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Valued but unwarranted: argument-field instability and the curriculum standing of an unsettled subject lineage in the national curriculum for England, 1904–2025

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ABSTRACT

Design and technology in England has been affirmed as nationally important for more than a century, yet over the past three decades it has suffered one of the steepest participation collapses of any established curriculum subject. This article argues that the contradiction is structural rather than accidental, and accountability pressure alone cannot explain it. Drawing on Toulmin's account of argument fields, and on his later treatment of how a discipline's standards of reasoning are historically constituted, it advances a historical-explanatory claim: *D&T has been repeatedly reassigned between incompatible fields* (craft, applied science, design, vocational preparation, and technological literacy), and so has never remained in one long enough to accrue a warrant with which to justify itself. The claim is evidenced through a critical-discourse reading of the policy record and a longitudinal analysis of examination entries; tested against the contested labour-market literature on skills shortages. The subject emerges as *valued but unwarranted*. Beyond the case of D&T, the article advances field-reassignment as an analytical proposition for examining how school subjects acquire and sustain curriculum legitimacy, why some remain chronically unsettled, and what their stabilization would require; its applicability in other subjects and systems is identified as a question for comparative investigation.

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Introduction

Few subjects in the English curriculum have been so consistently praised *in principle* and so consistently abandoned *in practice* as design and technology (D&T). The two movements are not sequential but simultaneous. In the same decades that the *Industrial Strategy* (HM Government, 2017) and the *Skills for Jobs* white paper (DfE, 2021) reasserted the national importance of design and technical capability, national examination D&T entries, at the age of 16, entered a sustained decline, *and* the subject was excluded from the headline accountability measures that increasingly govern school behaviour (McLain, 2026a, 2026b). A subject that policy rhetoric treats as a strategic asset has been allowed,

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by the operation of policy instruments, to contract towards the margins of the secondary offer. Not by conscious intent, but by neglect and competing policy drivers.

This article treats that contradiction as a puzzle requiring explanation rather than as a fact to be lamented. The puzzle is sharpened, not dissolved, by the obvious candidate explanation. It is tempting to attribute the decline straightforwardly to the accountability regime, which excludes D&T and thereby disincentivizes its provision at the local level in individual schools and in the wider collectives of Multi Academy Trusts (MAT). Two instruments carry most of that regime, and because both are specific to England they are set out here for readers working in other systems. The English Baccalaureate (EBacc) is not a qualification but a school-level performance measure, introduced in 2010, which reports the proportion of pupils entering and passing a prescribed group of subjects at 16: English, mathematics, the sciences, a language, and history or geography. D&T is not among them. Progress 8, introduced in 2016, is the headline accountability measure for secondary schools in England: it scores a school on the average progress its pupils make between the end of primary schooling and their examinations at 16, calculated across eight subject slots that are themselves weighted towards the EBacc group. D&T can occupy only the open slots and competes there with every other non-EBacc subject. Together the two measures determine what schools are publicly judged on, and therefore what they are under pressure to timetable. That account is correct, as far as it goes, and the participation data align with it closely, but it leaves the central asymmetry unexplained. Other subjects also fell outside the EBacc and were subject to the same accountability squeeze, the same austerity, and the same workforce pressures, yet did not experience the same existential rupture to their identity or the same depth of collapse. The accountability regime is better understood as a force that acted on D&T through a vulnerability specific to D&T. The task of this article is to identify that vulnerability.

The explanation offered here is that D&T has never possessed a stable *argument field* in Toulmin's (1958) sense: a settled domain of justification with its own accumulated standards for what counts as a coherent and robust rationale. Instead, across its history the subject has been repeatedly reassigned from one field to another, each reassignment importing a different, and frequently incompatible, standard of justification. The consequence, developed below, is that the subject never accrued a defensible warrant of its own, and so could neither satisfy the accountability regime's externally imposed standard nor mount an argument against it. The marginalization of D&T is, on this reading, a structural feature of its *argumentative condition* rather than a verdict on its *educational worth*.

Although the case is English, the question it poses is not. How school subjects acquire and sustain educational legitimacy, and what becomes of them when their purposes, knowledge bases, and curriculum positions are repeatedly redefined under changing educational, economic, vocational, and accountability demands, is a general concern of curriculum studies. Most systems contain subjects whose value is routinely affirmed while their position is routinely renegotiated: technology and vocational formations most obviously, but also arts and civic subjects whose justificatory basis is unsettled. The English D&T case is offered here as an unusually long-running and well-documented instance of that condition, and the analytic developed to explain it is intended to be portable: field-reassignment offers a way of examining the historical justification, stability,

and vulnerability of subjects elsewhere whose purposes and curriculum status have been repeatedly repositioned.

Two methodological commitments shape what follows. *First*, the claim is historical-explanatory, not merely descriptive: it asserts that successive field-reassignment is a *cause* of the subject's instability over time, not simply a *redescription* of it. This commitment imposes a discipline, taken up in the dual-corpus approach, below, of measuring instability independently of field-reassignment, so that the explanation does not collapse into merely saying the same thing twice in different words. *Second*, the argument is evidenced through two corpora of different types. The qualitative spine is a *critical-discourse* reading of the policy record from 1904 to the present (McLain, 2026a); the quantitative evidence is a longitudinal analysis of entries to the General Certificate of Secondary Education (GCSE), the national examination taken in England at the age of 16, from 1996 to 2025 (McLain, 2026b). The policy record reveals the sequence of field-reassignments; the examination entry data provide an independently measured symptom against which the explanatory claim can be tested. The article thus draws qualitative policy evidence and quantitative participation evidence into a single explanatory frame.

The argument also stands in a deliberate relation to a companion analysis (McLain, 2026c), which explains the same persistent instability synchronically, through the lens of epistemic hybridity: D&T as a hybrid curriculum formation combining partially reconciled traditions of craft, design, and technological knowledge. The present article is diachronic and argument-theoretic: it follows the subject across time and explains the process of successive reassignment between argument fields by which that hybrid state is produced and, crucially, perpetuated. The two accounts are complementary, and their reconciliation is taken up in the reframing below; what this article adds is the formal reconstruction of policy arguments, a temporal mechanism with stated falsification conditions, the quantitative participation evidence, and the demand-side analysis of skills shortages.

The article proceeds as follows. Toulmin's model and the concept of argument fields are set out first, followed by the candidate fields to which D&T has been assigned and the dual-corpus approach with its safeguards. The policy record's five eras are reconstructed as a sequence of field-reassignments, and the participation data are aligned with that sequence. The causal mechanism is then specified, addressing the threats of redescription, overdetermination, and reverse causation; the demand-side evidence on skills shortages is introduced; the relevance question is reframed; and the conditions under which the claim would be falsified are stated before the article concludes.

