Guest Editorial

Technology Education and the Worthwhileness of Lawrence Stenhouse

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Now and again, we stumble into illuminating moments where the work we do in one area, causes us to ponder and perhaps even think differently about our work in another. For me, just such a connection took hold between my work in curriculum reform and my work in Design & Technology education. It involves the work of Lawrence Stenhouse, and in particular, his idea dating back to the mid-1970s that education happens through engagement in worthwhile activities and processes. I have come to recognize Stenhouse as an ambitious and insightful educational thinker, but he was never (to the best of my knowledge) directly involved with Design & Technology Education. I would therefore like to begin by sharing a little about who he was and briefly highlight some of his ideas. I will then consider the idea of worthwhileness in relation to Design & Technology and offer a tentative (and necessarily partial) exploration of worthwhileness related to learning in woodwork. My hope in doing so is that others might reflect upon this idea and what it means for their own thinking and practice.

Born in England and with Scottish parents, Lawrence Stenhouse (1926-1982) was a teacher educator and noted educational thinker who developed a keen interest in curriculum studies early on in his career. This interest became his passion. It was spurred in no small part by the idea of *the teacher as researcher* and a desire to explore how schooling could better engage marginalized groups of pupils. Humes (2024), who writes insightfully about Stenhouse, notes his significance as a "creative and original thinker, with a body of work that broke new ground not only in the field of curriculum development, but in a range of related fields…" (p.561). Notably, this body of work includes a book that was published in 1975, entitled: *An Introduction to Curriculum, Research and Development* in which Stenhouse sets out what he calls a "process model" of curriculum (p.84). Stenhouse developed this model in response to concerns he had with curricula that were specified using learning objectives. For Stenhouse, education is very much about human development, rather than transmission, or being valuable in the sense of what it leads to.

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As shown by Kelly (2009) and others, *curriculum as process* has become recognized as one of three archetypal models of curriculum development, alongside 'curriculum as content' and *curriculum as product*. As Kelly explains, each of these models is underpinned by a different way of thinking about the purposes of education, and each requires us as educators to think differently about knowledge, learning and how we teach and assess.

The process model of curriculum looks and feels different to the other forms of curriculum that we find most countries working with teachers working with a process approach would not, for instance, use learning objectives or outcomes, nor would they assess or measure students against these. In the recent past, both Scotland and Northern Ireland have each had curricular frameworks that were informed by the ideas of Lawrence Stenhouse, as are elements of the current Taiwanese curriculum (Hung, 2021), but few other countries do. The current educational reforms taking place in Wales, however, provide a contemporary example of a country starting to work with a curriculum that is strongly process-developmental (Makara Fuller, 2023). Over the last several years, I have been privileged to work with Welsh teachers, education support partners and policymakers in thinking through and implementing this type of curriculum in schools and classrooms. Our work has drawn directly from the work of Stenhouse, among others. I suspect I can speak for most people involved when I say that this work has challenged our thinking, scratched away at some of our educational assumptions, and opened up new possibilities for teaching and learning. I have been personally struck by just how significant Stenhouse's ideas have been for the teachers and students in the schools we are working with some 50 years after they were first penned. Not least among these, is what we refer to as 'worthwhileness' (McKernan, 2008, p.101).

Stenhouse views education as being very much about human development rather than transmission, and as induction into different fields of knowledge through engagement in worthwhile activities. Worthwhileness is an idea that Stenhouse developed from the work of the English philosopher R. S. Peters and his efforts to establish criteria for education. If education is to be worthwhile for those involved, it follows that we as educators need to think through and be able to state the worthwhileness of what we teach and how. This was exactly what teachers in Wales did with us as part of the Camau I'r Dyfodol project[1] (which, in English, translates as 'Steps the Futures'). Worthwhileness was powerful because it moved people beyond ideas of covering content, or of teaching certain things in certain ways because it is what they have always done (or simply because they know it is likely to appear in a future test or examination).

[1] The Camau I'r Dyfodol project is a 3-year project (2022-2025) jointly led by the University of Wales Trinity Siant David and the University of Glasgow. The project is funded by the Welsh Government. https://www.gla.ac.uk/research/az/camauirdyfodol/

It made teachers stop and consider what makes a particular thing educationally worthwhile for their students to learn, and to ask what the worthwhile experiences, pedagogies and ways of assessing are that could be developed. It helped to explore something of the intrinsic value of what we teach. It is worth clarifying that while teachers explored worthwhileness in relation to the Curriculum for Wales framework, it was necessarily a matter of their own professional judgement. There can be different reasons why something is (or is not) considered to be worthwhile for different groups of students. Therefore, worthwhileness is not a fixed quality, but rather a reflection of the teacher's role and the responsive nature of Stenhouse's process model of curriculum.

