

Developing sustainable policy and practice for design and technology educational research: engaging with stakeholders in England

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Abstract

In recent, the policy landscape for schools in England, related to research-informed teaching, has had a tendency to focus on a relatively narrow collection of research findings. These have largely centred on findings from the cognitive sciences, with government funded research favouring randomised controlled trials. This has resulted in some feelings of disaffection from teachers of design and technology, who do not see their subject reflected in the research that is promoted by senior leaders in their schools. This study focuses on policy level activism and stakeholder engagement with subject leads in school groups, such as Multi Academy Trusts (MAT), with the aim to provide a sustainable policymaking voice for the design and technology (D&T) community. The research gathers mixed methods data via an online questionnaire. The data is analysed using Self-determination Theory (SDT), identifying stakeholders' sense of autonomy, competence, and relatedness in relation to the research findings that they and their organisations value and use, making recommendations to policymakers on the access and use of subject specific research findings in primary and secondary school settings.

Key Words: design and technology education, educational research, policy, stakeholders.

1. INTRODUCTION

This study builds on the research presented by McLain et al. (2023; 2022) on the perspectives of teachers of design and technology (D&T) on educational research. These studies found that D&T educators showed strong interest in educational research, but face barriers impacting their competence, relatedness, and autonomy. They felt that they needed more support to engage with research effectively, highlighting the need for accessible, high-quality research and professional development opportunities, to become effective consumers, users, and/or producers of D&T research. In this study, the focus is on policy level activism and stakeholder engagement with subject leads in school groups, such as Multi Academy Trusts (MAT), with the aim to provide a sustainable policymaking voice for the D&T community. Whilst there is a specificity on the policy context in England, this study provides valuable insights to educators, researchers, and policymakers in other jurisdictions where design and technology education (in its broadest sense) is part of the school curriculum, both at home in the United Kingdom for D&T and in other jurisdictions where education policy promotes a narrow range of acceptable sources and types of research evidence.

2. LITERATURE REVIEW

In this section, the review of literature is presented under the headings ‘policy context’, exploring the national policy drivers over the past two decades in England, and ‘educational research’, drawing on wider literature on the value and role of research on teaching and learning in schools.

Policy Context

Recent national level educational policies in England from the Department for Education (DfE) and Office for Standards in Education (Ofsted) reveal several common themes that impact on school-level policymaking decisions.

Evidence-Based Practices

DfE (2017, 2013, 2011) and Ofsted (2020) have emphasised the importance of integrating evidence-based practices into education. The DfE's 2017 report on evidence-informed teaching and the 2013 report by Professor Ben Goldacre (a British physician, academic and science writer) both highlight the need for schools to engage with research to improve educational outcomes. The influence of Goldacre was, no-doubt, highly influential in the DfE's preference and bias towards randomised controlled trials (RCT), the predominant research approach in medical and pharmaceutical research, and the foundation of the Education Endowment Foundation (EEF), set up to exclusively conduct RCTs in schools. Similarly, the Ofsted article written by Professor Daniel Muijs (then deputy director of research and evaluation) underscored the necessity of basing inspection frameworks on the best available evidence.

Professional Development and Quality Teaching

Professional development is recurrent across the documents from DfE (2017, 2013, 2011) and Ofsted (2020). The Teachers' Standards (DfE, 2011) stresses the importance of ongoing professional growth for teachers to maintain high standards and meet diverse pupil needs. DfE (2017) also highlighted the need for a culture that values continuous learning and development, promoting high standards and evidence-based practices.

Disadvantaged and Vulnerable Groups

Ofsted (2020) also focussed on improving education for disadvantaged and vulnerable groups. This theme is echoed in the other documents (DfE 2017, 2013, 2011), which advocate for evidence-based practices and high standards to ensure that all pupils, regardless of their background, receive quality education.

Educational Research

This subsection provided a brief critical literature review of key themes from articles on the relevance and role of research for teachers in schools.

