active collaborative learning

ACTIVE, COLLABORATIVE LEARNING AT SCALE

A guide to scaling up active, collaborative learning for student success

June 2019

Introduction: why you should develop active learning at scale

This guide is for adopting active, collaborative learning at scale, across an institution. The basis of the advice is the experience of three partners collaborating on the project – *Scaling up Active Collaborative Learning for Student Success*:

- Nottingham Trent University (NTU), using Student-Centred Active Learning Environment with Upside-down Pedagogies (SCALE-UP);
- Anglia Ruskin University (ARU) and University of Bradford (UoB), both using Team Based Learning (TBL).

The project was funded by the Office for Students (OfS) within the Addressing Barriers to Student Success (ABSS) programme (2017–2019). The goal was to increase the use of active, collaborative learning pedagogies at three institutions, as a strategy to address attainment disparities.

Each institution had experience in using and evaluating the approaches, and a body of evidence for the efficacy of the pedagogies in terms of student engagement, satisfaction and outcomes. Also, there was evidence in the literature on active, collaborative learning to indicate that these pedagogies could be used to address attainment disparities.

Each partner's context provides a different perspective on the starting point, as well as the scale and complexity of adoption. The characteristics of these contexts are summarised in page 4. At NTU, the initial context was a multi-site, multi-disciplinary trial in 2012/13, with 37 pilots, including 30 modules across 7 schools and study levels 4-7. A subsequent programme of managed growth reached 159 modules in 2015/16. The OfS ABSS programme supported further growth, to 249 modules in 2017/18, as well as large-scale evaluation activity and development of an operational model to support institution-wide adoption. At ARU, the initial context was a multi-site, multi-disciplinary initiative in 2015/16, with 25 modules in 4 Faculties. In 2018/19, adoption was expanded to 38 modules across all 5 Faculties. At UoB, adoption began as a local initiative, with 16 modules in a single Faculty. In 2017/18, adoption had expanded to 26 modules in 16 schools across all 5 Faculties.

Why active, collaborative learning?

Summary of findings from the project shows that:

The use of active, collaborative approaches to learning provides benefits for all students (NTU, ARU, UoB).

Active, collaborative learning reduces and, in some cases, removes gaps in student engagement and attendance, attainment and progression (NTU, ARU, UoB).

Adoption of active, collaborative learning in an institution takes time to mature but benefits can be seen during the first year of adoption (NTU, ARU, UoB).

Common themes across the partner institutions:

- Students and staff recognised that active, collaborative learning is a more inclusive form of learning when compared with other pedagogies (NTU, ARU, UoB).
- Staff expressed high levels of satisfaction using the pedagogies; and intention to continue (NTU, ARU, UoB).
- Students and staff recognised that active, collaborative learning enhances employability (ARU, UoB).

All three institutions find common ground in their drive for sustainable educational practice, as well as a commitment to develop pedagogy that is responsive to the needs of all learners, addresses differences in attainment, and enables all students to succeed in academic endeavour.

This guide is a distillation of learning about implementation at scale and is intended to provide a road map for other institutions. Examples of topics included are, how to provide support for curriculum development and academics' practice, as well as consideration of structural enablers, such as space design and timetable management.

The full project report is available at: https://aclproject.org.uk/articles/

Key recommendations for institution-wide adoption

The following section describes success factors for institution-wide model of SCALE-UP or TBL. For the most part, considerations are similar for both pedagogies; where this is not the case, the differences are noted. Three overarching recommendations are:

i. Adoption is based on a model of recruiting volunteers, rather than mandating the pedagogy. A strong commitment is needed by course teams to teach active, collaborative learning well. Without this, the benefits of these pedagogies for student outcomes may not be realised. Weak motivation to adopt may also adversely affect students' experience.

ii. For each partner in this project, the context was growth from smaller to larger scale adoption, rather than introduction at large scale from the outset. This is an important distinction, because the model of support that works for early growth will not work at scale. Up to a certain scale of growth, arrangements in place to support a project do continue to work and the limiting factor for a pedagogy like SCALE-UP is the availability of suitable learning spaces. However, at some point a project support model (for example for allocating spaces, technology or educational development) will no longer cope with the increasing demand. At that point, a complete rethinking of operational process is needed. In summary, what worked for growth, may cease to work for scale.

iii. It is important to work with professional services as well as academic teams, so that everyone has an appreciation of the benefits, principles, requirements and constraints of active, collaborative learning.

Summaries of the active, collaborative learning approaches

Student-Centred Active Learning Environment with Upside-down Pedagogies (SCALE-UP)

SCALE-UP is an active, collaborative mode of learning which offers an alternative to didactic and discursive pedagogies like lectures and seminars. In SCALE-UP, lectures are replaced by problem-solving and enquiry-based activities carried out in strategically-assigned groups. To foster collaborative learning, the re-designed classroom environment incorporates circular tables and technologies to enable students to share their work in small groups and in 'public thinking' spaces. These elements are supported by 'upside-down pedagogies' such as flipped learning, peer teaching, and rotating group roles. The shift away from lectures frees up class time for students to focus on the more difficult aspects of the material, to work at their own pace, and to receive on-the-spot feedback on their work from peers and the tutor.

