Schools in Crisis: Toward a Coherent Curriculum[1]

Even the most nearly ideal curriculum can be only the beginning of the educational process, and the student's years of formal education can accomplish little more than create an awareness of the knowledge he must master and the ways in which such mastery may be achieved over his entire professional life (Shera, 1972, p. 223).

School, it appears to me, is in crisis. Stavros Yiannouka (2017) goes to the root of this crisis by recalling David Deutsch's seemingly "logically unassailable idea that in a world where knowledge is growing exponentially, the tools for acquiring and interpreting that knowledge are at least as important as the actual knowledge itself".

For many of our schools, perhaps the majority, this crisis will be overwhelming for three interrelated reasons:

1. Schools are almost exclusively and entirely geared towards teaching knowledge. When schools get to the point where they realise that it is *actually* no longer possible to teach students everything that they need to know, then teaching effective use of the tools for acquiring and interpreting knowledge will become unavoidable.
2. At this point schools will no longer be able to pay lip service to independent learning, and will realise that independent learning is a complex problem that requires, amongst other things, "progressive and systematic preparation for and development of pupils in becoming independent learners within the curriculum" (Learning and Skills Network, 2008, p. 9).
3. At this point schools will discover that the success of their "progressive and systematic preparation for and development of pupils in becoming independent learners within the curriculum" depends on the effective collaboration of all academic departments in the school, which, crucially, includes the library, and this will be especially problematic for those schools who effectively no longer have one[2].

So, how have we gone about averting this crisis, which is at root a crisis of knowledge, at Oakham School[3] – beyond continuing to invest in a world class school library, that is?

Seymour Papert is widely reported to have said that you can't teach people everything that they need to know, and that the best that we can do is position them where they can find what they need to know when they need to know it. This is, for us, both the beginning and the end of an Oakham School education – the direction our students head off in when they arrive and where they find themselves poised when they leave. Our aim in this is to ensure that our students do not experience the transition to university as a clash of learning cultures (Figure 1).

---

[1] Our concern with coherence of the curriculum uncovered *Toward a Coherent Curriculum* (ASCD, 1995). While arguably dated and American, the issues it wrestles with are both timeless and universal. A coherent curriculum is our goal.
[2] It is beyond the scope of this article to explain in any detail what I understand a library to be, but I trust that a strong sense of this will emerge from my discussion of what our library does.
[3] Oakham School is an independent boarding and day school for boys and girls aged 10 to 18 offering both A-levels and the IB Diploma Programme (IBDP). I have been Head of Library at Oakham School since 2008, and the opportunity to directly experience two very different approaches to education has been very insightful. The IBDP is the end point of a continuum of education stretching back to Kindergarten. A defining characteristic of this continuum is that it is an inquiry-based approach to education. By contrast, this not even a characteristic of an A-level education.
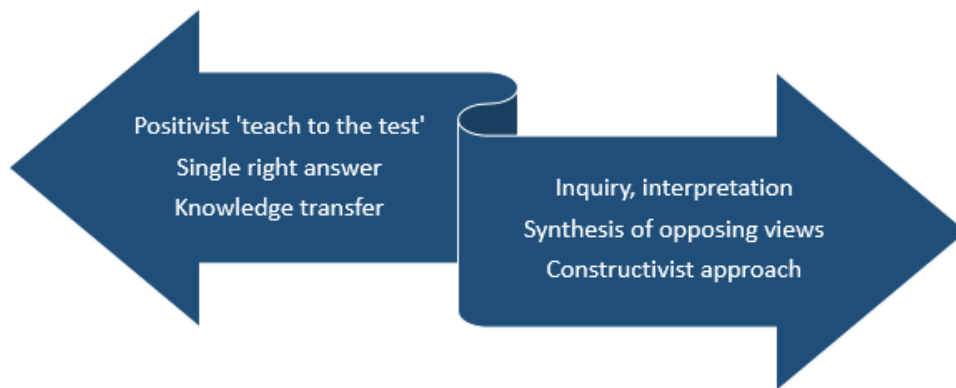
Figure 1: Transition: Culture Clash or Opportunity? (Secker & Coonan, 2011)

