

# Developing a reading comprehension assessment for aphasia



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## Introduction

A stroke occurs approximately every 3 minutes and 27 seconds in the UK (Stroke Association, 2016). Aphasia is a condition which can occur post-stroke and results in difficulties with understanding and using language. Difficulties with reading and understanding text is a common problem in aphasia and can impact on an individual's quality of life. For example restricting hobbies or employment. Currently, Speech and Language Therapists assess reading comprehension of text by asking the client to read a passage and answer questions about the passage. These questions target specific types of information in the passage; main ideas and details and stated and implied information.

This project will consider the properties of a test of paragraph comprehension that has been designed to use with people with aphasia. The test consists of 15 paragraphs followed by a set of questions. The project will consider the passage dependency (i.e. do people need to read the paragraph to answer the questions) and determine if the questions are targeting the correct type of information (i.e. main ideas and details). A main idea is defined as an idea which is repeated or elaborated throughout the paragraph. Alternatively, a detail is information which is not repeated or elaborated throughout the paragraph.

## Aims

1. What is the passage dependency of the paragraphs and questions within the assessment?
2. What do people think the main ideas of the paragraphs within the assessment are?

## Methods

### 1. Passage dependency

- The researcher set up an online version of the assessment using Survey Monkey.
- Participants were first asked to answer the test questions without reading the paragraph and then asked to answer the same questions after reading the paragraph.
- The Passage Dependency Index (PDI) was calculated for each of the paragraphs and questions. The PDI is a formal measure of passage dependency and was calculated using the equation devised by Tuinman (1973).

- The researcher determined which paragraphs and questions met the required passage dependency of .40.

### 2. Identifying main ideas

- The researcher administered the assessment face-face. The participants were asked to state the main points of each of the paragraphs and rank them in order of importance by labelling the points numerically i.e. the first most important main idea was labelled as one etc.
- The researcher identified the most common themes mentioned for each paragraph and totalled the three most important ideas for each paragraph.