Team-Based learning (TBL)

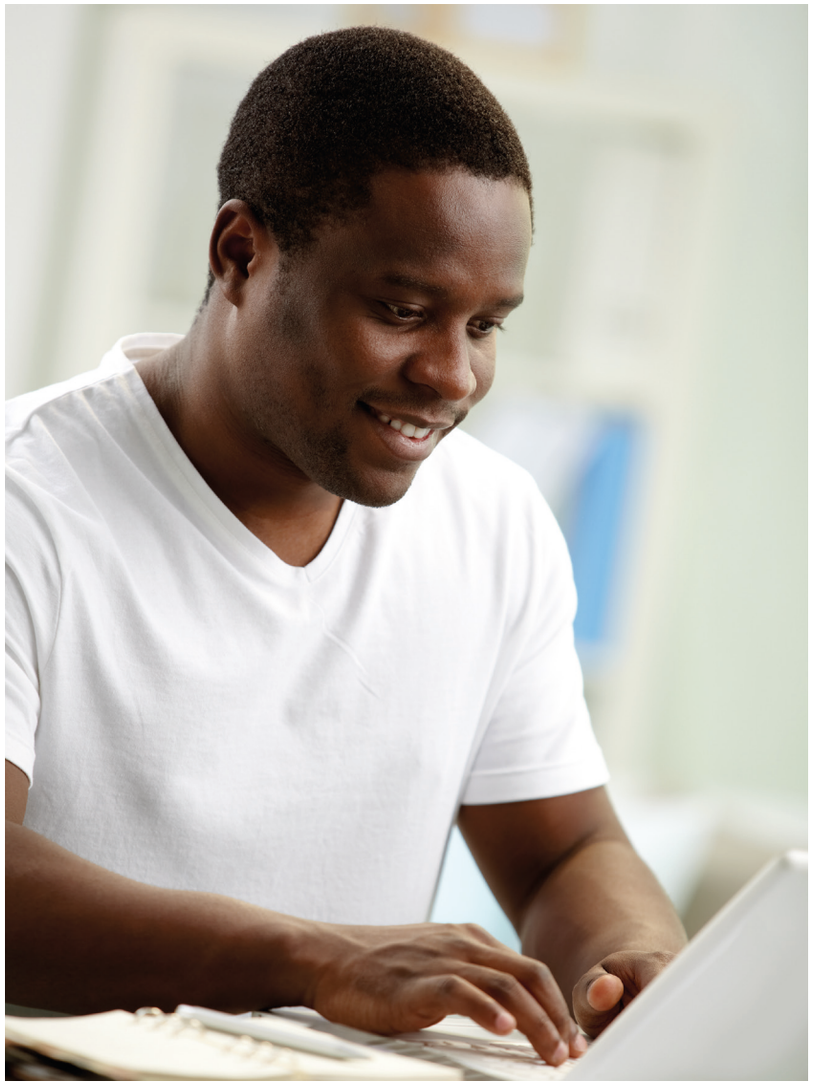
TBL is an active, collaborative learning and teaching strategy which uses a particular sequence of individual study, group work, immediate feedback, teacher-facilitated discussion and debate to create a motivational framework for students' learning. TBL takes a flipped approach to learning, with students being provided with or directed to learning resources to engage with before formal classes. The incentive to engage with the pre-class content comes from a readiness assurance process (RAP), which includes a short summative individual readiness assurance test (iRAT) immediately followed by an identical team test (tRAT) to foster discussion, debate, and peer learning. Students and academic staff receive immediate feedback on team performance, allowing a focused class discussion on any troublesome course concepts. The majority of class time is dedicated to application exercises where students learn how to use their new knowledge to solve authentic, real-world problems, make collaborative team decisions, justify their decisions to other teams during discussion and debate, all facilitated by an academic teacher.

Resources

SCALE-UP **aclproject.org.uk/scale-up** Team-Based Learning **aclproject.org.uk/team-based-learning**

Adoption contexts

For the project, each institution's context provides a different perspective on the starting point, as well as the scale and complexity of adoption. The characteristics of these contexts are summarised here.



Scale	Characterisation
Local →	The pedagogy is adopted in a single site, in terms of discipline and geography. This might be a single module or course, or across a subject or department. At this scale, processes are likely to be simpler and individuals are known to each other, meaning fewer communication challenges and easier community building. Educational support is likely to be from a source who knows the local context, for example, an academic champion. Risks to sustainability therefore include withdrawal of this support, without which adoption is likely to fall away. Working with services such as estates, timetabling and information services to identify requirements for adoption, may be more straightforward than in wider-scale adoption, although securing local changes may be contingent on resource. Larger services are likely to regard this scale of adoption as a project; any changes to systems or classrooms will likely be bespoke.
Multi-site →	Adoption is multi-site, and probably multi-disciplinary in nature. At small scale, many of the processes for support may be similar to the local model — bespoke and driven by enthusiastic champions. At larger scale and, where further growth is planned, systems and support must scale to cope with demand. Building the support base to identify more champions is one approach to this; creating a dedicated role for an educational developer may be more efficient. Services will need to move support from a project or bespoke basis to embed it in their service model, wherever possible.
Institution-wide →	The pedagogy has been adopted institution-wide. Local communities have developed within this, using institutional as well as peer support. Formalised processes are in place to support new staff to adopt the pedagogy and develop their practice. The approach is regarded as a standard in the design of courses, learning spaces and resources. A well-resourced service model exists within the relevant professional service department and these are inter-articulated. Ownership is distributed rather than resting with the originators and early adopters. This, together with the distributed support and processes mean that the innovation is largely self-sustaining, rather than being dependent on a group of champions.

Guide to active learning at scale: success factors for institution-wide adoption

1. Focus on adoption by course team

Adoption as part of a course learning and teaching strategy should be the goal. Individual adoption, in single modules, can be useful, but is not likely to be as sustainable or effective as ownership by the whole course team. Where possible, build consideration for approach into quality processes for course review, development and approval.