In order for this to happen, we needed a model of the inquiry process, as well as an underlying framework of skills that enable the various stages in the process. For this we were sadly forced to look for best practice abroad, settling eventually on the Empire State Information Fluency Continuum, which is centred on Barbara Stripling's cycle of inquiry[4] (Figure 2).
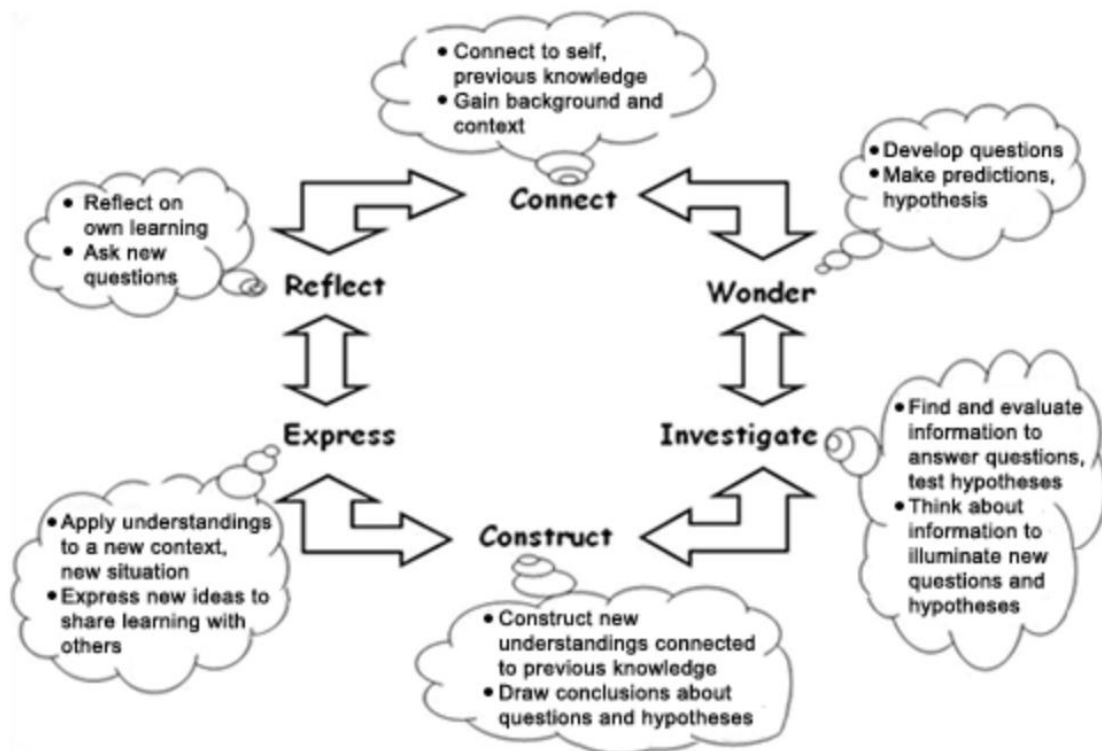

Figure 2: Stripling Model of Inquiry (Library of Congress, 2009)

---

[4] The *Continuum* was developed by the New York City Department of Education School Library System while Barbara Stripling was Director of Library Services. Bernard A. Margolis (2013), State Librarian and Assistant Commissioner for New York State Libraries, in officially endorsing the framework, said that it "has already become the standard which defines information literacy and helps to define the inquiry skills essential for student success". Daniel Callison more recently went on to say that "Stripling's stages of inquiry apply neatly across grade levels and academic disciplines as a basis for a modern interdisciplinary, inquiry-based curriculum" (2015, p. 11). Barbara Stripling went on to be President of the American Library Association (2013-2014), and is currently Senior Associate Dean of the iSchool at Syracuse University.

