights the research contri-
204 butions of this thesis in advancing.. You may elaborate more

205 The Chapter Appendix includes detailed explanations of the s.

CHAPTER 2

LITERATURE REVIEW

208 This chapter is composed of three main sections. The first section describes what a
209 literature review is and explains its role in research. It highlights the importance of re-
210 viewing existing literature to understand the current state of knowledge on a topic and
211 to build a foundation for further research. The second part of this chapter elaborates
212 on the practical requirements to conduct a comprehensive literature review. It pro-
213 vides detailed steps on how to plan and execute the search for relevant literature. This
214 includes choosing appropriate databases, using effective search strategies, and sys-
215 tematically analyzing and organizing the found information. Finally, the third section
216 summarizes the key findings from the literature review and discusses their implications
217 for the research field. It identifies gaps in current knowledge and suggests areas for fu-
218 ture research. This section emphasizes how the literature review supports the research
219 objectives and questions, providing a critical foundation for the subsequent chapters of
220 the study.

2.1 Introduction to Literature Review

222 This section introduces the concept of a literature review and discusses its importance
223 in research. A literature review serves as a critical summary of what the scientific
224 community has published on a particular topic or subject. It provides an overview of
225 current knowledge, allowing the researcher to position their own research within the
226 existing literature.

2.2 Conducting a Comprehensive Literature Review

2.2.1 Planning Your Literature Search

229 Begin by defining clear objectives for your review. Determine the scope of your research
230 and formulate research questions or hypotheses. Select databases and other sources
231 relevant to your field of study. It is advisable to use a range of sources, including books,
232 peer-reviewed journals, conference papers, and credible online resources.

233 **2.2.2 Searching for Relevant Literature**

234 Develop a search strategy using relevant keywords, phrases, and synonyms. Apply
235 appropriate filters and Boolean operators (AND, OR, NOT) to refine your search results.
236 Record your search strategies and results, which is essential for the reproducibility of
237 your research.

238 **2.2.3 Screening and Selecting Literature**

239 Screen titles and abstracts for relevance to your research questions. Obtain and read
240 full texts for selected sources. Use inclusion and exclusion criteria to systematically
241 decide which articles to consider in your review.

242 **2.2.4 Analyzing and Synthesizing Information**

243 Organize the selected literature into thematic categories or according to methodological
244 approaches. Analyze the findings and methodologies used in the literature to identify
245 patterns, themes, and gaps in the research.

246 **2.2.5 Writing the Review**

247 Summarize the literature, linking it directly to your research questions and objectives.
248 Discuss the significance of findings in relation to previous studies. Highlight any con-
249 troversies, inconsistencies, and gaps in the literature. Present a critical analysis of the
250 collected data, providing your interpretations and insights.

251 **2.3 Research Gap**

252 In the research gap section, it's important to find areas where questions still need
253 answers or where current theories and methods don't fully solve the problems. This
254 involves combining knowledge from previous studies you've reviewed, critically looking
255 at their findings and methods, and spotting areas that haven't been fully explored yet.
256 Doing this should help you see where you can make important improvements in the
257 field, suggest new ways of researching, or address complex issues that haven't been
258 dealt with thoroughly in past research.

Table 2.1. Comparison of Different Techniques

No.	Brief Note	Additional Details
1	Technique A: This technique is known for its speed and efficiency in processing large datasets.	Suitable for real-time applications. It can handle streaming data effectively but may require significant computational resources.
2	Technique B: Often used for its high accuracy in classification tasks, especially in machine learning.	Requires extensive training data and is computationally expensive. It excels in scenarios where precision is critical.
3	Technique C: Valued for its flexibility and adaptability across various domains.	While versatile, it may not provide the best performance in terms of speed or accuracy in specific applications.

Table 2.2. Reported results of the ternary sleepiness detection method in previous studies.

No	Study	Parameter(s)	Classifier
1	Barua_2019	EEG, EOG, CF	SVM
2	Chai2019	SWA	SVM
3	Wang2016	PERCLOS, SWA	MLO
4	Zhao2015	FE	NB
5	Zhao2018	FE	NB
6	Zilin2017	PERCLOS, EM	ANN
7	Picot_2012	EEG, EOG	CDR

259 2.4 Chapter Summary

260 A chapter summary in the literature review section is a brief overview of the key points
 261 covered in that chapter. It helps to consolidate the main findings, theories, and discus-
 262 sions presented. In this summary, you should clearly outline the most important ideas
 263 and how they relate to your research topic. This includes summarizing the debates,
 264 methodologies, and conclusions from various sources you've studied. The purpose of
 265 this summary is to give a clear and concise recap that helps readers understand the
 266 background and context of your study, and to set the stage for presenting the research
 267 gaps and questions your study aims to address.