The goal of institution-wide use does not equate to adoption on every module but rather a considered approach by course teams as to where to use active, collaborative learning as part of their overall pedagogic strategy.

Evaluation of the benefits of active, collaborative learning for student success at NTU indicated that there is a 'tipping point' of use: where students experience three or more SCALE-UP modules in an academic year for progression, attendance and engagement or since the commencement of their course for overall attainment.

It is highly useful to ensure that course teams have advice on the extent of change needed to adopt active, collaborative learning — and the lead time that this is likely to require. Peers working with the course team in quality and standards management (including external examiners) must understand how the pedagogy works in order to advise and ask questions about plans.

"[SCALE-UP teaching] went really quickly, far quicker than most teaching that I do, because it was more interactive, more participatory, more active on the part of the students, I enjoyed it more." — NTU academic

2. Recruit and support course teams

Develop strategies to ensure that there is widespread capacity to use active, collaborative learning, beyond the early adopters and into the mainstream of academics. Active, collaborative learning should certainly feature in institutional professional development for academics. Another goal should be to develop sufficient expertise across the institution so that tutors can be inducted into the approach locally.

It is worth considering whether variation in how the pedagogy is adopted is acceptable: the extent of use within a module, for example, or whether all the features of the approach are used. Being open to variation will increase the number of volunteers willing to try the pedagogy. Experience suggests that fidelity to the 'textbook' approach is more important for TBL than for SCALE-UP, as is adoption for every session in a given module. Two further considerations are:

i. It cannot be assumed that a tutor will adopt more features of the pedagogy over time. This assumption was tested at NTU and found not to be the case.

ii. Benefits for student success were evidenced at all the partners, even though the style of adoption varied. To date, is has not been possible to isolate specific features of the pedagogies as more beneficial than others.

Recruitment of tutors to adopt the pedagogy requires the following:

- A case to persuade colleagues — evidence for the benefits, case studies, advocacy and referral from enthusiasts in like disciplines.
- A systematic approach — to contact tutors who may be interested, have sessions timetabled in suitable spaces, have been referred by enthusiasts, or who are new to the institution.
- Target numbers and areas for recruitment. Experience suggests aiming slightly over target is useful.
- Effective follow up support for educational development and to address any operational constraints.
- Communication of recruitment data with managers.
- Attrition in adoption is associated with changes of staff in a teaching team; it therefore makes sense to try to recruit more than one member of staff in a given course team.

Early adopters are likely to be accomplished teachers who are comfortable with some ambiguity and conditions being less than optimal. This will help for a start-up initiative but needs to be borne in mind when expanding to more mainstream adoption.

Tutors at NTU commented that adoption was more straightforward where their local culture supported active learning.

"You'd be mad not to because it's so much fun. It's so much better seeing students talking to each other and arguing with each other and arguing with you than standing at the front telling them what's what while they try not to fall asleep" — UoB academic

3. Working with students

Active, collaborative learning may be a new experience for many students. They may perceive it to be more demanding than other pedagogic approaches, in terms of the expectation to prepare for class and engage in team work during sessions. It will therefore be important to discuss the approach with students, why it is being used, how it will benefit them and what is expected of them — particularly in terms of session preparation, management of their workload and engagement in teamwork.

There is evidence that adoption of active, collaborative learning challenges students to work counter to their expectations and they may feel that this is harder than when learning with a traditional pedagogy such as lecture-seminar.

There are three major considerations arising from this:

i. It is important to discuss the pedagogy with students. The following strategies will be useful:

   - The case for adoption should be developed and circulated to all tutors using the approach;
   - Module and course inductions should include an explanation of the approach and a discussion of expectations, workload etc.;
   - Students are likely to find it useful if other students talk to them about their experience of the approach;
   - Communication with students should also seek to address known challenges that students may face with active, collaborative approaches — for example, feeling out of their depth with group work or, for TBL, concerns about being over-assessed;
   - Consider demonstrating active, collaborative learning for prospective students at open days, taster days and offer-holder experience days.

ii. Ask that tutors use teaching strategies to support a positive experience for students. Students who have experienced active, collaborative learning say that these are:

   - peer learning and support;
   - high levels of tutor and contact in-session;
   - consistent structure to the classes, but variety in tasks;
   - clarity of what is expected of them;
   - explanations of links between pre-work, in-class tasks and post-work or assessment; and,
   - structured reflection on group roles.

iii. There may be an initial dip in student satisfaction, as measured in standard module surveys. Academic managers need to be aware of this and support positive dialogue about the value of the approach for improving student outcomes.

iv. Adoption by a course team should initially be focused at level 4 and then developed across the years of the programme, as appropriate to context. It is important to avoid the sudden introduction of active, collaborative learning to final year students, especially if this contrasts with their prior experience.

> **“Once we got into it… it was completely different, like it was engaging for us all. And it was something to look forward to, to be honest”**
> **— Student, UoB**

4. Be clear about the staff workload model

Ensure that the workload model for staff recognises the time needed to redesign modules and courses in the months prior to teaching, as well as for the additional demand associated with the first year of delivery. The scholarship inherent in this work should be recognised and appreciated.

Adopting active, collaborative learning has implications for course design, teaching practice and professional development, especially if moving from primarily didactic or even discursive models. Redesigning a module or course will involve significant work, as will developing and curating material to support flipped learning. Early discussion and agreement with academic managers on the teaching resource model can create goodwill amongst tutors, as well as supporting them to adopt. It will also mitigate the risk of colleagues dropping out due to pressure of workload, or of a module going ahead with minimal changes.

