

Active Learning Works: the evidence

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“Active Learning? You must be joking, there’s no time for entertainment - I’ve too much content to cover.”

We have all heard such views in staffrooms, yet in official circles active learning remains the orthodoxy. Professors queue up to insist upon it, inspectors require it, and conference speakers chant its praises. Many of us also remember long lectures about its effectiveness during our teacher training! Yes, we all know the theory --- but does it actually work in practice?

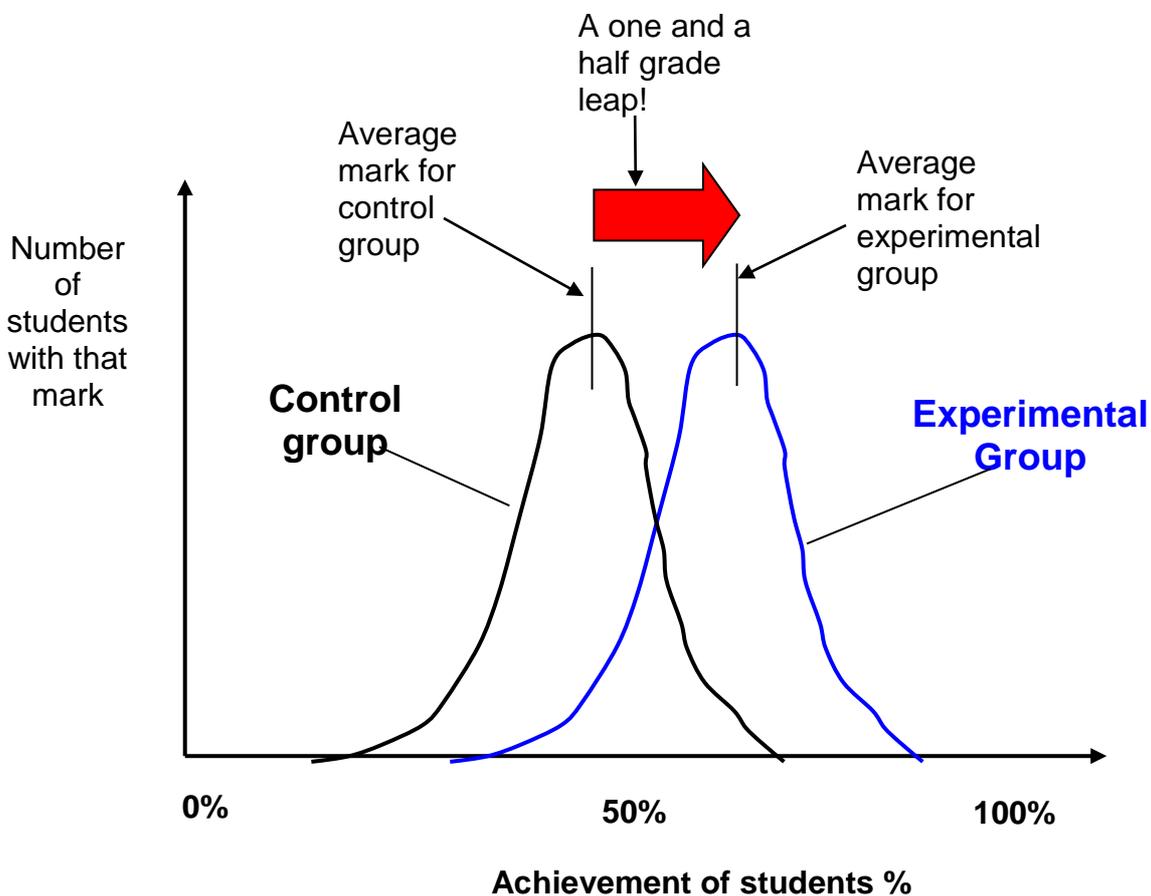
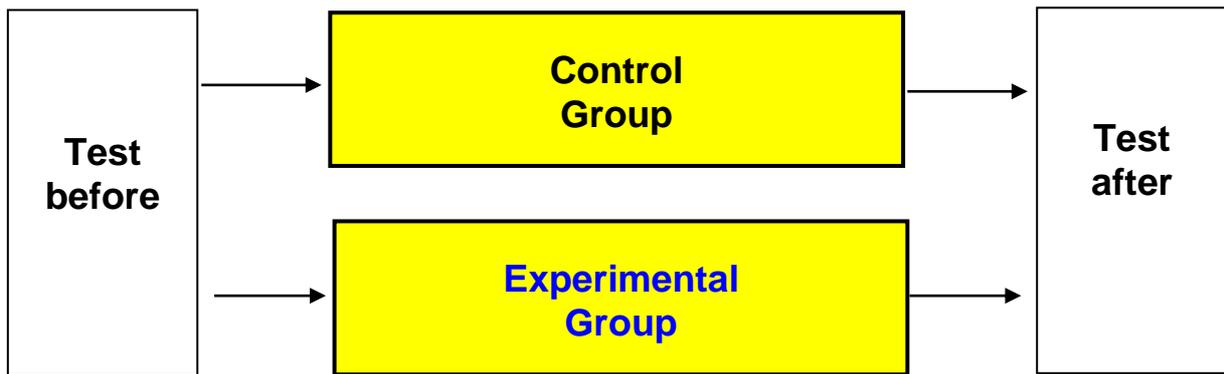
Many researchers have asked this question, and have tried a ‘let’s suck it and see’ approach to answer it. These are rigorous control group studies with real teachers in real schools and colleges.

