



Research paper

Understanding spaces of teacher agency: a case study of the experiences and practices of secondary school teachers in England

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ABSTRACT

Drawing on conceptual frameworks of the ecological approach to teacher agency and spaces of agency, we explored how and in what ways secondary school teachers in England ($n = 269$) identify, move between, and create spaces of agency, and the features of spaces of agency. Drawing on data gathered from an online survey, we considered the ways in which the different dimensions of agency, and the different aspects within those dimensions, interact. Teachers negotiated spaces of agency in the present through the 'messy entanglement' of the cultural, material and structural aspects of the practical-evaluative dimension, together with the iterational dimension of agency. Spaces of agency are inherently relational, open and dynamic. In the context of educational reform, this research highlights the importance of agency as a key concept which informs the educational structures created by government and school leaders that constrain and enable teachers' practice.

1. Introduction

Across the field of education, the concept of agency continues to proliferate in research, practice and policy (Cong-Lem, 2021) and yet, it is frequently ambiguously and inconsistently understood (Mercer, 2012). Similarly, the concept of teacher agency is increasingly prevalent (Priestley & Biesta, 2026) in the context of rising demands on teachers, working within educational systems frequently governed by accountability and performativity (Ball, 2003; Quiroz-Martinez & Rushton, 2024). We draw on the ecological approach to teacher agency conceptualised by Gert Biesta, Mark Priestley and colleagues (Biesta et al., 2015; Biesta & Tedder, 2007; Priestley & Biesta, 2026; Priestley et al., 2015), which understands teacher agency as an emergent and dynamic phenomenon which people achieve - or do not achieve - depending on the resources available to them and the conditions in which they work. When teachers achieve agency, they are able as critically engaged professionals to develop and implement curriculum which enables better learning experiences and outcomes for children and young people (Priestley et al., 2015). Previous research has considered space as a lens for teacher agency in the context of a small-scale interview-based study, working with three secondary school geography teachers during the first three years of their career (Rushton & Bird, 2024). Now, we consider the concept of spaces of agency

through a much larger data set of the response of 269 secondary school teachers, working across 17 different subjects in schools in England. Although teachers were asked about a particular aspect of their practice, this research takes an expansive look at teachers' experiences of spaces of agency in the context of curriculum making. Our research is guided by the following question: *How, and in what ways, can secondary school teachers identify, move between and create spaces of agency as they design and implement the curriculum?* We draw insights from a sub-set of data collected on teachers' practices through an online survey of teachers in England (Greer et al., 2023). This research expands our understanding of teacher agency in the context of secondary schools in England; for example, it illustrates how the different dimensions of agency interact to enable and/or constrain the agency which teachers can achieve. It deepens our understanding of spaces of teacher agency as collaborative and relational, showing how teachers can move between - and create - such spaces when they can access all three dimensions: - the iterational, the practical-evaluative and projective dimensions. This research offers valuable insights for teachers, school leaders and policy makers who are responsible for creating professional learning environments which equip teachers to realise high-quality education for all children and young people.

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2. Agency and teacher agency as a conceptual framework

Over the last thirty years, the concept of agency has become increasingly central to understanding teachers' practices, including as part of ideas of - and responses to - accountability, teacher professionalism and educational change (e.g. Lasky, 2005; Pyhältö et al., 2012; Ryder et al., 2018). A prevalent conceptualisation of agency in the literature foregrounds the emergent and relational properties of agency, which arise from complex interactions between individuals, society and their contexts (Eteläpelto et al., 2013). Across these emergent and relational conceptualisations of agency are three distinct sub-groups. Firstly, the sociocultural emergent sub-group considers how agency is the product of human interaction, dialogue and participation (e.g. Eteläpelto et al., 2013; Mercer, 2012; Roth et al., 2004). Across this aspect of the literature, attention is paid to culture and social development (e.g. Hedegaard et al., 2008) and Cultural Historical Activity Theory (e.g. Engeström & Sannino, 2020). Secondly, the ecological emergent sub-group (e.g. Huang, 2024; Priestley, 2020; Priestley et al., 2015; Rushton & Bird, 2024) draws on Biesta and Tedder's (2007) ecological model of agency which expands the sociocultural emergent approach with its focus on the temporality of agency. Biesta and Tedder (2007, p. 132) also conceptualise agency as being 'achieved' in 'contexts for action', enabling greater focus on the specific conditions with enable or constrain agency. Finally, the third sub-group is the socio-material emergent (e.g. Bennett, 2010; Chandler, 2013; Heikkilä & Mankki, 2023) – which consistent with the other two sub-groups - emphasises features of emergence, relationality and context. However, a key point of difference is the deliberate effort by scholars in the socio-material emergent sub-group to decentre the human, and the understanding that non-human entities and materials exercise agency alongside humans.

More recently, much research which explores teacher agency has been grounded in the ecological emergent conceptualisation, including the ecological approach to teacher agency which has been developed by Gert Biesta, Mark Priestley and colleagues (e.g. Biesta & Tedder, 2007; Biesta et al., 2015; Priestley et al., 2015). In the ecological approach, teacher agency is understood firstly as a dynamic and emergent phenomenon which teachers achieve or enact, rather than a capacity or quality they possess as individuals. Secondly, teacher agency is conceptualised as being formed by the conditions which shape teachers' professional lives, including the cultural (e.g. ideas, beliefs), material (money, environment) and structural (e.g. trust, roles) resources which are present, and the access teachers have to use these. Thirdly, the temporal quality of teacher agency is made visible in the ecological approach where agency is achieved in the present, shaped by the past and directed towards the future (Priestley et al., 2015). Teacher agency through the ecological approach has three dimensions: the iterational, the projective and the practical-evaluative (Priestley et al., 2015). The iterational dimension includes teachers' professional histories and/or their life histories (Biesta et al., 2015; Priestley et al., 2015). The projective dimension is the short- and long-term ideas and aspirations teacher have for their practice, which are informed by their prior experiences and their beliefs (Biesta et al., 2015; Priestley et al., 2015). Lastly, the practical-evaluative dimension of teacher agency includes the cultural, material and structural resources or conditions which can enable or constrain agency within a teachers' professional context (Priestley et al., 2015). Connections between the iterational, projective and practical-evaluative dimensions of teacher agency are relational processes which occur over time. For example, teachers values and beliefs (cultural aspect of the practical-evaluative dimension) are shaped by their professional histories (iterational dimension) and the policy contexts in which they work (structural aspect of the practical-evaluative dimension).

