UNIVERSITY OF SURREY

EDUCATIONAL DIALOGUE FOR IMPROVING FOUNDATION YEAR OUTCOMES

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1. Executive summary

Introduction

Foundation Year (FY) programmes are increasingly seen as a key route into higher education (HE) for students from underrepresented and disadvantaged backgrounds. Over the past decade, the number of students entering HE through FY routes has grown tenfold. These programmes provide vital access to higher education for students who may lack the traditional qualifications or confidence to apply directly.

However, despite the increasing popularity of FY routes, FY students face persistent challenges in progressing through university. Only 53% of FY students complete a degree within six years, compared to 80% of students who enter HE directly at undergraduate level (Office for Students, 2022). This gap is not simply about academic readiness; it reflects deeper issues of confidence, engagement, and the sense of belonging in academic spaces.

One underexplored but crucial factor is oral academic language, the ability to articulate ideas, build arguments, and collaborate through dialogue. While students in traditional academic pathways often enter university having developed these skills in school or college, many FY students, particularly those from working-class, ethnically diverse, or mature student backgrounds, have had fewer opportunities to practice structured, academic talk. As a result, they may struggle in classroom settings that rely on discussion, collaboration, and debate.

This project aimed to address this gap by developing and testing a scalable, evidence-based intervention: the Toolkit for Educational Dialogue (TED). The toolkit was designed to equip FY teachers with practical tools and strategies to help students engage in educational dialogue, a form of structured talk that promotes reasoning, reflection, and peer learning. FY students in three disciplines (Biological Education, Engineering and Psychology) across six institutions were grouped into intervention and control groups. All three FY programmes included regular timetabled classroom teaching. Findings revealed that students in both groups used more educational dialogue over the course of two semesters, with students in the intervention groups using significantly more educational dialogue. Students in the intervention groups also spoke for longer. Findings showed no significant differences in belonging and self-efficacy as a result of the intervention. Finally, there was no evidence that training in educational dialogue improved first-year academic performance. Students who received the training achieved similar final grades to those in the control group.

Project aims and objectives

The project was built on empirical evidence from the compulsory school sector that educational dialogue is a teachable, learnable, and assessable skill, and that improving students' dialogic engagement can enhance their academic outcomes (Amodia-Bidakowska, Hennessy & Warwick, 2023; Howe et al; 2019). This project specifically addressed the Nuffield Foundation's focus on promoting educational opportunity and reducing adversity. Foundation Year (FY) programmes were developed to provide access to Higher Education (HE) through widening participation (Sanders & Daly, 2012; Wint, 2022). Many students enrolling on FY programmes come from minority ethnic and low-income backgrounds, are older, and have completed BTECs (UK Gov, 19 October, 2023). FY programmes are one way to encourage these students to enter HE, an alternative to the Access to Higher Education Diploma offered through further education providers.

Our core objectives were to:

- Develop a practical Toolkit for Educational Dialogue (TED) for use in FY classrooms.
- Train FY staff to use the toolkit effectively and embed it into existing teaching practices.
- Evaluate the impact of the intervention on students' use of educational dialogue, self-efficacy and sense of belonging.
- Explore whether improved dialogue skills are associated with increased academic performance and progression.
- Gather student and teacher perspectives on the toolkit to refine it for broader dissemination.

The intervention focused on three disciplines: (Biological Education, Engineering, and Psychology). They were chosen based on the disciplinary expertise of the research team and to ensure a range of disciplinary traditions.

Methodology

The project was delivered across 12 FY programmes in six UK universities, involving a total of 99 students.

Our project aimed to answer the following research questions:

1. Can training students increase the amount of educational dialogue dyads use?

2. How do FY teachers and students evaluate the training and the teaching materials?
3. Does the participation in the intervention programme lead to increases in students' self-efficacy and a sense of belonging in students?
4. Can training in educational dialogue make a difference to FY final grades and progression?

Students participated in educational dialogue training, facilitated by lead pedagogic coordinators (PCs) at each institution. The intervention centred on the Toolkit for Educational Dialogue, which included a range of resources, activities, and scratch cards (multiple choice disciplinary questions with answer and explanatory sheet).

We used a cluster randomised pre-test post-test design in which groups were assigned to the intervention or the control group. Five programmes formed the intervention group, receiving the educational dialogue input each week in addition to completing discussions with scratch cards. Five programmes formed the control group who also completed the discussions with scratch cards but did not receive training in educational dialogue. Students assigned to the intervention group (M = 86.89, SD = 13.09) did not differ significantly in UCAS tariff scores from students assigned to the control group (M = 81.82, SD = 21.59), $F(1, 52) = 1.23$, $p = .27$. As only 54 students provided credible UCAS score data, these analyses were conducted on this subset of participants. In addition, there were no baseline differences between the intervention and control groups in belonging, $F(1, 357) = 0.12$, $p = .73$, or self-efficacy, $F(1, 357) = 2.93$, $p = .09$. Taken together, these findings indicate no evidence of systematic pre-existing differences between students assigned to the intervention and control conditions. (Table 4 displays these means). The findings indicate no evidence of systematic differences in prior academic attainment, belonging, or self-efficacy between the intervention and control groups at baseline.

To test the intervention, students participated in two recorded group discussions (pre-test and post-test) and completed pre- and post-intervention surveys measuring self-efficacy (using the Academic Behavioural Confidence scale (Sander & Sanders, 2009), and Sense of belonging using Yorke (2016). Additionally, semi-structured interviews were conducted with eight FY students and nine FY leads, with a total of 17 participants. All discussion recordings were transcribed and coded using an adapted version of the SEDA (Hennessy et al, 2016) and T-SEDA (T-SEDA Collective, 2021) frameworks, which identifies key elements of educational dialogue such as inviting reasoning, building on ideas, and connecting to prior knowledge (Hennessy et al, 2016).

A combination of quantitative and qualitative (thematic analysis) methods were used to measure a) developments in students' use of dialogic moves (e.g. Invite reasoning, Build, Make reasoning explicit); b) changes in confidence and belonging; c) final aggregate marks as well as student retention and progression; and d) perceptions of the efficacy of the training and toolkit from staff and students.

Key Findings

Educational Dialogue Skills: Students who received the training showed significant increases in the number of dialogic moves between the first and final sessions. Students in the control condition did not show this increase. Part of the difference may be that students in the intervention group talked for longer (allowing for more dialogic moves) in their pair discussions between their first and final sessions, whereas students in the control group did not show increases. Although the intervention group spent more time in discussion following the training, this does not undermine the intervention effect: the additional discussion time is itself a meaningful outcome, reflecting participants' increased capacity and willingness to sustain academic dialogue. The time allocated to the discussion sessions did not change, however students chose to speak for longer in the intervention group.

Confidence and Belonging: The change in belonging over time did not differ by condition, $F(1, 73) = 1.07$, $p = .31$, $_{\eta}p^2 = .01$. Overall, there was no evidence that assignment to the intervention versus control condition influenced students' belonging.

The effect of time did not vary significantly by condition, $F(1, 71) = 0.03$, $p = .88$, $_{\eta}p^2 < .001$. Overall, there was no evidence that assignment to the intervention versus control condition influenced students' self-efficacy.

Academic Outcomes: Final aggregated scores were available for 89 of the 99 participants who completed both pre- and post-intervention recordings (33 control; 56 intervention). There was no difference between students assigned to the intervention (M = 67.38, SD= 19.23) and control (68.12, SD = 15.67) groups, $F(1, 90) = .04$, $p = .85$.

Overall, we note that participation in the final data collection round was smaller than expected. The intervention might have been found to be more effective if the originally intended sample and level of participation was achieved. However, we also recognize that perceived outcomes from the interview data were stronger than what was measured quantitatively

Perceptions of toolkit and resources: Interviews revealed that students and teachers found the toolkit and resources helpful, particularly the Talk Stems (e.g. 'Here's what

I think..', 'I'm not sure I agree') and Ground Rules (e.g. Encourage everyone to speak; Treat all contributions with respect). Students commented on noticing their development of academic language and finding a voice. They also noted the relational benefits of educational dialogue. FY teachers noted the increase in quality of students' talk. Both groups commented on increased confidence to engage in dialogic interaction.

Implications for policy and practice

Foreground oral academic skills as an equity strategy: Students from less advantaged backgrounds often lack the same preparation in academic oracy as their peers. Educational dialogue should be treated as an equity issue, not merely a pedagogical choice.

Emphasise and embed educational dialogue in the curriculum: As concerns about generative AI lead institutions to re-emphasise oral assessment, FY students need targeted support. This project shows how scalable interventions can work in practice.

Adopt the Toolkit for Educational Dialogue across FY disciplines and beyond: All FY disciplines can leverage the power of the toolkit across classes. Teachers can use the tried-and-tested activities and resources to incorporate training in academic speaking skills. The activities can also be introduced to Level 4 students in year 1 of UG study.

