The role of teacher agency in realising EdTech's potential to reduce teacher workload and improve teacher retention

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This article considers how EdTech platform design and EdTech policy implementation in schools combine to contribute to rather than alleviate teachers' workload, constraining professional agency in ways which may contribute to teachers' dissatisfaction and the current teacher retention crisis.

Workload has been cited as a leading reason for teachers leaving the profession. Successive OECD Teaching and International Learning Surveys (TALIS) identify increases in teacher workload. English government taskforce recommendations and EdTech policy papers have since promoted education technology (EdTech) as means to alleviate teacher workload, prevent burnout and improve staff retention. Despite these moves to integrate EdTech to teaching and learning, many teachers do not experience the EdTech-reduced workload envisioned in policy discourse and political rhetoric.

We present narrative interview and survey data drawn from a mixed methods place-based study of teachers' experiences of EdTech, in primary and secondary schools in eastern England. Our analyses problematise conventional understandings of workload and its relationship with EdTech, affording insights through positioning analysis of teachers' 'small stories' of EdTech practice and resourcing. We explore the nature and extent of professional agency with EdTech relative to professional efficacy, work efficiency and job satisfaction.

Our findings have implications for national and local frameworks guiding teachers' EdTech use. They can inform initial and continuing professional education, contributing differentiated understandings of EdTech's relationships with workload. Our recommendations may support school leaders and teacher educators in facilitating teacher agency with EdTech, so that teachers' choices of EdTech use address workload challenges for job satisfaction and retention.

Introduction

Teachers' professional use of EdTech is defined as "the practice of using technology to support teaching and the effective day-to-day management of education institutions" and includes hardware, software, digital resources and services (Department for Education, 2019a). Politicians, education policymakers and leaders in education invoke EdTech as means to improve the quality of education (e.g. DfE, 2019a; 2019b). The imperative they articulate to introduce, embed and sustain use of EdTech in teaching is often accompanied by the assertion that EdTech and other technologies can mitigate challenges of teacher workload and indirectly counter trends of teacher attrition. Globally, patterns of teacher job satisfaction vary considerably, reflecting teachers' reports of relatively polarised experiences according to whether teachers work in the majority of countries where job satisfaction is good, or in a cluster of countries where more than half of all teachers report dissatisfaction with their work (OECD, 2020). In some of these countries dissatisfaction manifests in teachers leaving the profession at increasing rates, and in the profession being perceived as an unattractive career option thereby challenging governments in the recruitment of teachers. Teachers' satisfaction with their employment was generally high in the period 2013-18 with more than 80% feeling satisfied with their working conditions, and 60% satisfied with the profession in general, though this global data masks variation between countries. Teachers in England join counterparts in Lithuania, Malta, Saudi Arabia, South Africa and Iceland where more than half of respondents report doubt over whether they chose the right profession. In England there has been a significant increase in teachers aligning with the survey's negative characterisation of their feelings about teaching: 'I regret that I decided to become a teacher'. In the same period the UK EdTech sector has expanded rapidly, attracting 41% of European investment in EdTech and growing in venture capital investment by 21% between 2019 and 2020 (UK Government, 2025) further accelerating beyond the Covid-19 pandemic (TechNation, 2021). Collectively, UK schools are estimated to spend £900 million a year on EdTech. Commercial rhetoric about EdTech describes its 'exponential growth', 'revolutionizing' how students learn and transforming teaching associated with 'traditional educational practices' (EdTech World Forum, 2024). The majority of UK teachers report using interactive whiteboards (86%), laptops or notebooks (86%) and desktop PCs (74%) in their lessons, though frequency of use varies and sizeable proportions do not use them or work in schools which do not have them (between 5 and 11%) (DfE, 2023b:46).

Juxtaposing the trends of challenging teacher recruitment and retention in England with those of UK EdTech growth leads us to wonder how teachers experience EdTech in their professional lives, and why the availability of EdTech in schools and its increasing sophistication does not appear to contribute to arresting professional attrition in England. We examine survey data and narrative accounts about teachers' experiences of EdTech, arising from our research investigating teacher agency with EdTech. Though our research did not set out to investigate matters of teacher job satisfaction and workload directly, we have found that participants in our research have frequently remarked on the extent to which EdTech relates to their workload and satisfaction in their work. We also present our data in response to correlations made in international and national surveys between job satisfaction and phenomena such as teachers' autonomy, self-efficacy and self-reported feelings of control over their professional lives. These phenomena are distinct from agency, and though they may overlap some research literature treats them synonymously. Through the lens of teacher agency, our data and discussion offer insight to the intersection of EdTech access and use by teachers with their job satisfaction, also connecting international trends described in recent research literature with the hyperlocalised quotidian experience of teachers.

Literature review

Teacher agency

The concept of teacher agency (Priestley et al., 2013, 2015; Lasky, 2005; Leander & Osbourne, 2008; Ketelaar et al., 2012) refines the concept of agency (Emirbayer & Mische, 1998). Theorists of both acknowledge difficulties of definition, in part because agency is often understood as a dynamic process rather than a personal quality or capacity to act. Agency has been described as 'a temporally embedded practice of social engagement' where social actors evaluate and reconstruct the conditions of their own lives (ibid: 963). Conceptualisations of teacher agency introduce 'ecological' conditions (Biesta & Tedder, 2006), where agency is something achieved – more accurately, continually being achieved and in flux – by teachers in relation to their context of work, available resources, and structural factors (e.g. policy frameworks, curricula, organisation of schools in Trusts or relative to local authorities). It entails drawing on experience, personal values and repertoires of professional and pedagogic action (iterational dimension); goals and aspirations, whether immediate, such as the aim of a lesson, or longer term, as in strategic leadership, career development, or policymaking (projective dimension); and acting in the moment of a professional task or interaction, exercising judgement, making choices and problem-solving (practical-evaluative dimension). Research literature links general professional agency with professional learning and identity (Eteläpelto et al., 2014), while education commentaries link teacher agency with teachers' role in enacting education reform and with teacher retention (Olsen & McIntosh, 2024), though there appears to be a research gap concerning possible connections between teacher agency, job satisfaction and retention. Instead, research literature considering teacher retention focuses on teacher autonomy (NFER, 2020; Nguyen et al., 2024), which is similar to teacher agency in relating to the capacity of teachers to make decisions, but different in emphasising aptitudes of the individual rather than attending to the interaction of teachers with the conditions and resources of their work (Biesta & Tedder, 2007; Biesta et al., 2015; Priestley et al., 2015). Conceptually, agency is thus distinct from autonomy, self-efficacy and control, though we believe that in experience distinguishing between them is less easy.