Theoretical framework

Toulmin's model and the historical constitution of argument fields

Toulmin's *The Uses of Argument* (1958) was a deliberate departure from formal deductive logic, which Toulmin regarded as a poor description of how reasoning proceeds in substantive, practical contexts. In place of the syllogism, he proposed a layout of argument with six functional elements. A **claim** is the conclusion to be established; the **data** or **grounds** are the facts adduced in its support; and the **warrant** is the inferential licence (an implicit, general rule) that authorizes the move from data to claim. Three further elements qualify and support this core: (i) the **backing** justifies the warrant itself,

supplying the authority on which the warrant rests; (ii) the **qualifier** expresses the strength with which the claim is advanced ('necessarily', 'presumably', 'in most cases'); and (iii) the **rebuttal** specifies the conditions under which the claim *would not* hold.

For present purposes, the decisive feature of the model is its claim that argumentation is *field-dependent*. Toulmin distinguished the force of modal terms, which he took to be *field-invariant*, from the criteria by which claims are assessed, which vary from one field of argument to another. What counts as adequate *grounds*, or as sufficient backing, differs between jurisprudence and mechanics, for example, because each field has developed its own standards of cogency through its own argumentative practice. A justification that is impeccable in one field may be inadmissible in another not because of any logical defect but because it appeals to the wrong kind of reason.

This is the property the present analysis exploits, and it requires one honest acknowledgement at the outset: Toulmin never settled what individuates a field. At different points 'field' reads as a subject matter, a logical type of conclusion, and an institutional practice—an indeterminacy that occupied a subsequent generation of argumentation theorists (see the debates synthesized in Willard, 1981, 1983). Far from disqualifying the concept from analytic use, the indeterminacy is productive here, because D&T is contested on every available criterion of 'fieldhood' at once: its subject matter between made objects, design cognition and technological systems; its purpose between capability, culture, employment and citizenship; its institutional practice between the workshop, the studio, the laboratory and the firm. The subject is effectively a stress-test of the field concept: the indeterminacy of 'field' and the instability of D&T are the same phenomenon observed from opposite ends.

The application developed in this article is diachronic, and it is here that Toulmin's later work is indispensable. The *Uses of Argument* gives a largely static account of field-dependence; *Human Understanding* (Toulmin, 1972) is explicitly an account of how the rational standards of an evolving discipline are historically constituted: populated, transmitted, contested, and selected over time. On this account a field is not given but accrued: its standards of what counts as a good reason are the sediment of accumulated argumentative practice, and a discipline acquires the capacity to adjudicate its own claims only by remaining itself long enough to develop them. The diachronic use of Toulmin is thus not a stretching of a logical point beyond its remit but the more faithful reading of his mature position (Toulmin, 1990, 2001). The argument of this article is therefore a synthesis of Toulmin's field-dependence (1958), supplying the comparative principle, and the historical constitution of standards (1972), supplying the mechanism.

It is worth situating this use of Toulmin against two adjacent literatures. Within education, Toulmin's model has been used most heavily as a coding scheme for classroom argumentation in science education (Driver et al., 2000; Jiménez-Aleixandre & Erduran, 2008; Osborne et al., 2004), a literature that also records the model's principal difficulty: coding real argument into data, warrant, and backing proves unreliable, because warrants are typically implicit—a hazard that returns, in sharper form, in the warrant reconstruction below. A second, more congenial, lineage is the deliberative tradition in curriculum theory, which took up Toulmin's substantive practical reasoning to argue that curriculum decisions are reached through deliberation judged by field-appropriate standards (e.g. Reid, 1978, 1999; Schwab, 1969). The present analysis sits closer to this tradition but turns it to a new use: not to characterize curriculum-making in general as practical reasoning,

but to explain one subject's instability through the absence of a settled field in which such reasoning could accumulate.

Candidate fields

If the argument is that D&T has been reassigned between fields, the fields must be specified; and specified by their *warrant standards* rather than their content, because it is the warrant-standard, not the list of topics, that determines what counts as a sound justification and therefore migrates across reforms. Five fields recur in the English record, and Table 1 sets them out; each corresponds to a recognized orientation in the technology education literature (Williams, 2012). The prior question of the grounds on which curriculum content and a subject's educational standing are justified is itself a curriculum-theoretical one (Deng, 2025).

These standards do not merely differ; on particular curriculum decisions they conflict. A single choice (whether to teach traditional joinery or the material science of timber) is endorsed by the craft warrant and rejected by the applied science warrant, which pull in opposite directions over the same content. A curriculum that draws simultaneously on several of these fields therefore cannot be cogent by the standard of any single one of them, a point that becomes central to the *synchronic incoherence* diagnosed in the analysis of the mechanism.

One canonical strand of the D&T and design research literature can be relocated within this scheme to a clarifying effect. Cross's (1982) articulation of 'designerly ways of knowing', and the broader mission of establishing design as a discipline with its own epistemology (Archer, 1979), are most illuminatingly read not as descriptions of design cognition but as *field-constituting bids*: attempts to end the subject's oscillation by establishing design as a distinct third field, neither craft nor science, with its own warrant-standard and its own backing (on disciplines, knowledge structures and the conditions of disciplinary formation, see Hordern, 2025). Whether that bid succeeded is precisely the diagnostic question on which the subject's stability turns, whether D&T constituted its own field or merely added a further host to borrow from, which is explored further below.

Table 1. By-warrant-standards for D&T candidate argument fields.

Field	Warrant standard	What counts as 'good'	Characteristic backing
Craft inheritance	Fidelity to tradition and embodied, tacit skill	Authentic practice; mastery of tool and material	Apprenticeship lineage; manual-training and Sloyd traditions
Applied science	Correspondence to established scientific knowledge	Principled application; transfer to and from physics and mathematics	The authority of the sciences; technical-school rationale
Design discipline	The quality of designerly reasoning: projective, abductive resolution of ill-defined problems	The capacity to design	Design research (e.g. Archer, 1979; Cross, 1982)
Vocational preparation	Alignment to occupational competence and employability	Skills valued by employers; recognized technical qualifications	Industry and standards bodies; labour-market data
Technological literacy	Formation of the citizen in a technological society	Critical understanding of technology and its consequences	Near- <i>Bildung</i> arguments; technological-literacy scholarship (e.g. Bergheim, 2025)

These five fields are not an idiosyncratic construction. They correspond closely to curriculum settlements identified independently, on *knowledge-theoretic* rather than argumentative grounds, in a comparative typology of technology, engineering, and design education (McLain, 2026c): the craft, applied science, design, and technological literacy fields map respectively onto that typology's *craft-anchored*, *engineering-anchored*, *design-led-hybrid*, and *technological-literacy/civic* ideal types (currently being developed further in a 19-jurisdiction comparative curriculum analysis; McLain et al., [in press](#)). The correspondence is corroborating but deliberately imperfect at two points, and the mismatches are themselves informative. The *vocational preparation field* has no clean counterpart, because the comparative typology brackets occupational preparation to concentrate on general education. And this is precisely the demand-side territory the demand-side analysis occupied and this typology carries a *critical/socio-technical* type for which the present scheme has no field, since this scheme tracks the warrants that have actually governed the subject in England rather than those available to it in principle. That two schemes constructed from different building-blocks (one from *forms of knowledge*, one from *standards of justification*) converge on substantially the same set of orientations is itself evidence that these are real *divisions in the field* rather than *artefacts of either method*.

