

Epistemic Progression – the challenge of systematic progression in a complex horizontally structured field

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Epistemic progression should be a fundamental objective for curriculum design. It is only through systematic provision for knowledge that student's understanding of important knowledge can be appropriately developed. In contemporary curricula progression is often stated in terms of the gradual development over time towards higher order thinking skills and the capacity to exhibit core competencies, while progression in building substantive knowledge largely remains unaddressed or is fragmentary in the way it is accommodated for in curricula or in school programme designs.

I have presented in this forum on past occasions presenting the argument that knowledge as a goal in learning has become marginalised and teaching of knowledge has become fragmented. While multiple factors have created these circumstances, a critical feature of this phenomenon for senior secondary subjects is the way learning has become segmented into narrowed components suitable for assessment. Today I intend to extend this further suggesting that 'epistemic progression' as a goal in learning has also taken a back seat and that this has impacted upon the capacity to deliver powerful knowledge to students.

Discussion Points

My discussion today will consider

1. What is meant by 'epistemic progression'? and why is it critical in learning?
2. How Bernstein's theories on how knowledge is structured provides a means of considering how progression functions in humanities subjects.
3. How progression is accommodated in contemporary curricula, using the discipline of History as an example.
4. How teachers of History understand progression.
5. How a shift in focus to epistemic progression might be achieved.

What is meant by 'epistemic progression'?

Defining the terms

I am using the term 'epistemic progression' to mean the way in which knowledge, the episteme, can be mapped in curricula so that critical concepts and knowledge are organised in ways which progressively build knowledge. The goal in planning for progression is that students will acquire conceptual understandings and knowledge frameworks which enable them to make inferential links and develop abstract ideas.

In looking at epistemic progression, I am deliberately focussing upon the form of knowledge which is commonly referred to as 'propositional knowledge' – the knowledge that something is or has existed either as an object or idea. History educators refer to this knowledge as substantive knowledge – the knowledge of events, people, and ideas in the past. This differs from procedural knowledge of **how** to do something, such as skills in analysing primary evidence, or competencies such as leadership abilities.

While the term progression is also often associated with measurement so that we evaluate whether students have made progress in their learning, measuring progress is not the core focus of what I am discussing here. Instead I wish to give consideration to the need for deliberate mapping for progression to enable students to understand and logically develop their knowledge. Teachers therefore must look forwards to what should be learned and then give careful consideration to how to achieve it through building the epistemological steps.

This is important because the broad and minimal curriculum in New Zealand hands much of the responsibility to teachers and school departments to make provision for progression. There are high expectations that teachers will create effective programmes in accordance with the philosophy underpinning the curriculum that school-based programmes will best serve the students in their local communities. Teachers of history, for example, can now teach any historical topic of their choosing – they have complete autonomy over selections after the abandonment of prescribed topics from 2011.

Basil Bernstein

Bernstein's structuring of intellectual fields suggests conditions for progression in knowledge in social sciences. Due to its specialist knowledge Bernstein positions a subject such as History within his vertical discourse category and thereby differentiates it from the socially based unsystematic knowledge of a horizontal discourse. A vertical discourse, according to Bernstein, exhibits 'specialised symbolic structures of explicit knowledge'. However, Bernstein further differentiates the vertical discourse between hierarchical and horizontal knowledge structures. In a hierarchical structure knowledge is progressively subsumed and integrated, and operates at increasingly abstract levels (such as in the sciences) whereas a horizontal knowledge structure (such as for the social sciences, or arts) exhibits knowledge which is made up of multiple segments which don't exclude or subsume each other – they sit alongside.

This is relevant to the question of progression because while in sciences a student may progress through understanding the basics of a science principle, that knowledge is overtaken by more sophisticated knowledge – it is subsumed and it is difficult to progress without working through the learning steps to reach the necessary understanding. In history progression is less linear and more tangential, with multiple pathways.

