

Developing a cross-discipline approach to building student belonging by combining the performing arts with science

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Strong peer connections are central to students feeling a sense of belonging at university. When students feel part of a community and have positive relationships with their peers, they are more likely to remain and succeed at university. Keen to facilitate students forming supportive student communities from their first day at university, we drew on the expertise of performing arts lecturers and teachers to provide a series of interactive tasks from a drama-based curriculum for our Biological Sciences Foundation Year students. We have run these sessions for two intakes of students with overwhelmingly positive feedback. Such is their success that from the next academic year, these sessions will be offered to students across the institution. In this paper, we reflect on our approach to delivering these activities, providing recommendations for others who may want to adopt similar approaches to building a sense of belonging amongst their own incoming student cohorts.

Introduction

Being accepted to study a course at university is seen by many as a pinnacle of success; a significant milestone in their academic journey and an aspirational goal. The number of applicants to higher education courses is increasing (Bolton, 2023) and record numbers of students from lower participation areas enrolled on HE courses in 2022 (UCAS, 2023), even during a cost-of-living crisis. However, the opportunity to study within HE and the chances of success once there are not equal for all students. For the growing number of students whose pre-university experience consists of disruption to their education or for those from disadvantaged backgrounds, under-represented groups and lower-income households, there are significant barriers that they must overcome to be able to enter and succeed in HE (Connell-Smith and Hubble, 2018). These students are more likely to lack the social and cultural capital associated with university life (Connell-Smith and Hubble, 2018), making it difficult for them to feel like they belong. This is critical given that a sense of belonging is positively correlated with

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academic and social engagement while at university (Freeman et al., 2007), and can make or break students' overall experience.

Establishing a feeling of belonging within an academic environment is determined largely by people and place. For students, their sense of belonging to an academic environment is known to be heavily influenced by i) their pre-university lived experience, and ii) the interpersonal connections that are made on their university course – with their peers, administrative staff and academic teaching team – and the quality and frequency of these connections (Rueda & Lowe Swift, 2024). When students feel able to connect to the content and people linked to a course, this strengthens their confidence, academic competence and self-efficacy: their ability and belief in themselves to be able to succeed (Kirby & Thomas, 2022; Rueda et al. 2017).

Students from disadvantaged backgrounds are three times less likely to attend more selective HE institutions (Farquharson et al., 2022), with students from lower socio-economic backgrounds achieving, on average, lower academic grades and being more likely to fail to complete their university courses (Bolton & Lewis, 2024). The start of a degree programme results in many students juggling an array of shifting circumstances, such as increased academic demands and their associated workload, as well as new living arrangements and social settings (Ramler et al., 2016). Undoubtedly, this transition into HE is challenging for many students, but it can be particularly tough for students from disadvantaged backgrounds for whom the university environment may present an even starker contrast to their home environment (Pokorny et al., 2017; Morosanu et al., 2010; Krause & Coates, 2008), consequently reducing the chance of experiencing a feeling of belonging at university.

Beginning a new course at university brings many new opportunities, both social and academic. For an increasing number of students, growing external demands on their time and resources mean they need to make hard choices about which opportunities to engage with. For example, financial pressures disproportionately impact students from lower HE participation areas, making them more likely than their counterparts to withdraw from their courses (Sutton Trust, 2021; Million Plus, 2022). From a teaching perspective, biological sciences courses present opportunities to develop skills related to conducting experiments, using new equipment and engaging in trial-and-error as part of the scientific method. These are activities which can often lead to failure – indeed experimentation itself is built on the expectation of failure, reflection and learning, and then trying again! With the average student already managing challenges with their health and finances (56% and 59% respectively (Student Minds, 2023)), the prospect of failure within an academic setting can lead to many students disengaging from their studies. One way to mitigate the impact of these factors on student engagement and success is to help students build a strong sense of community and belonging within their studies.

To help level the playing field and address the inequalities within higher education, the Office for Students requires institutions to deliver a range of widening participation strategies which show how they are working to tackle the unequal chance for success experienced by some groups of students. One approach adopted by many higher

education institutions is to have a foundation year offer. These courses typically prioritise places for students from under-represented groups who are then provided with a combination of bespoke delivery of both subject knowledge and skills content alongside focused and intensive support systems, often delivered by foundation year specialist staff. The provision of foundation year courses has grown significantly in recent years (Braisby, 2019; Pickering, 2022) as institutions see the value and success of these courses across a range of subject disciplines (see e.g. Braisby, 2019; DfE, 2023).