Data and approach

The analysis combines two corpora that have been reported separately and are here drawn into a single explanatory frame. The *first* is the policy record: a purposively delimited set of Acts, statutory orders, national curriculum documents, white papers, and official reports relating to D&T and its predecessors in England from 1904 to the present, read through a *critical discourse analytic lens* after Fairclough (2010, 2026a). The *second* is the participation record: annual national examination entry data for D&T in England from 1996 to 2025, compiled from published national statistics and a freedom-of-information request, and analysed through descriptive visualization, percentage-share analysis, and epoch-based linear and logarithmic trend modelling, with a supplementary chi-square test (McLain, 2026b). The policy corpus reveals the sequence and character of field-reassignments. The participation corpus supplies an independently measured symptom against which the explanatory claim can be tested.

A *third* body of evidence enters where the relevance argument is joined, and it is of a different and more external kind: the peer-reviewed labour-market and employer-survey literature on skills shortages in engineering, technology, and design, together with the official surveys on which that literature draws. Establishing the subject's instability is the work of the first two corpora; this third body serves instead to test, from the demand side, the premise on which any relevance claim depends: that the capability D&T develops is genuinely and persistently demanded. It is treated with corresponding caution, because, as the demand-side section sets out, both the magnitude of the shortages it reports, and their very existence are contested within the literature itself.

Claim safeguards

There are four safeguards that keep the historical-explanatory claim from collapsing into tautology or overreach:

First, the redescription trap: If instability simply means ‘reassignment between fields’, and reassignment is then offered as the cause of instability, the explanation is circular. The discipline required is to operationalize instability *independently* of field-talk. The participation collapse, the halving of the specialist workforce, the cadence of qualification restructuring, and the recurrence of existential identity-discourse in the subject community are all observable without reference to argument fields. They are the thing to be explained; reassignment is the explanation offered for it; and the two are kept analytically distinct.

Second, warrant reconstruction: The warrants that licence policy claims are almost never stated. The move from ‘the economy requires technological capability’ to ‘therefore D&T should be statutory’ rests on an unwritten commitment, and recovering it is interpretive and contestable; the same reliability problem that attended Toulmin-pattern coding of classroom talk in science education (see the theoretical framework, above), in arguably sharper form here because there is no spoken exchange against which to triangulate, only the finished text. This hazard cannot be waved away. It is mitigated, as far as it can be, by treating warrant reconstruction as an explicit and abductive procedure with documented inferential steps, so that readers can contest particular attributions against the textual evidence. Transparency, not the elimination of interpretation, is the safeguard.

Third, the unit of analysis: National curriculum orders are largely declarative, listing content with thin or absent justification, and the argument for the subject is generally displaced into the surrounding texts: white papers, review reports, and ministerial rationales, to say nothing of the closed-door negotiations of curriculum drafting. The analytic unit is therefore not the programme of study alone but each curriculum *together with its justificatory penumbra*. This matters because the warrant implied by a rationale recurrently conflicts with the one implied by the corresponding assessment specification: an internal incoherence of warrants within a single moment, which the dual reading is designed to surface.

Fourth, presentation by convergence rather than aggregation: The symptom evidence is reported as several independently constructed series (examination entries, teacher workforce, qualification ‘churn’, structural position) examined for whether they move together around the reassignment episodes. No composite ‘instability index’ is constructed; triangulation across independent series, not aggregation into a single weighted number, carries the argument.

A limitation should be stated plainly rather than deferred. The strongest test of a causal claim of this kind is counterfactual, and the natural comparators (such as art and design, music, and drama), which sat through the identical accountability shocks while remaining stably fielded, are not analysed quantitatively within the present corpora. The comparative claim is therefore advanced as an analytic argument whose decisive empirical test is identified, in the falsification conditions, as the necessary next step.

Corpus I: the policy record as a sequence of field-reassignments

The critical discourse analysis of the policy corpus identifies five eras in the development of D&T and its predecessors (McLain, 2026a). Read through the present framework, these eras are not merely periods of differing emphasis; each constitutes a reassignment of the subject to a different argument field, importing a different warrant-standard and resting on a *migrating backing*. A note on the term is needed, because ‘era’ is used here in a specific and restricted sense. The dated spans are not a continuous partition of the century: they are the episodes in which the subject’s field-assignment was actively re-argued in policy, and they are separated by long intervals (roughly 1918–1944, and again 1949–1988) in which no comparable reassignment occurred. Those intervals were not empty, but nor were they simply stable. At the level of national policy, they were periods of settled framing, in which the warrant established at the preceding juncture went largely unchallenged; at the level of pedagogic practice, they were periods of drift and local variation, in which what was taught in workshops and domestic-science rooms diverged from the framing that formally licenced it. The gaps are therefore analytically informative rather than an embarrassment for the periodization: on the account developed here, they are precisely the intervals in which field-internal standards could have accrued, and the argument is that the reassignment episodes that bracket them repeatedly reset that accrual before it consolidated. Table 2 summarizes the reading, which the remainder of this section develops.

In **Era I**, the Board of Education’s *Regulations for Secondary Schools* (1904) embedded manual instruction within a liberal curriculum, and the *Acland Report* (Board of Education, 1913) defended handwork as cognitively and morally valuable for all rather than as pre-vocational training, reflecting the subject’s deeper cultural and historical roots (McLain et al., 2019). The warrant here is one of *civic and characterological formation* laid over a craft substrate: practical work is justified because it forms the rounded citizen. That framing, however, was the public face of a more stratified purpose, and the two ran together. Needlework, cookery and housecraft were directed at working-class girls, preparing them both for domestic service and for their anticipated role as wives and mothers

Table 2. The five policy eras read as field-reassignments.