Provide training for Foundation Year staff in dialogic teaching strategies: For successful incorporation and embedding of educational dialogue in the curriculum, FY teachers need to be trained in its value, purpose, and pedagogical practices. FY teachers also need flexibility to consider how to embed training in educational dialogue in their own classes without it being seen as burdensome.

Embed oracy learning outcomes into FY module specifications: Making the development of educational dialogue a learning outcome gives value to academic talk and encourages teachers and students to consider what educational dialogue looks like.

Use scratch cards (multiple-choice questions based on the disciplinary content – See Appendix D for project page and examples) and guided discussions to support structured peer talk: One key finding was the centrality of the questions as an artefact. The questions guided the discussions and provided a shared space. Educators can develop their own questions to suit the curriculum and act as a review or preparation of a topic. Students could also design questions for each other to discuss. Students need to be taught how to use academic questions to support the use of these materials.

Create early-term interventions that normalise educational dialogue and boost confidence: Once educational dialogue is embedded in the curriculum and peer discussions are part of the learning and teaching environment, educational dialogue will be normalised.

Conclusion

The transition into higher education is about more than academic preparedness. It is about confidence, communication, and connection. This project has shown that educational dialogue can be taught, and that when it is, FY students may benefit not just in marks, but in voice, identity, and belonging. The Toolkit for Educational Dialogue offers a practical, research-based response to widening participation challenges and the challenges that Gen AI pose to the integrity of learning and assessment in HE. It centres student voice. It builds peer relationships. And it empowers students to take ownership of their learning.

Project outputs

Academic papers:

Baker, L. A., Gamarra, E., Heron, M., & Tenenbaum, H. R. (2026). Toolkit for Educational Dialogue: Integration into a Foundation Year STEM Curriculum. *Journal of the Foundation Year Network*, *8*, 75-88. https://jfyn.co.uk/index.php/ukfyn/article/view/118

Gamarra, E., & Heron, M. (2025). Achieving inter-rater reliability in text-based studies: challenges and strategies in functional language coding with NVivo. *International Journal of Social Research Methodology*, 1-8. https://www.tandfonline.com/doi/pdf/10.1080/13645579.2025.2595072

Gamarra, E., Heron, M., Tenenbaum, H., & Baker, L. (2025). Disciplinary differences in educational dialogue: a comparative analysis of Foundation Year classrooms. *Language and Education,* 1-20. https://www.tandfonline.com/doi/pdf/10.1080/09500782.2025.2601042

Heron, M., Gamarra, E., Tenenbaum, H. R., & Baker, L. A. (2026). Finding a Voice: Student and Teacher Perceptions of Structured Dialogic Opportunities in a Foundation Year Context. *Active Learning in Higher Education*, 14697874261447290.

Reports:

Peer Dialogue as a Pedagogic Tool in Foundation Year Study Research. Report for Camtree https://hdl.handle.net/20.500.14069/1027

Blogs:

Speak Up, Measure Up: Building Better Tools for Evaluating Classroom Conversation – Oracy Cambridge (September 2025). Available at: https://oracycambridge.org/speak-up-measure-up/

Talking the talk: language for learning in higher education – SRHE Blog (May 2025). Available at: https://srheblog.com/tag/educational-dialogue/

Teaching students how to talk: why dialogue belongs at the heart of higher education. HEPI blog. 4 November 2025. https://www.hepi.ac.uk/2025/11/04/teaching-students-how-to-talk-why-dialogue-belongs-at-the-heart-of-higher-education/

Project page:

https://www.surrey.ac.uk/research-projects/educational-dialogue-improving-foundation-year-student-outcomes

2. Introduction

We start by presenting the context of the project and outline the key characteristics of the Foundation Year (FY). We then explain the key concepts underpinning the project: educational dialogue, a sense of belonging, and self-efficacy. We discuss these within the context of progression and retention of FY students. We then present and explain the methodology used in the project. Finally, we present the findings and discuss implications for practice and policy.

This report is organised in the following way. Section 2 provides the context to the project. In Section 3 we outline the methodology we used for the project, highlighting methodological challenges we experienced. In Section 4 we present the findings from the surveys on belonging and self-efficacy, the findings from the analysis of the audio recordings and the qualitative findings from the interviews with FY students and leads. In Section 5 we present implications for policy and practice, and we conclude with a discussion of next steps.

2.1 Context and rationale

2.1.1 Foundation Year in UK universities

The FY has become an increasingly significant pathway into higher education (HE) in the UK, offering students an alternative route to degree-level study and to level the playing field by providing a structured transition into undergraduate study. Formally recognized as Level 3 within the Framework of Higher Education Qualifications (FHEQ), FY programmes are designed to bridge the gap between prior learning and undergraduate education by developing students' academic skills and subject-specific knowledge (Austen et al., 2021). The primary aim of these programmes is to prepare students for university study, equipping them with academic writing, critical analysis, and research skills, while also fostering confidence and a sense of academic identity (Sanders, Daly & Fitzgerald, 2016).

The number of students enrolling in FY programmes has risen dramatically, increasing from 8,470 in 2011/12 (Office for Students, 2022) to 257,800 in 2024/25 (Office for Students, 2026). However, completion rates among FY students remain lower than those who enter university directly at Level 4. In 2021/22, 53% of FY students completed their degree within six years, compared to 80% of direct entrants completing within five years (Department for Education, 19 October 2023). These figures highlight the importance of understanding and addressing the specific challenges FY students face in their transition to higher education.

Strong self-efficacy has been linked to retention and progression (Reilly et al, 2021), but students with lower social and cultural capital may have lower self-efficacy. One way of supporting students' beliefs in these areas is through group work, peer interaction, and peer learning (Southall et al., 2016) which all involve oral communication skills. Belonging has also been identified as a key need for FY students (Becker, 2021). Developing peer relationships builds a sense of belonging and can provide access to bridging the cultural and social capital divide that may exist between WP students and their peers (O'Sullivan et al., 2019). In order to do this successfully, students need to have the requisite oral communication skills.

Oral communication skills are increasingly the focus on higher education learning. Concerns around Generative AI have resulted in an advocacy for more oral assessment and there is increasing pressure on students to perform through oral language skills. In particular, students may lack a type of oral language skills termed educational dialogue, necessary during seminar discussions, pair, and small group work (Heron, 2019). Educational dialogue is classroom talk in which students build on each other's ideas, respectfully challenge each other and use evidence-informed reasoning. FY students can be excluded from opportunities to learn through engaging in educational dialogue, impacting on university achievement. This disadvantage has implications for retention and progression and the widening attainment gaps. If we do

not address lower levels of oral language skills, FY students will remain at a disadvantage.

The importance of the project, therefore, lies in its ability to increase the progression of FY students through developing oral communication skills. As observed, FY students, compared to their direct entry peers, demonstrate lower levels of progression. One reason is due to a lack of confidence and knowledge of academic skills, in particular oral language skills (Baker & Heron, 2023; Klinger & Murray, 2012). Thus, we need to improve FY students' high-quality educational dialogue to increase retention and progression from FY programmes to first-year undergraduate.

2.1.2 Demographics and challenges faced by Foundation Year students

The demographic composition of FY students differs considerably from traditional undergraduate cohorts. In 2021/22, 64% of FY students were aged 21 or older, compared to 19% of first-year undergraduates. Additionally, 46% of FY students identified as non-white, compared to 34% of undergraduate students (Dampier et al, 2023). Given this diverse student profile, universities must consider how to effectively support their transition into HE and provide targeted interventions to improve retention and academic outcomes.

Despite the widening participation (WP) agenda that underpins FY programmes, many students face significant challenges in adapting to university life. Research suggests that self-doubt, uncertainty about academic capabilities, and a lack of confidence can act as barriers to success (Austen et al., 2021). The transition into HE can be particularly overwhelming, requiring not just academic preparation but also social and emotional support (Chivers, 2025). Scholars argue that discussions around FY student success should focus on the broader social, cultural, and institutional factors that shape students' experiences (Winter & Dismore, 2010).

One critical area of concern is the limited access to educational dialogue, which can significantly impact academic attainment, student engagement, and retention. Research has shown that exclusion from structured academic discussions can contribute to widening attainment gaps, making it essential to incorporate spoken language skills development into FY curricula. Addressing this issue requires intentional pedagogical strategies that enhance students' ability to engage in academic discussions, thereby improving their overall HE experiences.

2.1.3 The role of educational dialogue in academic success

Educational dialogue refers to structured, purposeful discussion that encourages students to articulate ideas, justify reasoning, and engage critically with content (Baker, 2022). Hennessy et al. (2021) highlight that, unlike everyday conversation, educational dialogue fosters active student participation, cognitive engagement, and academic agency. Research in dialogic teaching has primarily focused on supporting educators to facilitate meaningful academic discussions, where students are encouraged to challenge perspectives, support arguments with evidence, and co-construct knowledge. Studies demonstrate that students who engage in educational dialogue show significant academic gains, particularly when they reference external sources, elaborate on ideas, and critically evaluate different viewpoints (Amodia-Bidakowska et al., 2023; Howe et al., 2019).

