

Ministry of Higher Education
and Scientific Research
Tishk International University
Faculty of education
Department of Biology



Scientific Writing parts Result

By

Harmand Ali

What is the Discussion section?

- The discussion section is a chance for the researcher to verbalize his/her findings and what those findings mean to the subject matter of the experiment.
- The discussion section of an empirical research paper is **your opportunity to conclude the research and help the reader interpret the results of your research.**

Why is the Discussion section?

- The discussion section is essentially written for the sake of **explaining your findings**
- In very simple terms, what you did to answer the research questions and why you did it that way.
- It explains the results of your study, and connects the results to each research question.

Where
does it go
in the
paper?

- The Results section is the **fourth** major section of most scientific paper. It follows the Results section and it come before or with conclusion section.

Introduction

Material and
Methods

Result

Discussion

Contents or approaches of the Discussion

- Explain your findings
- Compare the findings
- Evaluate the findings
- Infer from the findings

APPROACH 1: EXPLAIN YOUR FINDINGS

a) Give reasons for the findings

Example 1 : Based on the statistical analysis, the results show that some of the school teachers have integrated well within the community in which they were residing. The percentage, however, is not high and this could be attributed to the fact that most of them were female. They were already occupied with their job and household duties which did not allow them to be active in community services.

Example 2 : Based on the Figure 3, the results clearly show that most of the students who took part of the survey preferred the pre-paid plan. Only a small fraction of the students used the post-paid plan as opposed to those who used the pre-paid plan. The results were anticipated as the respondents were all students, and the pre-paid plan seemed to be the most suitable plan to cater for the needs of the students as they paid for what they used only. While there were a handful of students from wealthy families, the majority of the students simply could not afford the post-paid plan. 8

APPROACH 1: EXPLAIN YOUR FINDINGS

b) Explain the scenario or circumstances during the data collection period or at the time of experiment which might have some influences on the results of the research

Example 1 : Based on the statistical analysis, the results revealed that most of the students were receptive to the idea of using Arabic vocabulary in their English classes. This is not surprising considering the institution is an Islamic institution.

Example 2: There are several factors that make phone calls not so popular among students. The most obvious factor was financial restraint. Students generally lived on the shoestring budget and could not afford the luxury of spending too much on making calls. These factors helped make SMS the most popular means of communicating.

APPROACH 1: EXPLAIN YOUR FINDINGS

c) explain the results based on the limitations or constraints of the research during the data collection period.

Example 1 : The results from the study only indicated the language errors made by students in the final examination. Since the error analysis indicated were only taken from the postgraduate students, the findings cannot represent all the university students' performance. Due to the time constraint, errors from the undergraduate students were excluded as there was a big number of students involved.

Example 2: One of the most popular peripheral services through the cell phone was to get sports results. this was highly anticipated as students usually followed sports events on regular basis, especially the Malaysia Premier League. Since the majority of the respondents were female students, the findings of the research did not show any significant result in the use of this peripheral service for sports.

APPROACH 2: COMPARE THE FINDINGS

a) compare the findings of the research with the findings of other research within the same fields (discussed in the literature review section)

Example : It can be summarized that SMS was the most popular means of communication among students of higher learning institutions. This trend was very much expected as students live on a strict budget. This was similar to the findings of another study conducted by Lim et al. (2002) at University Telekom Malaysia which found that SMS was the primary reason why students owned a handset.

APPROACH 2: COMPARE THE FINDINGS

b) Compare and relate the different findings of the research to highlight certain results as significant

Example 2 : Cell phone call rates are based on the location of the caller and the location where the destination number was registered. Since the student population came from different parts of the country, making long distance calls to family members back in the respective states could be very expensive for students. Therefore, the number of calls made by the students to the family members compared to the SMS was relatively small. This shows that financial limitation was a significant factor in the lives of students in the higher learning institution.

APPROACH 3: EVALUATE THE FINDINGS

a) Provide assessment of the findings

Example 1 : The findings suggest that there is a mismatch between the written literacy demands of the job market and the level of proficiency of applicants who were university graduates. This claim seemed to have found its basis only for local companies. However, there was no way of verifying this claim for the international companies as there were no previous studies conducted on them. As such, the feedback from these companies is still needed to produce a more substantive finding.

APPROACH 3: EVALUATE THE FINDINGS

b) Decide if the results is negative or positive, successful or otherwise.

Example : From the data collected, there is no doubt that the engineering students generally had positive experiences with Problem Based Learning (PBL) as they worked together on the their project in groups. Students acquired self-directed learning as they worked together in finding a solution to a problem which mirrors the real world. Through feedback from peers, students also learnt to express their ideas and share tasks assigned to them.