Evidence-Based Practice

A recurring theme across the literature is the emphasis on the importance of evidence-based practices. Perry (2022) and Perry et al. (2021) highlight the potential of cognitive science to enhance classroom practices, yet they caution that much remains unknown about its practical application, despite the recent DfE bias towards findings from the cognitive sciences and the use of RCTs. Voices from the last century, Stenhouse (1975) and Rudduck & Hopkins (1985) advocated for research as a foundation for teaching, emphasising the need for systematic inquiry to inform educational practices, an aim that holds true to the present day.

Professional Development

Stremmel (2007) underscored the value of teacher research in fostering both professional and personal growth, focusing on teachers of engineering and technology in the USA. Skogh and de Vries (2013) illustrated how engaging teachers in research can enhance their understanding and teaching of technology, based on experiences in Sweden. These present-day perspectives align with Stenhouse's (1975) call for teachers to be active participants in curriculum development and research.

Challenges

Several papers also discuss the challenges of translating research into practice. Perry (2022) points out the limitations of exclusively applying cognitive science in real classroom settings. Perry et al. (2021) also noted the limited evidence on how cognitive science strategies can be effectively implemented across different subjects and age groups, highlighting the risk of narrowing or nationally mandating sources of evidence to inform classroom practice. These challenges highlight the need for more practical research and support for teachers in applying these findings.

Teachers as Researchers

Strimel (2007) and Skogh and de Vries (2013) both emphasise the benefits of teachers conducting their own research to improve their practice and contribute to the broader educational community, echoing the central of Stenhouse (1975) who advocated for a research-based approach to curriculum development back in the 1970s.

Summary

By identifying these common themes, it becomes clear that fostering a culture of evidence-based practices, continuous professional development, and high standards is at the heart of the expressed aims for the DfE and Ofsted, as the national level policymakers, and others. However, the implementation approaches between policymakers and D&T scholars have marked differences in how to achieve this. The elements collectively contribute to school-level decision making, with

the real influence being from DfE and Ofsted who have the power to enforce policy through direct and indirect means. Whilst the aims of both 'sides' of the debate are laudable the reliance on high profile individuals to set the tone for educational policy on research-informed and evidence-based teaching is open to bias and over emphasis on particular ways of knowing and understanding the educational landscape.

3. RESEARCH DESIGN

This study adopts a mixed methods approach, grounded in the pragmatic paradigm (Biesta, 2022; Guba, 1990; Dewey, 1916), which emphasizes practical solutions to research problems (Creswell, 2014). The axiological stance underscores the importance of providing high-quality, subject-specific research to educators in design and technology. The sampling approach was purposive, targeting educators with subject leadership roles across schools in England, such as subject leads in Multi Academy Trusts (MATs), ensuring that participants had relevant expertise and experience, and were in a position to influence subject level policy across schools. The research was conducted under the ethical approval of the author's university research ethics committee (UREC), following the principles laid down by the British Educational Research Association (BERA, 2018).

The quantitative component involved an online questionnaire survey, designed to gather broad and potentially generalisable data on educators' perceptions and practices. Likert scale questions were used, and descriptive analysis was undertaken, with Pearson Correlation Coefficients generated to identify potential relationships between particular questions. The qualitative component included open-ended questions within the survey, allowing for in-depth exploration of participants' experiences and insights. This combination of methods enables a comprehensive understanding of the research problem, leveraging the strengths of both quantitative and qualitative data (Creswell & Creswell, 2018; Creswell & Plano Clark, 2017).

Whilst the mixed methods research (MMR) design is commonly used in educational research and is generally accepted as offering robust insights, it also presents challenges. The integration of quantitative and qualitative data requires careful planning and execution to ensure coherence and validity. Additionally, the purposive sampling, while ensuring relevance, and small sample size limits the generalisability of the findings. Future research could benefit from a larger, more diverse sample to enhance the study's external validity.