3. Spaces of agency as a conceptual framework

Space is a geographical concept or abstract idea that helps us understand how different phenomena on Earth are arranged and interact. These phenomena include people, physical features (e.g. mountains and cities), services (e.g. natural resources and electronic services) and goods (e.g. consumer goods and minerals). The geographical concept of space enables the description and analysis of patterns, distributions, relationships and networks drawing on social, economic, environmental and political processes to explain how spaces change and the implications of change over time. Space is widely conceptualised in current geographical scholarship as a complex and layered, where relational and fluid agency is enacted (Horton & Kraftl, 2006; Massey, 2005). Research which considers teacher agency has drawn on geographical conceptualisations of space (Rushton & Bird, 2024; Smit et al., 2025). Drawing on Massey (2005), Rushton and Bird (2024) identify three key propositions that underpin the conceptualisation of space. Firstly, space is the product of multiple interrelations, formed through interactions that span from the tiny to the global. Secondly, plurality and multiplicity are features of space, which means that numerous distinct and different trajectories coexist. Thirdly, space is continuously being made or constructed by people. Rushton and Bird (2024, p. 257) argue that 'these understandings of space as complex, always changing, as a *verb* (Horton & Kraftl, 2006) are consistent with conceptualisations of teacher agency as an emergent phenomenon, something which teachers *do*, rather than possess and which are both dynamic and temporal (Priestley et al., 2015)'. How then might these three propositions for space be applied to educational contexts? Firstly, if space is the product of multiple interrelations which include the 'tiny' and the 'global', this could help us understand the ways in which educational spaces are formed both through tiny interactions in a classroom between teachers and students, such as a student asking a question or a teacher providing a response or teachers receiving feedback from colleagues, as well as through global education policies which inform and govern national educational practices: space is produced through all of these interrelations. Secondly, if an inherent feature of space is plurality and multiplicity, where different trajectories co-exist, this can inform how we understand the educational context of a school or a college, where there are as many trajectories for learning and professional learning as there are teachers, children and young people present, and which require teachers to respond simultaneously in varied ways. Thirdly, if space is, 'a simultaneity of stories-so-far' (Massey, 2005, p. 9) which are always being re (made) through series of varied connections, in education this could help us (re)imagine the ways in which the stories which teachers tell about school subjects such as history, geography, science and mathematics may change over time and draw on different ways of thinking and knowing about the world.

Through engaging with conceptualisations of space (Massey, 2005), Rushton and Bird (2024) have previously argued that the lens of space can further elaborate ecological conceptualisations of teacher agency (Priestley et al., 2015), helping to better understand how teachers encounter barriers to, enablers of - and achieve - agency. Drawing on the idea of 'messy entanglement' articulated by Massey (2005), they argue that space can help us understand the non-linear and 'messy entanglement' of the cultural, material and structural conditions and resources, and the relational conditions and qualities of agency made explicit in the ecological approach (Rushton & Bird, 2024, p. 267). The idea of 'messy entanglement' speaks to reactions, relationships and assemblages that are complex, non-linear, unstructured and unexpected (Massey, 2005). Rushton and Bird (2024) contend that in addition to the widely understood emergent, dynamic and temporal facets, conceptualisations of teacher agency as a phenomenon can be extended through the lens of space – particularly the ways in which it enables analysis of the ways in which some teachers are able to identify spaces of agency, move between different spaces of agency and even create spaces of agency where none previously existed. Smit et al. (2025) have also examined the

spatial dimension of teacher educator's collective agency, exploring how teacher educators identified and moved between different spaces of collective agency, drawing on different cultural, structural and material resources. As part of their findings, Smit et al. (2025) articulated the ways in which agency was more strongly achieved by groups of teacher educators in a particular moment in time when all three aspects of the practical-evaluative dimension of agency were accessible. However, their analysis does not yet substantively extend to consider other dimensions of agency, the projective and iterational, and the interactions between the dimensions, in detail.

To date, research which has considered the spatial dimension of teacher and teacher educator agency has drawn on relatively small-scale research. The study based in England by Rushton and Bird (2024) drew on a series of interviews with three early career teachers over the course of three years (total of fifteen interviews). Similarly, the research focused on teacher educators in the Netherlands undertaken by Smit et al. (2025) involved focus groups involving 13 participants, with a range of levels of experience of secondary education and higher education from 3 to over 20 years. In both studies, the subject specialism of the early career teachers (Rushton & Bird, 2024) and teacher educators (Smit et al., 2025) was geography. Here, we report on findings from an online questionnaire which collected data from teachers working across England, in late 2022. The broad focus of the survey was to understand teachers' ideas, experiences and practices related to teaching climate change and sustainability topics (Greer et al., 2023). This current research focuses on a sub-set of 269 responses from secondary school teachers who each provided responses to three questions which invited them to share their practices and experiences. This research provides an important opportunity to explore the concept of spaces of agency across a larger data set, drawing on responses from secondary school teachers with varied subject specialisms (seventeen subjects are represented) and varied expertise and experience (ranging from one year to over twenty years of professional experience). Our over-arching research question was: *How, and in what ways, can secondary school teachers identify, move between and create spaces of agency as they design and implement the curriculum?*

4. Materials and methods

4.1. Data collection

Data were collected through an online questionnaire for teachers working in England during October – December 2022 as outlined previously by Greer et al. (2023). The survey was shared via institutional electronic distribution lists, social media channels and a range of professional networks. A limited incentive was provided (two randomly drawn £100 cash prizes), selected from those who completed the survey and provided their contact details. The survey included four sections focused on teaching climate change and sustainability with a total of 38 items. A range of question types were used, including multiple-choice, scales for indicating levels of agreement or disagreement with statements, frequency scales for practices and activities and, open-ended responses for sharing definitions, experiences and views. The first section invited teachers to share their perceptions of climate change and sustainability and the second section focused on teachers' views and practices. The third section explored teachers' experiences and views concerning professional development, and the last section collected participants' demographic information, their professional role and their setting.