Much of the existing research on educational dialogue has been conducted in primary and secondary education. However, an emerging body of literature is exploring its application in higher education, particularly within FY programmes (Hennessy et al., 2021; Heron, Tenenbaum & Hatch, 2023). One key initiative in this area is the Scheme for Educational Dialogue Analysis (SEDA) (Hennessy et al, 2016) and the Toolkit for Systematic Educational Dialogue Analysis (T-SEDA), (T-SEDA Collective, 2021), a resource pack developed to support teachers in fostering dialogic learning environments. Initially designed for primary and secondary education, the framework has since been adapted for HE (see Hennessy et al., (2021) and T-SEDA project). T-SEDA provides a coding system for analysing classroom discourse, helping educators identify and enhance dialogic teaching strategies. Research using SEDA has demonstrated that specific talk moves—such as elaboration, questioning, and sustained participation—play a crucial role in promoting conceptual understanding and higher-order thinking (Vrikki et al., 2019).

A key study which underpinned much of the thinking behind this project was conducted by Heron, Tenenbaum and Hatch (2023) exploring how Foundation Year Biological Science students used educational dialogue in small groups. The students were recorded three times over an 11-week semester yielding a total of around 900 minutes of discussion. The study was conducted during the pandemic (2020-2021), and as a result all the group interaction took place online. Nevertheless, the results allowed the researchers to identify specific areas for intervention. From the data, it was clear that most students aimed to finish the scratchcard (multiple-choice

questions) as quickly as possible. Few students engaged in educational dialogue as defined above. In some groups, individual students attempted to ask for clarification, or provide reasoning, but proved unable to achieve this communicative act due to the desire of others to finish the activity. The training in this project therefore focused on developing the language and skills to be able to engage in educationally purposeful dialogue.

2.1.4 Perspectives on a successful Foundation Year learner

Dampier et al. (2019) explored student and teacher perspectives on what constitutes a successful FY learner. Both groups identified resilience, engagement, and willingness to take intellectual risks as essential attributes. However, their expectations differed in key areas: teachers emphasized critical thinking, group collaboration, and confidence-building, whereas students did not highlight these aspects as central to success. Instead, students highlighted good time-management and organisation as important for success. These findings suggest a misalignment between student and teacher perceptions, particularly regarding academic discourse and oral communication skills.

The importance of language skills and academic literacy in shaping students' HE experiences is widely acknowledged. As Duckworth et al. (2016) argue, understanding how spoken and written discourse impact educational outcomes is critical for advancing equity and inclusivity in HE. Recognizing these gaps in expectations and embedding structured educational dialogue into FY curricula can help bridge these divides, ultimately fostering greater student engagement and success.

2.2 Belonging

A sense of belonging in an HE context has been described as involving a complex interaction between three main factors: the environmental, cognitive and social (Araujo et al., 2014). With specific reference to the aims of the project, Burke (2016) highlights the links between belonging, confidence and capabilities: "Sensibilities of belonging are formed in relation to constructions of capability: to belong in a field such as higher education, the student must be recognised as having the capability to belong." (Burke et al., 2016, p. 19). The concept of belonging and the under-critiqued nature of assumptions that all students want or need to belong is highlighted by

Gravett and Ajjawi (2022). They argue for a more nuanced and contextualised understanding of belonging, and to view belonging as social practice which is 'situated, relational and processual'. This aligns to some extent with the ideas behind this project. Educational dialogue can encourage co-construction of ideas, development of communication skills and ultimately support relational connections. A sense of belonging, including interaction with peers, has been linked to academic achievement and progression in higher education (van Herpen et al., 2020). In this project we drew on a validated measurement tool designed by Yorke (2016) who operationalised a sense of belonging as the extent to which participants felt a place was enriching and welcoming.

2.3 Self-efficacy

In this study we used Sander and Sanders' (2009) concept of academic behavioural confidence to measure self-efficacy. Academic behavioural confidence brings together two concepts: *academic self-efficacy* and *self-concept.* They define academic behavourial confidence as: "how students differ in the extent to which they have a 'strong belief, firm trust, or sure expectation' (Sander and Sanders 2003, 3) of how they will respond to the demands of studying at university" (Sander & Sanders, 2009, p. 19). The measurement is referred to as the Academic Behavioural Confidence Scale (ABC) and was appropriate for this project due to its fluidity and openness to changes which may come about as a result of interventions, such as the one in the project.

Honicke and Broadbent (2016) carried out a systematic review of the influence of academic self-efficacy and academic performance. They found moderate correlations between the two constructs and that effort, regulation, deep processing strategies and goal orientations mediated this relationship. The authors call for more research involving longitudinal studies which focus on interventions to explore the complex relationship between academic self-efficacy and academic performance. This project responded to that challenge. It explored whether embedding dialogic practices into FY teaching could improve student outcomes, and whether such interventions could help close equity gaps in HE progression.

2.4 Significance of the project

FY programmes support national goals for widening participation and social mobility, yet their long-term success hinges on more than access; they require retention, progression, and student achievement. By focusing on oral academic language, this project foregrounds a critical but neglected skill area: the ability to communicate ideas, justify thinking, and collaborate effectively in classroom and assessment contexts. As academic institutions increasingly embrace oral assessment (e.g., in response to AI-related concerns), these skills are becoming not only beneficial but essential. For example, the Skills Imperative 2035 programme has identified communication skills as one of the essential employment skills (The Skills Imperative, 2035). The project aligns closely with the Nuffield Foundation's mission to reduce disadvantage and promote equitable educational opportunity by addressing how FY students can be better supported through pedagogical change.

2.5 Project objectives

This project aimed to support Foundation Year teachers in enhancing students' educational dialogue skills through a targeted, evidence-based intervention. The key objectives were to:

- Develop the Toolkit for Educational Dialogue (TED)—a structured set of teaching resources for use in FY programmes.
- Enhance students' use of educational dialogue in small group/pair work activities.
- Evaluate the impact of dialogic teaching on students' self-efficacy and sense of belonging.
- Explore how students and teachers perceive and respond to the intervention.
- Examine whether improved dialogic practices lead to gains in academic performance and successful completion of the Foundation Year.

2.6 Research questions

The study was guided by the following questions:

1. Can training increase the frequency and quality of educational dialogue among FY student pairs?

2. How do FY teachers and students evaluate the training materials and their effectiveness?
3. Does participation in the intervention lead to higher levels of self-efficacy and belonging?
4. Can training in educational dialogue make a difference to FY final grades and progression?

3. Methodology

3.1 Research design

This project used a cluster randomised pre-test post-test design, involving 12 Foundation Year (FY) programmes across six UK universities. Groups were randomly assigned to intervention or control. Numbers were not equal across subject and university type. Randomisation was stratified by discipline to ensure equal representation of Psychology, Biology, and Engineering across study arms. The universities represented a mix of institutional types, including:

- Two post-1992 universities (Kingston University, Sheffield Hallam University)
- Two pre-1992 universities (University of Surrey, University of Kent)
- Two Russell Group universities (Queen Mary University of London, University of Sheffield)

Groups:

- Intervention group (6 FY programmes): Received the educational dialogue training during the first term.
- Control group (6 FY programmes): Some control groups received informal training after the study.

All Foundation Year leads and teachers received training in educational dialogue at the beginning of the project for background and familiarity with the resources, and as an ethical consideration that all teachers benefitted from the research.

3.2 The Intervention: Toolkit for Educational Dialogue (TED)

At the core of the project was the Toolkit for Educational Dialogue (TED), designed to help FY teachers foster students' academic oral communication skills. The toolkit included:

- A PowerPoint presentation introducing the concept and practice of educational dialogue.
- A student workbook with reflective tasks, self-assessment tools, and practical exercises.
- Scratch cards featuring subject-specific multiple-choice questions to scaffold structured, peer-to-peer discussion.

These tools were deployed in regular class sessions over the term, particularly in group and pair-based learning contexts.

3.3 Participants and sample

The original plan as set out in the project proposal was a total of 600 students in 300 dyads (pairs), returning a sample of 180 dyads with possible attrition. However, these numbers were not achieved, neither for the pre-stage or the post-stage. In Year 1, for the first round (pre-stage), a total of 369 participants completed the initial survey, with 255 consenting to be recorded. This resulted in 128 recorded conversations during the first round of discussions.

In Year 1, there were significant challenges in achieving numbers of participants for the final round post-stage. Attendance in the final classes of the second semester (May 2025) was low, and this was reflected in the data collected (Year 1: 79). To increase our numbers, we carried out further data collection for a no-cost extension to the project for Year 2. We worked with the research team's institution to carry out the project with FY Psychology (intervention) and FY Engineering (control). This provided us with a further 20 students for post-stage. In Year 2, a total of 133 participants completed the final questionnaire, but the final total number of students who completed all stages of the research was 99. This final figure reflects the fact that not all students completed both pre and post surveys and both recordings 1 and 10.

