4

Reporting Research Findings

Very often, you will have to write reports, which are documents containing factual and objective information that you have collected through research. Analytical research reports, which are written after having gathered important information from primary research resources such as surveys or experiments, rather than published documents, present original data that you collect and analyse. Learning to write them well, especially the *Results and Discussion* section, sometimes called *Findings* or simply *Results*, is an important skill you will need to learn.

This chapter suggests ways to write the Results and Discussion section of analytical reports in effective and convincing ways. To accomplish this, you will need to do the following:

- Use text and visual aids properly
- Interpret results
- Use headings and sub-headings
- Use language of reporting appropriately
- Refer to figures correctly

4.1 Use Text and Visual Aids Properly

In the Results section, you are expected to present the data in words with the help of tables, charts and graphs to make your data clear and easy to understand. However, you should remember that you **write** a report; you do not **draw** a report. The text is primary. The graphics support the text.

Figure 1 shows, on the left, an inappropriate reporting of results merely with a heading and a chart and, on the right, the appropriate way of reporting findings, that is, using text (a paragraph or more) and drawing the reader's attention to a figure that makes the description clearer. Note that the chart is located **after** the text which explains it.

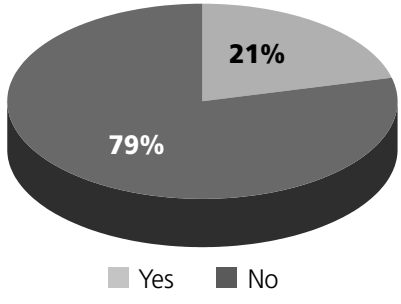
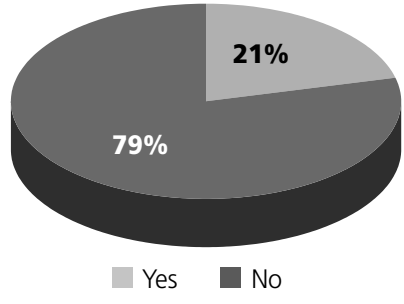
✗ Letting a visual do the reporting	✓ Reporting a survey finding using a paragraph (or two) **and** referring to a visual aid that helps to show the finding clearly.
2.1. Extent of knowledge of CPR  Figure 2: Percentage of respondents who know how to do CPR	2.1. Extent of knowledge of CPR As can be seen from Figure 2, only 21% of the respondents reported knowing how to administer CPR.  Figure 2: Percentage of respondents who know how to do CPR This is a surprising finding considering the many opportunities offered to the public to learn emergency procedures. This finding may also be deemed worrying given that government efforts to train the public to be ready for emergencies are central to the concept of total defense.

Figure 1: Inappropriate and appropriate ways of reporting findings

Note that simple findings usually do not need a visual aid, nor do you need a visual aid for every finding. Visual aids are usually used to make complex findings explained in the text easier to grasp. However, there are simple but crucial findings and visuals are sometimes created to give these facts more impact or emphasis, as above.

Remember that in the Results section you need to be objective. That is, you need to report your findings without any biased comment or slant. An example of biased reporting is as follows:

> *The survey shows that an **overwhelming** percentage of the respondents — 83% — feel that punishing cyberbullies is not necessary, a **disappointing** finding.*

You will notice that the words in bold betray the writer's feelings and attitude towards the subject under discussion. Such comments should be avoided.

4.2 Interpret Results

Reporting data involves more than just *presenting* it. Often, you need to *interpret* or *analyse* the data, that is, say what it means, especially in relation to your research question.

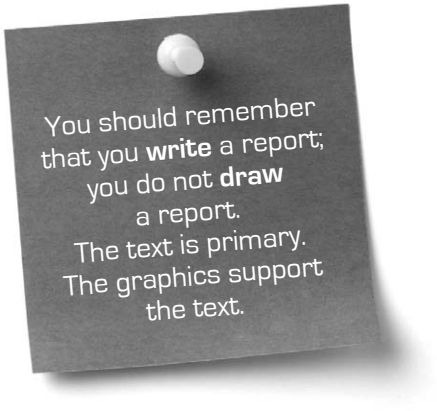
For example, if your research objective was to determine how successful the community centres (CCs) are in attracting young people, you would have to present what you had found out about the response of young people to programmes organised for them in the CCs **and** say what this could mean vis-à-vis your research question, for example, "How successful are government efforts in promoting the community centres to young people?"

A complete reporting could look like this: *A large proportion of the respondents — 74% — reported that the programmes organised in the CCs do not meet their needs, mainly because the programmes are not attractive enough [result/finding]. This does not augur well for government efforts to promote the CCs as a focal point for young people [interpretation].*

Table 1 shows the difference between reporting and interpreting data.

Table 1: Reporting and interpreting data

Reporting data	Interpreting data
Only 26% reported knowing how to perform emergency procedures like mouth-to-mouth resuscitation.	This finding shows how unprepared Singaporeans are in emergencies and illustrates that perhaps efforts to provide emergency training for Singaporeans need to be stepped up.
The majority of the respondents (75%) said that they had to wait for more than half an hour before being able to board bus service 151 in the morning, between 7.00 and 8.30am.	The finding indicates that the frequency of bus service 151 in the morning peak hours is inadequate.



