

Appendix 1: Active Pedagogy

There are many definitions of active pedagogy, or active learning, but it is broadly agreed to be a learner-centred approach to teaching that involves students in “doing things and thinking about what they are doing” (Bonwell & Eison, 1991, p2). This approach is argued to change the roles of both students and teachers, making them “co-creators of active learning environments and learning communities” (Misseyni et al., 2018, p4). Active learning practices vary, but often involve students “participating, interacting, or contributing, whether mentally or physically, in activities to gather information, to problem-solve, and to reflect upon knowledge” (Bovill, 2020, p1026). Common active learning practices include interactive lectures, class discussions, case study analyses, role-playing, experiential learning, peer teaching, flipped lessons, problem-based learning, visual-based learning, collaborative learning, project-based learning, inquiry-based learning, and game-based learning. Jisc (2019) report that active learning, specifically though peer-to-peer learning and increased interaction in learning, are increasingly in evidence in UK HEIs as a way of ensuring that students are actively engaging in their subject and in the interpretation of material and construction of learning.

1.1 Active Pedagogy Principles

All Programmes will use active pedagogic approaches.

Objective	Evidence in sections
AP1 In addition to traditional approaches, programmes will employ a range of active teaching approaches including, but not limited to, problem-based learning, collaborative learning, discussion-based learning, experiential learning, project work, enquiry-based learning, and flipped learning.	1.2.1, 1.2.2, 1.2.4, 1.2.6, 1.3.1, 1.4.1
AP2 As far as possible, synchronous teaching activities should provide core content in advance, focus on opportunities for students to undertake activities, interact with peers and the lecturer, and give and receive feedback.	1.2.2, 1.2.4, 1.3.2, 1.4.2
AP3 Students will be consulted and given the opportunity to be actively involved in the design and development of curricula and pedagogic approaches.	1.2.3, 1.3.3
AP4 Disciplinary and pedagogic research will underpin all programmes of study through research-led content, development of research-oriented skills, undertaking research-based activities, and using research-informed pedagogies.	1.2.5, 1.3.4, 1.4.3

1.2 Evidence from literature

1.2.1 Benefits of active pedagogy

Research on active pedagogy over a number of years has shown that it contributes to student learning, achievement, and engagement (e.g. Chaplin 2009; Freeman et al. 2014; Hake 1998; Harris and Welch Bacon 2019; Knight and Wood 2005; Lin and Hwang 2019; Prince 2004). There is also

evidence that, while active learning benefits all students, it contributes to reducing achievement gaps (Theobald et al., 2020) and so offers disproportionate benefits for students from underrepresented groups.

Turner (2013) discusses how international students can be stereotyped as rote learners who are incapable or unwilling to learn from collaborative or creative pedagogies. While robust research in this area is currently limited (Lomer & Mittelmeier, 2021), Marrone and colleagues' (2018) research into the impact of active learning approaches on international students (in Australia) reported broad improvements in international students' engagement and understanding of unit material when active learning strategies were used. They also found a preference for active learning compared with passive learning styles amongst international students and describe how exposure of a multicultural cohort to active learning may benefit students by enhancing opportunities for peer interaction and belonging.

The Covid-19 pandemic undoubtedly had an impact on teaching and learning in numerous ways. In Robson and colleagues' (2022) study involving academics across 36 UK institutions, staff identified a need to continue forms of interactivity and active learning that were introduced to online teaching during Covid. This included "...more considered lecturing, more interaction, more active learning during lectures" (Robson et al., 2022, p21); for example, the continued use of polls and interactive whiteboards. Participants also anticipated that smaller chunks of lectures would continue to be used, with traditional long lectures split into shorter 15–20-minute sections, with mini-breaks. There were two rationales for interactivity identified: first, a desire to assess what students were understanding on a regular basis and, second, a desire to create an engaging, community-building learning experience.

1.2.2 Common forms of active pedagogy

Two forms of active pedagogy that have gained prominence in the literature are *active lectures*, and *flipped learning* (sometimes referred to as the *flipped classroom*).