Theoretical Framework

This study employs Self-Determination Theory (SDT) as the theoretical framework to analyse the motivations and experiences of the participants (Ryan & Deci, 2017; CSDT, n.d.). SDT posits that human motivation is driven by the fulfilment of three basic psychological needs: competence, autonomy, and relatedness (Ryan & Deci, 2000). Competence refers to the need to feel effective and capable in one's activities. In the context of this study, it examines how educators perceive their ability to influence the value and availability of high-quality design and technology research. Autonomy involves the individual's need to feel in control of their actions and decisions. This study explores the extent to which participants feel able to influence subject-specific policy in

their organisations. Relatedness is the need to feel connected to people, policies and practices. The study investigates how connected the participants feel to decision making that affects how D&T is taught and understood in their organisations. Utilising SDT, this study aims to provide a nuanced understanding of the factors that motivate leaders in D&T to identify and promote the use of high-quality research in the teaching practices of the organisations that they have influence over. This framework aligns with the pragmatic paradigm of the study, emphasising practical solutions to enhance educational outcomes.

4. FINDINGS

Of the ten (10) participants who responded to the invitation to participate in the survey, eight (8) were D&T leads for MATs in England, one (1) was a leader in a national organisation supporting the subject, and one (1) in a school with a leadership role for a facility accessed by local schools. Whilst the sample size of MAT D&T leads is small, this is a relatively new and emerging role and not all trusts have appointed or publish the names of foundation subject leaders. Most of the participants also have an active profile in the national D&T community on social media and other platforms. Whilst this opens the study to potential self-selection or volunteer bias, a mitigating factor is the aim for the findings to fuel subject level activism, provide evidence to challenge hegemonies, and increase agency for others in these roles. The questionnaire asked participants to respond to twenty (20) quantitative Likert scale statements in the first section of the survey, and four (4) qualitative questions to explore views and experiences in the second, the responses from which are presented in the subsections below.

Table 1 Likert Scale Statements (5-point, strongly agree to strongly disagree)

Q1. Educational research is valued by my organisation.
Q2. Research is used in decision making by my organisation.
Q3. Research is promoted by my organisation.
Q4. My organisations promotes a wide range of different types and sources of research.
Q5. My organisations actively encourages teachers to read and use research in their practice.
Q6. My organisation has a policy relating to the use of research.
Q7. In general, policies have a positive impact on classroom practice in my organisation.
Q8. I am in a position of influence when it comes to how design and technology is viewed and experienced in my organisation.
Q9. I have used research to inform how design and technology is understood and experienced in my organisation.
Q10. National education policy for schools has positively influenced the use of research in my organisation.
Q11. I can find good quality, design and technology relevant, research easily on the internet.
Q12. My organisation knows what is reliable and trustworthy research.
Q13. I would support my organisation having a policy on the use of subject specific research in the design and technology classroom.
Q14. I understand what the peer-review process involves in the publishing of research.
Q15. I know where to find peer-reviewed research on design and technology education.
Q16. Time is a barrier for my colleagues to be able to access and use design and technology research.
Q17. Access to reliable sources is a barrier for my colleagues to be able to access and use design and technology research.
Q18. There is a desire from my colleagues to access and use design and technology research findings in their practice.
Q19. Teachers in my organisation are encouraged to engage with practitioner research (e.g., Action Research, Lesson Study, etc.)
Q20. I have observed examples of where engaging with design and technology research has improved learning in my organisation.

Quantitative Data

Table 1 presents the twenty (20) statements that participants were asked to respond to with Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, or Strongly Disagree. The statements related to the role that research evidence plays in the participants' organisations, their own knowledge of D&T research, and their experiences of how research is used in their own practice and that of their colleagues.