As previously reported (Greer et al., 2023), the teacher survey data set comprised 870 responses where respondents were not required to complete every item. Of those who elected to complete the demographic information in Section 4 (approximately 60%), the majority reported that they were female (74%) and the vast majority were white (91%). As Rushton and Walshe (2025) have outlined, this is consistent with the demographics of the teaching workforce in England in 2022/23, where

76% of teachers were female and less than 10% of teachers identified as an ethnic minority (including Asian/Asian British and Black/Black British) (School Workforce Census, 2023). Teaching experience ranged from one year to over twenty years (Greer et al., 2023).

Data reported in this study were drawn from the responses of 269 participants working in secondary schools who all provided open-text responses to three consecutive items in Section 2 of the survey (see Table 1). As these responses were decoupled from the demographic data (apart from the main subject participants reported they taught) no further specific information about the demographics of the teachers we report on here is available.

4.2. Limitations

The data collected represents the views and experiences of those who responded to the questionnaire, which focused on the specific topics of climate change and sustainability, rather than being generalisable across communities of teachers working in secondary schools in England. Given that participation was voluntary with limited incentives, it is possible that those who chose to complete the questionnaire have a particular set of views about teaching or experiences in their professional lives. Furthermore, the recruitment period for the survey coincided with the annual United Nations climate change conference in Glasgow (COP26), which increased the prevalence and visibility of climate change in public discourse and may have influenced the number and profile of teachers who elected to participate and informed the nature and content of their responses.

4.3. Ethical considerations

An Institutional Ethics Committee (REC 1627) provided approval of the research prior to the commencement of data collection and voluntary, informed consent was provided by participants in writing. Data were managed consistent with the UK General Data Protection Regulation and were anonymised before analysis. During phases of research design, data collection and analysis, our approach was consistent with the British Educational Research Association guidelines for ethical research (BERA, 2024). For example, in the design and piloting of the survey, we were cognisant of our responsibilities as researchers to minimise any potential harm arising from participation in research, including the potential for the construction of the survey questions to prompt or elicit psychological distress associated with climate anxiety (BERA, 2024 paragraph 34). As part of the recruitment strategy, the research team drew on a range of professional networks at individual (for example former students and colleagues) and institutional (for example school networks) levels. Therefore, it was important as part of the recruitment process to explicitly state that both the decision to complete the questionnaire (or not) and any responses provided would have no bearing on current or future professional relationships (BERA, 2024 paragraph 19).

Table 1
Items and the extent of responses to items included in data analysis.

Items from Section 2 with open text response included in the analysis	Total number of words across all responses
Please share an example of how you include climate change and/or sustainability in the subject(s) you teach.	10400
What has helped you to incorporate climate change and/or sustainability into your teaching?	4600
What barriers or challenges have you encountered in relation to incorporating climate change and/or sustainability in your teaching?	5500
Total across responses to all three items	20500

4.4. Data analysis

Data analysis focused on the open-text responses provided by secondary school teachers to three consecutive questions in Section 2, as outlined above. These responses were explored through iterative thematic analysis undertaken by all three authors, which took place over a series of six phases (Braun & Clarke, 2021). Data familiarisation included the creation of the dataset to be analysed by collating and importing all responses to the three questions per participant into an Excel spreadsheet. This phase was led by author 3, who had no previous involvement in the research design, data collection and previous phases of analysis and whose expertise is derived from different contexts (Chile, Scotland) than that of the study (England), providing a different perspective for data analysis.

The responses provided by secondary school teachers (n = 269) to the three questions totalled approximately 20,500 words (Table 1).

In our data analysis, we only included participants (n = 269) who had responded to each of the three questions (from a total sample of 870). This ensured that we had sufficient material from each participant to analyse, an average of 76 words per contribution. During phases of data coding, generation and revision of themes, we identified the number of responses to each question organised by secondary teachers' self-identified main subject taught. This showed that geography (33.5%), science (23%) and English (11.5%) were the most represented alongside a range of other subjects (Table 2).

Phases of data coding, generation of initial themes and review of themes involved the review and categorisation of the data independently by all authors to begin to identify patterns of meaning. These phases of review were undertaken across the whole data set and, following discussion, we decided not to consider responses by subject grouping but rather look across the data set as a whole. We produced individual coding of the data which the authors shared, discussed and refined iteratively through regular meetings and ongoing individual analysis and refinement. This process of analysis involved a hybrid process of inductive and deductive coding and theme generation (Fereday & Muir-Cochrane, 2006). It brought together deductive analysis informed by ideas from published literature focused on school-based teacher agency (e.g. Priestley & Biesta, 2026; Priestley et al., 2015) and spaces of agency (Rushton & Bird, 2024; Smit et al., 2025). We also approached data analysis inductively, where the coding process involved considering the individual responses provided across the responses to the three questions. As part of this approach to coding, we understood our roles as researchers as organising and interpreting the data points such that we can develop patterns of information, or themes.

Table 2
Number of responses organised by secondary teachers' self-identified main subject taught.