As I suggested in the opening section, Stenhouse's idea of worthwhileness has prompted me reflect on our own subject of Design & Technology. It surfaced a range of questions that seemed to chip away at things I might have, to some extent, taken for granted and, to other extents, not thought through as deeply as I imagined. What, for instance, is worthwhile for my students to know and understand about material properties? Why exactly is it worthwhile for them to learn this? Why is it worthwhile for my students to learn about aesthetics, design or digital electronics? What experiences, activities and approaches would be worthwhile in supporting students to learn about sustainability? Questions such as these made me think further about Design & Technology as a subject, and about the wider educational possibilities and imperatives at play. Something may be worthwhile because of what else it allows someone to know or understand in the subject, or because of its potential to help students to grow and make sense of the world (and this is not to suggest that we do not also help students to prepare for examinations and qualifications).

Sometimes, we will find that questions about what is educationally worthwhile in Design & Technology (or in any subject for that matter) can challenge us a little, particularly in terms of human growth and development. I would suggest this is because asking why something is educationally worthwhile is not the same as simply asking why we teach it. Nor is it simply what someone else decides is valuable. To exemplify this a little further, I would like to share a brief exploration of worthwhileness for woodworking. This developed as part of my work on pedagogical reasoning with our pre-service teachers who use the idea of worthwhileness as part of their own thinking. It is presented here in an illustrative and tentative form and is not developed in relation to a particular group of students.

We can all appreciate that its practical nature readily provokes pragmatic reasons about why woodworking might be valuable. Learning such skills can equip pupils for cognate jobs or careers (for those who choose to pursue them) and may even mean they are better able to maintain their home. While these are legitimate and may ultimately prove fruitful for some of our students, they perhaps fall short in terms of what is intrinsically valuable, or what it can offer for human growth and development. If we push a little further, we might begin

to consider aspects of confidence, precision and patience related primarily to skills development and interacting with materials. Oftentimes, these can be associated with the emotions of tool use discussed by Wells in a previous editorial. Pride can be a powerful emotion in practical classes.

If we push a little further still, however, we might also consider that students who learn woodworking are developing different ways of caring towards non-human things, and this might play some role in shaping who they become (regardless of whether this is a woodworker). Kuecker (2025) explores this idea of care through his analysis of woodworking and wood play in American schools and suggests that there are two strands to the dimension of care: "(1) the care of tools, machines, and the shop space; and (2) the care of wood across its lifespan from tree to object" (p.209). These are not new to those who teach practical subjects. I also find it interesting that Kuecker discusses Tronto's idea of care as an ethic, in the sense of it providing humans with knowledge about how to live a good life (p.207). For me, this resonates strongly with how Stenhouse thinks about education. Part of me does also wonder whether there is a further intrinsic sense of care for doing something well for its own sake. This, according to Sennett (2008), is an important feature of craftsmanship (p.20).

The work of Lawrence Stenhouse has enriched and challenged my thinking and practice as an educator. His idea of worthwhileness has allowed me to think more deeply about what and how I teach in Design & Technology, and about whether and how this meaningfully connects with and engages students. For me as an educator, this has very much been wrapped up in a process of honest self-reflection and humility.

For those who are interested, more formal findings from our work in Wales that draws upon Stenhouse's process model of curriculum, and the idea of educational worthwhileness, are found in our published report: *Working with a process approach to Curriculum for Wales: I can now be the teacher I always wanted to be* (Singh et al., 2025). For those teachers we worked with, worthwhileness became a significant idea that was used throughout different aspects of their thinking about curriculum, pedagogy, learning and assessment. As one teacher explained "whichever aspect we did, we went back to why are we doing it? Is it worthwhile for the children in front of us? And it was going back to that all of the time - it was for the children in front of us in the classrooms, not children who've been here before or are coming… what works with some cohorts doesn't work with others" (Singh, 2025, p.23).

Overall, we found that worthwhileness contributed to more individualized educational experiences, more responsive teaching, and more meaningful planning. One teacher said that their previous approach to planning "…was a paper task, wasn't it? It didn't help the learning at. It was just ticking the boxes for coverage really" (Singh, 2025, p24). However, another teacher who took the idea of worthwhileness back to their own school and colleagues, perhaps best captured the power of such self-reflection acknowledging that it had led them to think about how they bring "that creativity, that imagination, that awe and wonder back into our curriculum" (Singh, 2025, p.23).

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