Figure 1 (below) graphically represents the response rates for each statement. All participants either strongly (70%) or somewhat (30%) agreed that educational research is valued in their organisation (Q1). In terms of the use of research to inform decision making (Q2), the response rates remained positive albeit inverted with 10% strongly and 90% somewhat agreeing. The responses become a little more mixed in response to whether research is promoted by their organisation (Q3), with 30% strongly, 60% somewhat, and 10% neither agreeing nor disagreeing.

Figure 1 Response Rates to Likert Statements by Percentage (%)



Table 2 Pearson Correlation Coefficients for Likert Scale Statements ($r > 0.7$ in green)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	
Q1	1																				
Q2	0.2182	1																			
Q3	0.5819	0.4444	1																		
Q4	0.6245	0.3887	0.5653	1																	
Q5	0.4166	0.3939	0.3939	0.7420	1																
Q6	0.1455	0.1111	0.3889	0.6713	0.5152	1															
Q7	-0.3067	0.1562	0.1562	0.2814	0.4401	0.3644	1														
Q8	0.2182	0.1667	0.1667	0.7420	0.5455	0.6667	0.5466	1													
Q9	-0.3553	-0.3512	-0.1916	-0.0914	0.3744	0.0319	0.6432	0.0479	1												
Q10	-0.0546	0.1667	0.5833	0.2120	0.2045	0.2500	0.7418	0.3750	0.2873	1											
Q11	-0.2440	0.3727	0.3727	-0.1185	-0.3049	-0.1863	0.3492	0.0000	-0.2142	0.6988	1										
Q12	0.2667	0.1111	0.4815	0.4358	0.5152	0.2593	0.7115	0.3889	0.4576	0.6667	0.2485	1									
Q13	-0.2182	-0.1667	-0.1667	0.0530	0.3636	0.5833	0.2343	0.2500	0.4310	-0.0625	-0.5590	-0.1111	1								
Q14	-0.1502	0.0785	-0.3059	-0.0243	0.1460	0.3059	-0.1075	-0.1147	0.1318	-0.5449	-0.6412	-0.3314	0.8882	1							
Q15	-0.0935	0.5238	0.2857	-0.1666	-0.2987	-0.2857	-0.0669	-0.4286	-0.2600	0.1071	0.4792	-0.2063	-0.2857	0.1311	1						
Q16	0.3563	-0.4082	0.2722	0.5626	0.1485	0.4082	0.2550	0.6124	0.0782	0.3572	0.0000	0.4082	-0.1021	-0.4215	-0.4082	1					
Q17	-0.5819	-0.4444	-0.1667	-0.2120	-0.0909	0.1667	0.1041	-0.1667	0.3512	0.0417	0.0000	-0.1111	0.1667	-0.0785	-0.2857	0.0680	1				
Q18	-0.0546	0.1667	0.5833	0.4770	0.4318	0.6667	0.7418	0.3750	0.4071	0.6875	0.2795	0.6667	0.2500	0.0287	0.1071	0.3572	0.2500	1			
Q19	0.7167	0.4772	0.7579	0.8302	0.7579	0.5053	0.3814	0.5474	0.0565	0.4421	0.0000	0.6456	0.0842	-0.0386	0.0361	0.3782	-0.4772	0.5474	1		
Q20	0.1954	0.2322	-0.0995	0.5590	0.8051	0.2653	0.2953	0.3980	0.4479	-0.2239	-0.5562	0.2101	0.3483	0.4109	-0.2417	0.0406	-0.0663	0.1493	0.4274	1	

Table 2 (above) shows the Pearson Correlation Coefficients between the responses to each of the statements. These correlations help identify which questions are related and how strongly they influence each other. Focusing on the strong positive relationships ($r > 0.7$), the key relationships are detailed in Table 3 (below), which identifies the ten (10) strong correlations. Correlations 1

and 2 show a relationship between an organisation’s promotion of a wide range of different types and sources of research (Q4) –in contrast to the national bias towards findings from the cognitive sciences and RCT studies– and both (a) the encouragement for teachers to read and use research in their practice (#1) and (b) the participant being in a position of influence regarding organisational policy (#2). This indicates that the organisations represented by the participants are willing and able to look beyond the confines of national policy directives and foster a more inclusive and nuanced approach to local policy and practice, valuing different forms of knowledge across subjects.