Era	Policy framing (McLain, 2026a)	Dominant field	Warrant-standard imported	Principal backing
I (1904–1918)	Handwork for character and citizenship	Craft, on a civic-formation warrant	Practical work forms character and the citizen	1904 Regulations; Acland Report (1913)
II (1944–1949)	Technical modernity and post-war settlement	Applied science/technical	Technical capability serves national reconstruction	Education Act 1944; Registered Designs Act 1949
III (1988–1999)	Inventing ‘design and technology’; capability	Design discipline	Designery reasoning and capability	Education Reform Act 1988; the DES (1990) and 1999 Orders
IV (2002–2016)	Accountability, choice, marginalization	An <i>external</i> academic-core field judges D&T	Measured academic progress in a prescribed subject set	Education Act 2002; 2010 white paper (EBacc); Progress 8 (DfE, 2016); revised curriculum (DfE, 2013)
V (2016–present)	Skills, productivity, technical pipeline	Vocational preparation	Employability and alignment to technical routes	Post-16 Skills Plan (DfE & DBIS [DBIS], 2016); Industrial Strategy (2017); <i>Skills for Jobs</i> (2021)

(Attar, 1990); woodwork and metalwork were directed at working-class boys, preparing them for skilled manual trades (Penfold, 1988). Civic formation and class-and-gender allocation were, in this period, delivered by the same provision, and the warrant was correspondingly double: the rhetoric of the rounded citizen sat over a curriculum sorted by sex and social class. The backing is the liberal-educational settlement of the period, reinforced by the structural provisions of the 1907 and 1918 Acts.

In **Era II**, the Education Act 1944 legitimated technical education as a distinct pathway within the tripartite system, and the Registered Designs Act 1949 extended legal protection to industrial designs, signalling state recognition of design as an economic asset. The imagined learner is recast from rounded citizen to *technician-designer* serving post-war modernity. The warrant shifts *from civic formation to national-economic reconstruction*, and the field *from craft to applied science/technical*. The legitimation, however, ran ahead of the institutional provision, and the gap matters for the field reading. Relatively few technical schools were in fact opened, and the practical subjects that would later become D&T were taught right across secondary education, in grammar, technical and secondary modern schools alike. Where technical schools did exist, there was at least an intention (quite possibly not realized in practice) that provision for boys would carry a more engineering-inflected focus. The applied-science warrant was thus asserted at the level of national settlement while the subject's actual location remained distributed across a tripartite system that did not, in the main, instantiate it. The reassignment is already visible: the same broad domain of practical education is now justified by a different kind of reason, though the reason was carried more securely in policy than in the school estate.

One further transition falls in the interval before Era III and must be registered, because it was experienced at the time as the more consequential of the two. During the 1980s, and ahead of the National Curriculum, the separate practical subjects (woodwork, metalwork, technical drawing, cookery, needlework, childcare) were consolidated into the integrated fields of Craft, Design and Technology and Home Economics, a consolidation carried through the replacement of Certificate of Secondary Education (CSE) and Ordinary (O) level by the single GCSE examination in 1986–88. For the staff involved this was seismic: it dissolved the subject identities under which they had been trained and recruited, and it obliged those with longer service to make a second adjustment only a few years later when D&T proper arrived. In field terms the amalgamation is the rehearsal for Era III, and it is part of the reason the later reassignment met a workforce already once displaced.

Era III is the decisive and, in field terms, the most consequential. The Education Reform Act 1988 created the conditions for D&T's statutory status, and the Working Group's interim report (DES & WO [DES], 1988) and the Secretary of State's proposals (DES & WO [DES], 1989) defined the new subject as designing, problem-solving, creativity, and technological understanding; an explicit move *from craft-centric practice to design capability* (Kimbell & Stables, 2007), operationalized through the 1990 Order and later clarified, with ICT integration in the 1999 Order and iterative and user-centred design in 2013 (DfE). This is the design-discipline bid entering policy: the attempt to constitute D&T as a field of its own, with *designerly reasoning as its warrant-standard*. Two features of this moment matter for the diachronic argument. The first is that the new subject was assembled by *amalgamation*; fusing differently fielded antecedents (craft, design, and technical subjects, together with home economics and elements of business and

information technology) into a single curriculum 'slot'. The subject was, in this sense, born hybrid *without having synthesised a hybrid warrant*: it inherited several fields rather than constituting one (Bell et al., 2017). This is what the companion analysis describes, on knowledge-theoretic grounds, as a compelled alignment of craft, design, and technological traditions under *economic urgency* rather than their reconciliation (McLain, 2026c). The second is that the Education Act 1996 consolidated the statutory framework, providing a legal framework that both stabilized the subject's status and, as later sections show, framed the reforms that would subsequently erode it. A third feature is that the content of the new curriculum, and by implication its warrant, was contested from the outset rather than settled by statutory adoption. The Engineering Council led a reformulation within the first year, and the initial testing regime did not align with the subject specification it was supposed to assess. The design-discipline bid was, in other words, challenged before it had time to establish the standards by which its own claims might be judged; which is exactly the condition the mechanism below describes.

Era IV is the period in which the field framing changes most radically, and in a way the previous transitions did not. The Education Act 2002 removed D&T's compulsory status at Key Stage 4 (upper secondary, ages 14–16 years old) from 2004, by which point the subject's impact in schools was already under review (Wilson & Harris, 2004), replacing it with an entitlement to be offered one subject from each of several areas; the 2010 white paper introduced the EBacc, from which D&T is excluded; and Progress 8 (DfE, 2016) codified a value-added measure across a prescribed basket of subjects that again omits D&T. The critical point is that this era does not reassign D&T to a *new field of its own* but subjects it to the warrant-standard of an *external* field (the academic core defined by the accountability measures) whose standard of 'good provision' is measured progress in a prescribed set of subjects. D&T is not argued against on its own terms; it is rendered invisible to a measurement system built around different fields' standards. The subject's design-make-evaluate epistemics, however articulated in the surrounding curriculum texts, are simply not the kind of thing the headline metrics register. This is a mismatch traced in detail elsewhere to the gap between D&T's process-oriented, iterative knowledge and assessment systems optimized for stable, propositional content (McLain, 2026c). This is the structural origin of the marginalization, and it is the moment at which the absence of a settled, defensible warrant of D&T's own becomes decisive: a subject with an accrued field-standard might have contested the measure on the grounds that it fails to capture a recognized form of educational worth, but a subject still oscillating between borrowed warrants had no such ground to stand on.

Era V completes the cycle by provisionally reassigning the subject once more, back to the field of vocational preparation. From 2016 the *Post-16 Skills Plan*, the *Industrial Strategy* (2017), and *Skills for Jobs* (2021), building on the earlier overhaul of vocational education (Wolf, 2011), foreground skills, productivity, and technical routes, presupposing a school-age pipeline of design-technical literacies of exactly the kind D&T is structurally suited to develop. Yet the accountability instruments of Era IV remain intact, so the subject is simultaneously addressed by a skills-and-productivity warrant in industrial policy and excluded by an academic-core standard in accountability policy. The result is the contradiction with which this article began, now visible as a *synchronic* coexistence of incompatible fields rather than a clean succession; a point the analysis of the mechanism develops as the sediment/detritus of the diachronic process.