The University of East Anglia (UEA) has offered foundation year courses for approximately 20 years, with the aim of supporting learners from under-represented groups. For the academic year 2022-23, UEA welcomed foundation year students across courses covering subjects within Life Sciences, Social Sciences, Humanities and Medicine. Two of these courses are administered by the School of Biological Sciences: Biological Sciences with a Foundation Year and Biochemistry with a Foundation Year. The two courses are led by the same Course Director, have very similar course profiles and share many of the same modules. They attract students with similar interests, with those strongly interested in the chemistry side of biology opting to take the Biochemistry course variant. Students across the two Foundation Year courses also experience the same programme of pre-arrival and transition events welcoming them into the institution and onto their new courses.

As part of the welcome events offered for these science-based courses, students undertake a two-hour performing-arts based workshop, led by experienced external performing arts facilitators. This paper is an action-led reflective piece which embraces aspects of both relational and drama-based pedagogy. It describes the format, delivery and activities of our student-centred workshops and reflects on how these impact on the early student experience, drawing on feedback from both the staff and students involved.

Session Format

Our approach is built on the core principles of mystery, fun and permission to fail. We schedule the workshop for all students during the early part of their induction week and intentionally give it a name ('Your Biology Studies') that does not suggest the students will be doing drama-based tasks. An example programme with approximate timings for our workshops is shown in Table 1.

Start Time	Duration (minutes)	Activity	Student Groupings
0:00	1	Welcome and <u>very</u> brief introduction to session facilitators	None
Activity 1, e.g. Grandmother's footsteps ¹ . All students at one end of the room, the facilitator at the other end, with their back turned to the students.			
0:02	15	Grandmother's footsteps – level 1	Individual

¹ A children's game in which one player turns round often and without warning with the aim of catching the other players stealthily creeping up on them.

		Grandmother's footsteps – level 2	Pairs
		Grandmother's footsteps – level 3	Pairs + one chair
0:17	3	Short discussion reflecting on the activity	None
Activity 2, e.g. catch. All students and facilitators stand (or sit) in a circle with both hands out ready to catch the ball. Once the ball has been caught and passed on, hands are put down. All participants should receive and pass on the ball just once.			
0:20	15	Catch – level 1; random order	Individual
		Catch – level 2; same order as level 1	Individual
		Catch – level 3; reverse order to level 1/2	Individual
Activity 3, e.g. card towers. Organise students into groups of 6-8 students and give each group one pack of cards and one set of roles. The roles are small slips of paper with one of the following team roles written on them: Derailer – constantly distracted from the task; Yes person – says yes to everything; No person – says no to everything; Defeatist – gives up easily; Positive Leader – takes charge considerately; Diplomat – considers everyone's opinion and Dominant – believes their ideas to be the best, inconsiderate of others. Each student randomly chooses a role and does not share it with any of the others in their group. Their task is to, as a team, build the tallest tower of cards that they can.			
0:35	15	Teamworking card towers – round 1 Each student should take on the role they have chosen and really throw themselves into their role. Embrace it!	Group of 6-8 students
		Teamworking card towers – round 2 Now each student can forget the role they had and be themselves and again, build a team card tower.	Group of 6-8 students
0:50	5	Final plenary, drawing session together and highlighting the journey they have been on as a group and the connections they have made along the way.	All

Table 1: Timings and activities for a typical variant of the performing arts-based Welcome Week sessions delivered to Biological Sciences Foundation Year students at the University of East Anglia.

Session Delivery

Workshops begin with the external facilitators – a former performing arts lecturer and a drama teacher – briefly introducing themselves before moving to the first activity (see Table 1 for example programme). External facilitators were used for two main reasons. Firstly, they have specific expertise in facilitating sessions for performing arts students, where developing language, including non-verbal and non-written language, and the use of collective action to overcome problems in an ensemble or community is a key part of the performing arts curriculum.