Main subject reported by the secondary teachers who responded to all three items	Number of responses (% of total)
Art & Design	17 (6.3)
Business	5 (1.9)
Citizenship	3 (1.1)
Classics	1 (0.4)
Design and Technology	4 (1.5)
Drama	1 (0.4)
Economics	3 (1.1)
English	31 (11.5)
Geography	90 (33.5)
History	9 (3.3)
Information and Communications Technology (ICT)	2 (0.7)
Mathematics	11 (4.1)
Modern Foreign Languages (MFL)	13 (4.8)
Music	6 (2.2)
Psychology	3 (1.1)
Religious Education (RE)	8 (3.0)
Science	62 (23.0)
Total	269

As a further part of the deductive, analytical process, we drew on our professional lives and experiences as secondary school teachers and university-based teacher educators and education researchers, and how these shaped our engagement with the data. For example, as former geography teachers (authors one and two) and science teacher (author three) we inevitably drew on our experiences of school-based curriculum making when considering the data. Furthermore, as teacher educators working with teachers across the career span (e.g. initial teacher education and school leadership education) we drew insights from these professional experiences when considering teachers' responses.

Final phases of data analysis, including naming and defining themes and writing the narrative in relation to the literature, took place as part of a collaborative writing process, including engaging with the feedback provided by reviewers as part of the peer review process. For example, we discussed the number and organisation of the sub-themes across the two main themes, leading to the further refinement of the form and nature of themes and sub-themes (Braun & Clarke, 2006; Clarke et al., 2015), including through greater critical engagement with existing teacher agency literature.

5. Findings and discussion

We present two main themes, each with three sub-themes, which focus in depth on understanding the concept of spaces of teacher agency in the context of secondary school education in England (Table 3).

5.1. Teachers negotiate spaces of agency in the present through the messy entanglement of the cultural, material and structural aspects of the practical-evaluative dimension, together with the iterational dimension of agency

5.1.1. The National Curriculum and examination specifications as material resources and constraints to achieving agency

For many teachers who provided responses to these three questions, the National Curriculum and examination specifications were experienced as material resources for their teaching, and they were able to share varied examples of how this resource was an enabler for teaching climate change and sustainability topics. This was particularly the case for teachers of geography and science, where teachers of these subjects shared how the National Curriculum and examination specifications ensured that climate change and sustainability were integral.

For example, one geography teacher shared, 'climate change or sustainability are included in almost every lesson I teach', and another, 'climate change and sustainability are woven into all geography topics

Table 3
An overview of the themes and sub-themes.

Theme	Sub-theme
Teachers negotiate spaces of agency in the present through the messy entanglement of the cultural, material and structural aspects of the practical-evaluative dimension, together with the iterational dimension of agency.	The National Curriculum and examination specifications as material resources and constraints to achieving agency.
	Enabling and constraining the achievement of agency through the interaction of the material, cultural and structural aspects of the practical-evaluative dimension.
Teachers experience, move between and create spaces of agency across different dimensions and features.	Leveraging the iterational dimension of agency to achieve agency in the present.
	Understanding the interactions between different dimensions of agency through space.
	Understanding the features of spaces of agency.
	Moving between different spaces of agency and creating new spaces of agency requires achievement of agency across all three dimensions

naturally'. Geography teachers described how climate change is, 'an essential part of the modern geography curriculum', that examination specifications 'require the teaching of climate change' and that climate change and sustainability are 'essential parts of the curriculum across all key stages'. In a slightly different approach to geography teachers, who broadly saw that climate change and sustainability were integral to every topic, science teachers provided a range of examples of curriculum areas through which they taught about climate change and sustainability, for example 'energy resources', 'ecosystems' and 'human impacts on the environment'. Of the 90 geography teachers (33.5%) and 62 science teachers (23%) who provided responses to all three questions, only one science teacher provided a response which fundamentally rejected the need for and value of teaching climate change and sustainability topics, saying that they only taught these topics as, 'an example of proper science denial and collective insanity'.

Across the other 15 subject areas represented, whilst these were smaller in number of responses (43.5%, see Table 2), teachers from all these subjects (apart from classics) also provided examples of how the National Curriculum and/or examination specifications were material resources for teaching climate change and sustainability topics. For example, consistent with the approach of science teachers, teachers of art and design, business, citizenship, design technology, drama, economics, history, ICT, mathematics, MFL, music, psychology and RE all provided examples of topics or curriculum areas through which they taught climate change and/or sustainability. Teachers of English, the subject area with the third highest response rate (11.5%), shared how they took the existing National Curriculum requirements, for example, to teach persuasive writing which had no explicit link to climate change and sustainability, and used that as an opportunity to teach these topics by framing this through nature or climate based topics and/or providing examples from leading environmental figures. One English teacher shared: 'I most often use persuasive articles to teach the skills of persuasive writing, but use them on climate and nature-related topics ... I have used Greta Thunberg and Vanessa Nakate speaking to the UN ...'

Across the data, respondents also shared that the National Curriculum and examination specifications were experienced as material constraints to agency, with a lack of time, both in their professional lives and due to the 'over-crowded' or 'limited' curriculum and a lack of access to high quality teaching resources frequently cited as barriers to teaching climate change and sustainability. For example, teachers from across a range of subjects (including art & design, business, economics, English, music, MFL, RE) highlighted how they did not have the time to coordinate the teaching of climate change and sustainability across the curriculum with colleagues from other subject areas, or to develop subject specific teaching and resources focused on climate change and sustainability which also supported the development of their own professional knowledge. Time was also identified as an issue for teachers of geography and science, but this was less visible in geography, where climate change and sustainability were broadly understood as integral to the National Curriculum and examination specifications. In summary, and consistent with wider research, we found that the National Curriculum and examination specifications were experienced by teachers as both a material resource and a constraint to achieving agency (Dunlop et al., 2021, 2022; Rushton & Walshe, 2025).