Appropriate lead times will depend on the extent to which the course team intends to use active, collaborative learning across the programme. It is recommended that a one-off additional workload allocation for curriculum development be granted several months before delivery is planned.

At UoB, it is anticipated that additional time allocation for development will be offset by subsequent gains: a reduced need for repeat teaching, supplementary assessment and pastoral support.

At ARU, adoption at the level of a course was found to reduce the time commitment needed for module revision, as the course team would work together to create and review new TBL materials.

5. Developing specialised teaching spaces

An early consideration is the extent to which specialist rooms are needed for a given active, collaborative approach. These are different for SCALE-UP and TBL.

SCALE-UP requires specialist rooms with round tables of a specific size, good circulation pace, shared equipment such as laptops and whiteboards, and a screen-casting facility, with multiple screens.

TBL needs a room that supports collaborative group work: ideally, stable Wi-Fi, flat space with group tables, chairs with wheels and possibly an AV conference system, depending on the room capacity. TBL also requires specialised scratch cards.

Assuming that specialist learning spaces are needed, there are the following considerations:

- It will be useful to develop a persuasive case for adoption that speaks to colleagues working in estates, information services, registry, timetabling, and academic administration.
- Early predictions of demand are essential; this is likely to be around 9 to 12 months before the rooms are needed.
- Agree standard room specifications for active, collaborative learning.
- It is worth formalising regular conversations between estates, timetabling and educational developers to consider the demand, growth, size and location of new active, collaborative spaces and the resources needed to support them.

6. Timetabling and space allocation

A year-on-year increase in adoption will need an effective means in timetable planning of identifying which course teams intend to adopt, and which rooms will be suitable for use. This necessitates a balance between recruitment for adoption and capacity to support. Where specialised rooms are required, there will need to be an effective and transparent way to prioritise allocation of these.

Coordination is needed to ensure that course teams adopting active, collaborative learning meet institutional deadlines for timetabling.

- It is useful to add a flag in the timetabling system to allow staff to indicate that they will use active, collaborative learning when they submit a room request.
- At NTU, it was agreed with timetabling colleagues that SCALE-UP modules are scheduled into suitable rooms first, following which, the room is filled with other teaching.
- At UoB, a change in policy enabled priority for TBL assessments to be booked into the largest lecture rooms, creating the 50% extra space needed for exam conditions.

At a smaller scale, educational developers are likely to be a first point of contact for an adopting course team. They can therefore provide a co-ordinating function, advising timetabling colleagues when a course team intends to adopt. At larger scale, when assumptions about room requirements are built into processes for timetabling planning, this will change: recruitment to the approach should be handled locally, with new participants informed of the educational support available.

In managing scenarios where demand for rooms outstrips supply, the following strategies are useful:

- Agree rules for timetable prioritisation to dedicated spaces.
- Use 'pop-up' specialist rooms for a fraction of each week. A pop-up SCALE-UP room is a general-purpose teaching room for which, on particular days, tables are grouped to mimic a SCALE-UP set-up as closely as possible. SCALE-UP equipment — one laptop and a whiteboard per group of three students — is also made available.
- Where a module team cannot be accommodated in the short term, work with them to adopt some elements of the approach in a non-specialised room.

Consider the extent to which tutors who are not using active, collaborative learning will be affected by a room that is optimised for this approach. Opening a dialogue with them before they use the room is useful, as is an invitation to get involved.

Resource
See page 15 for sample SCALE-UP room prioritisation for timetabling at NTU

7. Develop scalable educational development

Consider how educational developers will support adoption at scale. Many educational developers will believe, entirely fairly, that working one-to-one with tutors is the best approach. However, it is likely to be unfeasible at large scale, especially in contexts of rapid growth.

It may be desirable to move to a model where support for adopting tutors is available locally from peers, as well as from a cross-institutional educational development team.

TBL requires an academic policy supportive of multiple assessment points, and this should be built into support assumptions prior to adoption.

Support from educational developers with specialism in the pedagogy is essential for successful adoption.

Consideration is needed on how to support at scale and the nature of that support.

- The most intensive support need will be for induction to the approach and initial staff development. Following this, more of a responsive support model will be needed year-round. The value of simply touching base with tutors on an on-going basis cannot be overstated.
- At scale, educational developers will need to identify strategies to work with groups of staff (new, experienced, fractional, etc.) rather than providing bespoke support.
- Institutional professional development programmes, especially those for new staff, should incorporate induction to active, collaborative learning approaches.
- Educational developers might usefully work with school-based colleagues to offer expertise in developing others locally.
- Support resources will be needed to deal with the year-round nature of demand and to help cope with peak periods. Examples might be video overviews, short guides and/or the development of a peer observation scheme to pair new or potential tutors with a more experienced colleague.

Assessment development strategies to support TBL are an important consideration, as the approach requires multiple assessment points. This will need to be reflected in policy and in guidance for course teams, academic quality staff and external examiners.

8. Build a constellation of communities

At a small scale, it is possible to sustain an adopters' Community of Practice. This has proven challenging at larger scale. It is therefore proposed that a constellation of communities for active, collaborative learning may work better[1]. At time of writing, however, the partners are experimenting with this approach and there is not sufficient evidence to demonstrate efficacy.

Communities provide mutual support, encouragement, motivation, development and feedback. They can provide an environment in which colleagues can experiment with innovation, talk about challenges and failures, and source solutions from their peer group. Additionally, the facilitation of boundary encounters between different communities should aid deeper development across disciplines. In this case, educational developers will help to keep the communities connected, but the communities themselves should be self-sustaining.