This reading of the eras is offered alongside, rather than in place of, an established literature on the subject histories and subcultures of practical education in England, and it is worth marking where the present analysis depends on that work and where it departs from it. Penfold's (1988) account of craft, design and technology traces the internal politics of the craft-to-design transition; Attar (1990) recovers the class-and-gender logic of domestic subjects; Layton (1994) reconstructs the making and remaking of school technology; McCulloch et al. (1986) situate the technical curriculum within the longer post-war argument about science, industry and national decline; and Paechter (1995) documents, ethnographically, how the departmental subcultures inherited from the separate subjects negotiated (and often resisted) the amalgamated D&T curriculum. Read together, these accounts supply much of the empirical substance that the field reading formalizes what they describe as subcultural conflict and contested subject identity is, in Toulmin's vocabulary, the absence of an agreed standard of cogency to which competing parties might appeal. It is also worth noting that the National Curriculum settlement was not without an articulated warrant of its own: Black and Harrison's (1985) 'In Place of Confusion' is arguably the clearest statement of the case for technology as a distinct curriculum undertaking and stands as the nearest thing to a field-constituting argument the subject received. That it was made in a pamphlet rather than accrued through sustained disciplinary practice is itself part of the story told here.

What the five eras together display is a migrating backing: the same family of claims about the value of practical, technical, and design education is re-grounded, era after era, in a different authority; the liberal-civic settlement, then post-war reconstruction, then design research, then the accountability apparatus, then the skills-and-productivity agenda. In Toulmin's terms this presents as progress but is, structurally, *field-substitution*: the warrant beneath the subject keeps changing, and with it the standard by which any justification of the subject is to be judged.

Corpus II: the participation symptom and the instability of its own measure

If the policy record supplies the sequence of reassignments, the participation data supply the independently measured symptom. The longitudinal analysis of national D&T examination entries from 1996 to 2025 identifies three policy-relevant epochs and models the trend within each (McLain, 2026b). The shape is unambiguous: a period of rise to a peak around 2000–2002, followed by a sustained and accelerating decline, with a tentative stabilization in the most recent years. In absolute terms, entries fell from approximately 280,000 in 2009 to 136,000 in 2020 and have fallen further since (DfE, 2025).

The epoch structure aligns closely with the field-reassignments of the policy record, and the *statistical character* of each epoch is as informative as its direction. **Epoch I** (1996–2004) corresponds to the post-Era-III settlement, when D&T was statutory and compulsory at Key Stage 4. Entries grew, and the linear model fits moderately ($R^2 \approx 0.60$), with a positive year coefficient; a rising but somewhat fluctuating trajectory consistent with a subject in expansion under a recently established, and briefly stable, design-capability framing. **Epoch II** (2005–2018) corresponds to Era IV, the accountability era inaugurated by the 2004 removal of compulsion and consolidated (but neither causal nor trajectory changing) by the EBacc (2010) and Progress 8 (2016) accountability measures. Here the decline is not

only steep but *exceptionally regular*: the linear model fits very strongly ($R^2 \approx 0.98$), with a large negative year coefficient, and the logarithmic model fits comparably well ($R^2 \approx 0.93$). The decline behaves, in the analysis's own terms, as predictable and compounding. **Epoch III** (2019–2025) follows the reformed single-title general certificate of secondary education (GCSE; DfE, 2015a, 2015b) first examined in 2019 and the vocational reorientation of Era V; the decline continues but at a markedly reduced rate (a small negative coefficient), with a weaker model fit ($R^2 \approx 0.73$) consistent with a transitional phase and tentative stabilization rather than recovery per se. However, a reading of the wider policy landscape might suggest a reset to pre compulsion entry levels from the late 1990s.

The interpretive weight falls on Epoch II. The period in which the decline is steepest and most statistically consistent is precisely the period in which an *external* field's warrant-standard (the academic-core standard of the accountability measures) was imposed on a subject that had no settled field of its own. The regularity of the decline is what the present framework would predict: once D&T was rendered invisible to the headline metrics (non-compulsion and adverse accountability metrics) and possessed no accrued warrant or disciplinary agency with which to contest that invisibility, the disincentive to provide it operated steadily and cumulatively across schools, producing the smooth, compounding trajectory the models capture. The accountability regime supplies the force; the absence of a defensible field supplies the reason the force met no effective resistance. It should be noted that the supplementary chi-square analysis returned no significant association between entry type and epoch, but that this test was underpowered, with expected cell counts below five throughout; the regression and trend analyses, not the chi-square, carry the substantive findings, and the contrast between the very strong Epoch II fit and the weaker fits either side is the result of interest.

There is a further and subtler symptom, and it is one the participation analysis encounters as a methodological obstacle before it can be recognized as evidence. The entry series does not measure a constant object across its span. Until 2017, students entered D&T through distinct specialist titles: food, graphic products, resistant materials, textiles, systems and control; from 2017 these were collapsed into a single D&T GCSE, food was removed as a material and relocated to a separate *Food Preparation and Nutrition* (FP&N) qualification, divergent aims to D&T, and the reformed single title was first examined in 2019. Constructing a continuous participation series across the reform therefore requires difficult decisions about what to count; whether and from when to fold FP&N back in to preserve comparability; and the analysis is obliged to reason explicitly about the resulting discontinuities (McLain, 2026b). On the surface this is a measurement defect. Within the present argument it is a first-order symptom of the very instability being explained: the subject was redefined so substantially that its own participation cannot be tracked with a stable instrument. The discontinuities in the series are not 'noise' to be smoothed away; they are *reassignment events* leaving their mark on the conditions of measurement itself. A subject whose entries cannot be counted continuously because the subject keeps being redefined is exhibiting, in the structure of its own data, the field-instability this article diagnoses.

Two further series corroborate the participation trend without depending on it. The specialist teaching workforce approximately halved between 2011 and 2020, from around 14,800 to 7,300 (Education Policy Institute, 2022), with recruitment

targets persistently missed and financial incentives weaker than those attached to subjects such as mathematics and physics (McLain, 2026b). And the cadence of qualification restructuring (repeated revision of orders across the 1990s, the 2010s reforms, and the 2017 single-title reconstruction) is itself unusually high. Workforce, qualification churn, and structural exclusion from the 'desirable' accountability categories move together with the entry decline around the reassignment episodes. Reported as a convergent dashboard rather than aggregated into an index, they constitute mutually independent symptoms of a single underlying instability.

The mechanism

The alignment established in the policy record and the participation symptom is necessary but not sufficient for a causal claim. Three threats must be met: that the explanation merely redescribes what it claims to explain, that the field story is a by-product of larger economic and political forces rather than a cause in its own right, and that the causal arrow runs backwards. Meeting them requires specifying the mechanism, and the mechanism must be temporal.

