

Active Learning Strategies



Quotation from "A Handbook for Teachers in Universities and Colleges (p.71)

Active learning stands in contrast to much of what passes for learning in large lectures and classes - it is lively, dynamic, engaging and full of life. It is a basis from which lifelong learning skills can be developed.

Active learning is often defined in contrast to the worst of traditional teaching where the teacher is active and the student is the passive recipient.

Specifically, active learning occurs when you use strategies to ensure that elements of student activity - which basically involves talking, reading, writing, thinking or doing something - for example solving a problem. These activities might be done alone, in pairs of students or in small groups of up to four.

Cannon, R & Newble, D (2000) 4th Edition. London : Kogan Page.
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1. At the start of a session

Ice breakers and starters

Aim: To stimulate active learning by reflecting on, and linking to, personal learning experiences

As a starter for a session or sub-section of a class session, try one of the following:

(a) Worst/Best personal experience of learning/teaching

1. Participants: in pairs, take 2 minutes each to describe to each other the best learning experience they have had
2. Change partners, again 2 minutes each, describe to each other their worst learning experience
3. Feedback to whole group - facilitator (or one of the group) takes notes on whiteboard (or overhead, or PowerPoint, or butchers paper)
4. Facilitator and participants: discuss implications for utilising good and avoiding poor learning experiences

(b) Staff and student expectations

1. Participants: in pairs, take 2 minutes each to describe to each other what you, as lecturer, hope to achieve for your students by the end of the semester
2. Participants then take 2 minutes each to describe to each other what they think students want from lectures

3. Feedback to whole group - facilitator summarises on whiteboard (or overhead, or PowerPoint, or butchers paper) the similarities and differences in students' and lecturers' (or tutors', or demonstrators') expectations
4. Whole group discussion: What might this mean for lecturers' (or tutors', or demonstrators') approaches to teaching?

(c) Background Knowledge Probe

1) Brainstorm

Write term/ concept on board and ask students what does this term suggests to them. Accept all answers, write down and clarify as you go along. Helps you build on student's prior knowledge of topic and also helps you identify misconceptions (basic constructivist principle of learning).

2) Background Knowledge probe

This is particularly useful when introducing a new topic: The principle is to select a half-dozen or so key concepts from the area you are about to develop ask students to indicate for each item whether they

- (a) had never heard of it or
- (b) have some knowledge but hazy, or
- (c) believe they know it well and
- (d) can apply/explain it.

If a 'show of hands' appears too threatening, anonymous responses can be collected by use of a handout. (see page 3)

By tabulating the results you can get a basic overview of the group's level of knowledge of (or at least familiarity with) the topic.

For an example see

<http://www.siue.edu/~deder/assess/cats/probe7.html>

BACKGROUND KNOWLEDGE PROBE

In response to each term below, circle the number that best represents your knowledge in the context of University learning and teaching:

1. Learning Outcomes

1. Never heard of this
2. Have heard of it but don't know what it means
3. Have some idea of what it means but not too clear
4. Have a clear idea and can explain what this means to me

2. Summative and Formative assessment

1. Never heard of this
2. Have heard of it but don't know what it means
3. Have some idea of what it means but not too clear
4. Have a clear idea and can explain what this means to me

3. Active Learning

1. Never heard of this
2. Have heard of it but don't know what it means
3. Have some idea of what it means but not too clear
4. Have a clear idea and can explain what this means to me

4. Assessment rubrics

1. Never heard of this
2. Have heard of it but don't know what it means
3. Have some idea of what it means but not too clear
4. Have a clear idea and can explain what this means to me

5. Turnitin.com

1. Never heard of this
2. Have heard of it but don't know what it means
3. Have some idea of what it means but not too clear
4. Have a clear idea and can explain what this means to me

6. Alignment (objectives, teaching strategies & assessment)

1. Never heard of this
2. Have heard of it but don't know what it means
3. Have some idea of what it means but not too clear
4. Have a clear idea and can explain what this means to me

NB: You can adapt this background knowledge probe for use with your own class by replacing the headings with key words from the course you are teaching.

