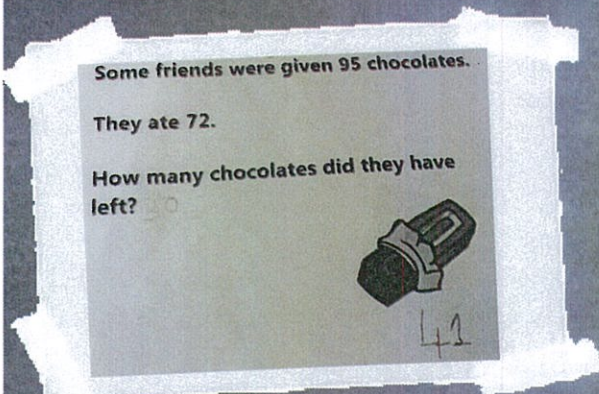# Removing the Answers

What impact does removing the multiple choice answers have on students' impulse control when answering PAT M questions?

Introduction

Most standardised testing that our students encounter, NAPLAN and PAT assessments, calls for students to reply to multiple choice questions. When students encounter one of these questions where the answer is not immediately obvious, they often choose a response at random and this does not reflect a student's understanding or knowledge of the task. This research was designed to discover if students would attend more closely to the task and demonstrate understanding if the multiple choice element was removed.

Some friends were given 95 chocolates.

They ate 72.

How many chocolates did they have left?

Method

A class of 24 2/3 students were split into two relatively even groups using their scaled PAT score. Both groups were presented with the same problem on paper, however one group had multiple choice answers and the other did not. Students responses and time taken to complete the problem were recorded. The question was selected due to the class' poor performance with it during the PAT M assessment.

Results

- There was no difference in accuracy rates whether students were provided with multiple choice answers or not.

- There was no difference in the average time taken to complete the problem between groups. An average of 5.6 minutes each.

- These results were replicated twice with the same results.

Observations

Students from both groups showed similar strategies to solve the problem, some students used counters and number grids but most relied upon drawing and counting on.. Most students were able to explain the process they used.

It was observed that all students who did not have a strategy to draw upon still selected an answer at random. Those without multiple choice, chose an answer and wrote it down. For those students who had multiple choice answers to choose from, their selected strategy did not lead them to an answer presented so still recorded their own option and rejected the available choices.

The predominant strategy observed was for students to count on. This led to observations of students having consistent errors in this approach. All students who adopted this approach counted the initial number as well leading to a common error amongst both cohorts.

For example; if we take the question pictured above, of the chocolates being shared amongst friends, the students were counting on beginning with 72 rather than 73, leading to an error of one consistently. This misconception was observed in over 75% of the student responses.

Discussion

It was surprising to see little to no difference in the time or approaches that students took when comparing multiple choice or not, however the more useful data came from the student misconceptions observed during the task. This has provided the teacher with rich data and a direction for further exploration with the class.