It is useful to make connections for staff with national and international communities for SCALE-UP and TBL.

97% **of academics at NTU strongly agreed that 'students learn and practice skills such as group working, communication, leadership, decision making and conflict management'**

9. Maintain accurate data on adoption

A crucial element of maintaining support for adoption is the ready availability of accurate data on room utilisation, who is using them (modules, students, tutors) and whether they are actually engaged in active, collaborative learning.

Balancing supply and demand for rooms and ensuring access to educational development support requires accurate data on recruitment, adoption and attrition. Accurate data on adoption is also important in evaluating the extent and quality of adoption, student and staff experience, and, importantly, benefits for student outcomes. It is important to know who is teaching what.

With small scale adoption, the project team will have known everyone involved, but as the number of tutors using the approach grows, this will no longer be the case. The resource needed to establish and maintain accurate adoption data should not be underestimated.

At NTU, the **module level attainment gap** closed by 4.2pp in ethnicity, 3.3pp in disability, 1.7pp for low socio-economic groups and 3.3pp for pre-entry qualification

At UoB the **non-continuation gap** on average reduced by 6.6pp. With the gender gap reducing by 3.1pp, ethnicity by 6.3pp and lower participation background by 0.7pp.

At ARU **attendance rates were** 7-9pp higher in TBL modules than non-TBL modules and engagement rates were 7-8pp higher.

10. Ensure institution-wide support and visibility

Institution-wide adoption requires visible and vocal support for the approach amongst senior staff.

Active, collaborative learning should be named in institutional documentation such as academic policy. It should also be a standard assumption for planning new and refreshed teaching estate.

The evidence in support should be cited and will become widely known; it will stand in contrast to the use of more traditional, and often un-evidenced, approaches.

The role of clear and frequent communications with all stakeholders cannot be underestimated, requiring a clarity of message on the rationale for adoption. Regular reminders of aims and intended benefits are useful, as are updates and news about successes.

In addition to working with students and tutors, other major stakeholders need to be engaged in planning for active, collaborative learning. These include estates and information systems (particularly for SCALE-UP), senior leadership, and all teams for timetabling, student administration and academic quality.

[1] Wenger, E. (1998). Communities of Practice: Learning, Meaning, And Identity (Learning in Doing: Social, Cognitive and Computational Perspectives). Cambridge: Cambridge University Press.

11. Evaluate and review

It is important to evaluate the impact of active, collaborative learning in context. This should go beyond student satisfaction, to include the impact on engagement, attendance and student outcomes for progression and attainment.

Evidence of the benefits will also be needed to engage tutors in further expansion and to justify resources needed to develop the approach.

To have meaning for a wide range of stakeholders, a mixed methods approach should be used for evaluation. Evidence to demonstrate that active, collaborative learning addresses barriers to student success will provide a persuasive argument for adoption at scale.

Evaluation is likely to involve collaboration in generating data and, in a multidisciplinary context, this may mean negotiating different conceptions of methods and evidence. Other considerations in designing the evaluation are:

- As well as assessing whether the intended benefits of the approach have been realised, it is useful to generate data to identify the conditions needed for wider use.
- Obtain ethical approval, particularly if there is an intention to publish. If tutors and students are interested in researching their own practice, it is worth establishing ethical clearance for the core project first, then encourage those who wish to go beyond this to pursue additional permissions. For publication and wider dissemination, articulate and agree with participants at the beginning who can write about what.
- Establish at the outset who is responsible for data generation, analysis, interpretation and reporting and ensure they have sufficient resource to support this.

If the pedagogy is adopted differently across disciplines and course teams, this will need to be considered in the evaluation of outcomes. One approach is to develop a typology based on characteristics of adoption and use this in the analysis of outcomes data.

Summary of key messages

1. The use of active, collaborative learning approaches does address barriers in student outcomes.

   a. Active, collaborative learning provides benefits for all students (NTU, ARU, UoB).

   b. Active, collaborative learning reduces and, in some cases, removes gaps in student engagement and attendance, attainment and progression (NTU, ARU, UoB).

   c. These benefits are magnified in contexts in which:

      i. there is a greater extent of use within a module (ARU);

      ii. there is greater engagement with the pedagogic model and with the educational developer (UoB),

      iii. where students study 3 or more SCALE-UP modules in an academic year (NTU).

2. Adoption of active, collaborative learning in an institution takes time to mature but benefits can be seen during the first year of adoption.

   a. In addition to improved student outcomes, there were other in benefits common across the partner institutions:

   i. students and staff recognised that active collaborative learning is a more inclusive form of learning when compared with other pedagogies (NTU, ARU, UoB),

   ii. staff expressed high levels of satisfaction using the pedagogies; and intention to continue (NTU, ARU, UoB),

   iii. students and staff recognised that active collaborative learning enhances employability (ARU, UoB).

3. Using pedagogic change as a strategy to address barriers to student success complements other approaches, such as additional student support. Additionally, the adoption of an inclusive pedagogy addresses structural disadvantage directly.

4. Large scale pedagogic change does not simply emerge from practice sharing; professional expertise, in the form of specialised educational development, is needed to accomplish it. This requires sustained engagement with practitioners to deepen and extend their understanding and use of the approach — an initial stand-alone staff development session is unlikely to be sufficient.

5. Innovation cannot be mandated, as, if poorly implemented, it is less likely to be successful. Adoption is most likely to be successful where there is already a culture of active learning and where a sense of genuine ownership can be engendered in a course team.

