

# Recent research into learning & exams

## Ramirez & Beilock (2011)

A sample of secondary school students completed a questionnaire to assess how worried they were about an upcoming exam. On the basis of their questionnaire responses, they were classified as either *anxious* or *non-anxious*. The students were then randomly assigned to one of two conditions. In both conditions they engaged in free writing for ten minutes before an important Biology exam. The experimental group wrote about their feelings about taking the exam and were encouraged to express their anxiety on the page. The control group wrote about a biology topic that was not going to be on the exam. Their exam scores were later compared. Ramirez and Beilock found that amongst the *anxious* students, writing about their anxiety led to an average improvement of 6% in their marks. This equates to about half a letter grade (e.g. from B- to B+).

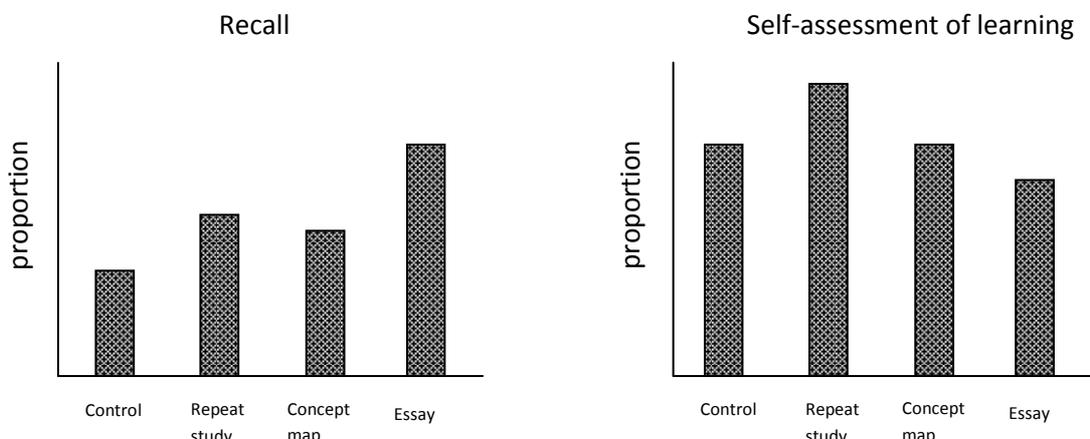
- What were the IV and DV in this experiment?
- What experimental design did the researchers use?
- Explain one strength and one weakness of this experimental design.
- What conclusion could be drawn from the results of this experiment?
- Suggest some suitable research questions for follow-up studies.

## Karpicke & Blunt (2011)

A sample of 200 university students was given five minutes to read a short passage about a scientific subject. They were given a further ten minutes study time. For this, they were randomly assigned to four conditions, which were given different instructions about how to learn.

Condition	Study instructions
Concept map	Draw a spider diagram to represent the ideas in the passage.
Repeated study	Read and re-read the passage as if cramming for an exam.
Essay	Write a free-form essay from memory about the ideas in the passage.
Control	No instructions.

Students were then given a recall test for the material in the passage. They were also asked to assess how much they *thought* they had learned. The results are shown on the graphs below:



- What was the IV in this experiment?
- Explain one variable the researchers would need to control in this experiment.
- What conclusions can be drawn about study methods from these results?
- Suggest why these results have surprised many cognitive psychologists.