Five years on a very steep learning curve has produced FOSIL [2.0][5] (Figure 3).
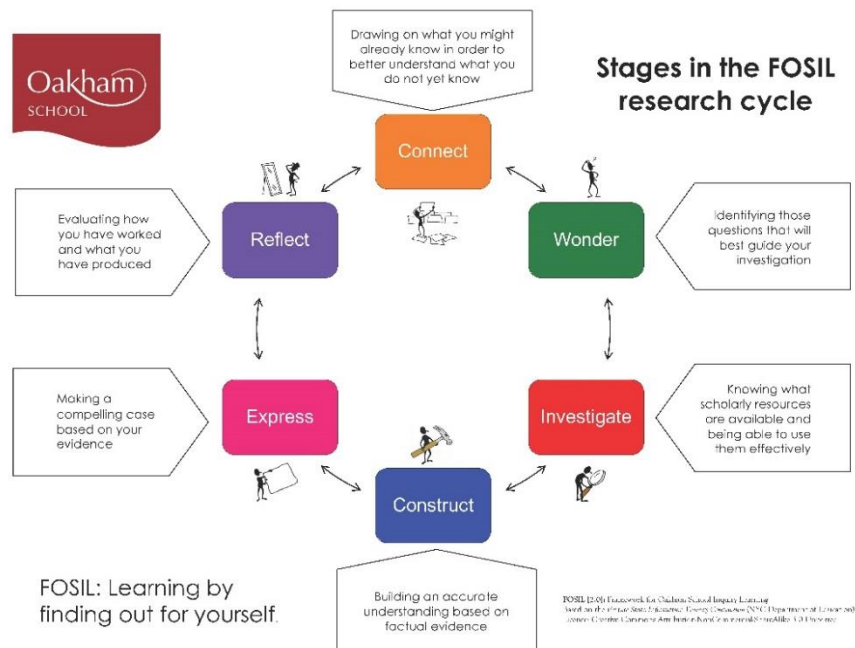
Figure 3: FOSIL [2.0]: Framework for Oakham School Inquiry Learning

This cycle of inquiry, or research in it fullest sense, rests on a systematic progression of skills stretching from Kindergarten to Grade 12, and with this iteration of FOSIL we have begun to adapt Year 6 – Year 9 to our specific needs, mainly through the Computer Science Hardware Inquiries (Figure 4).

Figure 4: FOSIL Skills (Year 6 - Year 9)

---

[5] While FOSIL stands for Framework for Oakham School Inquiry Learning, it deliberately also evokes the discipline and process of uncovering and interpreting [archaeological] evidence as a helpful image, as well as warns against complacency, because any framework like this will need to keep evolving if it is not to become extinct. The colours of the stages in the process are not arbitrary – the colour of each stage is the colour most closely associated with the main activity in that stage (or at least as close as the author could determine).

While working on FOSIL, I co-presented a seminar at the 2011 IBAEM Regional Conference titled **Research as a Way of Knowing: The Extended Essay in Theory of Knowledge**. This was significant for two reasons:

1. In preparing for this seminar it first became clear to me the extent to which subjects at school, taught as they are in isolation, fragment knowledge – by which I mean the sum total of what we know, or think we know, about the world and our place in it – so far that a coherent sense of the meaning of the whole is impossible. Since then I have become increasingly convinced that this does our students a profound disservice because it means that we cannot equip them to declare, with Balzac, "The world belongs to me because I *understand* it" (Bellow, 1987, p. 15). This realisation also caused me to fundamentally rethink our collection in terms of the state of a coherent body knowledge, rather than merely information about subjects.
2. I attended a seminar on dynamic curriculum mapping and had the good fortune to meet Kevin Heppell, the visionary architect of [Mondrian Wall](#), a powerful tool for doing just this. Mondrian Wall proved to be the missing piece of the puzzle.