6. Despite different contexts in the three partner institutions, a clear pattern emerged that active, collaborative learning is more successful where it is adopted at course level. This does not mean that the approach is used on every module, but rather, that it is used strategically on a course. This requires purposeful team-working and decision-making and may be more challenging to do in an environment with strong modularity and weak course ownership.

7. Student satisfaction with active, collaborative approaches to learning must be considered, particularly with adoption at larger scale. Course teams should weigh the risk of a dip in reported satisfaction against the benefits for student outcomes. They should also prepare strategies to ensure a good student experience during adoption.

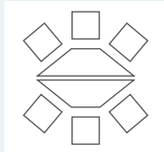
   a. Course teams should articulate the benefits of active, collaborative learning to students, developing their pedagogic literacy and the way they engage with their learning. This should also aid them in judging the value of SCALE-UP or TBL in comparison with more didactic models of teaching.

   b. Standard satisfaction surveys, such as the National Student Survey, may not be useful in understanding student views of active, collaborative learning and more comprehensive local surveys may be needed.

Resources

Sample room specifications

SCALE-UP
Based on published studies, and iterative experimentation at NTU.

Feature	Requirement	Notes
Floor plan/ layout	1. **Critical requirement**. Good circulation space around tables to allow easy movement and flow 2. No obstructed views of other tables or acoustic limitations	Supports collaboration and peer — peer interaction Lines of sight for peer — peer and peer — tutor are of equal importance
Acoustics	3. Sound-enhancement may be required if room is bigger than 4 tables. If required, the technology should support mobile working for students and tutor.	A SCALE-UP classroom is likely to be a noisier environment as there is lots of groupwork. Additionally, students may be asked to talk to the whole class and they may be less able/ willing to project their voice.
Lighting and window cover	4. Lighting layout should support lecture and group work 5. Reflections onto screens should be minimised	
Temperature	6. Temperature may need to be lower than an average room	Active classes are generally warmer due to use of laptops and closer seating arrangements for collaborative working.
Tables	7. **Critical requirement.** Circular tables that seat nine students with leg/supports that facilitate groupings of 3 x 3 students. Ideal size is 7ft/2m. The table is a fundamental part of the SCALE-UP specification.  *Compromise:* A smaller, sub-dividable table to seat 6 may provide more flexibility for alternative uses, while still being workable for the SCALE-UP pedagogy. This is untested and if used, should be evaluated before wider adoption. If alternatives to round shapes are used, these should maintain the principles of non-hierarchical seating, with clear lines of sight for peer to peer working. 	Smaller than 7ft/2m can feel cramped; larger than this size reduces interaction across the table. Tables must support interaction patterns of: (i) groups of 3 students, (ii) slightly larger groups — multiples of 3 or 6 or 9, (iii) plenary.
Chairs	8. Ergonomic and comfortable 9. Must be sized to support 3 groups of 3 students at each table	Swivel chairs will allow students to turn in comfort for plenary segments (student- or tutor- led)

Feature	Requirement	Notes
Instructor's lectern and projection screens	10. No lectern is ideal. If required, it should: a) be proportionate in size to the room and space b) not be at the front of the space 11. Two (or more) screens — capable of functioning independently — are ideal to allow students' work to be projected from laptops	SCALE-UP is about a shift away from a tutor-dominated teaching, this needs to be reflected in the layout of the room and the facility for students to present to their peers.
Storage unit	12. Space to hold guidance documents for technology and equipment such as mobile whiteboards, pens and erasers *Alternative:* other options could be considered	
Whiteboard	13. One or two large whiteboards that can be seen by all students 14. One collaborative whiteboard per three students *Alternative:* multiple large whiteboards around the walls, equal to one per table	Ideal size for collaborative whiteboard is 45cm x 60cm
Laptops	15. One per group of three students	Shared laptops encourage collaborative working. Desktop computers are not appropriate, they dominate a table, disrupting students' lines of sight.
Laptop support	16. Lockable laptop charging cabinet needed 17. Under-floor feed to tables — power cable and data point for each laptop.	Provision is needed for a secure environment for the laptops with easy access for tutors. Charging within the cabinets supports all-day use.
iPad (or other tablet)	18. Can be used to take photographs or record in class	One or two are useful in a room.
Wi-Fi	19. To support online access including to Virtual Learning Environments (VLE) 20. Wireless presentation capability from each laptop to the screens	