METHODOLOGY

270 This chapter is composed of five main sections. Section 3.1 presents an overview of
271 the proposed methodology, including a detailed flowchart of the experimental protocol.
272 This flowchart visually outlines each step of the research process, from initial data
273 collection to final analysis, providing a clear, step-by-step guide to how the research will
274 be conducted. It also helps in illustrating the sequence of experimental procedures and
275 how different phases of the study are interconnected. Section 3.2 discusses the criteria
276 and procedures for selecting participants or data sources. It explains the sampling
277 strategies, inclusion and exclusion criteria, and the methods employed to ensure a
278 representative sample, enhancing the validity of the research findings. Section 3.3
279 describes the data collection methods used in the study. This section elaborates on
280 each technique employed, such as surveys, interviews, or observations, and justifies
281 their use in effectively gathering the necessary data. Section 3.4 outlines the data
282 analysis procedures. It details the analytical techniques and tools used to interpret the
283 data, whether involving statistical analysis for quantitative data or thematic analysis for
284 qualitative data. Finally, Section 3.5 covers the ethical considerations of the research. It
285 includes details on how informed consent was obtained, the steps taken to ensure the
286 confidentiality and anonymity of participants, and the handling of any potential ethical
287 issues throughout the study.

288 3.1 Overview Of The Proposed Methodology

289 This chapter presents the complete methodology for the fulfillment of the research ob-
290 jectives formulated in Chapter 1. Section 3.1 details the design methodology chosen
291 to achieve these objectives, as illustrated in Figure 2.1. This figure provides a visual
292 flowchart of the experimental protocol, which maps out each step in the research pro-
293 cess, from initial hypothesis formulation to data collection, analysis, and conclusion
294 drawing. This systematic depiction ensures clarity in the research approach and facili-
295 tates a better understanding of how each phase interlinks and contributes to the overall

296 study goals.

297 **3.1.1 Research Design**

298 This subsection should describe the overall framework of the study, whether it is ex-
299 perimental, correlational, or descriptive, and explain the rationale behind the chosen
300 design.

301 **3.1.2 Participants**

302 **3.1.2.1 Sampling Strategy**

303 Detail how participants were selected, including the sampling methods and any demo-
304 graphic characteristics of interest.

305 **3.1.2.2 Inclusion and Exclusion Criteria**

306 Define the criteria for including or excluding participants in the study.

307 **3.1.3 Data Collection Methods**

308 **3.1.3.1 Quantitative Data**

309 Describe the instruments and tools used to collect numerical data, such as surveys or
310 standardized tests.

311 **3.1.3.2 Qualitative Data**

312 Discuss the methods used to gather textual or observational data, like interviews or
313 focus groups.

314 **3.1.4 Data Analysis**

315 **3.1.4.1 Statistical Analysis**

316 Outline the statistical techniques that will be applied to analyze the quantitative data.

317 **3.1.4.2 Thematic Analysis**

318 Describe how qualitative data will be analyzed, including any coding schemes or soft-
319 ware used.

320 **3.1.5 Ethical Considerations**

321 Discuss how ethical issues were addressed, including participant consent and data pri-
322 vacy measures.

323 **3.2 Results**

324 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut,
325 placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero,
326 nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque.
327 Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis
328 egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum
329 urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer
330 sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices
331 bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac,
332 nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue
333 eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

334 **3.3 Preparation For Comparative Study**

335 **3.3.1 Evaluation Criteria**

336 You may explain about the dataset here.

337 **3.3.2 Subject-wise Cross Validation for Performance Evaluation**

338 you may explain how to validate

339 **3.3.3 Evaluation Metric**

340 **3.3.3.1 Box-Whisker Plot**

341 Box-whiskers plot and average F-measure of the 24 selected subjects are reported in
342 this study. Each box plot displays the median, the first and third quartile, as well as the
343 minimum and maximum values. The notches around each median give a rough idea
344 on the significantly varied medians: if the notches do not overlap, the medians differ
345 at 5% significance level.

346 **3.3.3.2 Statistical Analyses**

347 The paired t-test was applied to ascertain the significant variance between the average
348 F-measure of the proposed system and other techniques **Demsar_2006**. The presence
349 of outlier was determined by inspecting the boxplot for a value exceeding 1.5 box-length
350 from the edge of the box in a boxplot. For each classifier performance, the normal
351 distribution of the F-measure score was examined using Shapiro-Wilk's test. As for F-
352 measure performance that is not normally distributed, two t-tests were conducted by
353 including and excluding the value of the outlier. The statistical significance was fixed at
354 $p < 0.05$.

