

Transition between primary and secondary design and technology - an all-through curriculum, the opportunities and challenges.

Lightning Talk Short Paper

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Abstract

This position piece argues that design and technology education benefits from a cohesive, all-through curriculum that embraces the opportunities to nurture and develop children's design and technology capabilities over time and in different settings. The authors share their experience and insight in devising such an all-through curriculum and suggest further iterations, including a response to the National Curriculum Review, which is due later this year.

Keywords: Primary, Secondary, transition, pedagogy

Design and technology has been a compulsory subject from Key Stage One through to Key Stage Four since the inception of the National Curriculum in 1990. Whilst the elements of design, make, evaluate and technical knowledge are embedded within the curriculum, how schools have interpreted this is varied - particularly between school phases.

The differences between primary and secondary design and technology include but are not limited to;

- curriculum time allocation and organisation
- resources available
- teacher specialisms, experience and training
- pupil relationships
- vocabulary
- pedagogy

Taking all aspects of the above into consideration, we initially deliberated how to meet the pedagogical differences to establish an effective all-through curriculum. Primary design and technology is often context-led and based around a cross-curricular project that is linear in the design process where children investigate, design, make and evaluate in every project (Hope, 2018).

This differs from some secondary practices where children may focus on just one aspect of the fourfold model (McLain, 2021, 2022), such as 'mainly designing'. The move from products and projects with a specific outcome in secondary education was in response to the 2014 National Curriculum Review. The emphasis moved from material-specific outcomes to material-agnostic creative problem-solving or context-led learning. This presents tensions within phases and between them.

The interim national curriculum review (DfE, 2025) states the need to review KS3, as there is repetition from KS2. This is not a new notion, as ten years ago, Ofsted published a report entitled 'Key Stage 3: the wasted years?' (DfE, 2015). This may have been in response to changes to GCSE high-stakes expectations in 2014 but from both a primary and secondary perspective, the challenges of transition are not a recent phenomenon (Kimbell, Stables & Green, 1994; Ryan, 2025). Regardless, Myatt (2025) argues pupils are entitled to a broad and challenging curriculum in every key stage; design and technology, in our minds, plays a key role across all key stages.

An all-through curriculum can address this challenge.

We developed a curriculum that allows students to build on their prior knowledge and skills, thereby fostering a cohesive and comprehensive educational experience. We ensured consistent threads across our primary and secondary curricula that can enable a more effective transition, helping pupils bridge their knowledge and understanding from primary to secondary whilst also retaining the positive features of teaching design and technology in different phases.

A good example of this is the use of microcontrollers in years 4, 6, 9 and 10; there is planned progression between these units, with year 4 directly linking to the science curriculum by exploring simple circuits using a few components through to year 10 writing programs in pseudocode and simulating virtually a complex control system for a greenhouse, including variables and feedback.

Accomplishing this challenging task has had implications for delivering Continuing Professional Development (CPD) to schools and Initial Teacher Training (ITT) providers. Firstly, we have grown in confidence in knowledge and understanding of our respective specialist age groups. However, the most significant change to the sessions we lead has been emphasising the flexibility of approach when utilising the four-fold pedagogical model. Empowering teachers in both primary and secondary sectors with the freedom to adapt the curriculum and shift the focus away from the linear approach of encompassing all aspects of designing and making in every unit of learning has influenced the content of our sessions.

We have had the privilege of working across phases to formulate an all-through design and technology curriculum. However, collaboration, professional dialogue, and reflectivity have been essential for this to be implemented effectively. Moreover, our continued association further develops the criticality towards the continuous professional development of future and current teachers of design and technology in both primary and secondary schools.

3. REFERENCES

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