4.3 Use Headings and Subheadings

The section in which you present and interpret findings can go over several pages in some reports. In this case, you will need to use subheadings to indicate clearly what the findings are. For instance, if your survey is on people's experience with recycling, and your survey had questions related to their practice of recycling, you might divide your Results section according to what the survey found, using headings like these:

2. Results and Discussion
   - 2.1 Frequency of recycling
   - 2.2 Reasons for not recycling
   - 2.3 Ways to improve recycling

4.3.1 Choose appropriate type of headings

There are two types of headings: *talking* and *topic* headings. Talking headings present a certain point of view whilst topic headings list only the topic to be discussed. You may want to use a combination of both in your report, as the following example illustrates:

2.2 Reasons for not recycling	*Topic heading*
2.2.1 Inconvenient location of recycling bins	*Talking headings*
2.2.2 Inadequate encouragement to recycle	

4.3.2 Keep your headings parallel

Remember also to keep headings of the same level under the same section parallel. In the example above, the headings for 2.1, 2.2 and 2.3 (all second-level headings under the *Results and Discussion* section) are parallel in that they are all noun phrases; they are also of the same type, i.e. topic headings. Similarly, the headings at 2.2.1 and 2.2.2 (third-level headings under the section *Reasons for not recycling*) are parallel grammatically and are both talking headings.

4.3.3 Number your sections consistently

In numbering the sections of your report, you can choose either the decimal system or the alphanumeric system but you must be consistent and not mix them. The decimal system uses numbers with increasing decimal places for lower level information. The alphanumeric system is a combination of the roman numerals and the alphabet. The table below illustrates the two numbering systems.

Table 2: The decimal and alphanumeric numbering systems

Decimal system	Alphanumeric system
2. Results and Discussion 2.1 Frequency of recycling 2.2 Reasons for not recycling 2.2.1 Inconvenient location of recycling bins 2.2.2 Inadequate encouragement to recycle 2.3 Ways to improve recycling	A. Results and Discussion i) Frequency of recycling ii) Reasons for not recycling a) Inconvenient location of recycling bins b) Inadequate encouragement to recycle iii) Ways to improve recycling

4.4 Use Language of Reporting Appropriately

Very often, when student writers report on information obtained from primary research, they do not use the appropriate forms of expression.

Table 3 shows some examples of inappropriate and appropriate language of reporting.

Table 3: Inappropriate and appropriate ways of reporting data

Inappropriate	Appropriate
✗ From the survey, 40% of the respondents feel... (It is not *from* the survey that the respondents feel or think a certain way.)	✓ The survey shows that 40% of the respondents feel...
✗ From the study, not many people...	✓ The study tells us that not many people...From the study, we can see that not many people...
✗ From interviews with students, they do not benefit from...	✓ From interviews with students, it can be seen that/it was found that they do not benefit from...
✗ Through my dealings with employees, they are concerned mostly with... (The subject following *through my dealings with employees* should be *I* not *they*.)	✓ Through my dealings with employees, I find that they are concerned mostly with... ✓ My dealings with employees show that they are concerned mostly with...

Here are four possibilities of structurally appropriate reporting:

- *The survey* [source] *shows that* [finding]
- *It can be seen* [writer's voice/comment] *from the survey* [source] *that* [finding]
- *From the survey* [source], *it was found that* [finding]
- *The majority* [finding], *as can be seen from the responses to a question about...* [source]

Another common error occurs when presenting what the respondents say or feel. Avoid saying this:

✗ *According to the respondents, they say that...* (Redundant writing)

The better version is:

✓ *According to the respondents, the decision whether to recycle or not depends on the availability of recycling resources such as bins and the encouragement to recycle.*

You can also use this:

✓ *The respondents say that...*

4.5 Refer to Figures Correctly

If you place any figure or table in the Results section of your report, you should number it and give it a concise, accurate title. Then you need to draw the reader's attention to it in your text so as to integrate the illustration more effectively into your report. This is another area where incorrect structures are often used. Students often write this:

✗ *Referring to Figure 1, only 15% of the respondents...* (Who is referring to Figure 1?)

The correct version is:

✓ *Referring to Figure 1, **we** can see that only 15% of the respondents...* (It is you and the reader(s) who are referring to the figure.)

You can also use these:

✓ *Figure 1 shows that only 15% of the respondents...*

✓ *As Figure 1 shows, only 15% of the respondents...*

✓ *As can be seen in Figure 1, only 15% of the respondents...*

Conclusion

After putting a lot of effort into gathering information, you will want your report to contain factually accurate information that is objectively reported and conveyed in accurate or appropriate language. The key to writing an effective Results and Discussion section in a report is to ensure that your reader is able to access data easily and understand what the information means to your research. To achieve the former, use headings, text and figures effectively. Additionally, ensure that the language you use reflects your voice, the source of the finding and the actual finding.

Further reading

Anderson, P.V. (2003). *Technical communication – A reader-centered approach* (5th ed). Boston: Heinle.
McMurrey, D.A. (2002). *Power tools for technical communication*. Fort Worth: Harcourt College Publishers.
Wesiman, H. (1996). *Basic technical reporting*. New Jersey, Englewood Woods: Prentice Hall.

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