

Active Learning:

29 Starter Ideas to Engage
Your Students

Introduction

This Guide is designed to help you reflect on the use of active learning in your teaching practice. Active learning is about educators providing the environment and opportunities for students to build knowledge and understanding of their subject for themselves. This contrasts with more conventional teaching methods, such as the traditional lecture, where knowledge is shared with students as they sit and listen in a passive way. While such traditional methods of delivery (e.g. lectures) can still have a place and purpose within higher education when effectively implemented, other learner-centred teaching strategies exist that can usefully engage students and enhance the student learning experience.

Active learning in action!

Active learning covers a raft of different activities to help students engage in their learning. In this guide, we introduce 29 active learning methods for you to try, adapt and experiment with. Some methods require limited preparation such as the minute paper, superlatives, and polls. Certain methods work well with large groups such as debates and quizzes, while others work better with smaller groups such as the jigsaw groups and fishbowl methods.

You do not need to include active learning in all your teaching. It is over to you to select the active learning methods that align with your session outcomes and your students' needs.

All active learning methods covered in this Guide align with and supplement the six dimension themes of Heriot-Watt University's strategic [Global Changemaker Curriculum Framework](#).

Why use an active learning approach

The range of active learning methods, which are listed alphabetically in this Guide, are designed to:

- build community and belonging within your programme and the institution.
- help you monitor your students' progress.
- assist your students to develop a deeper understanding of their subject.
- hone your students' transferable skills such as group work, problem solving, and communication.
- enable your students to reflect on their learning and subject knowledge.
- be implemented in on-campus and digital classrooms.

At the end of the Guide, you will find relevant reading and resources plus the sources of information we have used to prepare this Guide. We hope you find the methods presented helpful, and that they inspire you to reflect on, refresh and enhance your teaching. Feedback on this resource is appreciated. We'd love to hear what works and how you have adapted and developed new approaches.

Good Luck

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29 Active Learning Methods

A summary for each activity is outlined below:

3D Reflective Builds

Provide a prompt for individuals or groups along with 3D materials such as LEGO® (other bricks are available), and challenge students to build a literal or metaphorical response to a prompt. Set a time limit for the build and then encourage reflective feedback on the artefact. Short challenges work well individually, but when working with groups longer time limits encourage more complex artefacts. The hands-on building process increases confidence, enhances problem solving skills, reinforces meaning, engenders belonging, and promotes a sense of wellbeing due to the light-hearted approach and tactile nature of the activity.



Annotate

Annotation tools enable facilitators and their students to collaboratively highlight and comment on digital texts. You can ask students to engage with the assigned reading and use the annotation tool to raise questions, provide answers, and encourage students to discuss the text among themselves prior to the class.

Artefacts and Objects

Invite your students to bring in or have an image of an artefact or object linked to the course/session/topic. Depending on the cohort size, students can share their experiences in small groups or with the entire class. Alternatively, ask your students to record a short video (approximately 1-2 minutes) explaining their artefact/object, which can be shared in advance of the session via Canvas. Remember to provide students with advice on video accessibility, including the use of subtitles. The use of artefacts/objects enables students to develop their knowledge and enhance skills through creativity, reflection and discussion with peers.

Biscuit Challenge

Give each student one sandwich biscuit, such as Oreo (other biscuits are available), a sheet of paper and a selection of coloured pens. Set a challenge relevant to the session topic, practical or reflective, and give students a set time to create a solution involving the biscuit. They can take the biscuit apart, break it up, use it whole or whatever their imagination comes up with. Allow time for each student to report back on their creation. This also works well as a group activity.

Brainstorming

This method is used to generate multiple answers or ideas on a topic and is a useful approach to review current knowledge (e.g., what do you recall from the previous session?) or perspectives on a subject area (e.g., what makes an effective oral presentation?). The topic area is introduced by you as the facilitator, and then students call out ideas or add comments to a whiteboard or a Padlet™. These are collated, grouped together, and used to prompt students to discuss or prioritise the information in-class.