Conceptual Progression

Concepts lie at the core of planning for epistemic progression. As Elizabeth Rata has illustrated in her article 'A pedagogy of conceptual progression and the case for academic knowledge', conceptual progression enables a teacher to explain the unknown by linking it to concepts which are already familiar to the students. A logical structuring of the concepts provides for the building of knowledge.

Conceptual progression (or epistemic ascent [*to use the phrase coined by Christopher Winch*]) means the concepts already understood by students are brought into new relations of abstraction and generality as further concepts are acquired and integrated into students' understanding.

It is therefore the possible pathways of ordering concepts which need to be thought through and deliberately planned for and it is a teachers' specialist knowledge of their discipline which enables the sequence of learning to be organised in ways which facilitate progression.

'The ability to order "comes primarily from systematic work with an organised body of knowledge ... at different degrees of complexity, in and outside of specific contexts' (Shalem & Slonimsky).

Vygotsky makes similar distinctions to Bernstein in the nature of knowledge distinguishing between what he calls 'spontaneous' concepts which are unsystematic and 'scientific concepts' which have the potential to allow for generalisation and conceptual development. He argues that 'scientific concepts' provide for progression because they 'impose new orders of meaning on existing concepts. 'Concepts generalise phenomena; they extend them in time and space'. This means that a concept arising in one context may then be applicable to other circumstances. In History, for example, knowledge of concepts such as communism or nationalism enables progression from the specifics of knowing about the particular events which represent the concept at a point in time and in a particular location in the world, to a more universal or abstract sphere. The concepts provide the basis upon which to discuss connections over time and place.

Trends in History Education

The way in which knowledge of History as a school subject has developed is significant to how progression has been conceived. Beginning in England in 1972 with the Schools Council History Project, History as a school subject adopted a new disciplinary approach which was influential in shifting practices internationally. New Zealand similarly followed this trend towards positioning disciplinary knowledge at the centre of learning history. A disciplinary approach puts emphasis on the way academic communities of historians go about interpreting historical evidence and constructing arguments. A knowledge of how to 'do

history' is essential in questioning and validating the premises upon which particular knowledge about history has been constructed and arrived at. More recently history educational practices have also encompassed what history educators call second-order concepts – concepts which reflect the main ways that history is thought about – commonly referred to as 'historical thinking' concepts. These include thinking about the causes and consequences of historical events, how significant an event in the past was, and how changes or continuities can be traced through time. Throughout these shifts substantive knowledge was still regarded as important and prescribed knowledge is a feature of most countries' history programmes but what has changed is that progression has increasingly been measured in accordance with how well students engage with primary and secondary sources, how they use evidence in support of an historical argument and how they understand second order concepts.

45 years on from these beginnings, we have reached a point where, as Joseph Smith puts it - *'There is a shared recognition that substantive knowledge on its own provides no scope for progression. Since it is not inherently more challenging to understand one (historical) event than another. School curricula must be based on 'progression in procedural knowledge rather than substantive'.* Joseph Smith *The Curriculum Journal*, p. 503. Smith therefore points to the difficulties in using substantive knowledge as a yardstick for measuring progression. He argues that knowledge of itself is neither easy or hard and can't be positioned in a ranking structure from first learning steps to expert learning steps.

While these concepts are valuable in understanding and developing the cognitive processes undertaken when thinking about history, they require substantive knowledge to be realised. The concepts cannot, independent of a context, convey meaning (Rata, 2015). Therefore to progress students' understandings of what happened in the past, it is also critical to and systematically build substantive knowledge. Through the vehicle of well-ordered substantive knowledge, understandings of procedural knowledge can be enhanced, and vice versa.

Before looking at possibilities for how to cater for progression of substantive knowledge, I will briefly illustrate how managing progression using **procedural knowledge** is neither straightforward nor a particularly strong means of progression.

Using Procedural Knowledge for Progression

Here are three outcome statements from the NCEA Achievement Standards, which I have jumbled up. In their original order they are intended to show the progression in achievement from Year 11 history to Year 13 history when students undertake research.

Can you guess which order they go from Year 11 to Year 13 in senior level history?

