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Computer Science Dissertation writing

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Lesson aims

Focus on the content and structure of the results and discussion section of a dissertation

Review sentence structure



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Attendance

- <https://forms.gle/iVAPc5Y98etL5uJS9>



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Dissertation Structure (answer)

1.Title Page

2.Declaration

3.Abstract

4.Covid-19 Impact Statement

5.Acknowledgements

6.Contents

7.Introduction

8.Literature Review

9.Requirements + Analysis

10.Design

11.Implementation + Testing

12.Results +Discussion

13.Conclusion

14.References

15.Appendices



- The Results section can sometimes be a **separate** section in a written project, or it can be **combined** with the Discussion. Discuss with your supervisor and check the module requirements to help decide which approach is more appropriate for your particular study.
- When presenting your findings in the results section you should use a **combination** of **visual aids** (e.g. charts, tables, graphs, illustrations) and **prose** (i.e. written text).
- Visual aids must be **easy to read and understand**. You must **introduce** them in the text (e.g. '*Table 3.1 shows...*') and **point out key aspects** of the results (e.g. '*As can be seen in Table 3.2, Sample C was both the strongest and ...*').



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Look at the extract from a results section and answer the questions:

1. Is the table clearly labelled?
2. Is the table easy to read and understand?
3. Does the text point out the key aspects of the results?



6.2.2 Functional Testing Results

Heart Rate

Table 6.1 and Table 6.2 display the results of Resting HR and HR after workout that was captured by this app, Polar H7, and Apple Watch. The maximum difference between HR by this App and True HR by polar H7 is 3, while the minimum of that is 0. The average Error of Resting HR is 1.31%, which is acceptable. The maximum difference between HR after workout by App and true one is slightly higher, which is 4. Nevertheless, it still gets some results which are the same as the results of Polar H7. It turned out 1.306% error happened in measuring HR after workout. It can be concluded that this app is able to obtain reasonable and comparatively accurate Resting Heart Rate and Heart Rate after workout.

Table 6.1 Resting Hear Rate Results Captured by App, Polar H7 and Apple Watch

Number	HR by App	HR by Apple Watch	True HR (by Polar H7)	Difference*	Error**
1	88	90	90	-2	2.23%
2	92	94	92	0	0
3	95	-	94	1	1.06%
4	74	75	74	0	0
5	85	84	88	3	3.41%
6	78	78	77	1	1.30%
7	85	85	86	-1	1.16%
8	74	74	73	1	1.37%

*: $Difference = TrueHR - AppHR$

** : $Error = abs(\frac{Difference}{TrueHR})$



Results and discussion: true or false?

1. The main results of your work should be presented, together with critical discussion.
2. The chapter presents all the results (products, experimental findings, theories, etc.) generated during the project.
3. The goals may be partially or fully achieved, or exceeded.
4. An experimental project may prove, or disprove the original thesis.
5. A theoretical project may cover some or all of the example cases.
6. Reporting failures to achieve goals is important since a fundamental feature of the assessment procedures is that the processes (how you went about your project) are often as important as the products of the project.
7. The chapter describes further work including new areas of investigation prompted by developments in this project, and also parts of the current work which were not completed due to time constraints and/or problems encountered.
8. You should include the section headings Findings, Goals achieved, Further work.
9. You are likely to use a variety of modal verbs and verb tenses in this chapter.



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Discussion: points to mention

- How your results compare to existing research
- achievement/contribution of your research
- limitations/ future work

Components of a a discussion (1/2)

Complete the sentences with words from the box

remain to be *has potential* *are comparable*
provides a framework *lead to*
future studies *in general agreement* *a clear distinction*

1. However, the neutral mechanisms underlying these effects _____ determined.
2. Our results are _____ with previous studies [1,3].
3. Our study _____ for future studies.
4. This could eventually _____ the identification of novel biomarkers.
5. Our results provide _____ between the functions of the proteins.
6. The GMD method provide results that _____ to existing clay hydration processes.
7. An important question for _____ is to determine the antidepressant effects of such drugs.
8. This approach _____ in areas such as fluid density measurement.