Active lectures (Pickering & Roberts, 2017) include basic elements of good teaching practice (including ensuring lecture slides are relevant and that the context of the session is clear; ensuring slides support the learner, using current, evidence-based approaches; and developing support materials for students to use either before or after the face-to-face session to complement their own learning strategies). This approach also encourages more active engagement, such as embedding a catch-up segment at the beginning of each lecture to ensure everyone in the class has the background knowledge needed to engage meaningfully; or using suitable technology to continually facilitate engagement, interaction and questioning during the session.

Flipped learning (Baker, 2000) has gained popularity in recent years as a blended learning approach to learning in which content is made available online for students to engage with prior to teaching sessions. Contact time with staff then becomes student-centred with time devoted to discussion, group work and problem-solving. Although the idea of pre-class tasks and in-class interaction is not new, the increased availability of digital resources means it is now much more straightforward to construct content that can be accessed before the class via a virtual learning environment (Pickering & Roberts, 2017). There are differences in the ways in which the flipped classroom is implemented by different teachers, for example, some emphasise the use of digital technology while others focus on collaborative learning or group learning activities (Låg and Sæle 2019). However, research suggests that it is the presence of active learning, rather than the structure of the flipped classroom itself, that leads to higher student performance (Jensen, Kummer, and Godoy 2015).

1.2.3 Participatory approaches

In addition to the introduction of more interactive elements into traditional teaching approaches such as lectures, the term active pedagogy can also be used to describe more radical, collaborative approaches to curriculum development, including students as partners, curriculum co-creation and participatory design. Although it is not a new idea (e.g. Dewey, 1916), there has been a surge of interest in students and staff co-creating curricula in the last five to ten years (Bovill & Woolmer, 2019). Bovill and colleagues (2016) define co-creation as occurring “when staff and students work collaboratively with one another to create components of curricula and/or pedagogical approaches” (p196).

Bovill (2020, p1026) argues that “co-creation overlaps with the concept of active learning, which aims to move the student from adopting a passive role in learning to an active role involving interaction between teacher and students, and between students and students”. In co-creation, aspects of learning and teaching such as the purpose, approaches, and outcomes are jointly negotiated and there is a shared responsibility for learning that implies a greater level of student agency and empowerment than in more widely adopted forms of active learning. Co-creation involves developing deeper relationships between student and teacher, and between students themselves. Education is perceived as a shared endeavour where learning and teaching are done with students not to them (Cook-Sather et al. 2014).

Although co-creation is often considered to be time intensive and risky (Marquis 2018), literature describes how the process of co-creation can enhance: engagement; motivation; identity development; meta-cognitive understanding of learning and teaching; self-authorship abilities; and can lead to improved assessment performance (Cook-Sather et al. 2014; Lubicz-Nawrocka 2018). In some examples of this process, students lead the design of courses from scratch, for example designing outcomes and assessment rubrics (e.g. Deeley & Bovill 2017), in other cases, students become involved in the design of the curriculum as a course progresses (e.g. designing their own essay titles) (e.g. Cook-Sather et al., 2014).

1.2.4 Critical thinking

Active learning focuses on the development of critical thinking, going beyond information retention and recall (Anderson & Kraftwohl, 2001). Critical thinking is the process of conceptualising, analysing, synthesising, evaluating and applying information to solve a problem, deciding on a course of action, finding an answer to a given question or reaching a conclusion. It comprises different facets like evaluating claims, analysing inferences, weighing decisions, and analysing problems (Shavelson et al., 2019). Ennis (2016) describes two basic teaching methods for promoting critical thinking: Lecture-Discussion Teaching (LDT) and Problem-Based Learning (PBL). LDT usually takes the form of a lecture presenting aspects of subject matter, perhaps accompanied by some directed reading, followed by a discussion. PBL (or guided enquiry), on the other hand, requires students to investigate, develop, test, and discuss hypotheses or solutions and possible alternatives to a realistic or work-based problem. In this approach, teachers typically act as learning facilitators, guiding the process and promoting an environment of enquiry. However, as Liyanage and colleagues (2021) point out, there is a danger that teaching and assessing critical thinking as a sole aim can result in a process not unlike rote learning, with a focus on the obedient reproduction of a set of prescribed behaviours. This is particularly relevant in the context of increasing diversity of the student body as behaviours typically seen as exemplifying critical thinking can often rely on prior educational and social experiences. Working with international students, for example, Hicks (2016, p.50) advocates a reflexive approach (drawing on principles of New Literacy Studies) to focus on “student actions and strategies within new settings”, rather than “a checklist of competencies”.