Professional contexts for using EdTech

The literature on teacher attrition and retention indicates that conditions of work matter, and furthermore, that technology is changing the working environment for teachers. OECD (2024) reports intensifying teacher shortages rising sharply since 2015, highlighting the need to support teachers in 'evolving contexts' linked to 'rapid technological advances' including artificial intelligence (AI). OECD's 2022 Ministerial Declaration on Building Equitable Societies Through Education called for bold reimagining of education systems 'to enhance, adapt, or even disrupt current practices to strengthen teaching quality'. Its roadmap to supporting teacher quality includes managing teacher workload with technology' and 'collaborations between educators, researchers and EdTech to co-design digital tools that meet teachers' needs' (OECD, 2024). Technologically-enabled evaluation practices are recommended to enhance professional development, using 'AI-enabled data analytics, reflective tools, or platforms' which OECD asserts 'can further streamline' evaluation and decision-making in education.

In the UK, policymakers report the adoption of EdTech 'to improve pupil attainment, contribute to reduced workload, save time on school management, and complete teaching-related tasks', though barriers to its uptake and efficacy are acknowledged to include lack of affordability, limited school expertise in procurement processes and limited information for choosing from

the full range of products available (DfE, 2022:60). Differences in purchasing power between school Trusts and consortia cause some inequalities of access to technology for teachers and students, amplifying the digital divide for students according to their home circumstances. The same report described the reticence of some school leaders to invest in Edtech for fear of alienating 'sections of the teacher workforce who are not pro-tech' (p. 61). On training with EdTech, 26% of teachers surveyed reported some CPD in the last 12 months on using technology while teaching (DfE, 2023b:133), though there is difference between phases (Primary 22%; Secondary 40%). A similar number of teachers (24%) would welcome CPD on technology use in the next 12 months (136). In conclusion, the report recognises that how teachers use and integrate technology to practice are essential to realising its potential, without which mere access to EdTech is of little value.

Teacher agency, EdTech and teacher workforce issues

The focus on autonomy over agency in the research literature on teacher workforce issues extends to the literature exploring EdTech's potential to reduce teacher workload, thereby improving working conditions and indirectly supporting teacher retention. We find this puzzling, especially when commentators observe that it remains unclear 'why some teachers use technology frequently and benefit from it while others do not' (EPI, 2024). Though we have found only limited research literature stating or exploring an overt and direct connection between teacher agency and EdTech (see Leijen, Pedaste and Lepp, 2020 for related critique), the two topics have sometimes been loosely connected in research findings. A study of teachers' professional development in Latin American countries found that teachers describing involvement in collaborative peer-to-peer activities in and across schools also reported greater likelihood of using teaching practices incorporating ICT (OECD, 2020: see Box 4.1. Enabling factors for teachers' ICT use and self-efficacy in ICT use; see also OECD, 2023:406).The Digital Education Outlook report (OECD, 2023) provides a rare instance of discussion linking teacher agency with EdTech, noting there is 'little evidence to date about the effectiveness of mandating professional development on digital competences for improving teacher practice and agency' (p. 195). Nevertheless, research in the field of computing sciences does consider how teachers may interact with technology to exercise autonomy, and their specific requirements (Islam & Lum, 2024), while some education researchers articulate concerns that both the pedagogical autonomy of schools and of individual teachers may be threatened by digital infrastructure and digital platforms integrated to educational practices (Kerssens & Dijck, 2022). In the UK, 'many teachers do not feel engaged in strategic decisions about education technology in their schools', with just over half (51%) reporting that they can 'make their own decisions' about how they use technology in their classrooms (DfE, 2023b:13).

Predictably, tech sector voices present EdTech as a solution, asserting that 'learning management systems (LMS), artificial intelligence tools, digital grading platforms, and virtual classrooms streamline administrative tasks, thereby reducing the time teachers spend on administrative activities' but also recognise that tech can blur 'lines between work and personal life' with impacts on wellbeing (Digit, 2024). UK teachers and school leaders differ on how EdTech impacts workload, with 44% of leaders reporting reductions, compared with 30% of teachers. Large proportions of each group nevertheless report that technology has made no difference to their workload (32% and 45% respectively), or has actually increased it (18%/23%) (DfE, 2023b: 15).