5.1.2. Enabling and constraining the achievement of agency through the interaction of the material, cultural and structural aspects of the practical-evaluative dimension

Where the National Curriculum and examination specifications were experienced as enablers of agency, this was frequently in combination with access to both cultural and structural resources, – so that agency was achieved where teachers had access to all three aspects of the practical-evaluative dimension of teacher agency – material, structural and cultural. This pattern was particularly evident in responses from teachers who had achieved agency in contexts beyond teaching geography and science. For example, teachers of subjects including art and

design, business, classics, English, and RE described the cultural and structural resources they experienced in relation to teaching climate change and sustainability and we note that these cultural and structural resources were often described by teachers in combination. Teachers shared how important it was that there was a shared understanding of the value and importance of climate change and sustainability across the school community (cultural resource) and that this translated into school initiatives, decision-making and leadership roles focused on sustainability and climate change issues (structural resource). For example, a teacher of classics shared:

This year we have a sustainability initiative running all year in school. I think that because it is something everybody is involved in and has been made aware of, it is ... easier for me to open up ... conversations with my classes on the topic.

Teachers highlighted the importance of having school leadership which provided them with the 'freedom' and 'the autonomy my school gives me with curriculum' (geography teacher) to incorporate climate change and sustainability topics into their teaching and to 'create my own schemes of work'. An art and design teacher shared:

Not long-ago leadership would not have been interested in these issues. Recently there has been an explosion of interest from above which ensures I am supported in developing my teaching regarding these issues.

The cultural and structural aspects of the practical-evaluative dimension of agency were also found to be important constraints to teacher agency where there was limited shared understanding of the value of teaching climate change and sustainability, and where there were not structures or initiatives provided by those in leadership roles in schools and beyond. This was evident even in subjects such as geography and science, where the National Curriculum and examination specifications provided a strong material resource, even an imperative. For example, one geography teacher shared the cultural and structural constraints they experienced: 'Government expectations on remaining impartial. How can we be impartial when so much evidence points in the same direction?' A further geography teacher provided a detailed reflection on the structural (e.g. the role of government) and cultural (views of children and young people) constraints they experienced:

The government. Extinction rebellion is classed as an extremist organisation so I cannot discuss them in lessons, but all the local clean up programmes are run by Extinction Rebellion. It makes it incredibly difficult for young people to get involved ... There should be a stronger focus on solutions to climate change – my pupils feel like everything is terrible and the world is ending ... There is also racism in the curriculum about climate change. Most textbooks blame India and China for climate change but it doesn't even mention Western consumerism.

Another geography teacher noted cultural barriers they experienced as 'unsupportive colleagues. Limited support/awareness in school as a whole ...', whilst a different geography teacher highlighted cultural barriers as follows, 'the attitudes that children/adults bring from their background has a big impact on how receptive they are'. Science teachers also noted similar barriers including:

Other teachers do not take it seriously ... general attitudes to the climate crisis are 'the next generation will deal with it'. Staff take a back seat and think it is someone else's problem.

Across these examples, the importance of cultural and structural aspects as potential enablers of or barriers to agency being achieved are evident. This is consistent with previous research which has considered how to foster teacher agency in relation to school-based climate change and sustainability education in England (Rushton, Dunlop, & Atkinson, 2025) and the role of school leadership in providing enabling cultures and conditions (Higham et al., 2025; Rushton, Walshe, et al., 2025).

5.1.3. Leveraging the iterational dimension of agency to achieve agency in the present

Our analysis also noted the ways in which some teachers were able to leverage their previous professional and/or life histories, understood by Priestley et al. (2015) as the iterational dimension of teacher agency, and therefore drew on past experiences when achieving agency in the present. For example, teachers described the ways in which their 'own personal work' across their professional lives, including reading widely, taking part in local and national climate change and sustainability initiatives, belonging to networks and groups, were enablers of agency. This included past experiences of education, including undergraduate and postgraduate degrees in climate change and sustainability related topics; for example, one English teacher shared, 'my experiences of bio-farming and my own qualifications', whilst a mathematics teachers said, 'I took a year away from teaching (unpaid) to complete an MSc Sustainable Energy Solutions and spend time at the Centre for Alternative Technology' and a science teacher also shared that they obtained a relevant postgraduate degree in 'Learning for Sustainability'. Teachers also shared how they leveraged their own life histories, including their relationships with family members, including their children. For example, one English teacher shared, 'having my own children and knowing what is of concern to them', whilst a music teacher said:

I am married to a sustainability engineer, and my mother-in-law is a landscape architect, so this is something we discuss as a family all the time. This helps me keep it at the front of my mind. Including climate change/sustainability is potentially more challenging in music lessons but ... I am adding a 'music and the natural world' topic to our ... scheme of work ... this should give pupils an expressive and creative way to explore the topic.

Teachers also shared how their previous professional roles, related to sustainability and climate change (e.g. in farming, as a biologist, in the sustainability sector), supported their teaching of these topics. These are all examples of the ways in which teachers' life and professional histories, or the iterational dimension of teacher agency, are being leveraged or used to mediate the present, practical-evaluative dimension of agency. We also note that there is a rather fine line between these examples of the iterational dimension of agency and the cultural aspect of the practical-evaluative dimension of agency. These past experiences shape teachers' ideas of education, what they value in education and their professional beliefs. For example, the extent to which a teacher understands climate change and sustainability as 'urgent' and 'important' is also a cultural resource in terms of their ideas and values, and one science teacher described what helped them to teach climate change and sustainability as 'my background as a biologist and being a nature lover'.