1.2.5 Incorporating research

Incorporating aspects of practical research into teaching can enhance students' interests in their courses as they are able to see how their studies could lead to 'real world' application. Students potentially benefit from the experience of learning about leading-edge research direct from the person who is conducting it (Elsen et al., 2009). Research can be incorporated into teaching in a number of ways, which can be categorised as: research-led, research-oriented, research-based and research-tutored (Healey and Jenkins, 2009). Griffiths (2004) describes four ways in which the research-teaching nexus can be operationalised. *Research-led* teaching has an emphasis on the content of research and provides an opportunity for the students to learn about current research being conducted in the relevant discipline. *Research-oriented* teaching has an emphasis on the research process itself and enables students to develop their research and enquiry skills or techniques. *Research-based* teaching gives students the opportunity to actively participate in undertaking research, with a focus on the research process itself and is largely designed around enquiry-based activities. Finally, *research-informed* learning is underpinned by the research and scholarship in teaching and learning.

1.2.6 Barriers to active learning

In many campus-based universities, the environment can present a barrier to active pedagogies as these can be difficult to implement in learning spaces that were designed for more didactic approaches to teaching. As McNeil and Borg (2020, p9) point out, "approaches like lectures remain the dominant pedagogy, not because they are always preferred, but because of operational constraints and resourcing, which are often outside the programme team's control". These constraints typically include the relatively small number of spaces configured to facilitate collaborative learning; the increasing size of classes that can only be accommodated in lecture-style seating formats; and the long lead-in time and pressure on timetabling for suitable rooms that are available. Holec and Marynowski's (2020) research into the value of 'SCALE-UP' classrooms where students sit around large tables with an instructor in the middle reported, "an alignment between learning strategies and classroom can lead to improved student perceptions of engagement" (154). On the other hand, McNeil and Borg (2020) also acknowledge there are many examples of universities developing new spaces for learning and teaching, but not seeing changes in teaching practice subsequently.

There is often concern about how students will react to active learning experiences. Teachers implementing active learning techniques for the first time may face pushback from students unfamiliar with such an approach (Lambach et al., 2017). In addition, some studies report that students prefer low-effort learning strategies, such as listening to lectures, despite performing better with active learning (Deslauriers et al., 2019). Downing and colleagues (2020) looked at this issue and found that community college students who participated in their research frequently reported that most active learning practices had the potential to decrease their anxiety when they perceive that engaging in the practice will improve their learning. Students described that, compared with active learning, there were fewer opportunities during traditional lectures to access help from the lecturer or other students, which increased their anxiety. Specifically, students often had questions about content during traditional lecture but felt uncomfortable asking questions during class, because there did not seem to be enough time or because it would disrupt the flow of the class. However, the social aspects of active learning courses, which require students to communicate with others, have the potential to increase students' reported anxiety if they fear that others will negatively evaluate them. Students described experiencing fear of negative evaluation when engaging in social situations during active learning, such as asking and answering questions during class and working in groups.