Table 3 Relationships Between Strongly Correlating Statements

No.	Relationship (r)	Interpretation
1	Q4 and Q5 (0.7420)	The is a relationship between whether an organisation promotes a wide range of different types and sources of research and whether they actively encourage teachers to read and use research in their practice.
2	Q4 and Q8 (0.7420)	The is a relationship between whether an organisation promotes a wide range of different types and sources of research and the leader being in a position of influence when it comes to how D&T is viewed and experienced.
3	Q7 and Q10 (0.7418)	The is a relationship between whether policies have a positive impact on classroom practice in an organisation and national education policy positively influencing the use of research.
4	Q7 and Q12 (0.7115)	The is a relationship between whether policies have a positive impact on classroom practice in an organisation and they know what research is reliable and trustworthy.
5	Q7 and Q18 (0.7418)	The is a relationship between whether policies have a positive impact on classroom practice in an organisation and a desire from colleagues to access and use D&T research in their practice.
6	Q1 and Q19 (0.7167)	The is a relationship between whether educational research is valued by an organisation and teachers are encouraged to engage with practitioner research.
7	Q3 and Q19 (0.7579)	The is a relationship between whether research is promoted by an organisation and teachers are encouraged to engage with practitioner research.
8	Q4 and Q19 (0.8302)	The is a relationship between whether an organisation promotes a wide range of different types and sources of research and teachers are encouraged to engage with practitioner research.
9	Q5 and Q19 (0.7579)	The is a relationship between whether an organisation actively encourages teachers to read and use research in their practice and teachers are encouraged to engage with practitioner research.
10	Q5 and Q20 (0.8051)	The is a relationship between whether an organisation actively encourages teachers to read and use research in their practice and the participant having observed examples of where engaging with D&T research has improved learning.

Similarly, there was a strong relationship between the statement relating to the positive impact of policy on practice (Q7) and the beliefs that (a) national policy positively influences the use of research (#3), (b) they know what reliable and trustworthy research is (#4), and (c) there is a desire from colleagues to access and use D&T research (#5). Together, these relationships indicate that actively embracing national policy directives does not necessarily mean that an organisation accepts every assumption or value promoted, but provides a motivation and direction upon which to build organisational policies and practices. So, whilst the national policy can be viewed as a straitjacket where it leads to a narrow selection of ‘acceptable’ research findings, as found by McLain et al. (2023; 2022), a strong principled leadership on how it is interpreted and operationalised can lead to very different and more inclusive outcomes.

A third theme emerging from the strongly correlated statements relates to whether teachers are encouraged to engage with practitioner inquiry, as producers of research (Q19). There was a strong relationship between this and four (4) other statements: (a) educational research being valued by the organisation (#6); (b) educational research being promoted by the organisation (#7); (c) promotional of a wide range of types and sources of research (#8); and (d) teachers in the organisation being actively encouraged to read and use research (#9). McLain et al. (2023) identified three levels of teacher engagement with research: consumers, users and producers. Whilst it should not be considered as a progression path necessary or desirable for every teacher to aspire to and attain the third level and become active teacher-researchers, it does require increasing knowledge, commitment and support to engage at this level. Therefore, a commitment from an organisation, be it a single school or school group (such as a MAT), to support and encourage practitioner inquiry could be viewed as a prerequisite for effective and sustainable policy on research in schools. And this includes recognising the nuances of subjects and the different knowledges associated with them, and a more pluralistic approach to how knowledge is gained and validated.