Table 1 below presents the distribution of participants among universities, programmes, and control vs. intervention groups for the first round of Year 1 and 2.

Table 1 Participants' Distribution First Round of Questionnaires and Recordings (Year 1 and 2)

University	Programme	Group	Questionnaires	Recorded in groups
Kent	Psychology	Intervention	36	13
	Biology	Control	3	1
Kingston	Engineering	Control	38	13
	Biology	Intervention	46	21
QMUL	Biology	Intervention	7	6
Sheffield	Biology	Control	5	2
	Psychology	Intervention	6	3
Sheffield Hallam	Psychology	Control	11	5
Surrey	Engineering	Intervention	127	44
		Control	25	20
	Psychology	Control	41	7
		Intervention	24	3
Totals			369	138

Table 2 below presents the distribution of participants among universities, programmes, and control vs. intervention groups for the final round (post-stage) of Year 1 and 2.

Table 2 Participants' Distribution Final Round of Questionnaires and Recordings (Year 1 and 2)

University	Programme	Group	Surveys	Recorded in groups
Kent	Psychology	Intervention	13	9
	Biology	Control	0	0
Kingston	Engineering	Control	14	6
	Biology	Intervention	17	6
QMUL	Biology	Intervention	0	4
Sheffield	Biology	Control	2	2
	Psychology	Intervention	4	4
Sheffield Hallam	Psychology	Control	3	2
Surrey	Engineering	Intervention	40	30
		Control	14	14
	Psychology	Control	20	16
		Intervention	6	6
Totals			133	99

For the qualitative stage of the research, the initial plan was to recruit 36 teachers and 12 students for the semi-structured interviews. We achieved a total of 10 teachers and 8 students.

3.4 Materials

Educational dialogue toolkit (TED)

We developed a PowerPoint presentation and a workbook for training purposes (See Appendix D). The PowerPoint presentation introduced participants to the concept of educational dialogue, its significance, and its role in academic discussions. It also included examples of effective and ineffective discussions within an academic context.

The workbook provided background information about the project and included activities designed to enhance educational dialogue practices. These activities introduced students to ground rules for effective academic discussions, the dialogic moves they needed to practice, and self-evaluation criteria to help them assess the quality of their discussions.

Scratch cards

Scratch cards were fundamental to the research design. Each scratch card contained 10 multiple-choice questions, each with four answer options, alongside a corresponding answer key explaining why each option was correct or incorrect. Although a convergent task might not appear to prompt educational dialogue, such tasks with a correct or best answer can prompt explicit reasoning and problem-solving in disciplinary contexts, often associated with more scientific subjects (Palmgren-Neuvonen et al, 2020).

Artefacts can provide a clear purpose for dialogue and 'made the learning histories and trajectories more visible' (Hennessy et al, 2021, p. 19). Following the design principles of Epstein, Epstein, & Brosvic (2001), we created scratch cards for Biology, Psychology, and Engineering. Before their development, we gathered information on the curriculum content covered at each university and within each course to ensure relevance. However, the activity focused on developing dialogic skills rather than assessing knowledge. For this reason, prior exposure to the topics on the scratch cards was not required so the questions combined the curriculum content with topics relevant for future learning.

Measurements of self-efficacy and belonging

To assess self-efficacy, we used a measured developed by Sander and Sanders (2009). This 24-item scale evaluates students' confidence in their anticipated study habits and learning strategies within their degree programme.

To measure sense of belonging, we used Yorke's (2016). This 16-item scale assesses changes over time in students' connection to their institution, level of academic

engagement, and self-confidence. We chose this measure because of its brevity, relevance over time, and applicability across subjects.

Semi-structured interview questions

Two separate sets of interview questions were developed: one for Foundation Year students (see Appendix B) and another for Foundation Year leads (see Appendix C), designed to guide the semi-structured interviews. Each set consisted of three overarching questions, further divided into more specific prompts to facilitate discussion. The questions were structured to encourage reflection on participants' perceptions of the training, their evaluation of its effectiveness, and its broader impact beyond the discussion sessions.

3.5 Data collection procedures

During the first session, students were provided with a QR code linking to an online form, where they submitted demographic information, consented to their participation, and completed the self-report scales measuring self-efficacy and sense of belonging.

Next, students engaged in discussions using the first scratch card, with each dyad assigned a dedicated audio recorder to capture their conversation. It is possible that the discussions were affected by the recording, in terms of students' performance or confidence. This was mitigated through an initial PowerPoint presentation by the teachers about the project, and an assurance of confidentiality. The number of questions (10) also allowed students to become familiar with the process.

This procedure was repeated in the final session for all cohorts. For the Kingston University Engineering cohort, the final session was in Session 5 as the FY lead was unable to continue the project in semester 2. For all remaining cohorts, the final session was in Session 10 at the end of semester 2,

3.6 Data processing and analysis

All audio recordings were transcribed using either Descript software or Way With Words transcription services (https://waywithwords.net/). Transcriptions were then reviewed by the research team to ensure accuracy and fidelity to the original recordings.

For transcription coding, an adapted version of the T-SEDA framework (T-SEDA Collective, 2021) (See Appendix A) was employed, identifying six coding categories: inviting elaboration or reasoning, making reasoning explicit, building on ideas, expressing or inviting ideas, positioning and coordination, and connecting.

To ensure coding reliability, four coders underwent training before independently coding 15% of the dataset, achieving an inter-rater reliability kappa value of 0.65. Once an acceptable level of inter-rater reliability was established, a follow-up session was conducted to resolve any discrepancies and further enhance coding consistency. The remaining transcripts were then coded, with NVivo software used to record the frequency of each code within each transcript. The final level of reliability can be seen in Table 3 below.

Table 3: Inter-rater reliability

Code	Kappa
(B) Build on ideas	0.84
(C) Connect	0.90
(E) Express or invite ideas	0.79
(I) Invite elaboration or reasoning	0.72
(P) Positioning and Coordination	0.87
(R) Make reasoning explicit	0.75
Total	0.83

Interview analysis

The key focus of the interviews was to examine students' and teachers' perceptions of the training and the educational dialogue materials as presented in the Toolkit for Educational Dialogue. We were interested in feedback to inform a new, refined version of the Toolkit and thus deductively coded for changes and feedback, whilst inductively coding for perceptions, experiences and attitudes towards educational dialogue.

For the semi-structured interviews, Reflexive Thematic Analysis (Braun & Clarke 2021) was employed to identify prominent themes that provide insight into the relationship between participants' perceptions and their involvement in the study. In the first phase of analysis, one teacher and one student interview transcript were coded by three of the research team who agreed on key themes. The remaining transcripts were shared out and coded independently. In the final stage, the three researchers met and agreed on a final set of themes which are presented in the next section. The research questions initially drove the analysis with researchers also employing inductive analysis for themes which were not covered in the research questions.

3.7 Ethical considerations

Ethical approval was granted from the PI's institutional ethics committee [Ethics RM 1381]. All participating institutions also obtained ethical approval from their own institutions. All participants were provided with Information Sheets and gave informed consent prior to the start of the project. Participants were given the opportunity to withdraw from the study at any time without any negative consequence. All students participated in the dyadic discussions as per the intervention and training, regardless of whether they had consented to the research aspect and the collection of data. As incentives, student participants received £5 Amazon vouchers for the pre and post survey and the final recording. FY teachers and students received £15 Amazon vouchers for participating in the semi-structured interviews. Despite this incentive, recruitment for the interviews was lower than expected.

4.Findings

4.1 Can training students increase the amount of educational dialogue dyads use?

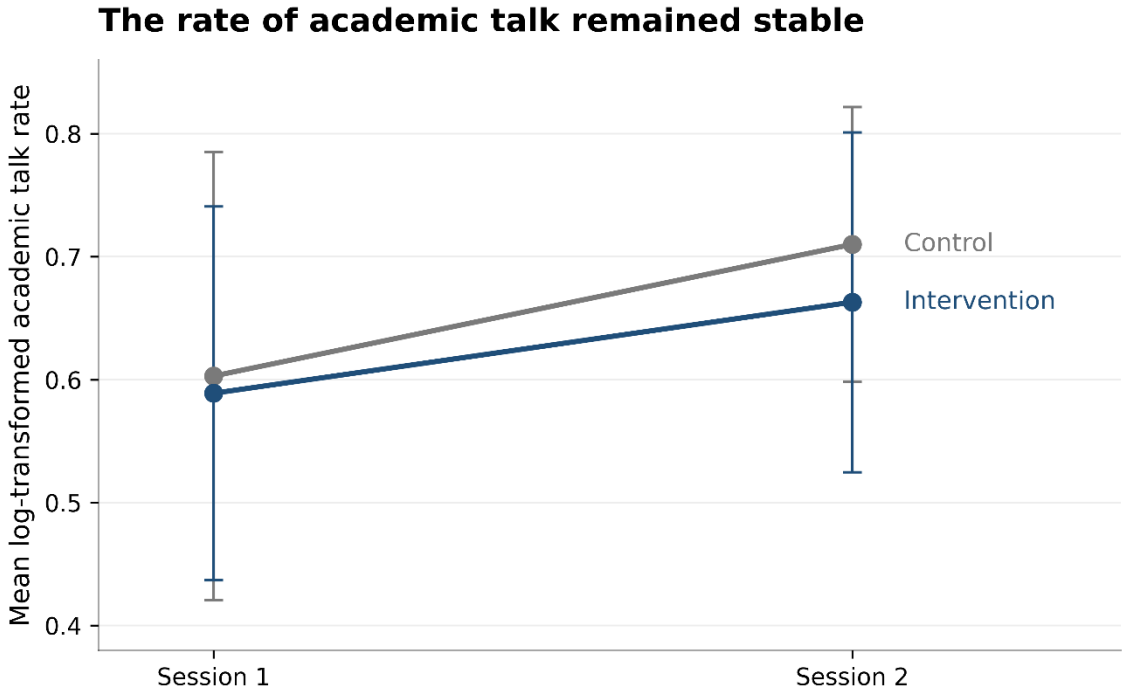
Statistical analyses comparing the intervention and control conditions found that both total amount of academic talk and time spent in discussion increased significantly in the intervention condition from the pre-intervention to the post-intervention session. However, no significant difference was found in the rate of academic talk instances per minute. The following paragraphs present these findings in greater detail.