While it is not uncommon for teaching staff to cite negative student attitudes or resistance as a barrier to active pedagogy (e.g. Froyd et al., 2012; Michael, 2007; Prince et al., 2013), Andrews and colleagues (2020) report a disconnect between instructor perceptions of students' responses to active learning and students' self-reported attitudes and behaviours. They found that instructors overestimate student resistance and, in contrast, students report they see value in the activities and enjoy them. Interestingly, Brigati (2018) found that while students showed positive attitudes toward active learning techniques, they were not as convinced of their learning benefits. However, those students in her study with more experience in learning the course subject (in this case, biology) had a greater understanding of the ability of active learning to help them understand or remember material.

It is important to note that students feel that the effectiveness of a given active-learning technique varies widely depending on how it is used (Welsh, 2012). Andrews and colleagues (2021), for instance, outline 'explanation strategies' that emphasise how an instructor can frame the purpose and the goal of the activity and 'facilitation strategies' that focus on how to better engage students in the activity, both of which have been shown to correlate with lower levels of student resistance (Finelli et al., 2018). Discussing the introduction of flipped learning, for example, Simmons and colleagues (2020) found that initial resistance among the student body changed to acceptance over time. Furthermore, they report that students felt that teachers themselves were vital to the success of the flipped model, and in ensuring a positive learning experience for students – 89% of students they surveyed agreed that 'What I took from flipped classroom depended on the quality and the approach of teacher' (Simmons et al., 2020, p.169).

1.3 Evidence from student consultation

1.3.1 Active learning approaches

Students identified their best teaching experiences as those in which there are opportunities for discussion and peer learning; opportunities to ask questions; that align with students' interests; and relate learning to the wider world. They also value approachable, enthusiastic staff who explain things clearly.

They made a point of flipping the normal teaching experience on its head by asking the students to come up with a lesson plan within the seminar group of about four or five of us. We had to come up with how we think we should teach this particular topic, which I thought was really fun. (FG6)

The kind of situations where you kind of get taught information and then you kind of have to apply it whether it be like a written task or you practically, like teach someone else. Quite often teaching someone else is a way that really helps you learn. (FG10)

...the interaction with my classmates. So recently, we had a hackathon that basically, they had workshops for us, as well as a chance for us to work on projects...I think I learned a lot more there than I did in like a traditional lecture I just sitting in class and listening...(FG3)

Conversely poor teaching experiences were identified as those which were less active, in particular, where teachers read from slides or relied upon pre-recorded content.

...during the lectures, they are just reading the PowerPoint instead of giving explanations or interacting with us...it made it's very difficult for me to engage in. (FG9)

...lecturers are always rushing. And because of that, they don't take any questions. They don't really like the idea; they're like speeding through the content (FG3)

1.3.2 Focus on interaction

Students clearly valued opportunities to interact with both teaching staff and other students.

...it's like questions and they ask us stuff during [the session] ...having that like, Question and Answer is much more engaging. I find them much more enjoyable to go to, because you're not just sitting there and they're not just like talking at you...it goes in a lot more than just sitting. (FG4)

...the best lectures I've had are the ones where they will actually ask questions in the middle of stuff, rather than just like sort of hiding away behind the whiteboard and just sort of speaking from their notes... (FG6)

...to have those discussions with each other to get to know each other better, to network...I think you're making the student experience more wholesome rather than overwhelming (FG4)

Even students who were broadly happy with the balance of activities on their course wanted more opportunities for interaction:

I like it, because I get a little bit of everything. I just wish there were less people in the lectures so that we could have like more of a chance to interact. But I know that's not like the purpose of a lecture. (FG5)

However, content delivered at the wrong level or speed for the class and limited opportunities for discussion with peers and staff, particularly in lecture-heavy courses, contributed to dissatisfaction.

There's been quite a few seminars, and where I've sat and like listening to someone talk about something like completely off topic...none of us are talking like it was just really teacher talk heavy. (FG6)

In addition, staff perceived as intimidating and not supportive of students' needs, or appearing to lack expertise in facilitating groups, were identified as negative experiences, which could deter students from actively engaging in learning activities.