Hundreds, or even thousands of students are divided between:

- an ‘*experimental group*’ which is taught with active methods and
- a ‘*control group*’: which is taught the same material without active methods.

The control and experimental groups are carefully composed to be identical in their mix of ability, social background, and so on. The control and experimental groups are taught for the same length of time, by the same teachers, or by teachers of the same ability, and the students are tested to see which group has learned best. In study after study of this type, active learning produced much better learning. (See the diagrams on the next page.)

Never mind the theory – does it work in practice?



Active Learning adds a grade and a half to achievement.

Professors John Hattie and Robert Marzano have independently used careful statistical methods to average the findings of many thousands of the most rigorous studies on active learning. Their findings show that, for the best active methods, if you put a student in the experimental group, then on average, they will do more than a grade and a half better than if they had been placed in the control group.

The time the teacher has to teach the topic is not a factor here. Remember that the groups taught with active learning methods were taught *for the same amount of time* as the control group. While the experimental group was engaged in the active learning methods, the control group was receiving more content and fuller explanations from their teacher. But the control group learned less.

Many teachers say active learning would be great 'if they had the time'. But the research shows that if you make the time for effective active learning by doing less didactic teaching, then your students will do better. It may seem strange not to be able to say everything you know about the topic you are teaching, but it won't help if you do. You know too much!

Active learning works best at every academic level. Peter Westwood, summarizing research on how best to teach students with learning difficulties argued for highly structured, intensive, well directed, active learning methods.

What active methods work best?

Any activity will not do. We need to set activities that require students to make their own meanings of the concepts you are teaching, and that get them to practice important skills. Ideally the activity is highly relevant to your goals, is an open task, and is challenging. Lets look at some examples of methods that have done particularly well in these rigorous trials.

'Same and different': *Tasks that require the learner to identify similarities and differences between two or more topics or concepts, often one they are familiar with, and one they are presently studying: 'Compare and contrast viral and bacterial infections'*

Graphic organisers: *The student creates their own diagrammatic representation of what they are learning, for example in a mind-map, flow diagram or comparison table. They get out of their place to look at other students work, to help them improve their own. Then they self-assess their own diagram using a model diagram provided by you.*

Decisions-Decisions: *Students are given a set of cards to match, group, rank, or sequence. For example: 'rank these advantages of stock taking in order of importance, then sort them by who benefits, customer, business, supplier, or investor. Students are asked to reject your 'spurious' cards that do not describe an advantage of stock taking.*

Feedback: *There are many feedback methods including self assessment and peer assessment. Ask students to decide on what was done well, and what they could improve.*

Hypothesis testing: *You give students a statement that is partly true, but partly false: "The more advertising the better". "Cromwell was religiously motivated". Then you ask them to work in groups to evaluate the statement. When the groups are finished you get one reason in favour of the hypothesis from each group in turn, continuing until all their reasons have been given. You nominate the member of the group to give the reason and to justify it: 'why did your group think that?'. When a reason has been given say 'thank you' but don't agree or disagree with it. Repeat for reasons against. When all the reasons are in, ask the class as a whole to try and agree reasons for and against. Then give your thoughts on their ideas.*

I expect you can guess why these methods work: they force students to think, and into making sense of what you are teaching them.

Let's not confuse good explaining with good learning. The delivery of content does not guarantee its arrival. In the end it is perhaps no surprise that students only get good at doing it --- by doing it!

Well if Active Learning works, why don't more teachers use it?

- We tend to teach the way we were taught ourselves, rather than in the way that works best.
- We know too much, and rather enjoy explaining. So when you set activities, listen carefully to learners as they work, this can be even more enjoyable and less hard work than explaining, and the feedback is very informative.

References

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