5.2. Teachers experience, move between and create spaces of agency across different dimensions and features

5.2.1. Understanding the interactions between different dimensions of agency through space

Whilst we acknowledge the value of articulating different dimensions of agency to better understand how agency is experienced and achieved, consistent with the concept of space, we also find it necessary to engage with these dimensions as a 'messy entanglement' of relations, interactions and resources. In this case we have seen how the ideas, beliefs and values that teachers have (the cultural aspect of the practical-evaluative dimension) are interwoven with their life and professional histories (the iterational dimension) and *vice versa* – it is not always possible, or perhaps necessary, to disentangle these, if we understand them as spaces of agency.

Across these findings we see that for a group of secondary school teachers who are perhaps more likely to have engaged in teaching climate change and sustainability topics, there are varied experiences of achieving agency. Where teachers can access cultural and structural

resources, as well as material resources, they provide examples of how they achieve agency. We note that the cultural aspect – for example, what is understood as important and valued, and therefore what should be taught, is an enabler of agency. It can both reinforce material resources like the National Curriculum and examination specifications by shaping the foci of lessons and schemes of work, and lead to structural resources of trust and relationships: what leaders value in education is realised through school initiatives and decision-making which, in turn, further reinforces the material aspect of the practical-evaluative dimension of agency. Perhaps, the material resource of the National Curriculum and examination specifications are only fully experienced as enablers of agency when this is in combination with the cultural and structural aspects of the practical-evaluative dimension of agency. Here, space helps us understand how the material, cultural and structural aspects of the practical-evaluative dimension of teaching agency interact in the present. Space helps us understand how teachers achieve agency through inter-relations between both the tiny (e.g. interactions between teachers and colleagues in school-based conversations, teachers and students in lessons) and the global (for example, speeches made by activists which are shared around the world as calls to action). Understanding the National Curriculum as a potential space for agency provides a new perspective on understanding why some teachers of the same subject are able to achieve agency with the same curriculum, whilst others are not – this is not due to the individual capacity of a teacher, but rather the result of the presently available resources and relationships and their past professional and life experiences. Similarly, the concept of space with its aspect of multiplicity and plurality helps us understand the emergent quality of agency, where we have teachers teaching the same subject, framed through the same curriculum, in similar school systems, and yet have very different experiences. These multiple and distinct trajectories of the experience of education are all simultaneously possible. As with space, the National Curriculum is always under construction and is made as a space of agency through the interactions of people (teachers, children, parents, community members) with ideas (knowledge, values, subject stories).

Fundamentally, these findings underline that achieving agency in the present is a result of the 'messy entanglement' of material, cultural and structural resources of the present, or practical-evaluative dimension of agency. These resources can also be leveraged, mediated or transformed by the past, or iterational dimensions of agency. This is a very different conceptualisation of agency from that where agency is understood as the individual capacity of a person to set their own goals, shape their environment or even, 'learn' agency, conceptualisations which are evident in recent global education policy documents (e.g. OECD, 2019).

5.2.2. Understanding the features of spaces of agency

Through this current study, we sought to build on previous work which has explored spaces of agency in smaller-scale research with geography teachers (Rushton & Bird, 2024) and geography teacher educators (Smit et al., 2025). Nearly all teachers in the present study were able to identify opportunities in the existing National Curriculum and examination specifications to teach climate change and sustainability topics and, at the same time, many were also able to identify barriers and constraints. This capacity to discern curricular possibilities can be understood as an expression of the projective dimension of agency (Priestley et al., 2015), as teachers reinterpret established curricular structures in relation to desired future trajectories of teaching and learning (Varpanen et al., 2022). Here, teachers are able to identify spaces of agency, including the possibility to create schemes of work, the choice of resources and materials and the focus of discussions and dialogue in their classrooms. Teachers were also able to articulate the ways in which the structure and culture of their schools, including whole-school initiatives, leadership roles and the beliefs and values of those in positions of authority provide the conditions through which agency can be achieved. These experiences of teachers are consistent with previously published analyses from the wider dataset (e.g. Greer

et al., 2023) including studies which focused on teachers' curriculum making (Rushton, Walshe, & Johnston, 2025; Rushton & Walshe, 2025) and teacher and student experiences of agency (Walshe & Rushton, 2025).

Across some of the teachers' responses we noted three aspects or features of spaces of agency which teachers moved between and/or created for teaching climate change and sustainability, which were beyond the existing National Curriculum and examination specifications. Firstly, teachers described the ways in which partnerships with external organisations enabled them to realise aspirations for their practice. These included the co-creation of schemes of work, the adaption and use of resources, and engaging in professional learning. Teachers of geography, drama, and science all described collaborations with external organisations, such as subject associations, theatre companies and universities as enablers of their teaching of climate change and sustainability topics. For example, one geography teacher described, 'great resources by the BBC and subject associations like the Royal Geographical Society and Geographical Association ... and forums for dialogue around climate education' and a science teacher said, 'being part of national projects, citizen science and outdoor learning'. An art and design teacher also highlighted partnerships with organisations 'that advocate climate change awareness through talks and workshops, and support sustainable art practice'.

Secondly, networks and communities of practice were also an important feature of teachers' partnerships with external organisations which facilitate agency. One geography shared, 'peer teacher collectives like Decolonising Geography, which the ethical/political/colonial dimensions can be discussed collaboratively'. An English teacher explained how such communities of practice, formed with external groups, enabled their practice to develop:

Belonging to activist groups and networks has helped equip me with detailed knowledge of the issues and plenty of interesting reading material/resources ... the lack of whole-school initiatives and impetus ... I feel like I am developing these strands of teaching largely on my own and unconnected to other subjects.

Networks internal to school communities were also important features of spaces of agency; for example, a science teacher underlined the importance of, 'conversations with interested colleagues, support from senior colleagues to focus school efforts in this area', similarly two geography teachers highlighted the role of 'my colleagues who are extremely knowledgeable and inspiring' or 'my collaborative department'.