Case Studies

Develop case studies to use in-class, so your students can apply their course learning to real-world scenarios. Using this approach helps to foster students' critical thinking and problem-solving skills, while linking theoretical learning to practical applications. Ideally, case studies should be relevant and meaningful, to enable students to offer their own personal insights and experiences. Tailoring the case studies allows students to become emotionally and intellectually involved in the subject under discussion, and the learning to resonate with them. Using a variety of different case studies also helps maintain student interest when they report their findings to the rest of the class.

Class Discussion

Use a range of open, closed, and probing questions to target different levels of Bloom's Learning Taxonomy. Use student responses to assist wider class discussion and to provide positive and formative feedback. An alternative feedback approach is to provide students with an opportunity to discuss their ideas in pairs in-class before they report back. It is a good idea to think through questioning strategies before the session. Questions can be useful in class discussions to ascertain students' prior knowledge at the start, as well as assess learning during and at the end of the session.

Concentric Circles

This method involves students forming two concentric circles with equal numbers of students (circa 6) in each circle. The session facilitator poses a question to the class and asks each pair from the inner and outer circle to discuss their response to the question for 2 minutes. Students on the outside circle are then asked to move one space to the right, so they are standing in front of a new peer. A new question is posed,

and the process is repeated until all students have met each other in their circle. The activity can be used at the start of the course to initiate subject conversations and to enable students to meet their peers.



Debate

This form of collaborative learning engages students with a topic to debate, while also developing their critical thinking, communication, and group work skills. Students read about the selected topic in advance of the debate. During the session, two individuals (students, session facilitators, or external practitioners) are invited to speak for and against the motion. Students pose questions to the speakers, and after a set time, the students vote on the motion. This method can be useful to enable students to deepen their understanding of complex topics and controversial issues.

Diamond Nine

This method involves students ranking and prioritising nine ideas, viewpoints, or pieces of information from highest to lowest in importance. The areas are developed by you in advance of the session and presented on nine individual cards. Students work in pairs or a small group to complete the task. They form the cards into a diamond arrangement, in which the top card in the diamond is the most important. The second, third, and fourth rows present cards with descending importance and the bottom card in the diamond is of least importance. Each group then shares their rationale for their diamond arrangement with the wider class.

Escape Rooms

Bring a gamification approach to your session with an educational escape room. The premise is that a team of players work co-operatively to find the solutions to different puzzles to solve a code or find a key to ultimately escape the room within a specific time frame. These can be designed for participation synchronously or asynchronously and can be delivered on campus or online. The content of the puzzles can be discipline/subject specific, for generic academic skills such as digital/information literacies or as a generic community building activity.



Fishbowl

This method enables students to engage with a topic or challenge through group discussion. Ask for 3-5 volunteers or randomly allocate students to work on the topic with an additional small group of students acting as observers. At the end of the activity, the observers provide a plenary debrief of the key discussion points and outcomes. This approach is ideal to focus and deepen discussion and enables students to hone their active listening skills.

Flipped Learning/Classroom

Ask students to prepare for the session in advance. This could be through reading a relevant article or journal paper, listening to a podcast, or watching a video. The taught session could then be based around small-group activities, which are facilitated to deepen students' learning on the selected topic. Randomise the small groups during the course, to help offer a more diverse learning environment.



Flipped Summaries

As an alternative to you as the facilitator summarising the session or topic, invite students to undertake this task. The synoptic task could be an individual activity or conducted in pairs. The summary could even be written as a 200 word 'abstract' of the session or topic that individual students keep as part of a learning journal on the University's VLE Canvas.

Jigsaw Groups

Outline a project for the entire class to complete, then divide this project into 'smaller pieces', known as jigsaw groups. Allocate a sub-topic to each jigsaw group, then each group becomes an expert on their allocated project topic in the allotted time. A representative from each group then reports back to the other groups to teach their peers the subject content and deepen their understanding. These other groups are then invited to provide constructive feedback and comments on the material presented and address any misconceptions.

Mind Maps

Present a mind map to students to illustrate how this type of visual tool can be used to organise ideas and information, and exemplify how entries are linked. Ask students to produce a mind map for a specified topic, either individually or in a group during the session. Undertaking this reflective activity can help students make sense of the topic and see how entries interconnect with each other.