Mapping the taught curriculum has always been desirable, because which school librarian would not want to know when students were learning what, even if only to ensure that the collection was relevant, budget permitting (Figure 5 and Figure 6)?
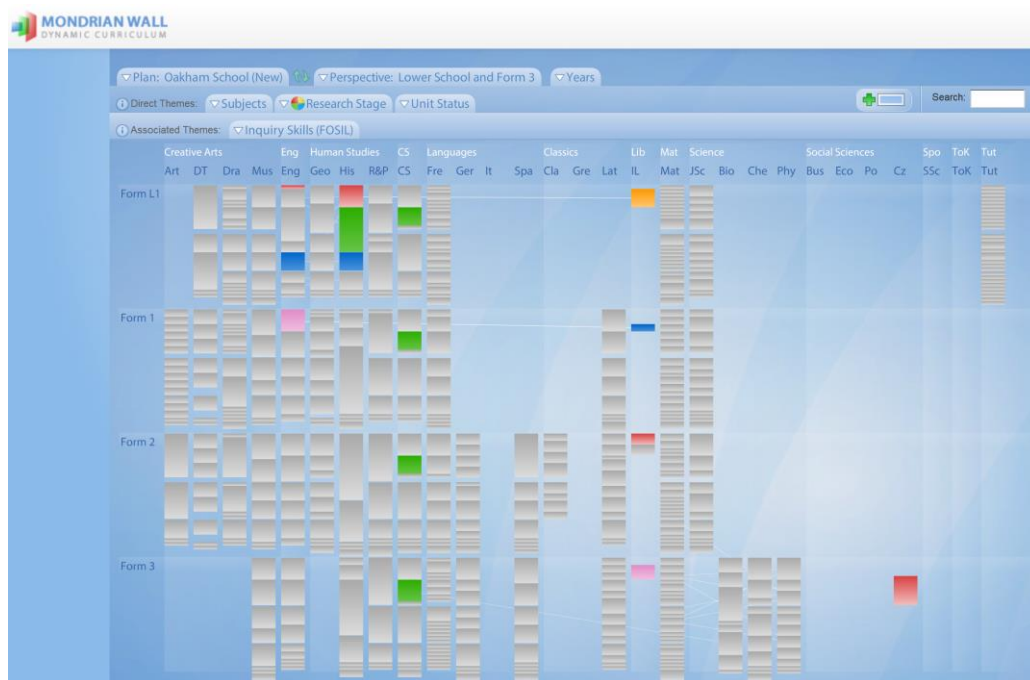
Figure 5: Emerging Curriculum Map: Unit Level Detail (Year 6 - Year 9)

Figure 6: Emerging Curriculum Map: Topic Level Detail (Year 7 Computer Science Hardware Inquiry)

However, if the curriculum is viewed in terms of knowledge of the world and our place in it – knowledge without which understanding is impossible – and subjects as perspectives on this knowledge – perspectives that in isolation are necessarily incomplete – then mapping the taught curriculum also becomes an exercise in determining the coherence of the taught curriculum, both within and between subjects (Figure 7). This example reveals a potential weakness in the teaching order in current Year 9 curriculum, because it would be desirable for the skills required to use and rearrange equations to be taught in Mathematics by a subject specialist before these skills are required in the Physics unit *Forces*.
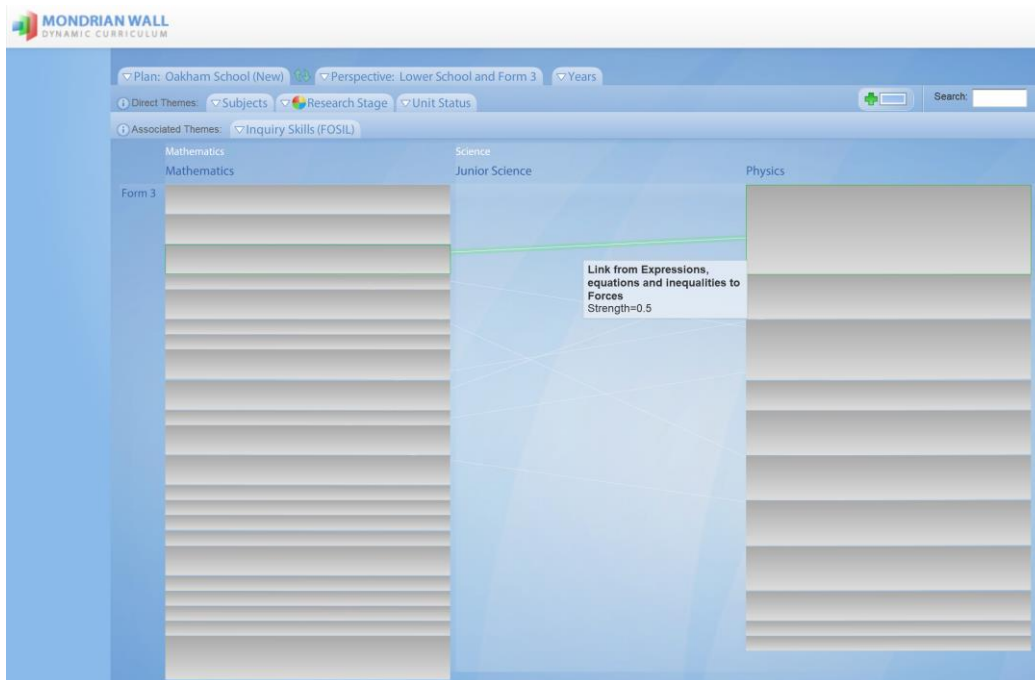
Figure 7: Content Link between Mathematics and Physics (Year 9)