Ecologies of practice shaping how teachers use EdTech

The ecologies of practice in which teachers work with EdTech are shaped in part by government policy and mechanisms for implementation. These vary across the four nations of the UK, though in each professional standards frameworks, related initial teacher education requirements, curricula and school inspection regimes all have bearing on teachers' daily experiences with technology. These systemic differences encourage our speculation that teachers' experiences of using technology may vary significantly between the four nations because they are circumscribed by frameworks which present the relationship of technology to teachers' professional competences very differently, with stark variance of detail and emphasis. This may also have some relationship with the extent to which teachers may be satisfied in their work as it pertains to technology, for example in terms of clarity of purpose or measures of success for using technology in their work. Scottish professional standards locate digital literacy within curriculum design expertise and require knowledge of how digital technologies support learning within pedagogical understanding, presenting both as central to effective teaching to meet learners' needs (GTC Scotland, 2021). For teachers in Wales, holistic 'digital competence' is required within 'overarching values and dispositions', and effective school leaders are expected to 'enable digital competence and the adoption of new technologies' (Welsh Government, 2019). In contrast, the Teachers' Standards adopted in England and Northern Ireland do not articulate technology requirements (Department for Education, 2021; GTCNI, 2018). Curricula across the four nations are more consistent on technology, all incorporating technology though in differing frames. In Wales, 'digital competence' is a mandatory cross-curricular skill distinguished from literacy and numeracy (Welsh Government, 2019); in Northern Ireland and England, digital literacy is embedded in the Computing curriculum (Department for Education, 2022); and in Scotland 'Technologies' is one of eight curriculum areas (Education Scotland, 2023). Inspection regimes direct strikingly different levels of attention to technology. England and Northern Ireland's Ofsted (2024) inspects how schools enable pupils 'to recognise the dangers of inappropriate use of mobile technology and social media' when evaluating provision for students' personal growth but otherwise states that it has no formal interest in digital platforms adopted by schools. Estyn inspects Welsh school provision to develop students' digital skills (Estyn, 2024), and Scotland's comprehensive framework advises self-evaluation on digital literacy provision and digital innovation, use of technology to manage and interrogate data, for professional learning, professional communication, and as a resource for creating a 'motivating environment for effective learning' (Education Scotland, 2025 28).

Research design

The research project: 'Enhancing Teacher Agency with Technology' (ETAT)

Since autumn 2023 our funded research has focussed on understanding teacher agency with EdTech in context, relative to place, in the eastern English county of Norfolk. The research involved teachers in Primary and Secondary schools across Norfolk, participating in working groups and paired or individual interviews. We sought to understand distinctive features of teacher agency with EdTech in Norfolk by contextualising the regional experience with national data obtained through an online survey open across the UK. We similarly invited teachers in each of the four nations to describe their experiences of using EdTech, and to reflect on related professional agency.

Our survey comprised demographic items, questions about how frequently respondents used types of EdTech, and four subscales: professional practices, attitudes toward technology, access to resources, and knowledge and skills (Table 1). These sections account not only for teachers'

self-reported agency with EdTech but also the temporal aspect of teacher agency (Priestley et al., 2013, 2015; Emirbayer & Mische, 1998): demographic items captured information about respondents' personal and professional backgrounds (the iterative dimension, in Emirbayer & Mische's terms,) and items from the remaining sections situated their practices and experiences with EdTech within their current teaching context (the practical-evaluative dimension). Additionally, interviews and focus groups captured information about participants' current experiences as well as their future plans (the projective dimension). When viewed as a whole, our data collection methods were designed to align with the ecological approach to teacher agency (Biesta et al., 2015; Priestley et al., 2013, 2015).

Table 1: Overview of national survey of teacher agency with EdTech

Section	*n*=	Sample Item
Demographics	10	My current and main specialism is
Frequency of EdTech use	7	Text-based tools (e.g., forums, wikis, blogs; document creation; synchronous text discussion)
Professional practices	6	I use technology for my work, most often alongside traditional resources.
Attitudes toward technology	7	My teaching has been positively affected by using technology.
Access to resources	7	My school provides access to the training I need to use technology effectively for work.
Knowledge and skills	6	I have sufficient knowledge of the education technologies I use to support my students' learning.

Our qualitative place-based study in Norfolk investigated these themes: assessment, online safety, digital citizenship, information literacy and teacher education. For each theme, activities have developed with small groups of teachers usually representing Primary and Secondary phases, and different schools from state and independent sectors. We described these as working groups, in which research built around three or four phases of conversation with teachers in combinations of paired or group discussion and interviews with individuals (see Table 2).

Table 2: Phases of working group activity

Working group	Activity
Phase 1	Introducing the focal theme – exploratory focus group discussion. Sometimes prompted by a text, artefact, tour or visit.
Phase 2	Developing discussion of topics raised by participants in phase 1.
Phase 3	Further exploration of topics, in focus group format or by individual interview.
Phase 4	Shared review of the discussion topics articulated by participants, possibly with focus on three main topics.

Our qualitative data is audio-recorded verbal data, transcribed then reduced and analysed using narrative methods. The approach yields narrative data in which teachers tell us about the purposes and contexts of their EdTech use. We refrained from asking them directly about agency, instead exploring their accounts of EdTech as expressions of degrees of agency relative to their workplace ecologies.

Data presented in this article: Participant profiles

In this paper our focus is primarily on five teacher accounts in the unit of 'small stories' (Bamberg, 2004; 2006; Bamberg & Georgakopoulou, 2008) drawn from our current dataset of 115 small stories, which have been reduced from transcripts representing 30 separate research conversations with participants in the formats we used. We present stories which we consider representative of teacher experiences of EdTech articulated elsewhere in the dataset, and here orient to the selected stories to demonstrate how such data can provide insights that help us better understand issues of teacher job satisfaction and retention related to everyday professional experiences of technology in schools. We analyse these data using the unit of 'small stories', through a lens informed by prior conceptualisations of teacher agency, categorisations of EdTech, and Positioning Theory. While we have collected narrative data from more than three dozen participants in Norfolk, the small story data presented in this article were articulated by three teachers: Mr Underwood, Miss Davies, and Mr Andrews. Their demographic data is presented in Table 3.

We make limited reference to results from our survey where they help to contextualise individual accounts expressed in small stories, though it is not our intention to provide a thorough account of the survey design or its results.