We were not able to run ratio scores (academic talk divided by session length) because of heteroscedasticity and the confounding of numerator and denominator effects.

We tried running models treating academic talk as count data with session length included as an exposure (Poisson and negative binomial), but the data failed to converge and showed evidence of extreme overdispersion, indicating that the data did not meet model assumptions. To obtain stable and interpretable estimates, the outcome was instead analysed as log-transformed rate of academic talk.

A 2 (Group: intervention, control) × 2 (Session: 1, 2) ANOVA on log-transformed academic talk rate (Figure 1) revealed no significant main effects of Group, $F(1, 194) = 0.16$, $p = .69$, $\eta_p^2 = .001$, or Session, $F(1, 194) = 1.42$, $p = .23$, $\eta_p^2 = .007$. The Group × Session interaction was also not significant, $F(1, 194) = 0.05$, $p = .83$, $\eta_p^2 < .001$, indicating that the intervention did not affect changes in the rate of academic talk over time. In other words, there is no effect of session or group on rate.

Figure 1: The rate of academic talk over time



Means and 95% confidence intervals for log-transformed academic talk rate by group and session.

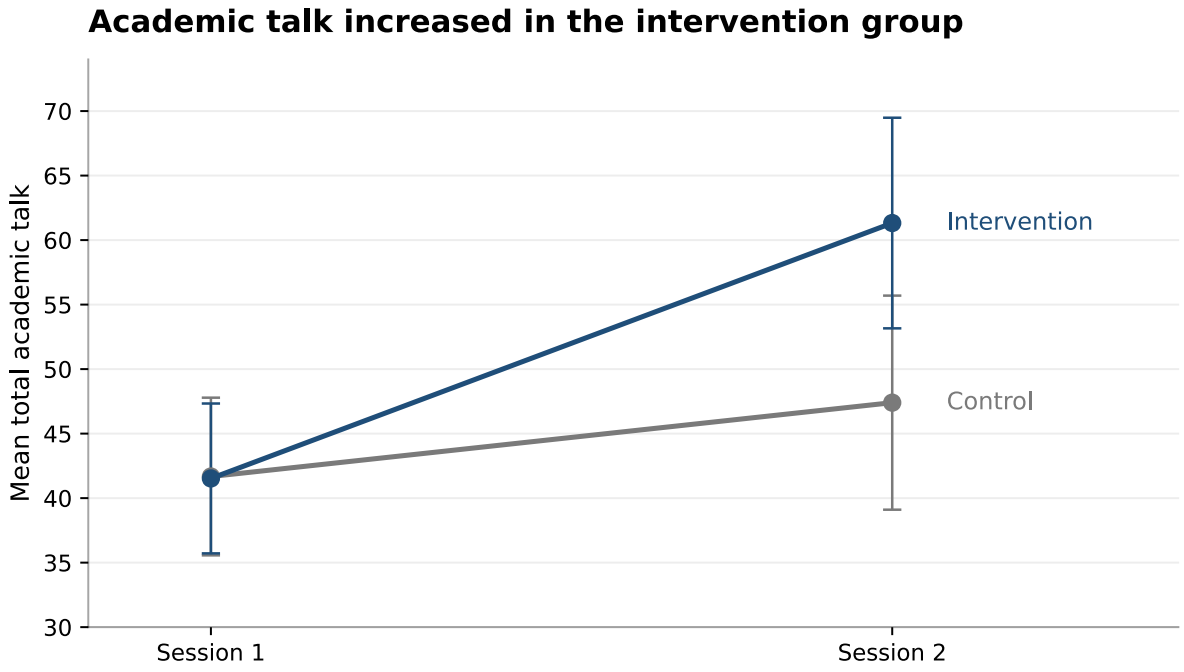
We also looked at increase in total academic talk. We ran a 2 (Group: Intervention, Control) x 2 (Time: Session1, Session2) ANOVA on total academic talk. The data are

not normally distributed because of two outliers so we ran the models with and without them and it did not change the results.

We ran the models first with the outliers. A repeated-measures ANOVA revealed a significant main effect of time, $F(1, 97) = 18.59$, $p < .001$, $\eta_p^2 = .16$, indicating that scores changed significantly over time. There was also a significant Time × Group interaction, $F(1, 97) = 5.65$, $p = .02$, $\eta_p^2 = .06$. To examine the interaction, we conducted separate within-subjects ANOVA models for control and intervention separately. For the control group, there was no significant effect of time, $F(1, 39) = 2.08$, $p = .16$, $\eta_p^2 = .05$, indicating that academic talk did not significantly change over time in the control condition. For the intervention group, there was a significant effect of time, $F(1, 58) = 23.76$, $p < .001$, $\eta_p^2 = .29$, indicating that academic talk increased significantly over time in the intervention condition with a large effect size.

We also ran it without the two outliers. A repeated-measures ANOVA revealed a significant main effect of time, $F(1, 97) = 18.59$, $p < .001$, $\eta_p^2 = .16$, indicating that academic talk changed significantly over time. This effect was qualified by a significant Time × Group interaction, $F(1, 97) = 5.65$, $p = .02$, $\eta_p^2 = .06$. To examine the interaction, we conducted separate within-subjects ANOVA models for control intervention separately. Follow-up analyses indicated that, in the control group, there was no significant effect of time, $F(1, 39) = 2.08$, $p = .18$, $\eta_p^2 = .05$, indicating that academic talk did not significantly change across sessions. In the intervention group, there was a significant effect of time, $F(1, 56) = 21.72$, $p < .001$, $\eta_p^2 = .28$, indicating that academic talk increased significantly across sessions with a large effect size.

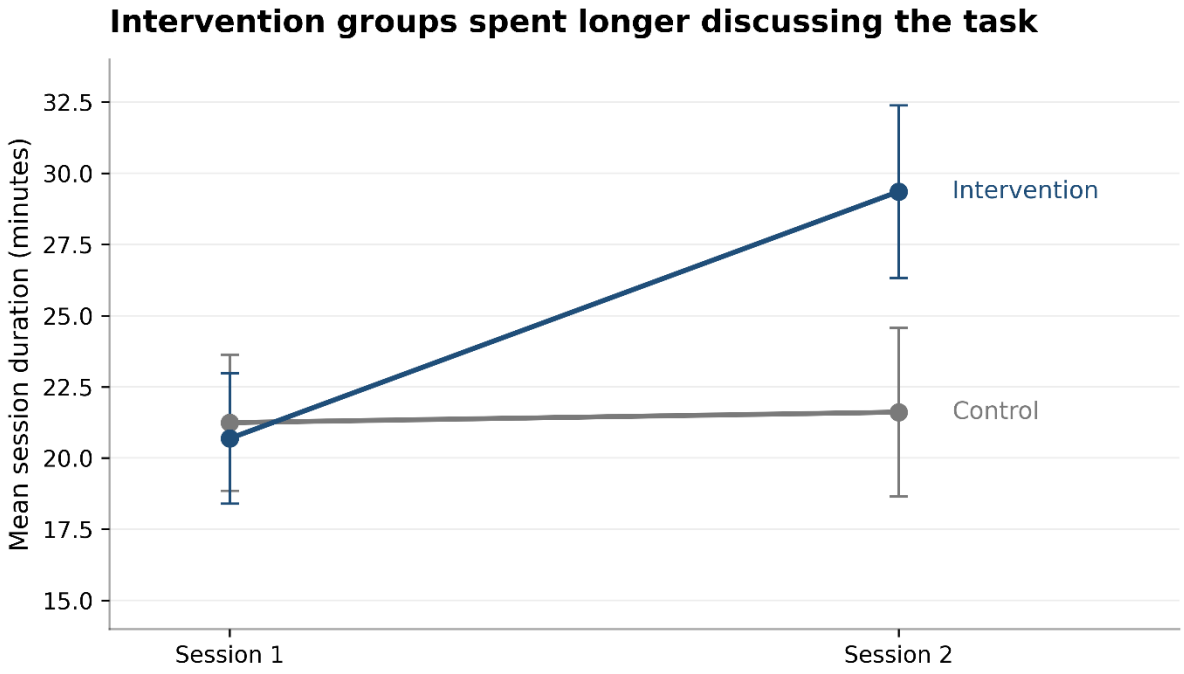
Figure 2: The number of educational dialogue moves across time



Means and 95% confidence intervals for total academic talk by group and session.