What collaboration with Kevin on Mondrian Wall further made possible, though, was to underlay the emerging map the taught curriculum in terms of content with a map of the progression of FOSIL-based inquiry skills (Figure 7).
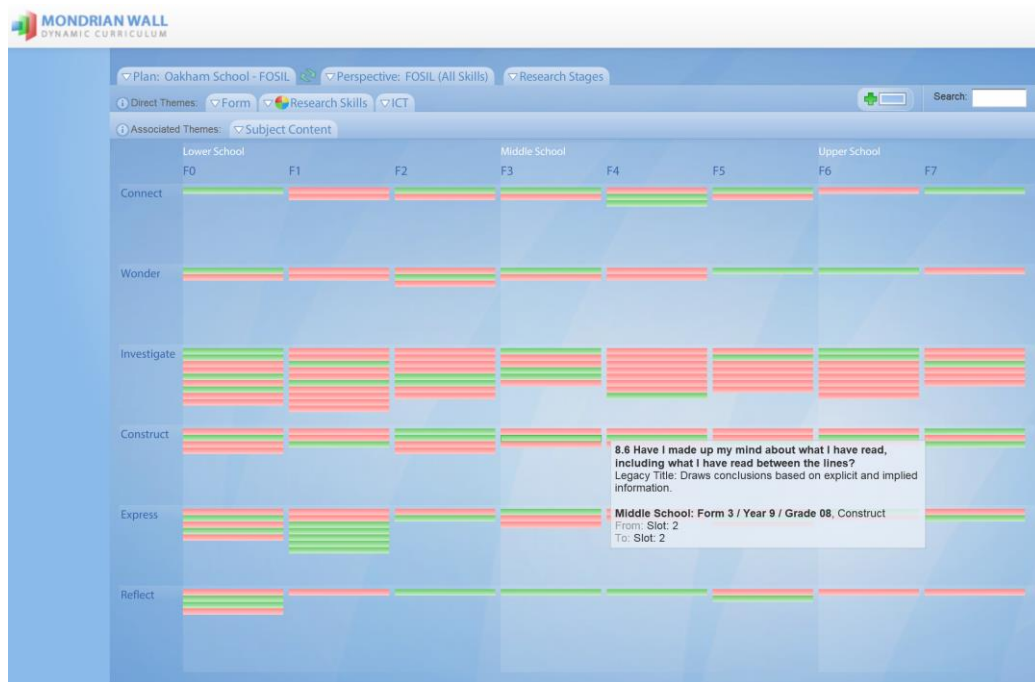
Figure 8: FOSIL Skills (Year 6 -Year 13)

This now allows us to map both where in the taught curriculum FOSIL-based inquiry learning is taking place, *and* exactly which FOSIL skills are involved.