Table 3: Selected participant demographic data

Name	Experience	Level	Specialism	School Location	School Type
Mr Underwood	3 years or less	Secondary	Science	Suburban	Academy Trust school
Miss Davies	3-5 years	Secondary	Science	Suburban	Academy Trust school
Mr Andrews	5-10 years	Primary	Computing	Rural	Faith school in a Trust

Analysing the nature and extent of teacher agency with EdTech

Our research project sought to develop a conceptualisation of teacher agency with EdTech through inductive research. From our qualitative dataset of small stories we have developed a simple heuristic for expressing degrees of teacher agency with EdTech, and refined an application of Positioning Theory that accounts for teacher positions relative to their uses of EdTech in context. Our project's quantitative survey data were summarised using descriptive

statistics calculated in Excel. Frequency distribution, a measure of variability (standard deviation) and a measure of central tendency (mean) are reported in the Results section, where we elaborate both approaches.

a) The unit of analysis: Small stories of teacher agency with EdTech

Small stories are a category of verbal narrative in research examining everyday conversations. They capture 'under-represented narrative activities, such as tellings of ongoing events, future or hypothetical events, shared (known) events, but also allusions to (previous) tellings, deferrals of tellings, and refusals to tell' (Bamberg & Georgakopolou, 2008:379). Small story research focusses on autobiographical and subjective representations of experience rather than the ideological master narratives which are typically the focus of narrative analysis. Rattansi and Phoenix (2005) propose three areas of analytic focus: how speakers as narrators establish and position characters in their narratives; the motives and narrative strategies of the narrator; and the identity of the speaker in terms of their self-positioning relative to social expectations of their identity. Bamberg argues that analysing small stories helps us to understand the master narratives within which speakers position 'a sense of self' (2004:367), and demonstrate 'agentive positioning of self within discourse' (Watson, 2007:374). Our small story data represent teacher accounts of using technology in their professional lives, positioned relative to dominant discourses of EdTech use by schools and teachers found in political rhetoric, policymaking and technology sector promotional material of EdTech products and services. As narratives, these anecdotes of practice provide information about contexts of use and therefore provide a unit of analysis suited to understanding teacher agency from an ecological perspective – though of course the contextual detail of these accounts is partial and derives from each speaker's view of what is salient to what they want to convey. Further, these are first person narratives, presenting subjective accounts of how technology – or arrangements for using technology – have affected or influenced their speakers. It seems appropriate to us that any study of agency does not attempt an objective or absolute representation of experience, especially when addressing the matters of teacher recruitment, retention and job satisfaction. The methods adopted provide some insight to the lived experiences of teachers, and some appreciation of the details and unique intersection of conditions that might shape an individual's experience of work, which might also encourage or diminish their motivation to continue in the profession.

b) An original heuristic for gauging the extent of teacher agency with EdTech

A key feature of our ecological understanding of teacher agency (Priestley et al., 2013; 2015) is that it is not an inherent quality; rather, it is a phenomenon enabled or inhibited to differing degrees according to the contexts in which teachers work. Agency is not something that can be achieved in any absolute or permanent sense, it is always in flux in relation to circumstances and context. We therefore developed a simple and original heuristic to aid how we gauge agency expressed by teachers in the accounts of practice they have shared with us (see Table 4). We devised four codes describing agency on a spectrum, from agency realised (AR), through agency enabled (AE) and agency constrained (AC), to agency denied (AD). The factors influencing whether agency is realised, enabled, constrained or denied should be understood as comprising any of the following: any aspect of the speakers' working environment or work ecosystem (material or virtual, as in the case of EdTech), their colleagues and managers, frameworks such as policy and curricula, and even themselves – where their actions, beliefs or habits may serve to realise or deny agency to varying degrees. This perspective is consistent

with an understanding of agency where even agentic actors may act or choose to act in ways which may prevent realisation of agency (Emirbayer and Mische, 1998). We understand context on several levels: the immediate workplaces of teachers (their classrooms, schools or homes), the institutional spaces and structures in which they work (at the levels of school, Trust or local authority), and of contextualising frameworks that shape working conditions and practices (policy, curriculum, professional competences etc).

Table 4: A heuristic for describing the extent of agency described in small stories

Extent of agency		Category	The participant describes…
greater	agency realised	AR	exercise of agency, realising their choice, judgement, creativity or intent
	agency enabled	AE	some exercise of agency, also referring to factors enabling or supporting it
lesser	agency constrained	AC	some exercise of agency, also referring to factors constraining it
	agency denied	AD	opportunity, intent or motivation to exercise agency which has been denied or thwarted

The heuristic has helped us to categorise small stories in our dataset according to the extent of agency articulated by any teacher in their narrative, though we recognise the limitations of the codes which can only be indicative. First, we have found that teachers may describe experiences where two or more categories are evident in the same narrative (for instance where *agency denied*, perhaps by poor EdTech functionality, prompts agency realised, when a teacher finds a 'workaround' or buys different equipment), and second, these categories do not contribute to understanding the interplay of ecological factors, and particularly the place of EdTech, in shaping the agency expressed in the narrative.