We then looked at amount of time they spoke. A repeated-measures ANOVA revealed a significant main effect of time, $F(1, 98) = 19.31$, $p < .001$, $\eta_p^2 = .16$, indicating that discussion duration changed significantly across sessions. This effect was qualified by a significant Time × Type interaction, $F(1, 98) = 16.30$, $p < .001$, $\eta_p^2 = .14$, indicating that the pattern of change in session duration differed between the intervention and control groups. In the control group, there was no significant effect of time, $F(1, 40) = 0.05$, $p = .820$, $\eta_p^2 = .001$, indicating that session duration did not change across sessions. In the intervention group, however there was a significant effect of time, $F(1, 58) = 44.54$, $p < .001$, $\eta_p^2 = .43$, indicating that session duration increased across sessions with a large effect size.

Figure 3: Time on task



Means and 95% confidence intervals for session duration by group and session.

In sum, students in the intervention group engaged in significantly more academic talk and spent longer discussing ideas in the second session, while the control group showed no change. However, there was no evidence that the intervention increased the amount of academic talk per minute of discussion. Instead, the training led students to choose to spend more time engaged in discussion, resulting in more educational dialogue overall, rather than making each minute of discussion use more academic dialogue. These findings suggest that academic dialogue increased in the group receiving training, but not in the control group.

4.2 How do FY teachers and students evaluate the training and the teaching materials?

Analysis of the interview data from FY students and FY teachers generated the main themes presented in Figure 4 below. These were inductive themes guided by the research question.

Figure 4: Evaluation of training and materials: Key themes



Confidence

The training and materials gave students the opportunity to develop confidence in their own voices. Interestingly, the students gained confidence not just in expressing their opinions, but also confidence in taking risks and being wrong. The student below highlights this:

> *I guess personally for me, I felt more, less like, I felt more confident in discussing the answer and also more confident in being wrong in the answer. So I felt by the end of it, I was more focused on,, I wonder why that isn't. Especially, I think where*

there were bits that I didn't know, I was more like, I just wanted to know the answer and figure it out. (Student - Psychology)

Teachers also noted an increase in confidence. As the semester progressed and students learned more about educational dialogue, and carried out pair discussions, they became more confident in articulating their ideas. The FY lead notes how their self-perceptions changed over time:

Luckily, I didn't really start with anybody in that kind of category, but there were a few who were maybe less confident or thought they perhaps didn't have, you know, particularly valid points to make, or they, they weren't as clever. At least that was their perception. So I, I think over time that changed again and they were a lot more confident too. (FY lead: Biological Sciences)

Language awareness

Through the materials and guided activities (Toolkit), students became more aware of the language they were using in their pair discussions. For example, a Biological Sciences student below describes how they initially referred to the materials (a list of language students can use in their discussions such as phrases for asking for reasoning, or phrases for disagreeing).

Because without thinking about it, I saw that I was using educational dialogue. Sometimes I was actively looking at the piece of paper that we had with the kind of key words and using them actively. But more times than not, I was using it without even thinking, which was quite helpful. (Student – Biological Sciences)

In this comment we see that as time progressed the student became less reliant on the materials and had appropriated educational dialogue language as part of their dialogic repertoire.

Teachers also noted the importance of language and became aware of the linguistic choices students made in their discussions.

And that ability to communicate the empathy with the others, the building of ideas, asking the right questions, adapting your language to suit the situation and the people is absolutely fundamental. (FY lead - Engineering)

The teacher here notes the importance of being able to use a variety of educational dialogue moves to be able to communicate effectively. The teacher also notes the importance of understanding the register and context to make linguistic decisions.

Resources

As part of the intervention and training, a Toolkit of resources was developed to support students (see Appendix D). There were many comments highlighting the strengths of the materials. The key point seemed to be that the materials / resources provided a reminder and shared understanding of what educational dialogue looks like, and how dialogue works.

For example, the student below refers to the activity on Ground Rules, where students agree how to carry out the pair discussion and what is important in the interaction.

> *And there were ground rules, so I knew that everyone would be respectful and appreciate each other's time.* (Student – Biological Sciences)

A teacher also refers to the guidance provided in the materials in the form of Talk Stems – suggested linguistic and rhetorical devices for carrying out dialogic functions.

> *The talk stems were very useful. I just wonder for scope to actually, rather than just delivering it to them to actually sort of get them to think in the first instance*. (FY lead – Biological Sciences)

The teacher here suggests that the resource could be adapted to first raise awareness of the language for educational dialogue before then presenting the talk stems.

One of the resources was a self-evaluation (see Appendix D for a link to the project resources) that students carried out two or three times over the course of the academic year. The idea was that students would evaluate their use of educational dialogue and interactional skills. The teacher here notes that the self-evaluation encouraged development of skills and raised awareness of the processes of discussion.

> *I think when they did the self-evaluation, they're kind of iteratively improving the way they're going to discuss with each other the next time. particularly when it came to things like why they're like, so why are we thinking this way then, then that kind of unlocked the discussion a bit more.* (FY lead - Engineering)

Interactional skills

Both students and teachers commented on the change in interactional skills. Educational dialogue has at its core the notion of polite agreement and disagreement, as well as justifying opinions and being open to discussion. Connected to the theme above of developing awareness of linguistic and rhetorical skills, the student below explains how the answer is almost irrelevant, it was the opportunity and skills in listening, explaining reasoning and being open to other possibilities.

> *I did find that I disagreed with some of my partners with the questions and at the end after we answered it and found the answer, I discovered that we were both wrong. And that really puts a perspective saying that he was close to one of the answers but changed his mind after I explained my reasoning. His answer was correct and he disagreed with me. But after I gave him my reasoning, he then agreed with me. So yeah, it's more dissuading your partner of your reasoning than anything.* (Student - Engineering)

Similarly, the teacher below describes a particular student who had previously dominated the discussions, but (possibly) due to the training, had become aware of interactional norms – through Ground Rules – and gave more space to others to participate.

> *What I did notice over time is that he kind of very much started to moderate. And I think he either realized himself that he was just jumping in too many times and, and kind of, was dominating the conversation too much. And I'm not sure if that was the, the result of those interventions. I'm hoping it might have had effect or whether he just came to this realization himself. But I did notice that, you know, his way of communicating changed over time and that gave a lot more room and possibility for others to come into the conversation and make, make their own points*. (FY lead - Biosciences)

Relational aspects

One of the most striking themes in the data from students was the relational connections which resulted from carrying out the pair discussions. Students pointed out that the pair work discussions gave them an opportunity to meet and interact with students. In these cases, it was the activity itself which generated connections.

The activity was very good because it helped me develop communication with my peers, and this is foundation here. So, I guess it helped me meet more people and form new connections. So my overall all experience of the research was very good. (Student - Engineering)

The teacher below also highlights this opportunity to engage and interact with others in a way that they might not have done. Teachers make assumptions about friendships, connections and interactions which may or may not take place outside the classroom. The activity of pair work gave students the opportunity to take part in guided, scaffolded and time resourced discussions.

I kind of felt that they were close friends and actually that was the one time, perhaps they saw each, each other during the week. So I could see that that seemed to be something that worked well, perhaps, that it was encouraging them to engage in conversation with others about kind of topics in a way that they wouldn't have done otherwise, because they, they aren't, they don't know each other in a way. We kind of assume that they do. (FY Lead – Psychology).

Finding one's own voice

FY students talked about *finding their voice* as a result of the intervention. For example, a student below describes the differences in their interaction between the beginning and end of the academic year:

Towards the start, I think when trying to get an answer, I feel like we all maybe weren't as honest and we were a bit more like hidden back. Like when we were getting to know people, it was like, oh, I think it's this. And it's like the other person would be, oh yeah, I agree with you. And it's like we'd just trying to be nice to each other and be like, yeah, I agree with you. Like even if we don't, but I found that. If I look back on it now, that once we started going through it, it did also just kind of help my decision making in the long run because rather than at the start just picking an answer and being like, yeah, I think it's that without really thinking about it. As I got towards the end ones, that's when I really started having the good discussions with my friends because that's when we properly started having the debates about answers and that's it just kind of really made me think a lot deeper compared to what I did at the start. (Student-Psychology)

Students also commented on how they negotiated the answer by justifying ideas. Although the student below notes that one of them 'gave in', this was through a process of justification, explanation and understanding perspectives.