355 **3.4 Chapter Summary**

356 This chapter is composed up of five primary sections. The first section discussed the
357 approach taken in this thesis in developing the system.

CHAPTER 4

RESULTS AND DISCUSSION

360 This chapter presents the empirical outcomes and discusses in detail their significance
361 to the field of study, as well as to the research community. When structuring the results
362 and discussion chapter in an academic or research document, it's crucial to organize the
363 content in a way that clearly presents your findings and interprets their implications.

364 **4.1 Experimental Result**

365 **4.1.1 Presentation of Quantitative Data**

366 Describe and present the findings from the quantitative data through tables, graphs,
367 and statistical analyses. Discuss significant trends or patterns observed in the data.

368 **4.1.2 Discussion Of The Results**

369 Discuss the implications of the results in the context of the existing literature or the-
370 ories presented in earlier chapters. Interpret what the findings mean for the broader
371 field of study. Explicitly address how the results relate to each research question or
372 hypothesis stated in the introduction. Discuss whether the findings support or refute
373 the hypotheses.

374 **4.2 Qualitative Comparison With Other Studies**

375 In some cases, you may want to conduct Qualitative Comparison With Other Studies.
376 In this case, you can consider to make a comparison table

377 **4.3 Chapter Summary**

378 This chapter presents the findings and discussions related to the research questions
379 outlined in the introduction. Initially, it systematically details the results obtained from

Table 4.1. Comparison of Various Industrial Physics Studies

Study	Parameter(s)	Acc (%)
Smith2020	Temperature, Pressure	82.3
Johnson2019	Velocity, Turbulence	75.6
Lee2018	Power Usage, Operational Hours	89.1
Kumar2017	Collision Energy, Particle Type	91.4
Chen2016	Frequency, Amplitude	88.7
Garcia2015	Chip Thickness, Impurity Levels	84.9
Morales2014	Solar Irradiance, Temperature	79.3
Proposed Method	Microstructure Analysis, Load	92.5

380 both quantitative and qualitative analyses, using statistical data, graphical representa-
381 tions, and thematic interpretations to illustrate the key outcomes. Subsequently, the
382 discussion section interprets these results in the context of existing literature, offering
383 a comprehensive analysis of how the findings contribute to the broader field of study.
384 The chapter addresses each research question thoroughly, identifying whether the ev-
385 idence supports or challenges the initial hypotheses. It also critically examines the
386 limitations of the study's methodology and the impact these may have on the results.
387 Furthermore, it explores the implications of the findings for future research and prac-
388 tical applications, suggesting directions for further studies and potential improvements
389 in practice. The chapter concludes by summarizing the main findings and their signifi-
390 cance, reinforcing the contribution of the study to the existing body of knowledge.

CONCLUSION AND FUTURE DIRECTION

5.1 Overview

This initial section provides a brief introduction to the concluding chapter. It sets the stage for summarizing the research findings, discussing their implications, and suggesting directions for future work. This overview should serve as a transition from the detailed analysis provided in the previous chapters to the summarization and forward-looking aspects of this final chapter.

5.2 Conclusion Of The Study

This section aims to clearly summarize the main results of your research and bring together your important findings into a final overview. It starts by briefly restating the main outcomes of the study, including a short explanation of the data analysis and results. Then, it focuses on the most important results and data points that directly address the research questions or hypotheses. It also discusses how these key findings are either similar to or different from the ideas and existing research that were mentioned earlier in your work. This helps to show how your results fit into the larger field of study.

5.3 Contributions Of The Study

This section outlines the unique contributions your study makes to its academic discipline or practical field. It starts by emphasizing any new methods you introduced or significant modifications you made to existing methods. Then, it discusses new insights or perspectives your research offers, highlighting how these enhance understanding within the field. Lastly, it describes how your results have expanded the existing body of knowledge, considering both theoretical and practical implications. This part of your study showcases the innovative aspects of your work and its impact on advancing knowledge.

417 **5.4 Future Work**

418 This section discusses the limitations of the current study and suggests directions for
419 future research. It begins by openly addressing the shortcomings and constraints en-
420 countered during the research process, such as methodological limitations or data col-
421 lection challenges. Next, it recommends specific areas where further investigation could
422 yield additional insights, providing concrete suggestions for future researchers. Finally,
423 it outlines strategies for overcoming the limitations identified in this study, suggesting
424 the use of new methodologies, broader datasets, or alternative frameworks to enhance
425 the robustness and scope of future research. This approach not only acknowledges the
426 imperfections of the current study but also paves the way for subsequent advancements
427 in the field.

428

APPENDIX A

429

SUPPLEMENTARY MATERIALS

430 This is the first appendix.