Team-Based Learning

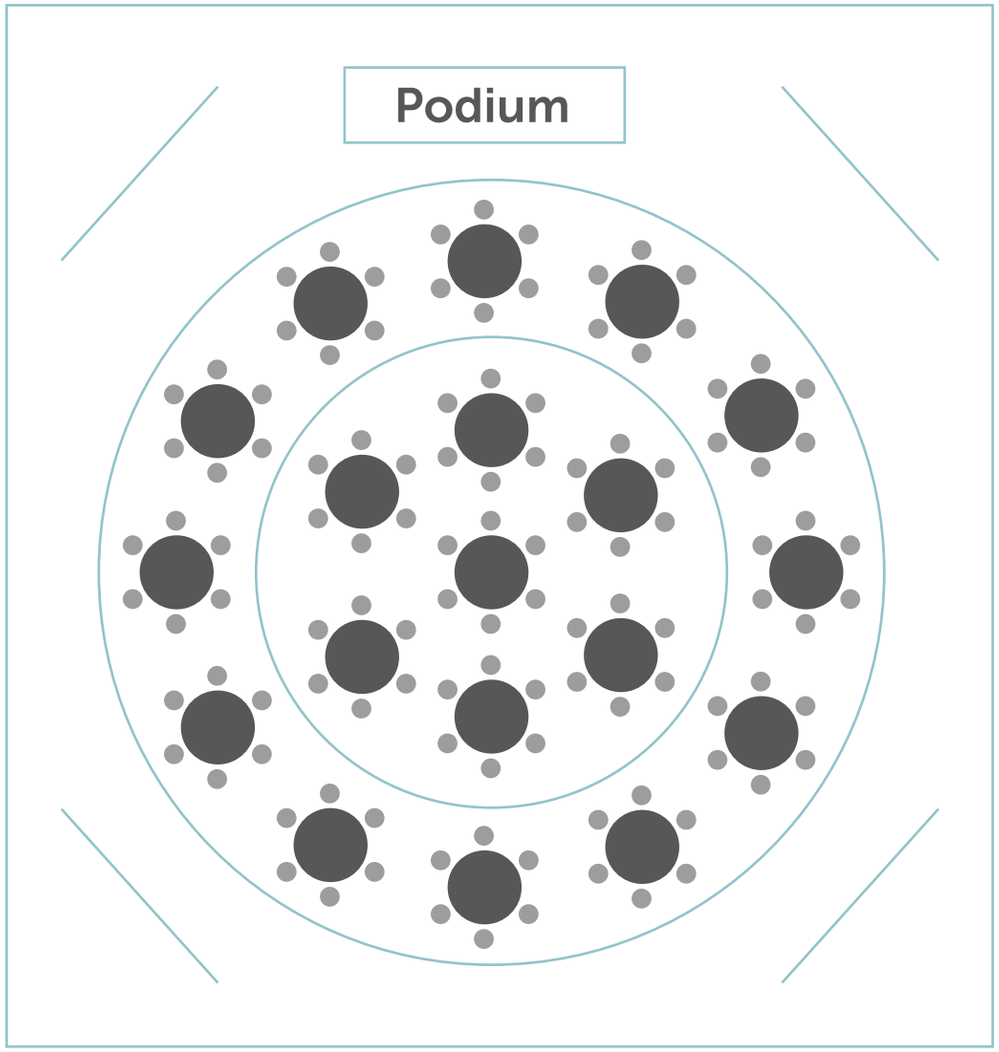
- Swivel chairs that can be raised and lowered
- Round, hexagonal or pear-shaped tables
- Variable height tables to optimise sightlines (higher tables around the periphery of the room, lower in the centre)
- Microphones built into the table
- A rail to clip up and display sheets of flip-chart paper around the room
- 2 PCs in the room and 2 presenter microphones
- Plenty of space between tables to allow facilitators to move between
- Plenty of volume in the height of the room to aid acoustics
- Baffles to prevent sound from being lost in the ceiling while also preventing echoes
- Consider tiers if a space large
- Air conditioning
- Excellent Wi-Fi
- Electronic method of voting/interacting between tables (preventing the need for stands and laminated cards)
- Either a PC with small/medium sized screen per table or the availability of a laptop per table
- Consider building stands into the desks to accommodate table numbers/letters for reveal

Examples

An ideal room for using TBL large-classes

It is critical to have a room in which students can discuss both within and between teams. Based on experience, the best overall configuration to enable both within and between discussion would be a tiered “theatre in the round” room (see right) with:

1. Good acoustics
2. Round tables 30 – 40 inches in diameter
3. Rolling chairs
4. Angled projection screens in at least both front corners (ideally all four)