> *But when it came down to not knowing the answer, we both disagreed. We then kind of gave each to a bit of time to explain our reasoning, try and convince the other person until one of us just eventually just gave in and went. Okay. Yeah, I agree with you. I see where you're coming from*. (Student - Psychology)

Quality of talk

Teachers commented on the quality of students' talk as the semester progressed in terms of disciplinary language and using questioning. *I felt the conversation started to become much more professional in nature.* (FY Lead – Biological Sciences)

Teachers also noted how students developed metacognitive awareness of the language they were using.

> *But the psychologists in particular were sort of asking quite smart questions about, okay, how do I do this? How do I do that? How do I ensure that I've got the academic language in there? Things like*. (FY Lead – Psychology)

Importance of educational dialogue

A final theme in the data relates to a developing awareness of the importance of educational dialogue in both an academic and professional context. A metacognitive awareness of educational dialogue, and academic language in general can help students to notice how they need to adapt their language to suit the context, be it academic or professional. As noted earlier in this report, communication is a key employability skill that employers report young people lacking. The student below explains how this awareness and language skills transcend the content knowledge and how important language skills are to participate in the disciplinary community.

> *For me personally, I'm a computer science student, so I know that when I go into work and let's say I, I write a piece of code, I'll be asked to explain it to a group of at least 10, 20 people. And if my communication skills aren't up to par with theirs,*

it wouldn't matter if, I've written the best piece of code ever, if I can't explain how I did things and why I've done things a certain way. (Student – Engineering).

A FY lead makes a similar point, focusing on the need to develop academic oral language for disciplinary contexts and industry, for both effective participation and for providing students with the confidence to participate.

> *I think it's [educational dialogue] integral. To understanding it. I mean, for me, having worked outside of academia, I've worked in industry, I've worked in hospital environments. It is very much about dialogue. It's very much about discussion, about how you'd move a subject on how you develop an essay, how you do sort of things. So it kind of mirrors the skills that I feel that they, they need to be able to have. And I think it's integral to building confidence in our foundation students, because actually a lot of them don't have very much confidence.* (FY lead – Biological Sciences)

4.3 Does the participation in the intervention programme lead to increases in students' self-efficacy and a sense of belonging in students?

To examine whether participation in the Educational Dialogue intervention influenced students' sense of belonging and self-efficacy, separate repeated-measures analyses of variance (ANOVAs) were conducted with Time 1 and Time 2 scores serving as the within-subjects factor and Group (intervention and control) as the between-subjects factor.

There was a significant main effect of time on students' sense of belonging, $F(1, 73) = 5.70$, $p = .02$, $\eta p^2 = .07$. Belonging increased from Time 1 ($M = 3.75$, $SD = 0.51$) to Time 2 ($M = 3.91$, $SD = 0.48$). The change in belonging over time did not differ significantly by university, $F(5, 73) = 1.74$, $p = .14$, $\eta p^2 = .11$; subject, $F(1, 73) = 0.09$, $p = .77$, $\eta p^2 = .001$; or condition, $F(1, 73) = 1.07$, $p = .31$, $\eta p^2 = .01$. The interaction between time, subject, and condition was also not significant, $F(1, 73) = 0.06$, $p = .82$, $\eta p^2 = .001$. Overall, there was no evidence that assignment to the intervention versus control condition influenced students' belonging.

Analysis of self-efficacy revealed no significant change over time, $F(1, 71) = 0.73$, $p = .40$, $\eta p^2 = .010$. Self-efficacy remained relatively stable from Time 1 ($M = 3.74$, $SD = 0.44$) to Time 2 ($M = 3.73$, $SD = 0.48$). Furthermore, the effect of time did not vary significantly by university, $F(5, 71) = 2.17$, $p = .07$, $\eta p^2 = .13$; subject area, $F(1, 71) = 0.38$, $p = .55$, ηp^2

= .005; or condition, $F(1, 71) = 0.03$, $p = .88$, $\eta p^2 < .001$. The interaction between time, subject area, and condition was also not significant, $F(1, 71) = 0.54$, $p = .47$, $\eta p^2 = .008$. Overall, there was no evidence that assignment to the intervention versus control condition influenced students' self-efficacy.

Table 4: Belonging and Self-efficacy SD

Measure	Time	Control M (SD)	Intervention M (SD)	Total M (SD)
Belonging	Time 1	3.61 (0.57)	3.87 (0.43)	3.75 (0.51)
Belonging	Time 2	3.84 (0.45)	3.96 (0.50)	3.91 (0.48)
Confidence	Time 1	3.72 (0.49)	3.75 (0.39)	3.74 (0.44)
Confidence	Time 2	3.66 (0.43)	3.80 (0.52)	3.73 (0.48

Overall, these findings indicate that although students' sense of belonging changed over time, there was no evidence that the Educational Dialogue intervention resulted in greater improvements in belonging or self-efficacy than those observed in the control group.

4.4 Can training in educational dialogue make a difference to FY final grades and progression?

Academic Outcomes: Due to issues with the sign-up sheets, grade data could be obtained for 89 out of the 99 participants. At the end of intervention, there was no difference between students assigned to the intervention (M = 67.38, SD= 19.23) and control (68.12, SD = 15.67) groups, F (1, 90) = .04, p = .85 on their aggregated marks.

The toolkit was perceived as beneficial to training students in using educational dialogue. Following the positive response to the toolkit we made a number of additional resources. We entitled the toolkit 'Speaking to Learn' and developed a student version, as well as a 5-week teaching plan. In response to feedback from teachers, we developed guidance on how to prepare multiple-choice questions and

shared the questions used in the project. All the materials and toolkits can be found on the project website in Appendix D.

5. Conclusion and Recommendations

5.1 Summary of findings

This section outlines how the project findings can inform both policy-level strategies and day-to-day teaching practices within Foundation Year (FY) programmes and beyond. It also identifies areas where further research could extend the project's impact.

Firstly, we turn to our research questions and summarise the key findings.

1. *Can training students increase the amount of educational dialogue dyads use?*

Data showed that students in the intervention groups used more educational dialogue moves overall than those in the control. In particular, intervention students used more reasoning and positioning than control group students. This is important because in a higher education context we encourage students to demonstrate critical thinking. Critical thinking skills are evidenced through agreeing, disagreeing (politely) and justifying positions. We can therefore conclude that training does result in an increase in the quantity and quality of students' educational dialogue.

2. *How do FY teachers and students evaluate the training and the teaching materials?*

FY teachers and students were mostly positive about the training and teaching materials. Key themes included the following points. Firstly, students talked about increased confidence in finding a voice, often linked to knowing appropriate language to be able to have a position. Secondly, students commented on the role of educational dialogue in building relational skills in terms of connecting with students they may not have met if not for the pair discussions. This gave confidence as well and a sense of community. Thirdly, both teachers and students commented on their development of interactional skills, involving improved turn-taking, active listening and polite disagreement. Finally, both students and teachers discussed a growing awareness of language and its importance, both in academic and future professional

contexts. A key driver in this awareness was the materials and activities from the toolkit, such as Talk Stems. In terms of suggestions, teachers suggested flexibility around the 10 multiple-choice questions for variation and also expressed concern over attendance and regularity of participation.

3. *Does the participation in the intervention programme lead to increases in students' self-efficacy and sense of belonging in students?*

The results showed no significant interaction between condition and time for either students' sense of belonging or self-efficacy. Although students' sense of belonging increased over time across the sample, this increase did not differ significantly between the control and intervention conditions and therefore cannot be attributed to the intervention. No significant change over time was detected in students' self-efficacy. This result challenges the notion that belonging and self-efficacy mediate the intervention and academic outcomes. Given the current interest in belonging and self-efficacy in higher education, our understanding of the relationship between these concepts and educational dialogue on FY learning outcomes and progression would benefit from a larger scale study involving larger cohorts of students possible for a shorter time period, such as one semester.

4. *Can training in educational dialogue make a difference to FY final grades and progression?*

There was no evidence that training in educational dialogue improved first-year academic performance. Students who received the training achieved similar final grades to those in the control group.

5.2 Implications for policy and practice

Overall, our findings have the following implications for policy and practice.

1. Oral language development must be prioritised in widening participation (WP) strategies: Existing WP strategies focus on access but often neglect academic communication skills, which are critical for success and progression. Oral academic skills, whether framed as educational dialogue or oracy, should be explicitly recognised in HE policy frameworks as an equity lever.
2. National frameworks should incentivise dialogic pedagogy. The Office for Students (OfS) and other bodies could promote dialogic learning standards in teacher training and curriculum design. Incentives (e.g., innovation grants or

other research funds) could support scaling dialogic models like the Toolkit for Educational Dialogue (TED) across institutions.