c) Introducing EdTech categorisation to conceptualisation of teacher agency

To describe EdTech, we began with categories defined by Gao et al. (2019), who assert that the tendency in research to treat EdTech as homogenous is inadequate to understanding the unique features and functions of diverse technologies used by teachers. The distinctions they make also suggest that the intent of users of technology has a bearing on how we might categorise technologies, with some relevance to agency and understanding contexts of use as articulated in the teacher accounts comprising our dataset. They propose two broad groups of education technologies; pedagogical and operational. Pedagogical technologies are incorporated into teaching and learning processes (e.g. through PowerPoint to support instruction), while operational technologies are those which are used by the teacher to only support administrative or operative tasks, such as management information systems (MIS) holding student assessment

data, or email to communicate with colleagues. Pedagogical technologies are further divided into program-based and tool-based categories. Program based tools have been designed for education and may replace the teacher in some teaching and learning activities (e.g. algorithm-enabled instruction, personalised instruction platforms), whereas tool-based technologies are not designed specifically for educational purposes (e.g. tablets, Microsoft Office, the internet) and require teachers to design their use in the classroom. In practice, overlap of the two groups may occur, which we designated as hybrid when described in teachers' small stories, for example if teachers describe using MIS-held data (operational) to share feedback with students during a lesson (pedagogical); or using Microsoft Word to write a letter to parents (operational) and also for modelling writing composition on an interactive whiteboard (pedagogical). Our survey questions additionally drew on previous work (Bond et al., 2020; Bower, 2015) and invited participants to respond about their use of EdTech according to seven tool-based categories (see Table 5), some of which suggest educational functions, though they may be used in other sectors, and without specifying program-based examples that could be available in each.

Table 5: Tool-based categories on project survey of teachers' experiences with EdTech

Category	Examples
Knowledge organising and sharing	cloud storage, file sharing, MIS/LMS
Audio/multimodal tools	videos, podcasts, cassette recorders, interactive whiteboard/touchscreen, interactive modules or lessons
Text-based tools	forums, wikis, blogs; document creation; synchronous text discussion
Image-based tools	word clouds; mind mapping; image creation/editing/ sharing
Assessment tools	Google/Microsoft Forms, formative or summative assessments)
Maker technologies	robotics, 3D printers, e-textiles, makerspaces
Production tools	creation of images, animations, podcasts, videos, websites

In this article, one form of technology described in a teacher's account is Bromcom, a cloud-based management information system (MIS) with integrated finance packages. Its creators present it as a multi-functional application for primary, secondary, all-through and special schools, multi academy trusts, and Local Authorities. Data in Bromcom are cloud-hosted on the Microsoft Azure platform. For teachers and school staff, Bromcom seeks to enable a variety

of functions such as registering attendance, logging behaviour events, sending emails or SMS, as well as report writing and other administrative or operational tasks. It offers a mobile application for parents and students to access their own data on their personal devices, allowing them to send and receive messages with the school. Based on this description, Bromcom appears to be an operational and program-based pedagogical technology as it comprises knowledge organising, sharing and assessment tools, though our later analysis extends understanding of this MIS in context by considering some of its impacts on a teacher's reported experience of work.

d) Understanding teacher small stories of agency with EdTech: Using Positioning Theory

We developed our heuristic of teacher agency with EdTech inductively, using and adapting Education research applications of Positioning Theory (McVee, 2011; Felix & Ali, 2023), an analytic lens (Green et al., 2020) initially applied to discursive data in social psychology (Davies & Harré, 1990; Harré, 2011; Harré & Moghaddam, 2003; Harré & van Langenhove, 1999) and since applied in studies of classroom interaction (e.g., Anderson, 2009; Kayi-Aydar & Miller, 2018), student experience (e.g., Jacobson, 2024; Ritchie, 2002) and teacher identity (e.g. Arvaja, 2016; Avidov-Ungar & Forkosh-Baruch, 2018; Kayi-Aydar, 2017; Tao & Xuesong, 2017). Positioning Theory enables investigation of the positions teachers report or adopt in the moment of articulating accounts of practice, as they describe professional interactions with colleagues and students (the interpersonal dimension), and in relation to resources, institutional structures and professional frameworks that offer or determine positions for them. We drew on types of positioning proposed for Education research by McVee (2011; see Table 6), particularly 'role-based' and 'self-other', where the default role of our participants was usually 'teacher' though sometimes nuanced according to professional responsibility (e.g. 'school leader') or adjusted by participants as they narrated their experiences (e.g. where they self-describe as 'learners').

Table 6: Types and definitions of positions identified in our data

Position Type	**Definition**
Role-based	Participants are positioned based on one or more specific roles they occupy within a professional (e.g., teacher) or personal (e.g., parent) context. This emphasises how roles shape interactions.
Self-other	Participants position themselves in relation to others. This position involves the dynamic and fluid manner in which people define their identities through interactions with others.
Self-as-other	Participants position themselves in place of the other.
Self-in-other	Participants position themselves in a similar fashion to the other.
Self-opposed	Participants position themselves against certain roles, identities, or groups.
Self-aligned	Participants position themselves in harmony with certain roles, identities, or groups.

Static	Participants consistently express beliefs around specific ideas or themes.

The 'self-other' type afforded us space for innovation, adapting its usual interpretive perspective, which describes the subject's positioning relative to other people, to encompass positioning relative to technology, EdTech tools and broader features of workplace ecologies. Our analyses of the complete project data set have found instances where, for example, teachers self-align with EdTech (in co-production of tasks with Generative AI tools), self-oppose technology (where they present technology as a barrier to their aims), or suggest self-as or self-in relationships with their school's corporate body or their immediate teaching teams. Nevertheless, we maintain interest in the original definitions of these positioning types because we approach teacher agency with EdTech as a phenomenon influenced by various elements in the workplace ecology, including professional interactions, and not something determined by qualities of EdTech alone.