## Results

### 1. Passage Dependency

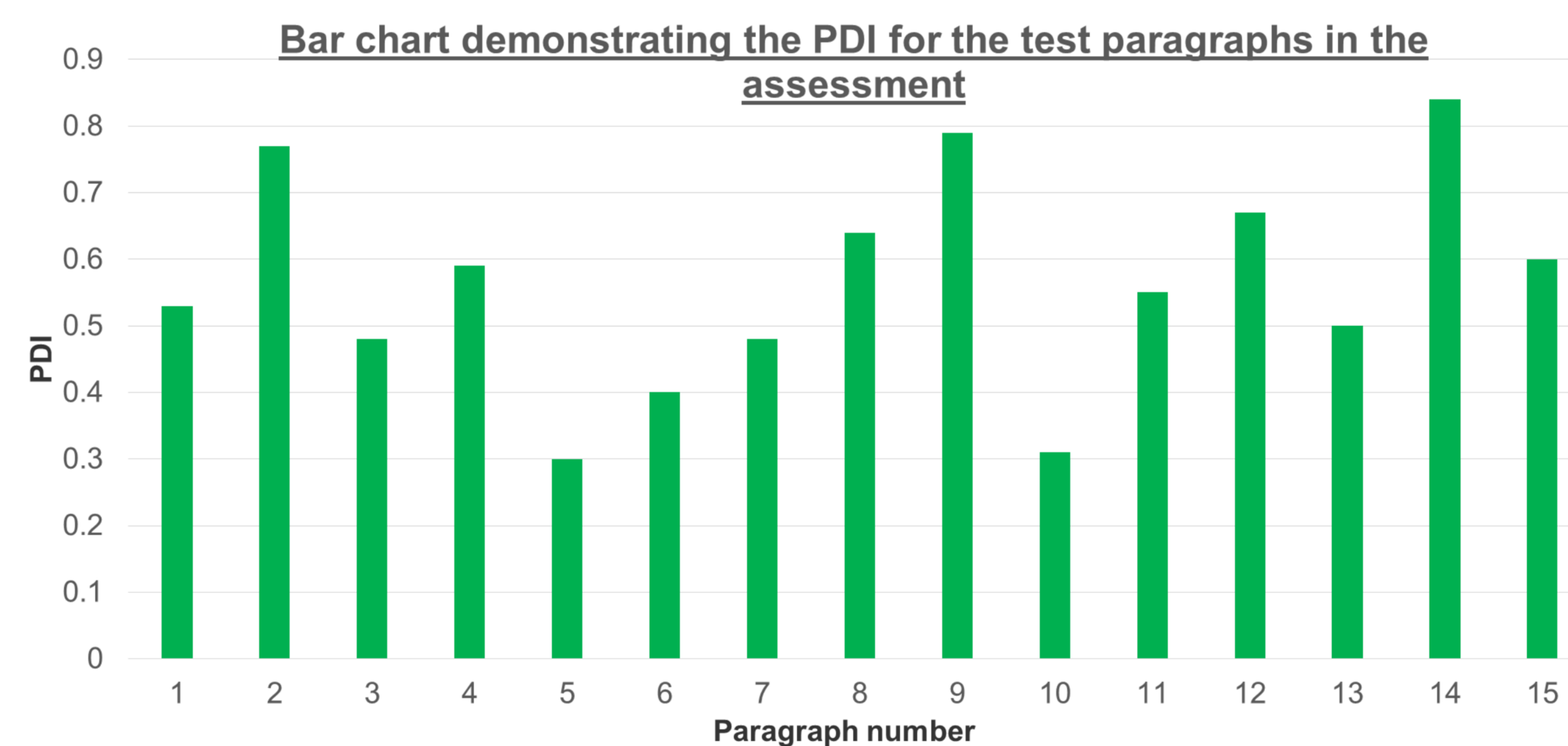


Figure 1: All paragraphs with the exception of paragraphs 5 and 10 reached or exceeded the required PDI.

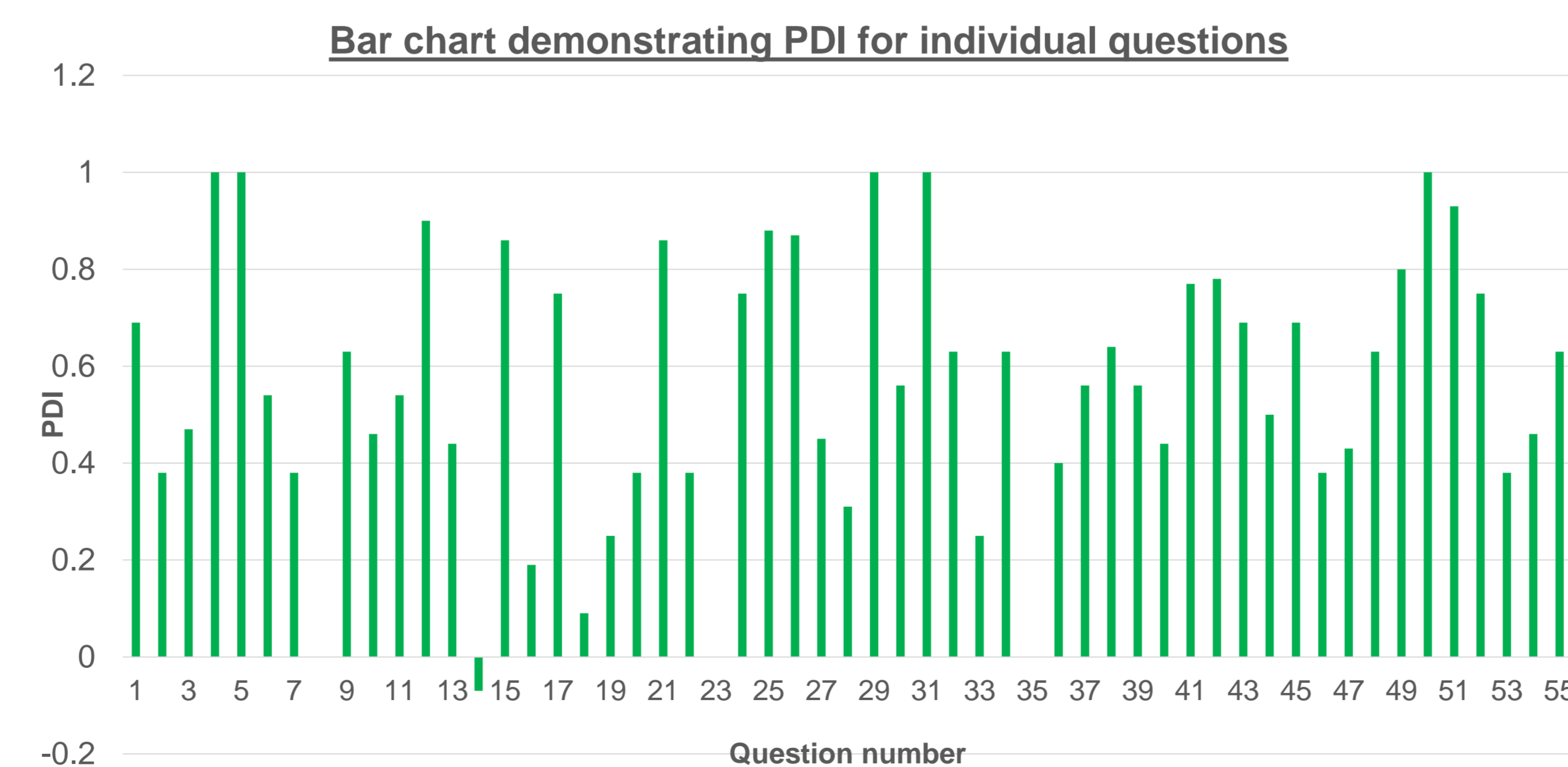


Figure 2: 15 questions did not reach the required PDI. Some questions have a PDI of 0, this demonstrates an equal number of participants answered the question correctly under both conditions. A negative score is reported for question 14, this indicates more participants answered the question correctly in the without passage condition.