The mechanism is the one Toulmin's (1972) *Human Understanding* supplies. The standards of cogency by which a field judges its own claims are not given but accrue through accumulated argumentative practice over time. Reassignment resets that accrual: each time D&T is moved to a new field, the partly formed standards of the previous one cease to apply, and the subject must begin again to establish what counts as a good justification within the new field's terms; yet retains a legacy (both constructive and destructive) from its predecessors. A subject reassigned every reform cycle therefore never accumulates field-internal standards, and the consequence is that there is no settled answer to the question '*what makes a good D&T justification?*' Every reform reopens that question rather than building on a prior settlement, because there is no accumulated *warrant-stock* to appeal to. The instability is, on this account, self-perpetuating: not a sequence of unfortunate decisions but the structural result of never remaining in one field long enough for standards to form.

This mechanism also explains the synchronic incoherence noted in the policy record: the simultaneous coexistence in the present moment of a *design capability rationale*, an *applied science inflected written assessment*, a *craft-rooted workshop estate* and *teacher formation route*, and a *vocational skills policy framing*. These are not a coherent settlement but *sediment*, or *detritus*. Each reassignment leaves residue that is never cleared: the physical workshop infrastructure built for craft, the cohorts of teachers trained under a prior field, the assessment apparatus designed for the last reform. The teacher residue in particular is not merely a matter of formation. Teachers were not only trained and professionally shaped under previous systems; in many cases they were strongly loyal to them and held a considered view of their value that survived the reassignment intact (Paechter, 1995). Residue of this kind is therefore active rather than inert: the prior field persists not just as habit and infrastructure but as a continuing commitment, held by people with good reasons for holding it, and it is capable of contesting the incoming warrant rather than simply lagging behind it. The synchronic field-split is the *stratigraphy* of abandoned field-assignments, the distinct layers laid down by each successive settlement; the present incoherence is the diachronic process viewed in cross-section. The

same split is documented independently as a gap between *intended* and *enacted* curriculum, which is precisely what the ‘sediment model’ would predict; policy and leading practice aspiring to a design-led hybrid while accountability and resource pressures revector enactment towards engineering- or craft-anchored forms (McLain, 2026c). Path-dependence, not clean succession, is the right picture, and it is why metric or statutory reform alone would be unlikely to settle the subject, addressing the surface without clearing the strata accreted beneath it.

The *redescription trap* is met by the independent measurement of the participation symptom. Instability is evidenced by *participation decline*, *workforce contraction*, *qualification churn*, and the *discontinuity of the entry series*; none of which mentions argument fields. These symptoms are the thing to be explained; field-reassignment, reconstructed separately from the policy corpus, is the explanation offered; and the temporal mechanism connects them.

Overdetermination is met not by denying the macro forces but by positioning field-reassignment as the *proximate mechanism through which they act*. Curriculum history is causally crowded: *vocationalism*, the *knowledge-rich turn*, the *accountability squeeze*, *exam reform*, *austerity*, and the *material shift* from craft to digital all bear on D&T. The contention here is not that the field story displaces these but that it specifies the route by which they reach the subject. Political-economic pressure does not act on subjects directly; it acts through the recontextualizing layer in which a subject’s identity and justification are negotiated, and it is there that pressure on D&T was converted into a change of warrant-standard. This is why the macro forces produced an existential crisis in D&T specifically: the subject’s want of a settled field meant that each external shock was absorbed as a question of identity rather than absorbed as a change of circumstances. A stably fielded subject can lose curriculum time without losing its account of itself. D&T could not.

This positioning also answers the obvious question of *who* does the reassigning. The agency is diffuse, distributed across ministers, exam boards, subject communities, teacher educators, departmental and institutional location, and historical accretion, and ‘assignment’ should not be read as a single deliberate act. The structure is best given by Bernstein’s (2000) account of recontextualizing fields. The *official recontextualising field* comprises the state and its instruments; the *pedagogic recontextualising field* comprises the subject community, teacher education, and the examination apparatus. It is the agents of these two fields who, collectively and without agreement among themselves, assign and reassign the subject. That they do not agree is itself part of the explanation since their competing assignments are one source of the synchronic incoherence. This is also more than a convenient argument: Toulmin’s notion of a field was never built to carry sociological weight (the very gap the post-Toulmin field-theory debates exposed) and the diachronic, comparative claim made here therefore requires something like *recontextualisation theory* to bear that load. The combination is structurally necessary, not decorative.

Reverse causation is the most serious threat and cannot be dismissed by asserting a clean unidirectional arrow. Decline plainly *contributes* to reassignment: falling entries prompt *rescue-oriented review*, and the 2017 reform of examinations can be read in part as such a response. The defensible structure is therefore a *vicious cycle*. Reassignment resets the accrual of field-internal standards; the absence of a settled standard means that each shock is re-litigated as a question of the subject’s identity; that re-litigation issues in further reform, which reassigns the field again; and the resulting disincentives depress

participation, which prompts the next rescue-review, and so-on-and-so-forth. Decline is thus both a *symptom* of the instability and an *accelerant* within the loop. A feedback mechanism is harder to attack than a straight line, but only if the claim is stated as such and supported by attention to timing, by asking of each symptom series, whether crisis intensity rises *around* the reassignment episodes rather than merely drifting with the accountability trend (as was the case with the eBacc and Progress 8). The regularity of the Epoch II decline, bracketed by the weaker fits of Epochs I and III, is consistent with the loop tightening precisely when the external standard was imposed on a subject least able to answer it.

The demand-side

The relevance argument developed in the next section turns on a premise the policy record asserts but cannot itself verify. That economic and industrial policy has valorized design and technical capability for a century establishes only that the **discourse** of demand is durable; it does not establish that the demand is real, since policy rhetoric is itself a kind of text, and an interested one. Testing the premise requires evidence of a more external kind: the empirical labour-market and employer-survey literature on skills shortages in engineering, technology, and design.

The honest summary of that literature is that it corroborates the existence of demand while resisting any confident statement of its magnitude. Engineering and technical shortages are reported as persistent and structural rather than merely episodic (Mason, 1999; Penn, 1999), with industry surveys by the early 2020s reporting large majorities of firms facing gaps they struggled to fill (C. Edwards, 2023), and with measurable consequences at the level of the firm for output, employment adjustment, and productivity (Bennett & McGuinness, 2009; Morris et al., 2020; Stevens, 2007). Yet the same literature is unusually candid about the fragility of its own foundations: the evidence base for the headline shortage has been judged neither well-established nor consistent with labour-supply theory (Smith & White, 2022); the category of STEM is defined inconsistently across the reports that measure it (Banerjee et al., 2024); and employer-survey measures are known to conflate genuine shortage with mismatch, low pay, and ordinary recruitment difficulty (Cutler, 1992; Moore & Morton, 2017; Watson et al., 2006). The magnitude of the shortage is, in short, exactly the kind of contested quantity on which a careful argument should not rest.

