**Introduction**

The historical status of 'academic disciplines', what defines them, their boundaries and knowledge, and what we know them to be have all been subject to much debate (Cooper 2010).

In the context of a flexible education system, what offers a conceptual framework that deals with the distinction between the subject matter knowledge that is identified on the basis of a discipline's boundaries? The question is, how is the relationship between the idea of a discipline and the concepts of practice and knowledge, and the individual's role in the process of constructing the discipline, to be understood? The implications of this are twofold: first, how is it that a discipline is defined and its boundaries established; and second, how is the individual's role in the construction of the discipline understood?

**Design and Technology a legitimate STEM subject?**

Since design and technology's inception, it has been marginalised from STEM education policy (Morgan 2013), which frequently focuses only upon mathematics and science. Analysis of the current design and technology curriculum (DfE 2014) illustrates a positional shift, with the instruction to 'drop on disciplines' rather than to work with them. Following analysis of individual curricula for mathematics, science, and computing, the instruction appears unidimensional. This position design and technology uncomfortably as a subject different to its peers, seemingly without its own distinct set of knowledge and skills, which could argue lowers its standing as a discipline in its own right.

**A review of literature**

Citing the difficulty of defining a clear, comprehensive subject within a context of increased focus upon mathematics, the struggle to balance new content with pre-existing practice, in a recent controversy Miller (2015), provides a plausible account of what is wrong with design and technology, but his work stops short of offering an explanation that supports our understanding as to why this may, or may not, be the case.

In seeking to answer the research question, a preliminary review of the literature relating to disciplinary knowledge (Neumann et al. 2002, Beach and Tozer 2002, Beach 1984) teaching and learning regimes (Tozer and Cooper 2002), and what constitutes subject knowledge (Maton 2013, Maton and Moore 2010) has been undertaken.

"Why would you do a hard subject like maths or science when you could do an easier subject?" ([Coe 2010])

Aside concerns of academic decline, tackling the 'culture of low expectation' and 'anti-academicism' failure to learn (Gibbs 2010) is the contrasting of the disproportionately low number of pupils from disadvantaged backgrounds being entered for academic subjects. While acknowledging that vocational and technical disciplines are vital to future economic growth, he believes that only by placing academic subjects at the heart of the curriculum we can ensure a rigorous education for all. Since the introduction of performance-related funding, schools have sought to deliver qualifications that appeal to the most favourable results. The results were due to the introduction of the Science and Progress (DfE 2013), the measure by which pupil performance is calculated.

**Conclusion and next steps...**

Prior to its creation, design and technology comprised of individual disciplines, each with their own body of knowledge. Through amalgamation each has been diluted, with individual subject identities stripped away. Within a curriculum that places value predominantly upon disciplines perceived to be 'academic', design and technology is seen as a relatively unimportant aspect. In seeking to justify its place within the curriculum, design and technology has been compared to existing categories of knowledge that exist alongside academic and vocational disciplines. However, the nature of design and technology is unique and distinct, supporting the argument that design and technology is undervalued and underappreciated.

Within a curriculum that places value predominantly upon disciplines perceived to be 'academic', 'shift' is not seen as desirable. In seeking to justify its place within the curriculum, design and technology has been compared to existing categories of knowledge that exist alongside academic and vocational disciplines. However, the nature of design and technology is unique and distinct, supporting the argument that design and technology is undervalued and underappreciated.

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**Selected References**