Minute Paper

This is a useful and efficient method to assess whether students have understood the lecture/session or topic. It involves students summarising the key points of a lecture or session in their own words on a piece of paper in one minute. The papers are collected by you at the end of the session. The approach is designed to help students make sense of their learning and provides insights for you into whether students have understood the topic, which is particularly useful in advance of any course assessments. Any clarifications can then be followed-up and discussed with students.

Paper Aeroplanes

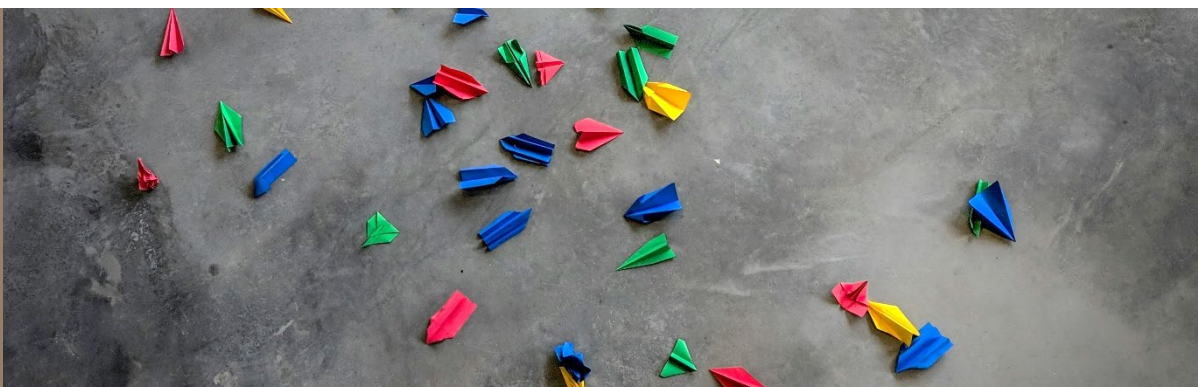
As students enter the class, hand them each a piece of scrap A4 paper. During the session, ask a few questions and ask each student to record their responses on the paper. Then signal when students should fold the paper into an aeroplane and simultaneously launch. Selected responses can be reviewed and discussed or collected for use in a subsequent session. This can also be done in reverse see **Student Generated Questions** activity in this Guide.

Points of View

Provide students with several statements (e.g., controversial opinions, or misconceptions) that require their response. Using a 5-point Likert scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree), students stand up or form a line to indicate the response with which they most identify. Students can then discuss their thinking in pairs or small groups and can change positions when exchanging their perspectives with peers. This activity provides an opportunity to discuss the challenges and advantages of different theoretical or experiential perspectives.

Polls

Encourage your students to answer a question or share their views on a topic anonymously via the use of polling software (e.g., Wooclap, MS Teams). Students submit their responses via their laptop, tablet, or phone, and then the software summarises and displays all the class responses. This approach is particularly useful in a large lecture setting to enhance engagement and provide you with insights into students' topic/subject knowledge and views across the cohort. Types of questions that focus on different Bloom's Taxonomy levels include factual recall, conceptual understanding, and free text responses.



Quizzes

Online quizzes usually consist of short-answer questions such as multiple-choice questions (MCQs), true or false questions, and text matching questions. Implementing quizzes can stimulate student engagement, personalise the learning experience, and provide immediate feedback to students. Quizzes can be used after specific course topics or at the start /end of sessions. The quiz tool in Heriot-Watt's VLE Canvas enables the production of short quizzes with a range of question types.

Spin Wheels

Use an online wheel spinner in Wooclap for example, to introduce a 'gamification' element to your sessions. A spin wheel approach can be used to review material that has already been covered in class. Make the coloured sections of the wheel correspond to different topics or concepts that have been covered in your course. Have students take turns spinning the wheel and answering the question that is selected. Alternatively, the activity can be anonymised and students in the class answer using a Padlet™.