Empirical findings

a) Survey findings

Through our survey teachers (N=75) indicated the forms of EdTech they experience in their work. The majority of teachers stated they use audio and multimodal tools (69.33%, n=52) as well as knowledge organising and sharing tools (73.33%, n=55) daily, with under 3% (n=2) reporting that they never used either. Over half of the teachers reported using text-based tools on a daily or weekly basis (53.33%, n=40), though more than one in five (21.33%, n=16) said they never used them. The teachers reported using assessment (62.67%, n=47) and image-based tools (53.55%, n=40) with some regularity. Conversely, the majority of teachers (61.33%, n=46) said they never used maker technologies. Production technologies were also notable for being less frequently used by teachers, with only 26.67% (n=20) using them weekly or daily, and 25.33% (n=19) reporting never using them. Participants' responses to items on the four subscales related to teacher agency with EdTech were reported on a scale from 1 (strongly disagree) to 7 (strongly agree). Respondents indicated positive feelings of agency in all four areas. The highest mean score was for *attitudes toward technology* (M=5.51, SD=0.91). *Knowledge and skills* was next (M=5.35, SD=0.94) but was followed closely by professional practices (M=5.21, SD=0.93) and access to resources (M=5.21, SD=0.85).

b) Small story analyses

Small stories of EdTech design and implementation: A Management Information System

Mr Underwood shared two small stories describing his experience of using a cloud-based management information system called Bromcom, which is widely used by schools in Norfolk and across England. His stories describe or suggest the positions he and other teachers take in relation to the application, and to other elements of his workplace ecology such as his school's approach to managing student behaviour and the actions of the Senior Leadership Team (SLT).

Mr Underwood's first small story focusses on how Bromcom's functionality and user interface correspond to the purposes for which it is adopted:

> Bromcom is used in my school as the attendance and behaviour software, but because once again, it's so fast, it has seating plans, it has behaviour points, it has attendance, it tracks end needs for students, but sometimes there's almost too much information on the screen and it's not a case of, like, everything easily connects to each other. You've just got to somehow figure out the pathways. Like, if I want to add behaviour points for a lesson that was a week ago because sometimes I forget to do it the same week, I have to go back to the calendar, click on the exact date and time that the period was, click on it, then click open its register, then on the register go to the behaviour system and then add the points there. I can't just add the points and then select the time or date that they were meant to be, so I think Bromcom and a lot of these wider can-do-everything systems unfortunately struggle with ease of use.

Mr Underwood's opening comments describe features and qualities of Bromcom. Only when he says 'there's almost too much information on the screen' does he appear to adopt a position towards it, moving beyond matter-of-fact statement of the information it holds. When he adds that items in it do not easily connect with one another, his story suggests his own distance from and frustration with Bromcom, which may have been implicit in his opening phrase 'Bromcom is used in my school', adopting passive voice. His story expresses something of overload in his experience of Bromcom, of its 'too-much-ness' of data, display and organisation, though we do not want to describe it as overwhelming. Mr Underwood's story indicates a degree of agency activated by necessity - 'You've just got to somehow figure it how'- though this is agency constrained by an interface which demands effort. This sense of frustration lingers in the rest of the narrative, where his illustration presents the activity of adding 'behaviour points' to Bromcom as an administrative obligation in part determined by the application, which also denies intuitive entry of data ('You can't just add…'). Yet Mr Underwood is clearly very familiar with Bromcom's operation, describing the required sequence of data entry it requires in detail and acknowledging 'it's so fast'.

In this small story Mr Underwood does not need to state his role in relation to a role-based position of teacher (McVee, 2011), though the story additionally conveys what we have called a *narrated role*, tacit and emerging through narrating, which we might characterise as Thwarted Data Entrist. It is a role in which Mr Underwood cannot exercise the agency he would like because the interface precludes organising or entering data as he would wish, in ways he would find efficient, or efficacious relative to his students and events in his teaching. We also propose that the vocabulary of this story, of 'I can't just…' and 'I have to…', suggest a position of opposition relative to Bromcom, not in the sense of being against or anti-EdTech, but of being 'self-opposed to other' (McVee, 2011), where the narrator communicates misalignment with the described 'other' entity. In McVee's framework the 'other' is human; in this instance it is an EdTech system.

Mr Underwood's second small story about Bromcom describes how 'they [SLT] started asking us to set the students' homework on Bromcom':

> Bromcom allows parents to see what homework has been set, the students to see the homework, and us to see the homework. But because how to set homework and how to put the dates in properly and all that was part of that secondhand training from SLT, there was a lot of mistakes in the first term to the point where most of SLT was saying if a student hasn't handed in the homework because something was set wrong on Bromcom, just ignore it and don't set any detentions. Don't set any sanctions for it because unfortunately there were so many misevents or mistimings put on the homework that they had to just tell whole vast year groups being like don't worry about it, we'll get it sorted for next term.

This similarly recognises and describes potentially helpful affordances of Bromcom, but looks beyond the MIS to report factors that foiled its effective implementation in the virtual space between the school and the homes of students and their families, which is a significant dimension of Mr Underwood's workplace ecology. Here, his mode of narration partially aligns him with SLT (self-as-other positioning) in that he assumes the SLT voice in reported speech, though this narrative alignment is undercut by distancing phrases ('unfortunately'; 'they just had to…') which amplify his view, clearly stated, that there were 'a lot of mistakes' associated with 'secondhand training', by which he seems to mean indirect and possibly unsystematic sharing of guidance about the Bromcom MIS between colleagues. In its entirety, this small story again narrates a 'self-opposed' position which is not adopted relative to Bromcom but instead to the related ecological factor of actions taken by senior leadership colleagues to implement the MIS. The failings of implementation seem to have constrained the agency of Mr Underwood and his colleagues, agency that might otherwise have been enabled by Bromcom's capacity to allow everyone to 'see the homework', presented here as a form of efficacy. In this small story of events, the inhibition of teachers' agency is intensified in instructions attributed to SLT through reported speech, of 'Don't set any homework…Don't set any sanctions', which explicitly deny agency for Mr Underwood and his colleagues.

EdTech policy implementation: Lockdown legacies shaping workload and organisation

Next, we juxtapose small stories shared by Miss Davies, a Science teacher in an 11-16 school, and Mr Andrews, a primary school teacher with responsibility for leading Computing. Their stories recollect experiences of teaching during Covid-19 lockdowns in England, in Spring 2020, late 2020 and across Spring 2021, and their legacy on school uses of EdTech and related school-level policymaking. At that time, the UK government directed funds to schools to support provision of hardware enabling remote learning at home for students considered disadvantaged according to criteria for school funding intended to improve educational outcomes for them ('Pupil Premium': DfE, 2025).