What survives the contestation is not the magnitude but the *description*. Across the period, and with remarkable consistency, employers characterize the deficit of new entrants in qualitative terms the disputed numbers do not touch. In engineering the recurring complaint is of recruits who are theory-rich but application-poor: possessed of sound academic knowledge but short of the practical, work-related capability to deploy it (S. Edwards, 2021; Mason, 1999; Pultarova, 2020; Spinks et al., 2006). In design and the creative industries the complaint is cognate: new entrants creatively able but lacking the practical and business capability to realize and apply their ideas (Hall & Velez-Colby, 2011; Munro, 2017). Beneath the sectoral difference the two converge on a single underlying lack, the capacity to turn knowledge into resolved, made, usable outcomes. This converged description is the most evidentially robust element of the skills literature:

qualitative, consistent across decades and sectors, and independent of the disputed quantification.

That description is, almost exactly, a description of the design-make-evaluate epistemic that the 1990 settlement constituted as D&T's distinctive contribution (the policy record, Era III). The capability the labour market most persistently reports missing is the capability the subject was built to develop. The 'valued' half of the thesis thus rests on firmer ground than policy assertion alone: the demand the policy record proclaims is, at least in its qualitative core, corroborated from the demand side.

The same literature, however, reveals something that deepens the diagnosis rather than simply vindicating the subject, and it is here that the demand-side evidence rejoins the article's central argument. The missing capability has no stable name in the demand-side discourse either: it is coded, across sources and decades, as 'practical skills', as 'employability', as 'soft skills', as 'work-readiness', and as 'applied' or 'technical' capability, with the very meaning of 'skill' broadening across the period (Payne, 1999; Succi & Canovi, 2020). The capability is real and demanded, yet it is unwarranted in the labour-market register too: it lacks a settled vocabulary and an agreed standard by which it can be recognized, named, and credited. Just as the accountability system possesses no warrant-language for what D&T does (the policy record, Era IV), neither does the demand side. A capability that cannot be named stably cannot be measured, credited, or demanded in terms an accountability regime would register, and this is why the demand for it can be at once loud and ineffective at protecting the subject that supplies it. The subject is, in this sense, doubly unwarranted.

This evidence strengthens the relevance case but does not complete it, and the limits of the inference must be stated. The demand-side literature establishes that the capability is demanded and reported scarce; it does not establish that statutory D&T is its unique or most efficient supplier. Only a minority of those who acquire such capability ever work in the sectors said to lack it (Smith & White, 2022), and the shortage may be as much a problem of weak employer demand, poor skill utilization, and low pay (Finegold & Soskice, 1988; Glynn & Gospel, 1993; Mayhew & Keep, 1999) as of educational supply, in which case no curriculum reform could discharge it. The relevance claim the evidence will support is therefore specific and bounded: the capability D&T develops is persistently demanded and persistently reported as scarce, and to exclude the subject from the accountability basket while continuing to proclaim that demand is a structural incoherence. It is not claimed that mandating D&T would by itself resolve the shortage.

Reframing relevance

With the demand-side premise now corroborated and bounded (the demand-side analysis), the framework permits a reframing of the question with which debates about D&T's future are usually conducted. That question is generally posed as '*is D&T valuable enough to mandate?*' and to that question the policy record returns a consistent affirmative across more than a century. From the Acland Report (1913), through the Registered Designs Act (1949), to the *Industrial Strategy* (2017) and *Skills for Jobs* (2021), official discourse has repeatedly asserted the national importance of design and technical capability. The subject's marginalization has not been caused by any official judgement that it lacks

worth. On the contrary, the same documents that govern the system continue to affirm exactly the capabilities D&T is structurally suited to develop.

The operative question is different, and the present analysis brings it into focus: *does D&T possess a settled field whose warrant the accountability architecture can recognise?* To this the answer is *no*, and the consequences follow directly. A subject is rewarded within an accountability regime to the extent that its claim to curriculum space can be expressed in a warrant the regime's standard admits. D&T's claim cannot be so expressed, not because it is weak but because the subject has no settled warrant of its own, only a sediment of partly incompatible borrowed ones, and the headline metrics are calibrated to a different field's standard. The subject is, in the precise sense this article has developed, *valued but unwarranted*: esteemed in principle, and without a defensible warrant in the only terms the governing instruments register. Its relevance is being eroded not by a deficit of value but by a deficit of field-settlement.

This reframing has direct implications for what would actually secure the subject's standing, and it distinguishes the immediate remedies from a durable one. The immediate remedies are those the policy analysis already indicates (McLain, 2026a). *Metric realignment* would incorporate D&T-relevant indicators into the performance measures, so that the subject's contribution becomes visible to the accountability standard and would thereby remove the immediate disincentive. *Statutory reaffirmation*, by restoring a Key Stage 4 entitlement, would re-establish a baseline of provision below which schools could not fall, though the *teacher recruitment and retention crisis* would work against it unless addressed in parallel. Each is warranted by the evidence and could arrest the immediate decline. But the analysis of the mechanism implies that neither alone is curative because both leave the underlying condition untouched: the absence of an accrued field-standard. A subject restored by statute or rendered visible by a revised metric, but still without a settled warrant of its own, would remain vulnerable to the next reassignment, and the cycle would resume.

The durable remedy is *field-constitution*: the long-deferred completion of the task that the *design discipline bid* of the late 1980s began. If D&T is to cease oscillating between borrowed warrants, it must synthesize its own; a settled, unique standard of what counts as a good justification for the subject, of the kind that stable hybrid fields such as engineering and medicine have developed by constituting their own forms of judgement rather than perpetually deferring to their constituent sciences. This is the sense in which Cross's (1982) 'designerly ways of knowing', read as a *field-constituting bid* (the candidate fields), names the right project but leaves it incomplete: the subject community's task is to carry that bid to settlement, establishing *design-make-evaluate epistemics* not as one rationale among the sediment but as the field-internal standard by which the subject's claims are to be judged. Only a subject that has constituted its own field can answer an externally imposed standard on its own terms, because only such a subject has terms of its own. Framed educationally rather than administratively, that task is one of articulating the subject's distinctive contribution to knowledge and to formation (Deng, 2025); and recent accounts of how competence-oriented curricula and Bildung may be reconciled suggest that such a synthesis is achievable within curriculum thinking (Bergheim, 2025).