1. However, the neutral mechanisms underlying these effects remain to be determined.
2. Our results are in general agreement with previous studies [1,3].
3. Our study provides a framework for future studies.
4. This could eventually lead to the identification of novel biomarkers.
5. Our results provide a clear distinction between the functions of the proteins.
6. The GMD method provide results that are comparable to existing clay hydration processes.
7. An important question for future studies is to determine the antidepressant effects of such drugs.
8. This approach has potential in areas such as fluid density measurement.



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Components of a discussion (2/2)

From which of the following parts of the discussion section would you find the sentences 1-8 previously

1	Revisiting previous sections Summarising/revisiting general or key results
2	Mapping – relationship to existing research
3	Achievement/contribution Refining the implications
4	Limitations Current and future work Applications/applicability/implementation



Mapping – relationship to existing research Achievement/contribution Limitations
Current and future work
Applications/applicability/implementation

1. However, the neutral mechanisms underlying these effects remain to be determined.
2. Our results are in general agreement with previous studies [1,3].
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5. Our results provide a clear distinction between the functions of the proteins.
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Feedback

The GMD method provide results that are comparable to existing clay hydration processes. Mapping– relationship to existing research

Our results are in general agreement with previous studies [1,3]. Mapping – relationship to existing research

Our study provides a framework for future studies. Achievement/contribution

Our results provide a clear distinction between the functions of the proteins. Achievement/contribution

However, the neutral mechanisms underlying these effects remain to be determined. Limitations/Current and future work

An important question for future studies is to determine the antidepressant effects of such drugs.

Limitations/Current and future work

This approach has potential in areas such as fluid density measurement.

Applications/applicability/implementation

This could eventually lead to the identification of novel biomarkers.

Applications/applicability/implementation



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Look at the extract from the results and discussion section of a dissertation on 'Predicting emojis'.

Where does the writer

explain how her results are related to existing research?

mention some failures or limitations of her research?

https://docs.google.com/document/d/1mLxvoc_DcACbDU55qOFtyKtKPJgJChjnCXp9ciZuvOM/edit?usp=sharing



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It's a good idea to use cautious language when you are discussing your results.

This is because it's difficult to be certain about our explanation of the results and what the results imply.



The certainty analysis of the models indicates that while there is a link between specific emojis and certain words (similar to what has been found in previous investigations into emoji semantics [9, 30, 32, 88, 115]), it seems much more important to uphold syntactic constraints on emoji position. Even for obvious links between emojis and words, such as and sun, if the input is a single word, the models prefer to continue the tweet further instead of directly placing the emoji. However, if the same word is at the end of a full phrase, it is much more likely to be followed by the emoji. This effect increased even more when adding sentence completion markers, which highlights the link between a phrase being finished and an emoji appearing. Moreover, even when there was a word within a sentence that has a strong semantic link to some emojis (like love and the emojis , or), the models strongly disfavoured predicting any of these emojis as a next token if the current position was within an unfinished phrase, such as immediately after a preposition still in need of a following noun. This perhaps highlights the shortcomings of current emoji prediction approaches where the emoji is removed from the text and then predicted as label for the full text.



The certainty analysis of the models indicates that while there is a link between specific emojis and certain words (similar to what has been found in previous investigations into emoji semantics [9, 30, 32, 88, 115]), **it seems** much more important to uphold syntactic constraints on emoji position. Even for obvious links between emojis and words, such as and sun, if the input is a single word, the models prefer to continue the tweet further instead of directly placing the emoji. However, if the same word is at the end of a full phrase, **it is much more likely** to be followed by the emoji. This effect increased even more when adding sentence completion markers, which highlights the link between a phrase being finished and an emoji appearing. Moreover, even when there was a word within a sentence that has a strong semantic link to some emojis (like love and the emojis , or), the models strongly disfavoured predicting any of these emojis as a next token if the current position was within an unfinished phrase, such as immediately after a preposition still in need of a following noun. **This perhaps highlights** the shortcomings of current emoji prediction approaches where the emoji is removed from the text and then predicted as label for the full text.



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Expressing caution when discussing results

A possible explanation for this might be that ...

Another possible explanation for this is that ...

This result may be explained by the fact that ...

There are, however, other possible explanations.

These relationships may partly be explained by ...

There are several possible explanations for this result.

A possible explanation for these results may be the lack of adequate ...



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<https://www.phrasebank.manchester.ac.uk/discussing-findings/>