MEMORIAL UNIVERSITY

Faculty of Engineering and Applied Science

DESCRIBING CHARTS AND GRAPHS

A common feature in documents in STEM topics is the use of charts and graphs. These often represent data gathered from research and/or experimentation.

This document explains how to discuss figures in a report or presentation. It is covered in a five-step process that can be used for each illustration in a project.

1. DETERMINE THE IMPORTANCE OF THE FIGURE TO YOUR PURPOSE

Whether this is a figure (or table) that you created or one that you have found elsewhere, you need to identify your reason for creating/using it. Graphs can contain a variety of information, expressing trends, quantities, proportions, and so forth. It is up to you to determine the reason(s) why you are including this figure in your report. Select the data from the figure that best support your purpose.

2. DESCRIBE THESE IMPORTANT POINTS

Once you have identified which points are important, you need to describe them in words. First, you give a general description of the table or figure, stating what function the illustration is supposed to serve. Then you highlight the data that is relevant to your project. Table 1 contains some useful expressions when describing illustrations.

Table 1. Useful words and expressions when describing illustrations

↑	↓	↔	Comparisons	Adverbs
Increase	Decrease	Level off	Doubled/Tripled/Quadrupled	Steadily
Rise	Fall	Stabilize	Twice as/Three times as	Gradually
Jump	Plummet	Remain steady	A quarter/A third/A half	Sharply
Grow	Decline	Maintain a level of x	One in _____	Slowly
	Shrink		A twofold/threefold/etc. increase	Dramatically
	Drop			Drastically
				Quickly

3. ALWAYS REFERENCE THE FIGURE/TABLE NUMBER

Every table or figure must be specifically referenced in the report. There are several ways to do this:

Figure 1 shows…

According to Table 2…

The estimated population of each insect is shown in Figure 3.

The populations of each insect were estimated (see Table 4).

Including a table or figure that is not explicitly mentioned in the text is considered an error.

4. DO NOT MENTION IRRELEVANT DATA

A common mistake is essentially describing the entire chart or graph in words. If that were the intention, there would be no point in including a visual representation of the data. Anything that is irrelevant to the point that you are attempting to make does not need to be mentioned. Whenever possible, describe trends and commonalities rather than specifically saying each point of data.

5. DO MENTION ANOMALOUS DATA

If the table or figure does contain data that contradicts a point you have made, do not ignore this contradiction. Instead, mention it directly, and then explain the reason for this anomaly if possible. Do not, however, propose an explanation that cannot be supported by evidence.

EXAMPLE FIGURE WITH DESCRIPTIONS

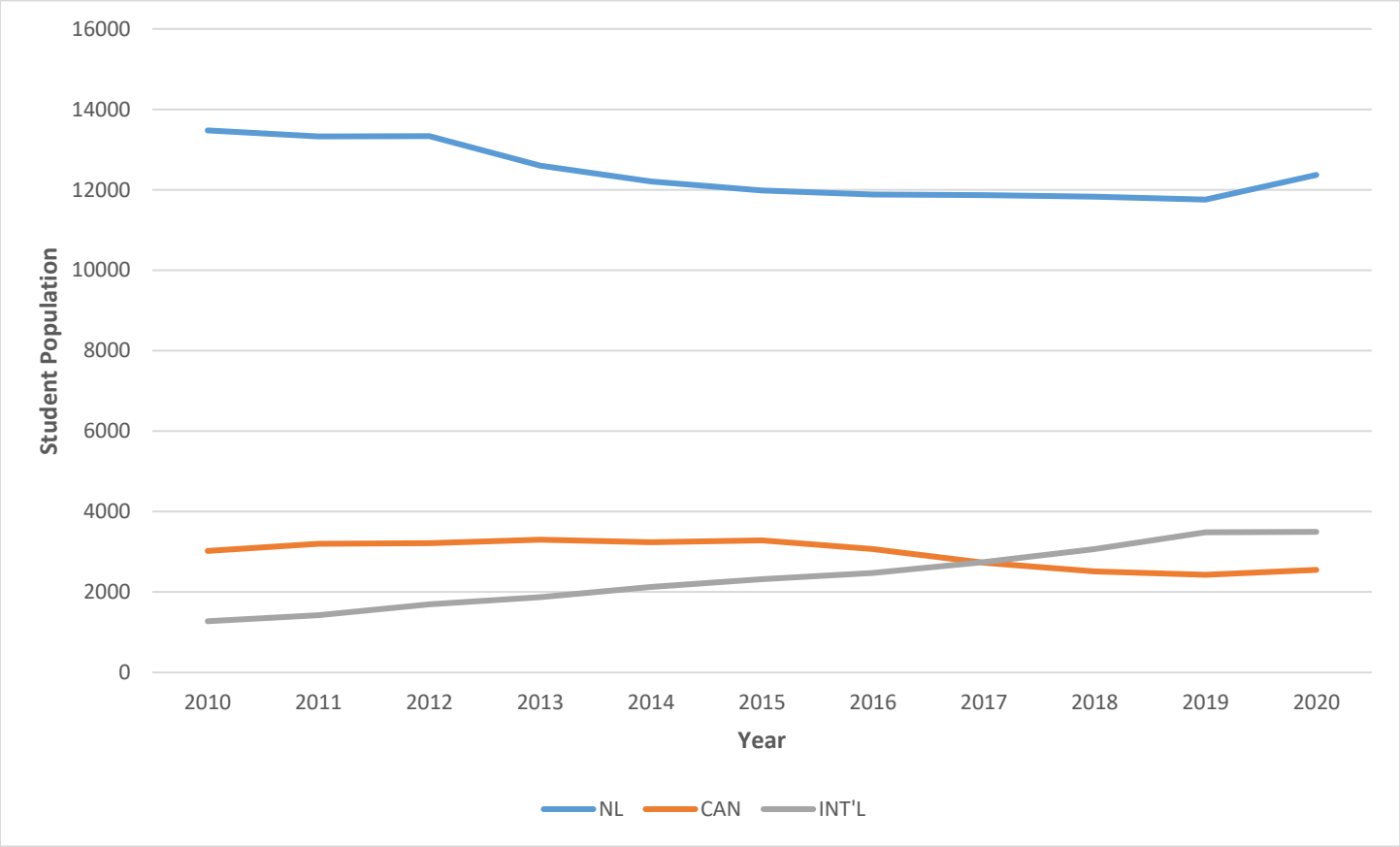

Figure 1. Student enrolment by place of origin. Adapted from [1].

POOR DESCRIPTION: More students at Memorial University of Newfoundland come from Newfoundland and Labrador than anywhere else. In 2010, there were 13,476 students from the province. In 2013, there were 12,601. In 2020, they numbered 12,372. In 2017, the numbers of international students and Canadian students were almost the same.

GOOD DESCRIPTION: The student population of Memorial University of Newfoundland, broken down by country of origin, is shown in Figure 1. The population of students from Newfoundland and Labrador has been steadily declining, with a slight increase noted in the last recorded year. Conversely, the international student population has been gradually increasing, now outnumbering students from other Canadian provinces.