Thirdly, we noted how spaces of agency extended across the school site and/or extra-curricular initiatives. For example, a music teacher noted the importance of the school garden with an outdoor teaching shelter which enabled them to 'explore nature a lot and teach in the garden' and an English teacher shared, 'the school I work at has a wonderful forest school area and the grounds are varied and large and this always helps planning as it is easy to complete outdoor lessons'. Across these examples, teachers who all experience agency in relation to teaching climate change and sustainability topics can move between and create spaces of agency which leverage material, cultural and structural resources available to them across and beyond their immediate school contexts. This is consistent with previous research (e.g. Rushton & Bird, 2024; Rushton, Dunlop, & Atkinson, 2025); however, importantly this current study extends to include a much larger sample of teachers across 17 different subjects which arguably means that the concept of spaces of agency is helpful beyond the experiences of geography teachers, or in the case of Smit et al. (2025) geography teacher educators.

Moving between different spaces of agency and creating new spaces of agency requires achievement of agency across all three dimensions.

In our analysis, we noted that the projective dimension of agency, where teachers identify different possibilities in the past, present and future, is visible in the responses of teachers who move between and create spaces of agency. For example, teachers have a sense of their

changing practice in the short and longer term when they reflect on past and current contexts. An English teacher reflected on the different enablers and constraints of their current and previous professional contexts:

I teach in SEND [Special Educational Needs and Disabilities] so it is easier to build these topics in, however I used to teach in mainstream secondary and I know it would have been harder to build in these topics with the National Curriculum requirements and exam specifications.

An art and design teacher also reflected on the ways in which they could achieve agency in the context of competing priorities, recognising that this could be achieved in both the longer-term and short-term, in the present and the future:

People cannot see beyond the year ahead, let alone the future young people face. I have found my voice and use it wisely to influence the SLT [Senior Leadership Team] ... I have found the thing that turns heads is the bottom line (saving money) or the statistics for Young People's eco-anxiety.

We also observed that teachers who move between and create spaces of agency tend to articulate the iterational dimension of agency, sharing how their professional and/or life histories inform their current and future practices in relation to teaching climate change and sustainability topics. For example, a teacher of MFL shared how despite the curriculum no longer including climate change, their previous career in environmental policy informed their practice to continue to explicitly link the teaching of climate change and culture:

Having a previous career in central government which included environmental policy ... I teach languages. The ... curriculum used to included climate change but now does not. However, I used the example of Easter Island as a tool to talk about how climate change and culture are linked.

Similarly, a mathematics teachers outlined:

My background is in Beetle Conservation and biogeography ... I created a mapping without technology project for year 10 (involving construction, measuring and trigonometry) ... I find it harder to convince my colleagues to integrate this into their teaching, but I am working on it.

Reflecting on these findings, we argue that teachers who do not achieve agency - or whose agency is substantially constrained in the present - are still able to identify spaces of agency. Drawing on past experiences and professional knowledge, teachers reconfigure existing curricular and institutional structures in relation to their values, hopes and concerns for future teaching (Varpanen et al., 2022). Whilst such projections are not always realised into achieved agency, they reveal an important capacity to envisage alternative educational trajectories, underlining a future orientation, through which spaces of agency are continuously being made and remade, even when immediate conditions constrain its realisation. For example, a teacher who is currently working in a context without a supportive headteacher, or without access to high-quality resources, or where the examination specification has marginal focus on climate change and sustainability topics, can still articulate spaces in the past or the future where they could achieve agency. Furthermore, teachers who are able to move between and create spaces of agency are only able to do so when they can draw on all three dimensions of the practical-evaluative, the iterative and the projective. Varpanen et al. (2022) suggests that futures thinking (probable, possible and preferred futures) can help elaborate the iterative and projective dimensions of the ecological agency model. Probable futures can be mapped onto the iterative dimension whilst the possible and preferable form part of the projective dimension. Supporting and educating teachers to question practices, policy including the everyday curriculum making, can create spaces for agency where they can imagine differently, and to go beyond the probable towards possible and preferred. These ideas of the interactions of the dimensions of agency is consistent with Emirbayer and Mische (1998, p. 972), who described the three

dimensions as a 'chordal triad' of human agency, 'within which all three dimensions resonate as separate but not always harmonious tones'. We argue that the concept of space helps us to understand how these dimensions interact, perhaps less like a chordal triad, even with the potential nuances of dissonance and tonality, but rather a 'messy entanglement' of reactions, relations and resources which can be complex, non-linear and disorganised. We found the cultural and structural aspects of the practical-evaluative dimension of agency were strongly visible, and evident interactions between the practical-evaluative, iterative and projective dimensions of agency. Space allows us to understand the dimensions which make up agency as a sphere of possibility that is fluid, open and relational and which enables the emergence and achievement of teacher agency. Although we have analysed the presence and features of spaces of agency through the reported practices, choices and decision-making of teachers, we are clear that these actions and judgements are not agency in of themselves. Similarly, whilst across the examples of practices provided by different teachers they have shared a range of sites, settings or places (for example outdoor learning spaces on school site) and networks and groups (for example subject associations), these sites or networks are themselves not 'spaces of agency'; rather, they are examples of dimensions or aspects of agency (such as the cultural, structural material resources found in the practical-evaluative dimension) which are necessary conditions and enablers of the achievement of agency. Spaces of agency are the constellations or spheres of possibilities and becomings which emerge and are achieved (or not achieved), depending on the past, present and future conditions and resources available to teachers. This much more expansive view of teaching than a set of actions and inactions or lists of places and sites in which teaching occurs.