### 2. Identifying main ideas

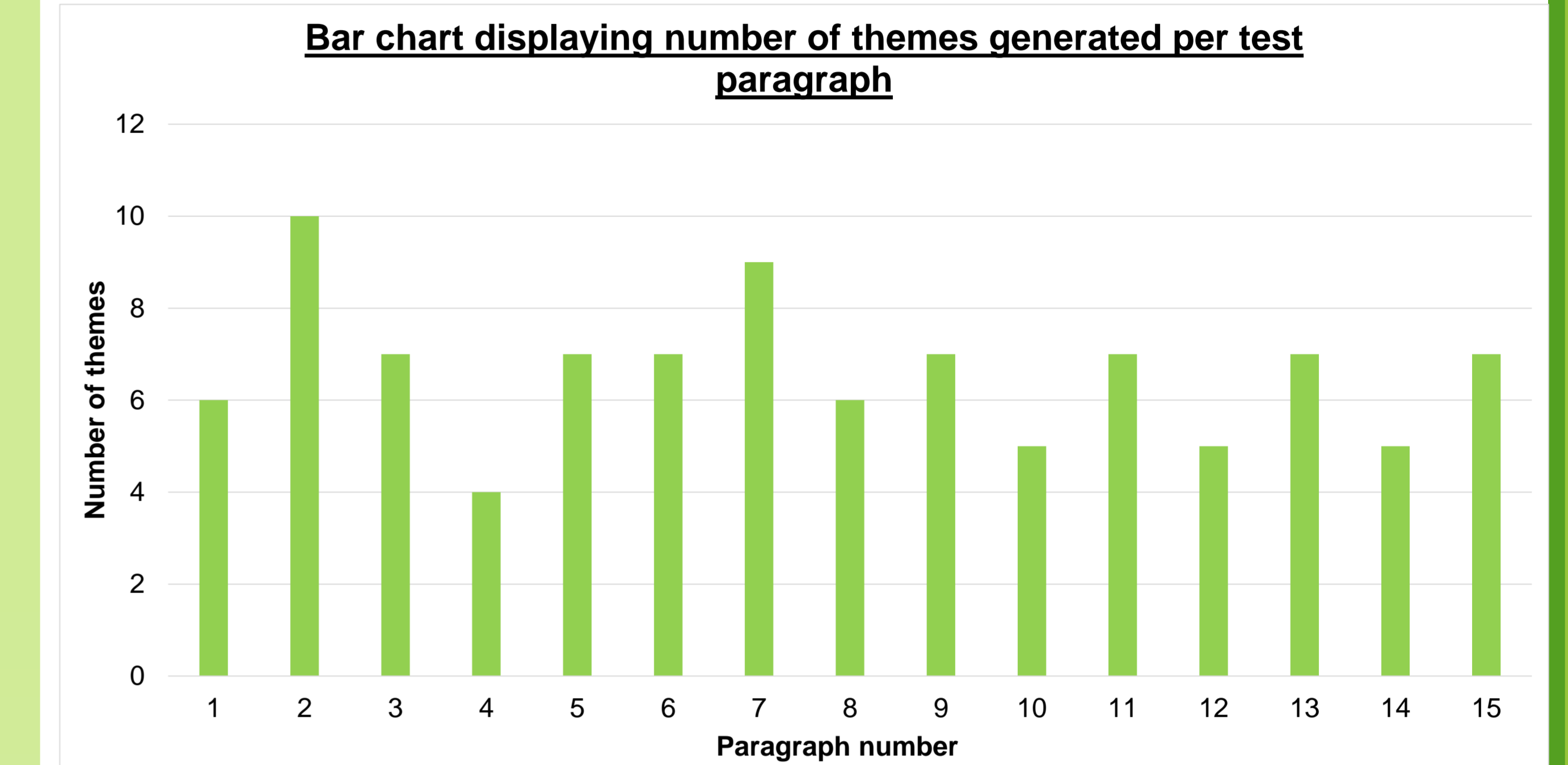


Figure 3 showcases the wide range of themes participants generated for each paragraph.

## Conclusion

- Factors contributing to the questions with a low PDI included: being able to use general knowledge to answer the question or the ability to make an informed choice by choosing the most plausible answer when the passage is not given.
- Some themes generated agreed with the main ideas identified by the designers of the assessment. Others disagreed and resembled questions coded as details within the assessment.
- The original assessment may need to be revised as questions with a low PDI indicate they are not testing reading comprehension. Furthermore, questions may not be testing what they believe to be (i.e. main ideas or details).

### Acknowledgments

Tuinman, J. (1973). Determining the passage dependency of comprehension questions in 5 major tests. *Reading Research Quarterly*, 9(2), 206-223.

Stroke Association. (2016). Stroke Statistics. Retrieved from [www.stroke.org.uk](http://www.stroke.org.uk).

### For further information

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