...if I have a lecturer...that I feel scared to ask a question, or I feel scared that I'm gonna get picked on for not knowing the answer, then I feel like unsafe and I don't feel like I'm learning so much, because I'm stressed (FG5)

I've probably had a bad teaching experience at seminars. It's sort of part student, probably part teacher, but if not everyone comes prepared, sometimes, you know, it just goes quiet. And then they end it [the session]. (FG6)

1.3.3 Involvement in course design

Several of the students participating in the focus groups were course reps, but the majority felt that there was a lack of communication about who they were and their role. Indeed, students often perceived course reps as dealing mainly with administrative issues rather than larger questions about course design. Another problem was that staff could react badly to, or were dismissive of, suggestions put forward by course reps.

I feel like course reps often get dismissed, even when they do raise issues...a lot of the time...it's just been like, "Well, you don't know how things work. This is how we've always done it". And so, kind of not actually being willing to listen to the issues. (FG2)

At a more informal level, there are clearly some lecturers who welcome and respond positively to student feedback.

...this year, one of our lecturers said, 'What do you want to do out of these five topics or something else? What would you like to talk about in the seminar?' So that was nice, because it meant that she could build it around the interest of the class (FG7)

1.3.4 Incorporating research

Research-led approaches did not feature strongly in student focus groups. However, several students commented that they would like more support to engage with research.

For my programme, at least, there isn't a research module available until second year. But already in first year, we're dealing with a lot of papers and a lot of research content. So having that moved to earlier on would have been useful...at the time can feel a bit overwhelming, and you can get a bit lost. (FG10)

...it was like a critical analysis of...research that had already been done. And we've never really had that before. And we didn't really get any support or guidance on...what they were looking for...it didn't feel like there was enough support... (FG6)

1.4 Evidence from staff consultation

1.4.1 Active learning

Staff tended to favour a combination of lectures and seminars (or other small group teaching), for direct contact hours, though approaches to lectures varied widely from content delivery to more active forms of learning. A wide variety of active learning opportunities were reported by staff, including enquiry/project work, peer learning and modelling professional practice, and case studies.

The way I love to teach is, even in what are called lectures, I will always be doing that in sort of short sections of me talking and then posing them questions. And we do group work in lectures, and they feed back and that kind of dialogue, where people talk to each other and talk to me...because I know what we get a lot in feedback with students is they want to talk to us more, they want to talk more to their lecturers... (Group K)

The way I think about it is teaching as an enquiry-based approach. I want students to be able to enquire, to develop skills of how to enquire about things, and that involves both, you know, conceptual knowledge, knowledge about theories, but also, crucially, knowledge about methods...I see teaching as enquiry based in order to allow students to find out information by themselves. (Group A)

I do try and model some professional practice in what I do. I think I'm concerned that often university is quite sort of abstract, and students struggle to identify the relationships between what they're learning, and kind of what they will end up doing...if you're doing something that does have strong applicability, I think it's important to bring that out... (Group H)

However, staff believed that students preferred more passive approaches to learning and they were reluctant to challenge this.

I feel like there's a strong tension between what is argued to be good pedagogy...and what students actually want. I do not consider myself to be a very good educator in the sense of I teach in ways that pedagogical work says that they shouldn't...But also students rate my teaching very highly. And I think that's because I teach them in ways they want to be taught,

which isn't necessarily ways in which are necessarily effective ways of teaching. And...I don't know how to break away from that. (Group E)

There does seem to be a sense that they have developed an idea of what education, what study is, that is problematic, that it's very passive in its approach, and that it is very consumerist. And as much as they expect something to be handed to them. And for that to be packaged in a way that is as simple as possible for them. (Group L)

Other barriers discussed included: lack of flexibility in teaching spaces, timetabling issues, large class sizes, staff workloads and a perceived tension between engagement and content delivery.