6. Implications and conclusions

The starting point for this research was to consider the responses of 269 secondary school teachers, working in England, who chose to contribute to a survey about teaching climate change and sustainability, and completed three open-text questions about their practices and experiences. Although teachers of geography and science make up just over half of the responses analysed, the remaining responses are provided by teachers of 15 other subjects, where climate change and sustainability topics are far less explicit or visible in the secondary National Curriculum in England, or in the exam specifications which articulate the knowledge and skills young people learn. Therefore, we contend that this sample of teachers are perhaps more likely to represent the experiences and practices of teachers who are achieving agency in relation to a specific area of practice and so provide a rich context through which to understand spaces of agency. Previously, [Rushton and Bird \(2024\)](#) have suggested that the concept of space, in the context of the ecological approach to teacher agency, can help us better understand how teachers encounter barriers to and enablers of agency and how agency can be achieved through the 'messy entanglement' ([Massey, 2005](#)) of the different dimensions of agency. In response to the research question 'How, and in what ways, can secondary school teachers identify, move between and create spaces of agency as they design and implement the curriculum?', this study has explored how the different dimensions of agency - the iterative, the practical-evaluative, the projective - and the aspects within these dimensions (e.g. the material, cultural and structural which make up the practical-evaluative) interact and relate to one another. It pays particular attention to the ways in which these interactions have spatial dimensions making spaces of agency are visible through the analysis of teachers' experiences and practices.

Firstly, we have explored how teachers have negotiated spaces of agency in the present through the messy entanglement of the material, cultural and structural aspects of the practical-evaluative dimension, together with the iterative dimension of agency. Whilst we have suggested some possible relationships, effects or even structures visible in the entanglements of these dimensions, for example, the ways in

which material aspects of the practical-evaluative can be constrained and/or enabled by accessing structural and cultural aspects, these interactions remain complex, non-linear and multiple. Teachers themselves have a professional responsibility to continue to develop their engagement with educational theories such as teacher agency and spaces of agency so that they have the knowledge and understanding to understand the available conditions and resources and to use their own professional judgement for themselves and others.

Secondly, we have considered the different features or aspects of spaces of agency, exploring how teachers can (or cannot) identify, move between and create spaces of agency. Across the three features of spaces of agency which we have identified, partnerships, networks, communities of practice and colleagues were central: agency, and spaces of agency, are inherently social, contextualised and collaborative - it is not possible to achieve agency in isolation. As [Massey \(2005, p. 56\)](#) writes, 'we cannot 'become', in other words, without others. And it is a space that provides the necessary condition for that possibility'. This, therefore, requires us to pay further attention to the roles of colleagues and communities of practice which exist within and beyond schools and how these are fundamental to achieving agency. For example, what school structures are in place which enable teachers within and across subjects to collaborate with each other and to develop partnerships with colleagues in other schools and organisations? Consistent with ideas of spaces of agency, answers to this question and previous questions cannot be authentically provided through a list of teachers' practices and actions or contexts and places which are available to teachers, although these are important starting points. Understanding the emergence and achievement of agency requires a holistic view of the conditions, resources, structures and qualities which exist over time.

At a time of educational review, reform and improvement across the different educational and school systems of the UK, we argue that policy makers should continue to consider the different possibilities and opportunities for teachers to move between and create spaces of agency. For example, in Scotland at the current time, the government are considering a range of possible reforms, including piloting a four-day 'flexible' working week for teachers, which could potentially provide more opportunities for teacher professional learning and collaboration ([See & Wheatley, 2025](#)). Such opportunities for professional learning which enable teachers to problematise their context and practice are vital for the emergence and achievement of agency ([Molla & Nolan, 2020](#)). Whilst the practicalities have yet to be determined, structuring a teachers' working week in ways which allows for greater collaboration, which is valued by leaders and which interrupts teachers' existing practices, represents an important opportunity for policy makers to enhance the conditions for agency for teachers in Scotland.

Furthermore, whilst in this research the responses teachers gave focused on climate change and sustainability topics, we argue that these findings have relevance to understanding teacher agency and spaces of agency across different areas of practice, particularly those which attend to cross-curricular themes or topics. In England, the recent Curriculum and Assessment Review (DfE, 2025, p.10) highlighted the dual purpose of the National Curriculum to provide both the 'best investment' of 'subject-specific knowledge' in 'core subjects', but also to better equip children and young people with 'additional knowledge and skills' for a 'world of rapid technological, environmental and social change'. Such 'additional knowledge and skills' encompass cross-cutting themes or areas including 'Climate education and sustainability' ([DfE, 2025](#)), which cannot be taught in one school subject area. Therefore, if teachers in England are to realise the revised National Curriculum, they will need to experience spaces of agency that enable collaboration with their colleagues as part of whole-school initiatives and partnerships that extend beyond the school.

We contend that our findings have particular relevance and value for school leaders, who are tasked with creating productive and learning environments for teachers' professional growth and development. This research has underlined the important role that the cultural and

structural aspects of the practical-evaluative dimension have in enabling or constraining teachers' experiences of the present, including the National Curriculum, as material resources for agency. Consistent with previous research (e.g. Dağdeviren Ertaş et al., 2025; Harris & Jones, 2019) teachers in this study frequently underlined the importance of leaders in providing the conditions through which they could achieve agency, including the ideas, beliefs and values that leaders held about the importance of education, in this case climate change and sustainability education.

Finally, the study has underlined the ways in which all three dimensions of agency are necessary for teachers to be able to move between and create spaces of agency and articulated some features of spaces of agency. Understanding these ideas may better equip teachers and school leaders to consider the ways in which teachers' life histories and professional histories can enrich the current and future development of the school.

Ethical approval

Ethical approval has been granted by the Research Ethics Committee, UCL Institute of Education, prior to each stage of this research.

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CRedit authorship contribution statement

Elizabeth A.C. Rushton: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. **Nicola Walshe:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Writing – review & editing. **Denise Quiroz-Martinez:** Formal analysis, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors have no competing interest to declare.

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Data availability

The data that has been used is confidential.

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