However, there is a strong objection to this conclusion that must be met, because it is a good one and it is, in effect, the objection the companion analysis raises. It may be

argued that D&T is not unstably assigned but legitimately *multi-field* (genuinely interdisciplinary) and that the demand for a single field is itself the error, since much of the subject's value lies in its hybridity and the evolving nature of technology and society. On this view, urged by McLain (2026c), the subject's instability may not be '*a weakness to be resolved, but a defining characteristic*', and efforts to standardize the subject risk destroying the very hybridity that gives it worth. The reply turns on a distinction that reconciles the two positions rather than opposing them. What must be resisted is the *flattening of the knowledge base*; the homogenization of D&T's craft, design, and technological materials into something monodisciplinary. What is urged here is something different: the *settling of a warrant*, an agreed standard of what counts as a good justification for the subject's *hybrid nature and practice*. These are not the same thing, and the difference is visible in the comparators.

Engineering and medicine draw on many sciences yet have developed their own standards of engineering judgement and clinical reasoning; their hybridity is not diminished but stabilized by possessing a warrant of its own. A subject can therefore retain its hybridity and lose its instability: the two are not identical, as the companions' accounts imply. The diagnostic question for D&T is accordingly empirical and sharp: *has the subject constituted its own warrant-standard, or does it continue to borrow?* The evidence of recurrent *identity discourse*, *qualification churn*, and the *discontinuity* of its own participation series suggests the latter. This is why the *multi-field defence*, though right that hybridity is not in itself a defect, does not rescue the subject from the diagnosis. Hybridity without a synthesized warrant is exactly the condition this article has named; and the contribution of its account, set beside the companion one, is to show that escaping that condition need not mean surrendering the hybridity the subject may rightly value.

Rebuttal

A historical-explanatory claim earns its standing partly by specifying what would defeat it. Three conditions would falsify, or substantially weaken, the argument advanced here.

First, the comparator condition: The claim entails that stably fielded subjects in the same system, exposed to the same accountability and resourcing shocks, should be correspondingly more stable. The decisive test is therefore a quantitative comparison of D&T's participation and workforce trajectories with those of art and design, music, and drama, all non-EBacc subjects with relatively settled identities differencing out the shared accountability effect. If those comparators fell as steeply and exhibited equivalent identity crisis, the field story would be epiphenomenal and the accountability account sufficient on its own. This comparison is not undertaken within the present corpora, and it is identified here as the necessary next step rather than claimed as established. There is evidence that art and design held its own in this period, where others experienced similar, if not as sharp, declines; the relative buoyancy of A&D has been anecdotally attributed to a shift of D&T teachers into the A&D examinations in 3D design and textiles (undocumented). The argument's central empirical vulnerability is thus openly on the table.

Second, the tracking condition: The mechanism predicts that crisis intensity (in participation, in qualification restructuring, and in the subject community's identity-discourse) should rise *around* the reassignment episodes, not merely drift with the secular

trend. If the symptom series proved insensitive to the timing of reassignments, or if periods of relatively stable assignment showed no corresponding reduction in crisis symptoms, the temporal mechanism would be undermined. The regularity of the Epoch II decline is consistent with the prediction, but a fuller test requires aligning the discursive crisis-evidence against the reassignment chronology with the firewall described below.

Third, the firewall condition: Because the community's crisis-discourse sits adjacent to its field-discourse, the two must be coded separately; the presence and intensity of existential framing in one pass, the field being argued for in another; so that the symptom (that the subject is litigating what it is, again) is not conflated with the variable (that this time it is arguing for design, or for skills). If that separation could not be sustained in practice, the measurement would rebuild the tautology the analysis is at pains to avoid, and the claim would lose its evidential independence.

Two further limitations qualify the present account: (i) warrant reconstruction from policy texts is interpretive and contestable, and although an explicit, documented procedure mitigates the hazard, it does not eliminate it (particular attributions in the policy record are open to challenge against the textual evidence, and that openness is intended); and (ii) the participation analysis itself carries the constraints reported in its source (McLain, 2026b)—the chi-square test is underpowered, the epochs are unequal in length, and certain statistical tabulations require verification before the detailed figures are relied upon (this article reports model fits, coefficient signs and magnitudes, and significance, rather than reproducing the full tables). None of these qualifications bears on the direction of the participation trend, which is secure, but they bound the precision of the quantitative claims.

Conclusion

D&T (and its predecessors) in England has been a subject that policy values and policy abandons at once for more than a century. This article has argued that the contradiction is not a paradox to be lamented but a structure to be explained, and that the explanation lies in the subject's want of a settled argument field. Read through Toulmin, the five eras of the policy record emerge as a sequence of reassignments between incompatible fields, and the steep, regular decline of the accountability era emerges as what follows when an external field's standard is imposed on a subject that has accrued no warrant of its own with which to answer it. The participation data, treated as a symptom measured independently of field-talk, track the reassignments; and the instability of the entry series itself is among the clearest signatures of the condition: a subject whose participation cannot be counted continuously because the subject keeps being redefined.

The decisive forces in this history have been instrumental: statutory status and performance metrics, which elevated the subject when they included it and decentred it when they did not. But beneath the instruments lies the deeper condition the present analysis has sought to name: D&T is *valued but unwarranted*. To make the rhetoric of relevance real, England must do more than reassert the subject's worth, which it has never seriously doubted. To address the decline and instability, it must align its levers with its aims through metric realignment and statutory reaffirmation. Beyond those proximate remedies, it must allow the subject to do what no reform cycle has yet let it do; *remain in one field long enough to constitute a warrant of its own*. Only a subject that has settled what counts as a good reason

for itself can flourish within a system that claims to need it. The mechanism identified here (i.e. that subjects whose justificatory history shows repeated reassignment between incompatible argument fields will remain structurally exposed, whatever their acknowledged value) is advanced as an analytical proposition arising from this single national case rather than as a regularity demonstrated across subjects and systems; its applicability and explanatory value in other contexts remain to be investigated. It offers curriculum studies a conceptual resource for diagnosing persistent subject instability, and for distinguishing the proximate accountability instruments that accelerate decline from the deeper structural conditions that must be addressed if any subject's standing is to be secured on grounds that endure. For researchers elsewhere, the case indicates the questions a field-reassignment analysis would ask of any subject whose purposes and curriculum position have been repeatedly redefined: through what sequence of justificatory fields has the subject passed; has it remained in any one long enough to accrue standards of its own; are the measures by which the system judges it calibrated to a field it has never occupied; and does its participation record show the discontinuities of definition that repeated reassignment predicts? Asked comparatively, these questions would also test the analytical proposition advanced here.

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Author contributions

CRedit: **Matt McLain:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing.

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Data availability statement

The primary source documents analysed in the policy corpus are publicly available from national archives, legislation.gov.uk, and official government portals. Examination entry data were compiled from published Department for Education national statistics and data obtained via a freedom-of-

information request; the compiled dataset is available from the corresponding author upon reasonable request.

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