3. The Toolkit for Educational Dialogue (TED) can be adopted in FY Programmes. This involves integrating TED activities across disciplines, especially in Biology, Psychology, and Engineering, where our findings show impact. Staff can be encouraged to adapt scratch card designs to fit subject-specific contexts.
4. Engagement and participation in higher education teaching sessions. A significant challenge in implementing this project was low and sporadic attendance at the discussion sessions. Despite the offer of incentives, students chose to stop attending classes towards the end of both semesters. This impacted on the final numbers for the project, but more widely, the lack of attendance can impact on opportunities for students to learn together, co-construct understanding and develop academic language. Institutions need to work with students and teachers to understand the reasons for non-attendance and to work on solutions. Sharing the insights from this project can be one way. Resources to promote educational dialogue and motivate students can be found in the project resources.
5. Educational dialogue should be included in module descriptors, particularly in seminar-based teaching. Participation and peer dialogue can be part of formative assessments.
6. Structured training workshops can be provided using the TED slides and other resources which form part of this project (see Appendix D for project link). Peer observation is a collegial and low-stakes way to share best practices in facilitating dialogue.

5.3 Further research

One significant area for further research is to conduct a similar evaluation project with a larger sample. We would recommend carrying out the training and data collection in Semester 1 to avoid some of the challenges we faced in lack of attendance and therefore lack of research data. Although we offered incentives, this was not sufficient to encourage participation in Semester 2.

Further research and project work could extend the impact of the project beyond the current FY context. Firstly, advocates of educational dialogue from amongst the Foundation Year teaching staff can work with undergraduate level 4 teachers to

promote the importance of educational dialogue and build capacity in dialogic teaching and continue to gain feedback on the Toolkit. This involves emphasising the role of educational dialogue in academic success and its relevance to disciplinary teaching in FY and equipping teachers with strategies to integrate dialogue into their classrooms effectively. Secondly, educators can work closely with sixth form students and teachers to encourage students to view FY programmes as a supportive environment to develop oracy skills. Finally, FY teachers can promote peer-to-peer learning with new FY students. This can be achieved through induction weeks and activities, where teachers can highlight the benefits of attending class and participating in educational dialogue on disciplinary content. In particular, citing research such as the current one, the perceived benefit of making connections and academic and personal growth can be emphasised.

This project has addressed a critical gap in Foundation Year education: the role of structured, purposeful educational dialogue in supporting underrepresented students' success. By developing and evaluating a practical, discipline-adaptable intervention, the project has shown that educational dialogue can be taught and developed, and that teachers and students alike value structured opportunities to speak, listen, and reason in academic settings.

5.4 Key messages

- Educational dialogue is a teachable skill that improves academic outcomes for FY students.
- Dialogic pedagogy enhances students' confidence to share opinions and thereby feel heard.
- Embedding educational dialogue into FY curricula should be a national practice priority, especially as oral assessment grows in relevance.
- Teachers need support and resources, like TED, to implement dialogic teaching at scale.

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Appendices

Appendix A: Final coding scheme (based on Hennessy et al, 2016)

	Code	Description	Linguistic markers
I	**Invite Elaboration or Reasoning** Invites participants to explain, justify, elaborate, or speculate on ideas, encouraging deeper thinking and reasoning.	**I1:** Ask for explanation or justification. **E.g.** Why?, Why do you think that is correct? **I2:** Invite possibility thinking or prediction. **E.g.,** what do you think would happen if we do Y/if we choose Y? **I3:** Ask for elaboration or clarification. **E.g.,** What do you mean?	Why?, reasons?, what's your reasoning? Would you X? How? How can...?
R	**Make Reasoning Explicit**	**R1:** Explain or justify own contribution. **E.g.,** because **R2:** Speculate or predict.	Because, what I mean is, if...then, I would have thought

	Involves participants making their reasoning clear through explanation, justification, speculation, or prediction.		
B	**Build on Ideas** Encourages participants to build on, clarify, or elaborate on their own or others' contributions to advance the dialogue.	**B1:** Build on/clarify others' contributions. **E.g.,** Adding on what X said, I think… **B2:** Explain or justify another's contribution. **E.g.,** So what you're saying is that…, **B3:** Speculate or predict on the basis of another's contribution. **E.g.,** based on what you said then think C is the correct answer **B4:** Clarify/elaborate own contribution. **E.g.,** I meant that…. What I meant was… **B5:** Building on what is being read / building on the text. **E.g** So what this means is…, oh! So this is like X., In other words, this is…	Yes, and; Yes, but; so; what this/you mean is; but also; finishing someone's sentence
E	**Express or Invite Ideas** Participants state their belief and encourage other participants to build on their contribution, contribute to advance the dialogue.	**E1:** Invite opinions/beliefs/ideas. **E.g.,** What do you think?, right? **E2:** Make other relevant contribution. **E.3:** Make a statement that is relevant to the question that is not building on anything previously said or stated by the text.	What are you thought on..?; Thoughts?; I think [when it's expressing an idea, not choosing an option]; I believe, I feel,

P	**Positioning and Coordination** Focuses on participants taking a stance, comparing, evaluating synthesizing ideas, or coordinating perspectives within the dialogue.	**P1:** Synthesise ideas. **E.g.,** So, to sum up, we think…, so, combining what you said with this, the answer would be **P2:** Compare/evaluate alternative views**. E.g.,** So, between A and B which one…. **P3:** Propose resolution. **E.g.,** we agree is C then. **P4:** Acknowledge shift in position. **E.g.,** I used to think it was X but now I see it could be Y **P5:** Challenge viewpoint. **E.g.,** I disagree, I don't think so, **P6:** State (dis)agreement. **E.g.**, I agree with that. **P7**: Take a stand, adopt a position**. E.g**., I think it's C.	[letters of the answers]; (dis)agree; Okay, Yeah, you're right, I'm guessing, I see what you mean, which one, I think it's B; it's not B
C	**Connect** Makes connections to prior knowledge, or wider contexts, linking the current dialogue to broader learning trajectories	**C1:** Refer back. **E.g.,** Remember that we saw that in class.	remember, back to, we saw this, we did this in A-level, this was in a lecture; it's like …

Appendix B: Interview questions for Foundation Year Leads

Interview Protocol

Introduction

Thank you for your time today. I anticipate the interview lasting around 45 minutes. I will be recording the interview through Teams. After the interview we will check the transcript, remove any identifying information and then we delete the recording. If you would like to withdraw from the study and withdraw your data from this interview, you are free to do so. You will need to let us know through email up until 14 days after the date of this interview.

The content of this interview will remain confidential and all identifying information will be deleted. If you would like to stop this interview at any time please let me know and we can either take a break, or we can stop. If you do not want to answer the question, please let me know and I will ask a different question.

Do you have any questions before we start?

Indicative interview questions for FY students

1. Please could you reflect on the training you received on educational dialogue (prompt with the materials and resources).
    - What was your experience of the training?
    - How useful did you find it?
    - Can you give examples of any part of the training that was particularly helpful? How and why was it helpful.
2. Please can you reflect on the pair work discussions.
    - What were your experiences of the discussions?
    - How did you interact with your partner?
    - How did you agree on the answers?
    - What was the process of agreeing and disagreeing?
    - Did you notice how you communicated with your partner?
3. Please can you reflect on the discussions over the period of the academic year.
    - Have you noticed any changes in the way you carry out the discussions, or the way you reach an answer?

- Have you noticed any changes in the ways you interact, or your partner interacts with you?

4. What have you noticed about the language you use in the discussions?

Appendix C: Interview questions for Foundation Year Leads

Interview Protocol

Introduction

Thank you for your time today. I anticipate the interview lasting around 45 minutes. I will be recording the interview through Teams. After the interview we will check the transcript, remove any identifying information and then we delete the recording. If you would like to withdraw from the study and withdraw your data from this interview, you are free to do so. You will need to let us know through email up until 14 days after the date of this interview.

The content of this interview will remain confidential and all identifying information will be deleted. If you would like to stop this interview at any time please let me know and we can either take a break, or we can stop. If you do not want to answer the question, please let me know and I will ask a different question.

Do you have any questions before we start?

Indicative interview questions for FY leads

1. Please could you reflect on the training you received on educational dialogue (prompt with the materials and resources).
    - What was your experience of the training?
    - How useful did you find it?
    - Can you give examples of any part of the training that was particularly helpful? How and why was it helpful.

2. Please can you reflect on your students' discussions and interactive activities in your modules over the last year.
    - What have you noticed about their interaction? How do students interact with each other? How do they communicate with each other?
    - Have you noticed any changes in the way students carry out the discussions, or the way they interact with you, other students, or other staff?
    - Have you noticed anything about the students' use of language in discussions, or in their academic speaking?
    - How might any changes be linked to the students' training and the regular discussion sessions?

3. This project has focused on developing students' educational dialogue. What are your thoughts on the role of educational dialogue in student learning?

Appendix D: Project link – including resources and toolkit

https://www.surrey.ac.uk/research-projects/educational-dialogue-improving-foundation-year-student-outcomes