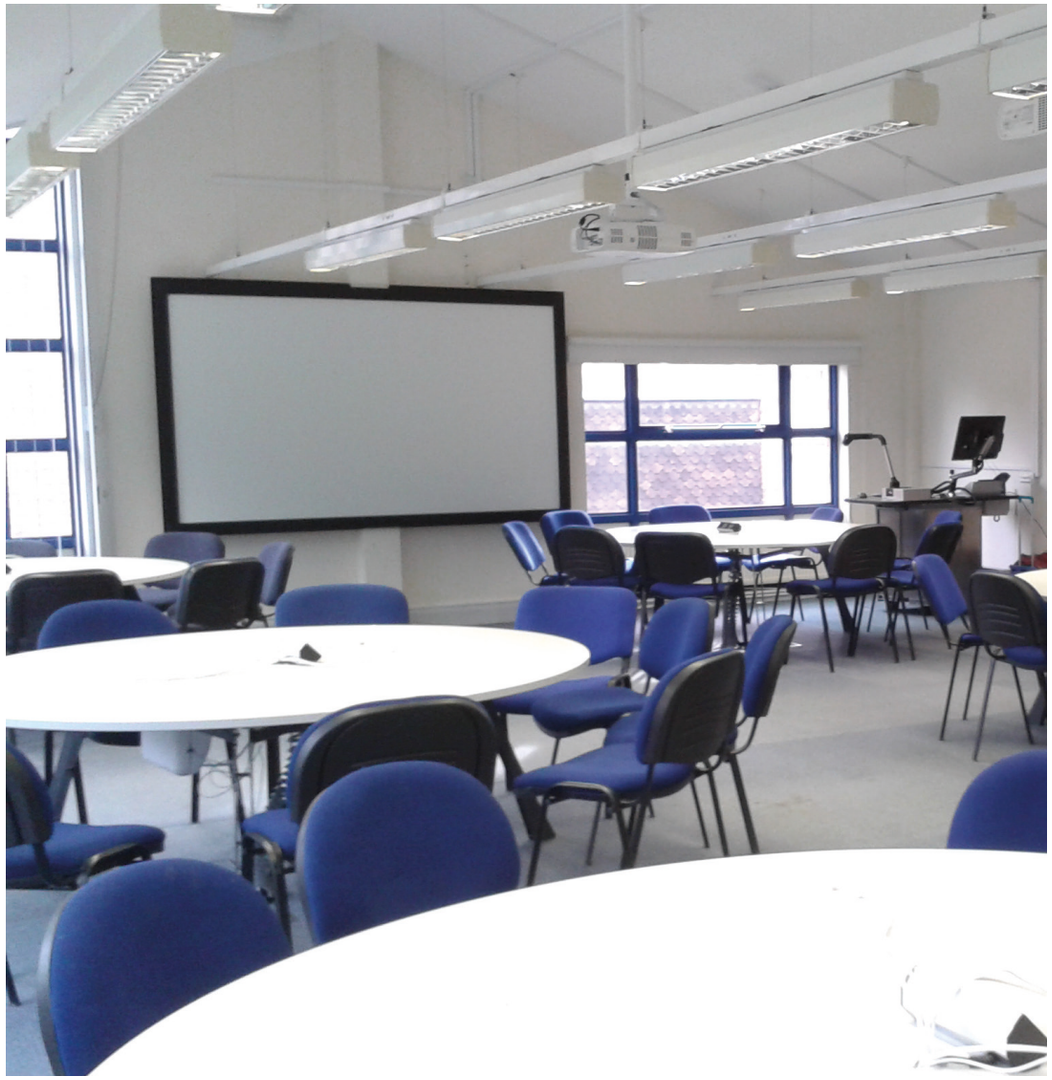
Technology for SCALE-UP rooms

NTU case study

- Students sit at round tables in groups of three with nine students to a table.
- Each group of three has a laptop that can be used for group work and wireless presentation.
- The laptops are stored and charged in the room, either in a bay of the lectern or in separate storage unit.
- Access to the laptop storage is controlled via a keypad lock; the facilitator is issued the PIN.
- There is a display at the front of the classroom for a variety of content used in teaching.
- Voice reinforcement audio is delivered via ceiling speakers above each student table.
- Microphones provided: lectern and wireless headset, plus two hand-held microphones.
- A lectern is used to house the AV equipment and also act as a presenter's desk. The lectern will have a double pedestal, the second pedestal is used to house the student laptops.
- Small dry-wipe boards are provided to each group of students.
- Standard dry-wipe writing boards will be provided (if there is sufficient wall-space) for when the room is used for traditional teaching activities.

SCALE-UP rooms are provided in two types:

1. Standalone rooms of various sizes. Rooms with eight or more tables will have one or more additional screens that can either mirror the main display's contents or be used for local wireless presentation. The AV controls on the lectern allow the presenter to take control of the secondary displays.
2. Suites of two or three joinable rooms. When these rooms are joined the lectern in the primary room can take control over secondary lecterns and programme audio and voice reinforcement are routed to all the joined rooms. Lecterns in the secondary rooms can take back control.



SCALE-UP room prioritisation for timetabling

NTU case study

The list below provides an approach to prioritising the allocation of SCALE-UP space in the case of oversubscription. It is proposed that this is reviewed annually.

Priority	
1	Modules which have been scheduled into a SCALE-UP room in previous year(s), and are using SCALE-UP, take precedence over new SCALE-UP modules. *Rationale:* colleagues on these modules will have already made adaptations to their teaching and/or module.
2	Modules that are using SCALE-UP across the whole module take precedence over those who are only using SCALE-UP for some sessions. *Rationale:* a whole module use of SCALE-UP is likely to be more impactful than occasional or partial use; it has also required more work redesigning.
3	Modules using SCALE-UP that are strategically important on a course take precedence over other modules (e.g., a core module or a module that is available on more than one level of a course). *Rationale:* consideration and planning for SCALE-UP at course-level is an indicator of course team support and strategic planning for the student learning experience.
4	Precedence should be given to a module with a large cohort of students. *Rationale:* It is easier to adapt to a different room if you have a smaller group of students.

Note: If a module leader is interested in an aspect of a SCALE-UP room, rather than adopting the approach itself, it may be worth suggesting alternative rooms, for example:

- If their primary interest is access to technology, they might be allocated one of the technology-rich collaborative rooms
- If their primary interest is access to collaborative space, they might be allocated one of the active learning rooms without technology, or a Node chair room

About the project

The Active Learning project is part of the wider Office for Students (OfS) programme — "Addressing Barriers to Student Success". The project was focused on scaling up active, collaborative learning for student success across three across three institutions: Nottingham Trent University, University of Bradford and Anglia Ruskin University.

To find out more please visit:

W: www.aclproject.org.uk
E: info@aclproject.org.uk

Project information

Title
Scaling up Active Collaborative Learning for Student Success

Project lead
Jane McNeil, Executive Dean of Learning and Teaching, Nottingham Trent University

Summary
The project aimed to increase the use of active learning pedagogies at three institutions, as a strategy to address attainment disparities.

Lead institution
Nottingham Trent University (NTU)

Partner institutions
Anglia Ruskin University (ARU), University of Bradford (UoB)

Project start date
March 2017

Project end date
28 February 2019

With special thanks to colleagues at all three institutions who contributed to various aspects of the project, and all students who took part in and provided feedback on initiatives.

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- Lead authors were Jane McNeil and Michaela Borg with contributions from:
    i. Nottingham Trent University — Loyin Olotu-Umoren, Mike Kerrigan, Tony Churchill, Tim Suffield, Ellie Kennedy, Joel Morley, Joeffrey Apo-Katigbak, Zena Rashid and Dave Whitlock;
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