Secondly, we wanted the session to stand apart from the content-focused sessions that we would go on to lead for the students throughout the rest of their foundation year. All external facilitators were experienced in facilitating sessions with young adults,

were trained in performing arts, and indeed the lead facilitator had taught in further education for many years prior. All sessions also had at least one member of the Foundation Year course team present.

Level 1 in each activity is always one that requires limited peer-to-peer discussion, will likely be familiar to the students and includes a strong element of play, for example, Grandma's footsteps or a variation of catch. Each activity can be levelled up to a more complex activity by adding rules, such as students needing to take a seat before reaching 'Grandma' or varying the order, direction or sequence in which the ball must travel around the room. Level 2 then levels up to incorporate elements of teamwork, such as working in pairs to reach 'Grandma' without being seen to move or by introducing a pair-based challenge such as building a tower from a deck of cards. For Activity 3 (and 4 if time allows) we move to team-based activities, usually with an element of role-play and competition. Another popular team activity has students in groups of approximately six, and their challenge is to arrange themselves (and props if any are available) into a random object. For example, might shout, 'As a group, arrange yourselves to become a microscope!' Other objects that work well for this activity include a washing machine, a racing car, a camera, a cell, or a toaster.

Session Feedback

When we started delivering these sessions, our intention was to provide something fun and informal for the students early in their time at university. We had not anticipated how successful the sessions would be or how quickly they would deliver a change in the cohort dynamics. As a result, formal evaluation of the sessions was not prioritised. With hindsight, it would have been helpful to include some form of evaluation within these sessions that allowed us to measure the immediate impact of the session on students' sense of belonging, as well as identifying any measurable impact on their sense of belonging beyond the initial transition period. However, we do have some measures of impact for these sessions through a combination of anecdotal and student evaluation feedback.

Anecdotally, from across the two years of delivery for these workshops, they are well received by the students. Feedback from an institutional student experience focus group reported students mentioning the ease in fostering new connections with their coursemates due to the high levels of interaction within these Welcome Week activities. Helping students make meaningful connections with others on their course is one of the top three most impactful activities that we can do to help with a student's sense of belonging and their retention on their course (Blake et al., 2022). A typical scenario for these sessions is that students arrive on their own, choose a seat within the room and then sit on their own, not engaging with each other. Within ten minutes of the session starting, the volume, chatter and laughter in the room have noticeably increased. By the end of the session, students leave the room chatting in small groups, having made connections with their peers during their shared experience. Such student-centric teaching practices place students at the centre of the learning experience and are widely acknowledged for creating a stronger student experience

and sense of belonging than the more traditional teacher-centric approach (Wong, 2024; Shaw et al., 2023; Kong, 2021; Chatterjee & Correia, 2020).

As part of our session evaluation, we asked the students a series of questions using Wooclap, an anonymous audience polling platform. When asked ‘Do you think all new students should be offered a session like this?’, 95.3% of the respondents across both cohorts said yes (81/85) compared to 4.7% (4/85) who said no. The responses to this specific question have been key to our decision to offer these sessions more widely across the School of Biological Sciences. When our 2022-23 cohort were asked to choose their favourite session from across more than a dozen that took place during their Welcome Week (the 2023-24 cohort were not asked this question), 21.2% (7/33) of students chose this session despite it being one of the first sessions that they had engaged with in that week and thus less fresh in their minds.

At the start and end of the session, students were asked, ‘What one word would you use to describe how you are feeling at the start/end of this session?’. There were many more positive responses given by the cohort after the session (e.g. ‘incredible’, ‘relaxed’ and ‘excited’), compared to before (see Table 2). Of the negative responses given, many of these were words unrelated to the workshop itself, such as ‘tired’, ‘hungry’, ‘thirsty’ and ‘hangover’.

	Positive words	Negative words	Total
Start of session	28 (35.9%)	50 (64.1%)	78
End of session	59 (72.8%)	22 (27.2%)	81
Total	87	72	159

Table 2: the number of positive and negative words given by the Biological Sciences Foundation Year student cohorts of 2022-23 and 2023-24 at the University of East Anglia in response to the Wooclap-pollled question ‘What one word would you use to describe how you are feeling at the start/end of this session?’ The session referred to in the question is a performing arts-based Welcome Week session with an emphasis on team-building and building connections across the cohort.