The fourth strong relationship identified was between the organisation actively encouraging teachers to read and use educational research and the participants observing examples of the use of research findings improving learning (#10). This suggests that policy has a direct relationship to practice, although this correlation, in itself, does not prove a causal relationship in a particular direction – i.e. policy changes practice, such as the policy creating a climate where practice is positively affected and changed.

In summary, whilst the numbers of participants are small, making the findings not statistically significant, there are some interesting and useful findings that might inform policy level activism and inform more sustainable approaches to policymaking in school settings. The next subsection explores some of the qualitative responses from participants.

Qualitative Data

A thematic analysis of the qualitative comments provided by the participants is outlined below.

Q6 Please provide any further comments to elaborate on or illustrate your responses...

Participant 1 highlighted the value of peer-to-peer lesson observations, indicating trust from senior leadership and encouragement to try new teaching methods. Regarding the use of research, Participant 2 emphasised the importance of using peer-reviewed research over educational books by non-researchers to ensure robust research processes, whereas Participant 10 noted that few D&T teachers actively use research to inform practice, with many being dismissive of research. Participant 6 stated that most learning about updating the D&T curriculum comes from face-to-face collaborations or workshops, and Participant 8 pointed out the limited availability of research in design and technology compared to other subjects, suggesting the need for a database of recognised research. This suggests that readily available information and knowledge is given preference by busy teachers. Participant 9 described how they oversee D&T across several schools, commenting on variability in research engagement and the support for academic research. These themes reflect the diverse perspectives on the use of research, professional trust, and collaboration within the educational context.

Q7 Where do you access design and technology research?

The response to this question elicited responses under the themes of:

- Online Platform: participants frequently mentioned accessing research through online journals, Google Scholar, and websites.
- Books and Publications: several participants noted using books, including those from reputable and specialist publishers.
- Professional Networks: forums, social media (e.g. Twitter, Facebook), and network meetings were highlighted as valuable sources.

Participant 4 emphasised the value of discussions and podcasts for understanding research, suggesting that these formats help capture the essence of the research better than written work. The Design and Technology Association (D&TA) was mentioned by multiple participants as a key resource, and Participant 2 specifically referred to Design and Technology Education: An International Journal, which is the association's peer-reviewed journal, as a primary source of research. Participant 8 also highlighted the use of research during a postgraduate degree and the importance of academic grounding in research. These themes reflect the diverse methods and resources that the participants use to access and engage with D&T research.

Q8 What, if anything, would have a positive impact on how design and technology research is actively engaged with in your organisation?

Participant 1 emphasised the value of the subject due to good student outcomes and improved experiences through STEAM (science, technology, engineering, art, and mathematics) activities. Participant 2 highlighted the importance of active communication with their Trust, regarding the latest research to influence subject performance. Participant 4 suggested paying teachers to engage in research and offering grants to provide more opportunities for D&T teachers to contribute valuable work. Participants 6 and 10 mentioned the need for national data and evidence repository to support outcomes, whereas Participant 8 focused on demonstrating positive impacts on learning outcomes and exploring research on subject leadership and cross-curricular links, and Participant 9 stressed the need for time for staff to engage with research. These responses reflect the diverse perspectives on how to enhance engagement with D&T research within educational organisations, with no clear themes emerging – except for the need for a national repository of evidence for D&T, linking with a response to Q6 above.

Q9 What, if any, design and technology research are you interested in in your organisation?

As with responses to Q8, above, there were no clear and shared themes from the participants. However, seven (7) participants offered suggestions for research priorities:

- Participant 1: industry-related research and preparing students for external examinations and apprenticeships, highlighting a strong track record for learner destinations;
- Participant 2: formative assessment within design and the impact of D&T subjects on student attainment;