Figure 9: A Search Revealing Where Citation is Currently Taught and/or Practised (Year 6 - Year 9)

A school curriculum is so complex, and with so many different stakeholders, that without this dynamic overview it would be impossible to design and maintain a curriculum in which students encounter academic content in a coherent way, particularly across traditional subject boundaries. Crucially, also a coheren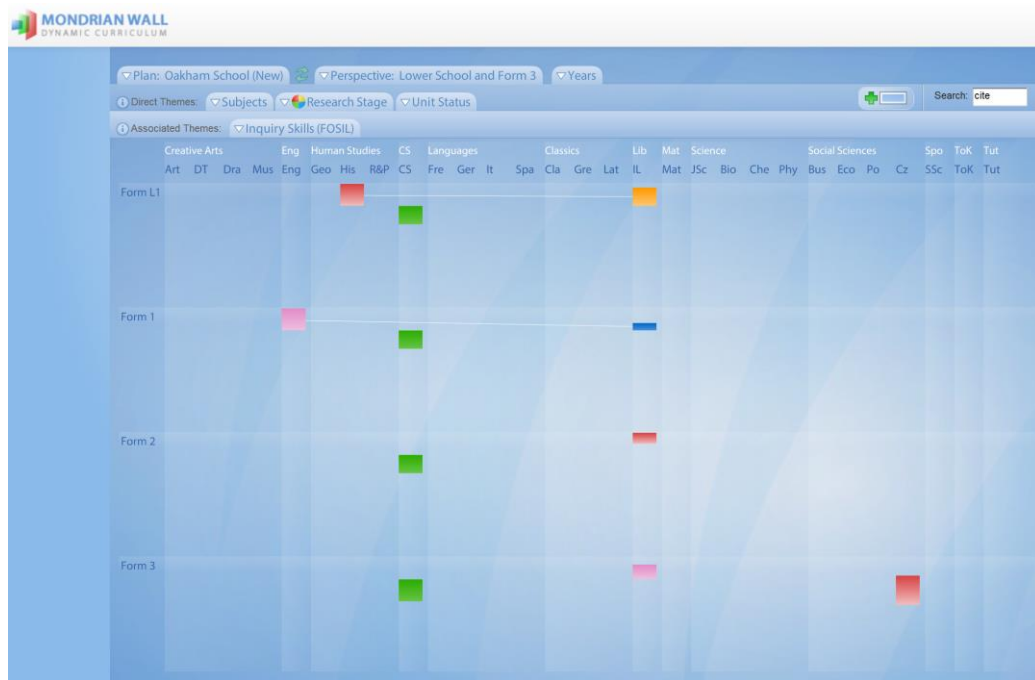t curriculum in which they are given, in a structured and intentional way across all subjects, opportunities to master the skills they will need to negotiate our information-dense world far beyond the end of formal schooling. It is finally possible for us to begin in earnest the conversation about how we collaborate to "progressively and systematically" equip our students with "the tools for acquiring and interpreting…knowledge", the knowledge that they will need for the world to be fully open to them.

Bibliography

ASCD. (1995). *Toward a Coherent Curriculum.* Alexandria: Assocaiation for Supervision and Curriculum Development Publications.

Bellow, S. (1987). Foreword. In A. Bloom, *The Closing of the American Mind: How Higher Education Has Failed Democracy and Impoverished the Souls of Today's Students* (pp. 11-18). New York: Simon & Schuster.

Callison, D. (2015). *The Evolution of Inquiry: Controlled, Guided, Modeled, and Free.* Santa Barbara: Libraries Unlimited.

Learning and Skills Network. (2008). *Independent Learning: Literature Review.* Nottingham: DCSF Publications.

Library of Congress. (2009). *Teaching Inquiry with Primary Sources*. Retrieved from Teaching with Primary Sources Quarterly: http://www.loc.gov/teachers/tps/quarterly/inquiry_learning/article.html

Margolis, B. A. (2013, January 24). *Empire State Information Fluency Continuum Endorsed by New York Library Association*. Retrieved from New York State Library: http://www.nysl.nysed.gov/libdev/slssap/letter.htm

Secker, J., & Coonan, E. (2011, November 1). *Supporting undergraduates of the future: developing a new curriculum for information literacy*. Retrieved from NetworkEd2011 : https://www.slideshare.net/seckerj/networked2011-9978692

Shera, J. H. (1972). *The foundations of education for librarianship.* New York: Becker and Hayes.

Yiannouka, S. N. (2017, November 6). *We have to rethink what "educated" means in a post-truth world*. Retrieved from Quartz: https://qz.com/1120690/we-have-to-rethink-what-educated-means-in-a-post-truth-world/