Story of Your Name

Ask students to share a story about their name as an introductory or welcome activity. This works well in live synchronous sessions, on campus or online or asynchronously in a VLE discussion forum. In large classes using a polling application such as Wooclap or MS Teams would encourage participation. The benefits include - helping students remember each other's name, community building, creating a safe space to share background information and usually involves a level of humour.

Student-generated Questions

At the end of a lecture/session or a topic, each student generates several questions. These questions are collected via Post-It™ notes or shared digitally through a whiteboard or Padlet™. Questions can be converted to MCQs or kept as short questions for students to complete on the Heriot-Watt VLE Canvas. Alternatively, selected questions can be used as a 'warm-up' activity in a subsequent teaching session.

Superlatives

Use superlatives at the end of a lecture section or lecture period to encourage your students to reflect on the topic. Ask students in pairs to identify the most important, surprising, disturbing, or useful aspects of the session content. Use student responses to clarify issues, stimulate meaningful discussion, and deepen student understanding of the subject.

Talk Show Host

Format the session as a TV talk show, where you act as a talk-show host and interview a panel of experts (e.g., research staff, PhD students, employers). Students contribute additional questions and comments during the session to encourage dialogue between other students and the panellists. This method enables students to share ideas and opinions and is most effective when discourse guidelines are formulated and shared upfront with all contributors.

Think-Pair-Share

This method is a co-operative learning approach where the class is given a single question or an area to discuss. Students consider the question individually for a few minutes before forming pairs to discuss, then report back to the wider class. This is a useful technique to promote participation by all students, while also enabling students to engage with different peer viewpoints and ideas, often beyond their social network, so it can be a helpful icebreaker too.



Thought for the Day

Start each session with a snippet of news that is relevant to the session/course/subject. This could be from a journal article, global news piece, or a blog. As students enter the session, share the snippet and ask a related question. Build in time during the session to enable students to share their responses with their peers. Consider a more permanent record to capture student responses through a Padlet™, Canvas discussion board or MS Teams chat.

Treasure Hunt

Prior to the session, ask your students to search for digital resources on a given topic. Resources might include but are not limited to videos, screencasts, podcasts, blogs, online journals, and e-books. Allocate time during the session for students to comment and provide feedback on what the other students find, use of a five-star rating scale to appraise each item can be a helpful part of constructing feedback. Consider using a Padlet™ or Canvas discussion board to capture a more permanent record of the ratings.

Summary

We hope that the examples above give you a flavour of what can be achieved in the classroom to build community and increase student engagement. All the examples can be modified to best align with your context and student needs. If you would like further support, please contact the Learning and Teaching Academy at: LTAcademy@hw.ac.uk.

Resources and Further Active Learning Inspiration

100 Ideas for Active Learning (2022) Gowers, I., Oprandi, P. and Betts, T. (Eds). Open Press, University of Sussex

<https://openpress.sussex.ac.uk/ideasforactivelearning/>

Active Learning in Higher Education is an international, peer-reviewed journal for individuals who are teaching and support learning in higher education. All journal issues since 2000 are available at:

<https://journals.sagepub.com/loi/ALH>

Advance HE Project: Engaging Learners: Any Time? Any Place? Anyhow?

<https://www.advance-he.ac.uk/membership/all-member-benefit-projects/engaging-learners-any-time-any-place-anyhow#toolkit>

Advance HE Scotland Thematic Series: Active Learning

<https://www.advance-he.ac.uk/scotland/thematic-series/active-learning>

Brainstorming Techniques: How to Innovate in Groups (Video)

<https://www.youtube.com/watch?v=YXZamW4-Ysk>

The Jigsaw Method (Video)

<https://www.youtube.com/watch?v=euhtXUgBEts>

OneHE: Community Building Activities

<https://onehe.org/equity-unbound/>

Support for Heriot-Watt Learning Technologies

<https://heriotwatt.sharepoint.com/sites/is-learningtechnologies>

Transform Your Teaching Podcast – What Does Active Learning Look Like?

<https://podcasts.apple.com/gb/podcast/transform-your-teaching/id1671635367?i=1000659705773>