...there's some allowance for room layout and things within timetable booking, although it requires getting all of the staff including timetabling central team and local departmental staff to realise the importance of that. So it's not unusual for me to end up with a workshop-based class being scheduled in the lecture theatre, for example, with fixed seating, facing down on tiers, you just cannot do group work in that setting, you know, it's not designed for it. (Group A)

...we'd have all of these different things to accommodate all different kinds of students. But none of us have the time or energy or resource to be able to do that. (Group E)

1.4.2 Focus on interaction

Staff appreciated the importance of facilitating interaction between students.

...[the] communication you get with a student and engaging them and talking them through problems and teaching in that way, it's more interesting to me than just...speaking out to a lecture (Group F)

...we strive for student-centred activities: having students working together at the whiteboard in groups of three or four and the role of the of the tutor is just to stroll around and give some comments or hints, or maybe convene them when there was a common theme. (Group L)

However, some felt there could be a tension between encouraging student interaction and delivering content.

...sometimes there is a lot of material, a lot of content to deliver, and you have a certain amount of time to do it. So there is a kind of trade off of how much you want them to participate, how much interaction you want, and at the same time to deliver all the things you have to deliver, all the content... (Group D)

1.4.3. Incorporating research

Whilst research-led approaches to teaching were occasionally discussed, for example, third year dissertation modules or assignments written in form of academic papers, the incorporation of research into teaching was not a strong theme in the staff focus groups. However, the perceived relative importance of teaching compared to research at Durham was felt to have an impact on curriculum design and delivery, suggesting that teaching and research are not currently well-integrated.

...[they've done] a decent job of raising the profile of teaching people, but there's still big discrepancy. So for instance, as a teaching person, you're not allowed to apply for research or scholarship...it's simply not allowed...researchers get money...to travel, a conference and so on...So there's still kind of status things out there. (Group H)

I think [being on the teaching track is] quite different to your average academic who, mainly, is just trying to get by with teaching... (Group H)

Another issue discussed was the fact that lecturers from other disciplines may not find it easy to engage with pedagogical research.

...if I read a paper by an educationalist...I do not know what they are talking about and I just get freaked out by it...a lot of people in hard sciences, I think, find it really difficult to get into [educational research] (Group H)

1.5 Active Pedagogy at Durham University

This section details existing principles and policies at Durham University and discusses gaps that have been identified in the analysis of the current state of play regarding active pedagogy.

1.5.1 DU Principles and Policies relating to Active Pedagogy

- Research-led education will be embedded within the curriculum of all programmes of study, with research-led education (as appropriate to the academic community(ies) of practice to which the department belongs) being a coherent, progressive and explicit strand at all stages of a programme¹.
- All programmes of study will normally engage with all four of the modes of research-led education¹.
- All degree programmes will include a major research project, dissertation or equivalent (at undergraduate level typically 40 credits and at taught postgraduate level typically 60 credits) where students are able to demonstrate the development of their own research and independent study skills, as well as their expertise in their chosen field of study¹.
- Programmes will be focused on student learning gain – on the educational distance travelled from matriculation to graduation².
- Programmes will provide a balanced and pedagogically justified mix of instructional activities and class sizes².

1.5.2 Gap Analysis

Staff employ active pedagogies in a variety of teaching sessions; students appreciate these and would favour an increase in the use of active learning approaches. Staff feel there is a tension between delivering module content and utilisation of active approaches to learning and have also identified several structural issues hindering their wider use.

As reported in the literature (Andrews et. al., 2020), focus group discussions highlighted a disconnect between staff and student feelings about active pedagogies; staff identified students' attitudes as a barrier towards implementing active pedagogies, whereas students clearly identified active learning as elements of their best teaching experiences. Staff additionally identified lack of flexibility in teaching spaces, timetabling issues, large class sizes, staff workload and tension between engagement and content delivery as barriers to implementing active pedagogies.

Further consultation with staff should explore the tensions identified and what support they would need to incorporate greater use of active pedagogies in their teaching.

¹ [Learning and Teaching Handbook : Principles for the development of the taught curriculum - Durham University](#)

² [Learning and Teaching Handbook : SECTION 7: Curriculum Reform - Durham University](#)