BACKGROUND KNOWLEDGE PROBE: Summary table of responses

| | Learning Outcomes | Summative and Formative Ass't | Active Learning | Assessment Rubrics | Turnitin.com | Alignment: obj/tch'g/ass't |
|--------------------------|-------------------|-------------------------------|-----------------|--------------------|--------------|----------------------------|
| 1. Never heard of it | 4 | 1 | 1 | 2 | 4 | 4 |
| 2. heard but don't know | 3 | 2 | 2 | 2 | 2 | 2 |
| 3. Some idea...not clear | 1 | 3 | 3 | 2 | 2 | 1 |
| 4. clear...can explain | 1 | 3 | 0 | 3 | 1 | 2 |

If you had this result for a series of items in your own topic area, what would you do?

Remember, results such as these give a good indication of the level of confidence of your students on these items, but not necessarily their actual competence!

Think about:

1. How could this result be helpful to you?
2. What can you do to make sure that the 'confident' students don't feel patronised, while those for whom the topic is entirely new, are not left behind?
3. Could you consider starting with some small group activities, rather than by giving input? If so, how would you group them: mixed - so that the confident ones help the less confident - or streamed, so that you can help the less confident group while the confident students tackle a more advanced issue?

2. During a session:

Active participation strategies

Aim: To maintain student interest and attention to encourage learning.

During a session, particularly if there is a considerable amount of input, try to interrupt your flow of input to provide variety and encourage participation

1. Introduce a problem related to the topic
2. Provide a short reading passage
3. Provide a diagram, picture or cartoon relevant to the topic
4. Show an artefact or apparatus relevant to the topic

Give participants some time to think about how they might solve the problem; or what the next step might be; or how a reading is relevant to the point being made; or how the artefact or apparatus might be applied.

Participants could be asked to do one of the following:

1. write down a point or two in response to the task
2. talk about the problem with the group immediately around them
3. if the size of the room permits, move around to find someone who has a similar solution to their own
4. if time permits and class size is large enough, engage in a 'pyramid discussion'.

Following a short activity of this kind, the lecturer gathers feedback from two or three individuals or groups, and links their comments back to the topic.

3. At the conclusion of a session:

Summary and feedback activities

Aims:

- (i) to encourage participants to reflect on what they have learnt
- (ii) to provide lecturer/facilitator with feedback on the level of understanding or difficulty experienced by the students.

At the conclusion of a session you can ask students to write a few lines on one of the following and hand it in as they leave. (Angelo & Cross, 1993)

- A 'Minute Paper' handed up anonymously:
'the most important thing you learnt in this class'
- A 'Muddiest point' what important question remains unanswered?
- 'Pro and Con grid'
- 'Applications Card', applying theory to practice
(For a brief summary see also Cannon & Newble pp.74-75)

The results may give the lecturer an insight into the level of impact or difficulties experienced by the students and may be used as a starting point or woven into the following session.

Alternatively you may wish to try an evaluation about half way through a course and use it 'formatively' to modify the learning/teaching approaches in the light of student comments.

Informal evaluation sheet (ask 3 basic questions)

Please let me know about the course so far:

1. Anything that has been particularly useful/interesting/clear
2. Anything that has not been useful/interesting/clear
3. Any other comments

Formal evaluation:

This is gathered through QAI forms by Institute at end of year.

4. More ideas for active learning strategies

Source: from Cannon & Newble (2000), pp.71-75.

Variation in your manner and style

at the most basic level...variety in presentation is essential in maintaining attention and therefore the possibility of students engaging with the material. (p.71)

Questions

A powerful way of enhancing learning is to devise situations that require the students to interact with you or each other. Questions are the simplest form of interaction.

Questions directed at students:

...unless the teacher is very careful, the dominant emotion is one of fear. It is therefore preferable to create a situation in which all students answer the question and individuals are not placed in the foreground.

Examples might be

- ...a multiple choice or true-false item... show of hands
- Vary style of questions use divergent (open questions) rather than convergent (one answer only) Examples of divergent questions
 - What would you do next?
 - What's wrong in what I just did?
 - How could this process be improved?
 - What if?
- ...ask students to write a question on a piece of paper
- ...address some or all of them in a relatively anonymous and non-threatening way
- ...small group activity within a large group
- ...one-to-one discussion...
- ...reading or problem-solving activities...
- ...brainstorming... encourages lateral or divergent thinking.

5. Reference List

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