Session Accessibility

A student’s higher education journey begins before they arrive on campus to begin their course. Prior to starting a course, many students will have visited their institution for open days, applicant days or outreach events; others may live locally and be very familiar with the university campus. At the very least, all new students will have received communications from the institution prior to arrival. All of these pre-arrival factors help students in forming that initial sense of belonging and an idea of where their place might be, where they might find others to connect with, and how they envisage themselves spending their time, both social and academic, at university. But, in the same way that each of our lived experiences is unique, so too is the way our interactions and experiences impact our sense of belonging. Thus, when embedding belonging-focused activities within teaching, it is important not to assume that all students will get the same benefit from the same activity or experience.

Critically, we believe that an undergraduate university course, especially one with a foundation year, should be an accessible learning journey that encultures a community whereby all views and lived experiences are of as much value as the teaching. That said, the timing of the sessions described in this paper meant it was especially important to be aware of additional access needs some students may have. Specifically, due to our sessions being so early in the academic year, many students with disabilities or additional access needs have not yet declared (and do not need to declare) these to the institution; thus we designed the session to be as inclusive and accessible as possible, with resources for multiple different activities (and variants of those activities), available within each session. For example, Activity 2 within Table 1 can be delivered as a standing or seated activity, involving a ball being thrown, rolled or using a ball with an internal bell. There are myriad variations on the activities used within a session, and key to meeting the unknown needs of an unknown cohort is to prepare for a range of activities that can be delivered on the day. Sessions such as those described here (see Table 1 for a detailed example) have been taken by students from a range of cultural and educational backgrounds and with wide and varied accessibility needs. A real strength of these sessions appears to be how they are able to facilitate student interaction across different student groups, through the removal of certain cultural and socio-economic barriers that can often be divisive within large group education settings.

More generally, there is growing evidence (primarily from secondary education) that cross-curricular drama is a medium of learning that can bridge gaps in student communication to facilitate human interaction, helping participants to learn about themselves, their peers, and their surrounding world. For example, the National Curriculum has included drama-based activities in the sciences since 2004 (Dorion, 2011). It would be easy to trivialise the type of activities we present here – charades, role-play, mime – as just games, ‘ice-breakers’ or ‘team building’, or at best, as an extension of play-based learning. This is, of course, true. Yet they are also rooted in a drama-based pedagogy that has recently been described as a ‘peace pedagogy’ and ‘a pedagogy for social change in the classroom’ (Karahasanović-Avdibegović, 2023). In our experience, adopting a drama-based pedagogy in our science induction activities has been the most meaningful and immediate improvement to building rapport and a feeling of belonging in our Foundation Year cohorts.

Lessons Learned and Recommendations

These sessions were developed and delivered by experienced facilitators trained in performing arts, and we intentionally wanted the facilitators to be people from outside of the University. When we first pitched the idea for these sessions to some of our biological sciences colleagues, we were met with resistance and told that sessions like this would not work, that external people aren’t necessary for sessions like this, and that we wouldn’t get student buy-in to these sessions. We remained steadfast in our approach, and based on both our anecdotal observations, student engagement and feedback, we are confident that these sessions have delivered what we had hoped for, and more, to our student cohorts.

Based on our experiences with these sessions, here are some recommendations for anyone wanting to deliver similar sessions for their student cohorts.

1. Use external facilitators. Wherever possible, use facilitators who are different from those the students will normally see. This seems to make the students more willing to be themselves and remove the barrier of having to put on a front for 'their' academic staff.
2. Deliver early. Scheduling sessions early in the welcome period allows for maximising connections, building opportunities across demographic groups before students form cliques.
3. Be vague. Avoid giving out too many details before the session so students arrive with an open mind and without pre-session bias.
4. Don't force the fun. Avoid forcing students to engage or interact with the session activities. It tends to happen organically when others are seen to be having fun, and forcing this reduces inclusivity and accessibility.
5. It's not all about the subject! It's ok to deliver sessions that are not subject-specific. There are many other skills that are important for degree success, and our students, who are the first generation to have grown up in an entirely digital world, do not always have much experience of these prior to university. Look outside of your own discipline (especially to the performing arts) to build resources for your students.

Make any potential perceived failure a fun feature. For example, to remove anxiety around being a poor thrower or catcher, if the ball is dropped in a game of catch, everyone responds with 'balls'.

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