APPROACH 4: INFER FROM THE FINDINGS

a) Develop your own viewpoint and ideas based on the facts and results

Example : The finding suggested that traffic information was the least attractive peripheral service provided by the hand phone service provider among the respondents. This was expected as the university was situated far from the busy metropolitan area. Apart from that, many of the students lived on the campus and did not need traffic information to travel to their classes. As such, traffic information may not be useful to them

APPROACH 4: INFER FROM THE FINDINGS

b) Make sense of findings

Example : Comparing reactors where yeast extract and glucose were added, it was observed that the gradients of the graphs for variation in nitrate concentration in these reactors are all very close and similar to that of the control reactor. Thus, it can be deduced that at the beginning of the experiment the biomass were utilizing the naturally occurring readily biodegradable substrate as the electron donor for denitrification.

APPROACH 4: INFER FROM THE FINDINGS

c) do not leave findings in the statistical form as no one would be able to understand what the numbers mean

Example : The finding suggested one quarter of the those surveyed were doing some form of part- time jobs. 98% of those who responded are postgraduate students who have families.

APPROACH 4: INFER FROM THE FINDINGS

d) Be creative and do not be afraid to speculate

Example : The statistical analysis has shown that more and more female students are selected for the dean's list. The numbers show that even in the Faculty of Engineering, the ladies are outdoing the male students in terms of examination results and performance in the industrial training. Perhaps in the future, the ladies will be more in demand in the industry than their male counterpart. It would probably be difficult for male engineers to find a job.

Common mistakes of discussion section

- 1) Don't substitute a summary for discussion.
- 2) Don't simply justify the research by claiming it has practical application
- 3) Don't make a discussion out of all the little things that went wrong in your study.
- 4) Don't fill up space by listing topics for future research

LANGUAGE EXPRESSIONS THAT CAN BE USED IN YOUR DISCUSSION!

A. BACKGROUND INFORMATION

- As mentioned in the literature review...
- Prior studies showed that students....
- Other research in.....concluded that....
- This study set out with the aim of assessing the importance of...
- Very little was found in the literature on the question of...

LANGUAGE EXPRESSIONS THAT CAN BE USED IN YOUR DISCUSSION!

B. EXPLANATION OF RESULTS

- This result may be explained by .../a number of different factors
- It may be that these students benefited from...
- There are several possible explanations for this result.
- A possible explanation for this might be ...
- Another possible explanation for this is that...

LANGUAGE EXPRESSIONS THAT CAN BE USED IN YOUR DISCUSSION!

C. REFERENCE TO PREVIOUS RESEARCH (Positive/Support)

- This result of this study seems to confirm the findings of a study by Nuraihan (2004) in this field.
- These findings of this research are consistent with those of Jacob et al. (2001) who found...
- These findings supported the previous research....
- These findings confirmed the result of other research that...

LANGUAGE EXPRESSIONS THAT CAN BE USED IN YOUR DISCUSSION!

• C. REFERENCE TO PREVIOUS RESEARCH (Negative/Contradict)

- These findings did not support previous research ...
- The present findings did not seem to be consistent with other research that...
- In contrast to earlier findings, however, no evidence of... was discovered.
- This study has been unable to demonstrate that... • However, the findings of the current study do not support the study conducted by Param (1998).
- However, this result has not been previously described in other studies.

LANGUAGE EXPRESSIONS THAT CAN BE USED IN YOUR DISCUSSION!

D. SUGGESTING GENERAL HYPOTHESES AND IMPLICATIONS

- These findings suggest that...
- The findings show that there exists a weak link between...
- It is possible that...
- It is therefore likely that such connections exist between...
- It can thus be suggested that...

LANGUAGE EXPRESSIONS THAT CAN BE USED IN YOUR DISCUSSION!

D. SUGGESTING GENERAL HYPOTHESES AND IMPLICATIONS (continuation)

- It is possible to hypothesize that these conditions are less likely to occur in...
- From the above discussion, it can be concluded that...
- It can therefore be assumed that the...
- The findings of this study suggest that...

LANGUAGE EXPRESSIONS THAT CAN BE USED IN YOUR DISCUSSION!

D. SUGGESTING GENERAL HYPOTHESES AND IMPLICATIONS (continuation)

- It is possible to hypothesize that these conditions are less likely to occur in...
- From the above discussion, it can be concluded that...
- It can therefore be assumed that the...
- The findings of this study suggest that...
- It is difficult to explain this result, but it might be related to...
- It seems possible that these results are due to..
- The reason for this is not clear but it may due to
- This inconsistency/discrepancy may due to....