Miss Davies shared a story explaining how these funds help her school to 'make sure they are supplied with things that they need... to get laptops out to children that perhaps maybe didn't [have them] at all because we found actually a load of them, everything they were doing was on their phone, they were doing the live lessons on their phone'. Her story continues to orient toward a reflection on the agency of the schools' staff for supporting students:

> They were doing their homework and it wasn't productive for them, but then we also had kids that were falling through the cracks that maybe didn't kind of come under that bracket of PP , but maybe the family laptop that they have or computer that they have was being used by an older sibling in an exam year or by a parent who was working, so they couldn't actually interact with any of the live lessons and were having to do all their homework in the evening once whoever was using it had finished. So we had a real problem with students accessing Internet devices as well. But our main things on the teacher perspective was Teams and Outlook, which hasn't really changed really since.

Though this small story describes lockdown circumstances that have since changed, it articulates an ecology of professional experience, and of the school community, where students' access to hardware varies, further differentiated by device type, shared use of devices, and time of use. It is a situation where professional agency to educate effectively is constrained by the infrastructure, and which Miss Davies presents as a challenge arising from policy limitations (families in need of tech provision but excluded because they were ineligible for Pupil Premium) and possibly inadequate connectivity ('a real problem with students accessing

Internet devices'). The legacy is her school's adoption of Teams and Outlook across teachers' practice and routines, which itself becomes the focus of a small story:

> I mean, we do a lot more of our scheduling now through Teams. I think our school calendar is now moved on to Outlook rather than an external school website one or - we even had a paper-based school calendar when I first started maybe, what, four years ago, five years ago. So that's now it was always there. But I don't think it was used as religiously. So now obviously since coming back that's all we use. We even have some members of staff that do revision sessions, but they might do them not straight after school. They might do them between 4:00 and 5:00, but on Teams instead. So although there's no expectation of live lessons anymore, actually that's been a really impactful one for our year 11 students that maybe have like a Sports Club or commitments straight after school but still want to access revision. So that's carried on and that wouldn't have been done before, definitely not.

This small story conveys her colleagues' post-lockdown integration to practice of Teams and Outlook systems, and organisation of school scheduling through Outlook calendars which is by implication used more 'religiously' than pre-lockdown methods. Miss Davies narrates her own position in this and other details as one of 'self in', meaning she experiences these changes in a similar fashion to others: 'we do a lot more of our scheduling through Teams' conveys collective endeavour, and expresses agency for scheduling which is enabled and realised by Outlook. Yet this small story as an entire unit suggests an experience which is complex in terms of agency, where 'that's all we use' could indicate agency realised but could also signal lack of choice or agency to act differently. It also seems that her colleagues are acting with agency to offer after-school revision sessions for students insofar as this is 'no expectation… anymore', though we could also interpret this as gradual normalisation of emergency practices established during lockdowns, where teachers engaged in teaching beyond the usual span of the school day. If we view this small story as an expression of positioning relative to EdTech, using McVee's terminology, it may convey an emergent 'static position', serving to reify a position 'articulated and adhered to over time', where the preponderance of these systems in daily practice is expressed as a new norm.

The next small story told by Mr Andrews similarly focuses on a school ecology and the legacy of lockdown, in a primary school. He was reacting to a description of changes to approach and infrastructure in another school:

> Mr Osborne sort of mentioned how the staff, you know, were quite pleased they've got the Google so can work at home. I know we spoke when we had our meeting that I've almost gone full circle the opposite. Both my position in teaching at the time of the pandemic and I guess the highlighting of the pandemic was that there is still an expectation that you should work more than the hours that we are expected. And if you only work the hours in school, you would be behind. Yes, OK, the children go home, you might do an hour, but we're always filling up with more for the night. So I now refuse to bring work home. I don't have emails on my phone. The laptop, I'm at home now, but the laptop nearly every day will stay at school. I have a cut-off point where I stop working and from my point of view it's a case of if my efforts and those hours are not enough then maybe it's not right for me because I just think if you're not careful, technology can take over and then work could take over and then you... I think I certainly felt I built really unhealthy habits.

This is an articulation of agency realised, as Mr Andrews describes exercising control over EdTech to establish the boundary between his in-school and out-of-school lives needed for a healthy balance and job satisfaction. However, this exercise of agency is prompted by a workplace Edtech ecology of continuous access to devices with which to engage in work tasks,

whether at home, school, or in digital spaces and systems (‘emails on my phone’). While EdTech may not be the cause of workload extending beyond the school day, Mr Andrews positions himself in opposition to the capacity of EdTech (its *narrated capacity*) to reach into his extra-professional world. To some extent this narrative also attributes agency to technology, which ‘can take over’ if not denied, facilitating the encroachment of work on his personal time, with unexpressed consequences (‘and then you…’). Mr Andrews’ small story is one of agency exercised as a result of dissatisfaction with workload in his designated professional role, where boundaries between work and home are blurred, and which he associates with affordances of EdTech used in his workplace ecology.