- Participant 3: exploring the pros and cons of teaching using ‘carousel’ timetabling (where lower secondary school classes rotated between teachers, classrooms, and units over the academic year, so each group experiences the units in a different sequence), methods for assessing process versus outcome, and how different lower secondary school models impact upper secondary school outcomes;
- Participant 4: exploring the use of practical work to embed knowledge, teaching technical vocabulary, and how learners learn in D&T;
- Participant 6: the balance between skills and knowledge in D&T education.
- Participant 8: the positive impact on learning outcomes, cross-curricular work (e.g., integrating mathematics or sustainability), and what constitutes a good curriculum in lower and upper secondary school;
- Participant 10: defining a modern D&T curriculum and accurately assessing creativity and problem-solving without compromising their essence;

Whilst each of the suggestions offer a unique insight into the priorities of the individual participant and organisations, there is a common thread related to the practicalities of curriculum intentions, implementation, and impact, which reflects the criteria for the current Ofsted (*cf* 2023, 2018) inspection framework.

Summary

The quantitative and qualitative data from the small sample of D&T leaders in this study provides rich insights into the policy context for the use of subject specific research.

5. DISCUSSION

A Self-Determination Theory Perspective

SDT focuses on the three basic psychological needs for autonomy, competence, and relatedness. Using SDT as a framework to briefly analyse the findings from this study, the participants’ responses suggest the following insights.

Autonomy

Participant 1 highlighted the value of peer-to-peer lesson observations and the trust from senior leadership to experiment with new teaching methods. This supports the need for autonomy by allowing teachers to make independent decisions about their teaching practices. The findings also support the notion that that the organisations represented promote a wide range of research types and sources, encouraging teachers to read and use research. This also fosters a sense of autonomy as teachers can choose the research that best fits their needs and interests.

Competence

Participant 2 emphasised the importance of using peer-reviewed research over non-research-informed educational books helps teachers feel more competent in their practice by ensuring they

are using reliable and robust information and knowledge. The encouragement for teachers to engage with practitioner inquiry and the provision of resources such as workshops and collaborations enhance teachers' skills and knowledge, also increases their sense of competence.

Relatedness

The findings also highlight the importance of face-to-face collaborations, workshops, and active communication with school group leaders and professional networks. This has been somewhat lacking in England in recent years, but there is evidence of increased interest through events such as PATT40 Liverpool 2023 conference and The Big D&T Meet 2024, in Norwich. These interactions help build a sense of community and relatedness among teachers.

Variability in research engagement across the schools represented by the participants and the support for academic research indicate efforts to create a supportive environment where teachers feel connected and valued. By addressing these three psychological needs, the findings suggest that organisations in England, such as MATs, can create a more motivating and supportive environment for teachers, ultimately leading to better educational outcomes for learners. Whilst the study focus on D&T in groups of schools in England, anecdotal evidence suggests that the findings are readily transferable to other school subjects and diverse national contexts.

Recommendations

Whilst this study focuses on the policy context for D&T in England, the learning and recommendations may serve as a salutary warning to technology education communities around the world of the potentially fragile nature of the subjects in the eyes of policymakers and school leaders. It highlights the need for teachers and subject leaders to be aware of the research in their field and have access to knowledge and understanding to adapt to and challenge generic or narrowly informed policy decisions, as appropriate.

The key recommendations are for D&T subject leaders to leverage their influence within their organisations to advocate for subject specific research to be valued and promoted. It also indicates some of the key indicators for successful implementation, including the active encouragement and support for teachers to engage with research as consumers, users, and producers. Subject leaders play a vital role in the local and national vibrancy of professional communities and networks, and access to quality research packaged in an accessible format for busy teachers is most likely to increase agency and fuel activism, to foster fair and inclusive educational policy at the national and organisational levels. Thus, providing thoughtful and bespoke policies at the organisational level that translate national directives into sustainable and impactful practices, which are informed by and contribute to research-informed teaching.

Through the unintended consequences of top-down policy decisions, general education subjects that do not align with the current national priorities or proclivities can easily become marginalised, as has been the case for D&T in England. Whilst not quite a playbook for lobbying and activism, it seeks to provide a new perspective for teachers, scholars and policymakers in related fields around the world.

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