Discussion

The small stories shared by these three teachers articulate different responses to technology in their work, where it seems to constrain, enable or realise agency. In our analysis we take care not to suggest that technology in the professional lives of teachers is inherently ‘good’ or ‘bad’, because none of these speakers express ‘moral positioning’ (Davies & Harre,1990) of EdTech in their narratives. Instead, analyses of small stories as units of data allow us to see agency in context, in different degrees and different combinations, relative to technology and other resources, in the workplace ecologies hinted at in narrative details. Counter to descriptions in government reporting, none of these small stories suggest speakers who are straightforwardly pro- or anti- tech (or ‘not pro-tech': DfE, 2022: 61), though they do describe workplace ecologies in which tech does not of itself enhance their working lives or teaching effectiveness. These findings elaborate our survey data, which showed generally positive attitudes to EdTech overall but could not represent nuanced experiences in context. Our analyses show teachers navigating complex workplace ecologies in which agency matters to how they use tech as an aid to their work, and that exercising agency is necessary to counter potentially deleterious impacts of imperfect tech design and implementation, which some speakers associated with challenging workload and daily frustrations to effective practice. Where Mr Underwood describes Bromcom’s feature bloat, perhaps more support or training could have mitigated his frustration and contributed to the MIS having positive impacts on his experience of work, rather than complicating it (see IFF Research, 20023), When Mr Andrews allows that ‘maybe it’s not right for me’, the tech-influenced workplace ecology in which he works, it seems that he has contemplated employment outside teaching. And like them, Miss Davies tells us of experiences with ‘operational’ and ‘knowledge organising and sharing’ EdTech, which begin to organise teachers as much as they organise data. As we found in our survey, there is little suggestion of access to maker or production technologies we might associate with expression and creativity over cataloguing and conformity: EdTech begins to shape their lived experience and the ethos of their workplace ecologies. In these narrated experiences, technology has not been the solution promised by political rhetoric, though the insights to context offered by these stories suggest that a shift in how we *think* about and approach implementing EdTech could improve its impact, paying attention to the nature and extent of agency teachers have with technology in addition to evaluating the qualities we view as being inherent in EdTech design and functionality.

As teachers tell their small stories of using EdTech they often acknowledge or suggest affordances of EdTech to which they attribute value, and which could bring greater efficiency to their work, or where they recognise uses and features of EdTech which could be efficacious for teaching, learning or professional administration. Their small stories demonstrate that they usually have a clear sense of where they believe opportunities for efficiency or efficacy lie, whether in EdTech design or implementation, and that they have either the experience or knowledge to act independently to realise these improvements to practice. However, the agency

they require to achieve this appears to be constrained, sometimes by features of EdTech design, as in the narrated example of a MIS (Bromcom) user interface, and at other times by factors in their workplace ecologies, such as ineffective communication, or directives from senior leadership colleagues which go as far as denying agency. Furthermore, where their agency to use EdTech has been inhibited to any degree, or where their senior colleagues have not led effective implementation of EdTech, technology has served to extend teachers' working hours (e.g. through gradual normalisation of using work tech at home), complicate or confound simple tasks, or create new tasks. In such conditions, the teachers narrating these small stories have expressed dissatisfaction and *agency constrained*, nevertheless exercising and sometimes realising agency in responding against EdTech in the workplace. They do so to find a tolerable or satisfying work-life balance that allows them to sustain their work and continuing employment as teachers: these are people who want to teach if conditions allow them to.

Conclusion

In our data, teacher agency has a relationship with EdTech that is not straightforwardly aligned with typical representations of its benefits in policymaking and EdTech promotion, where technology eases workload and facilitates agency. Effective and professionally satisfying - or merely tolerable - teacher experiences of EdTech appear to result from more than the inherent affordances of EdTech, being additionally shaped by the conditions of their workplace ecologies and scope to exercise agency in the moment of EdTech use. Our findings have implications for national and local frameworks guiding teachers' EdTech use. They can inform initial and continuing professional education, contributing differentiated understandings of EdTech's relationships with workload derived from teachers' professional experiences. Our recommendations may support school leaders and teacher educators in facilitating teacher agency with EdTech, helping to reduce workload and mitigate teacher attrition. This can only be realised with better understanding of contexts of EdTech use and teachers' individualised experiences of using EdTech in context, taking an ecological perspective. This helps us understand micro-level factors which enable effective technology use, including the positions teachers adopt to technology. We argue that teachers' positions deserve greater attention in local and national policymaking, and in implementation processes. This should be complemented by research-informed and user-centred EdTech product design which understands 'the existing educational ecosystem and real-life user needs'(DfE, 2023b:5).

We have presented methods and tools which can underpin such research and contribute to realising and operationalising agency in practice. Further research might examine teacher experiences of specific EdTech categories (knowledge-based tools, maker tools etc), facilitators of agency with EdTech relative to specific themes of practice (assessment, wellbeing, citizenship etc), or develop more focussed study of teacher experiences of EdTech at different career stages and correlations with teacher retention. We call on policymakers and school leaders to adopt a more nuanced position on EdTech implementation, moving from its presentation as unproblematic to a position where the generally positive attitudes to EdTech held and expressed by teachers can be harnessed more effectively – for more efficient, efficacious and more satisfying experiences of work – to acknowledge, exploit and create features of workplace ecologies which lend teachers more agency to determine how they use technology in their practice, including where technology has limitations of design or presents practical challenges. This response could, for example, encompass institution-level surveying of staff as a contribution to strategic planning and decision making about technology in schools, to understand where teachers are able to realise agency and where it is constrained, the conditions shaping their experiences, and the consequences in terms of realising educational aims of the school, quality of teaching, teacher satisfaction and related retention (see DfE

2023a:13, which suggests a link between individual teacher decision making and EdTech efficacy). Response could also integrate our approach to tools for assessing EdTech design quality, and to inform EdTech Quality Frameworks (see DfE 2023b); or embed similar explorations in school EdTech procurement process, for example by conducting agency-oriented surveys of staff experiences and needs when using management information systems, to complement commercial decision-making (DfE, 2025). This would enable a fuller conception of value for money with EdTech encompassing its influence on job satisfaction as a factor in retention, and inform more subtle appreciation of how EdTech shapes the daily professional experiences of teachers.

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