Carry out an inquiry of an historical event or place that is of significance to New Zealanders.
(2)

Research an historical event or place of significance to New Zealanders using primary and secondary sources.

(3)

Carry out an investigation of an historical event or place of significance to New Zealanders.

(1)

Progression?

Or this one concerning historical evidence:

Interpret sources of an historical event of significance to New Zealanders.

(1)

Analyse evidence relating to an historical event of significance to New Zealanders.

(3)

Examine sources of an historical event that is of significance to New Zealanders.

(2)

Joseph Smith has similarly shown how outcomes stated in Scotland's *Curriculum for Excellence*, a curriculum which was designed with a similar philosophy to the New Zealand Curriculum, demonstrate these difficulties. The attempts to capture the elements of progression in short outcome statements do not serve to deliver either clarity or genuine progression.

One of the History teachers I interviewed made the comment on progression that 'Level 2 in my mind can be harder than level 3' which suggests a major problem. And a further teacher in a History Teachers Association Survey 2015 felt that the examiner, who is supposed to be an expert, lacked any clear overall strategies for identifying or measuring progression. Comment 48, Survey 2, Post 2014 exam p.47

Further on the point of basing progression on development of skills, Christine Counsell commented that it is a flawed idea that by merely doing skills students will get better at them. Evidence has shown that a constant diet of activities relating to, for example, causation or evidence and the assessment of students against those aspects in relation to England's National Curriculum level descriptions, suggest that students struggle. (p.55)

In New Zealand the reductive effects of utilising just enough knowledge to address the standards is often compounded by the common practice that students are usually assessed against an achievement standard just once so that the 'peas-sized bits (are) to be swallowed one at a time – and for each bit, once only' (Sadler, 2007, p. 390). Whether a single experience of a concept or skill learned once for the purposes of achieving a standard is sufficient to enable that learning to be transferrable, is doubtful. While there may be an expectation that teachers revisit concepts repeatedly and relate them to different contexts to facilitate progression and ensure the learning process is robust, the purpose of gaining the standard or a qualification is likely to be foremost in both teachers' and students' minds so that achievement of an outcome be ticked off and learning moves quickly on to the next bite-sized segment.

Nevertheless I am not arguing for an abandonment of engagement with procedural knowledge but rather that a balance of procedural and substantive knowledge should be sought and that epistemic progression must be a critical ingredient in teachers' considerations.

I am also not advocating for prescribed knowledge as the best way to ensure progression. Prescriptions are commonly formulated by a group of teachers who are regarded as experts in their disciplinary field. The difficulty though, with expecting a prescription to adequately serve the purposes of progression is that its structure would be likely to both complex and highly detailed to demonstrate the necessary conceptual progression able to be interpreted by all users of the prescription. Christine Counsell describes teachers as the *chief resonance managers* – she is referring to the way incorporating new knowledge is dependent on resonance – how it is understood in relation to earlier learning – so a teacher is in the best position to structure progression.

I remember struggling with how best to progress students' knowledge through the year-long topic of England 1558 to 1667 – a topic which was taught to Year 13 students prior to the recent abandonment of the prescribed topic in 2013.

Prescribed content and progression

Returning to the question of prescriptions - the history prescription clearly outlined the key questions which should be addressed and provided a list of content we needed to cover but it didn't provide any clues on how to progress students' understandings, conceptually.

Here is a portion of the prescription at that time.

What was the nature of Elizabethan and early Stuart Government?

Content listed Elizabeth: as a ruler, government, finance, religion, Crown and Parliament in peace and war.

Structurally one could go through each of these listed content areas but that didn't enable students to adequately understand the content – they needed the concepts to explain the history. Over the first few years of teaching this topic I gradually learned how to structure the concepts to integrate and build students' knowledge – for example the concepts of monarchy, personal monarchy the way in which individual monarchs have the powers to exercise their authority), royal prerogative (the rights of the monarch to rule as understood by convention), the trinity (made up of the Crown, House of Lords and House of Commons), and omnicompetence (the all encompassing powers of a monarch) and how these concepts explained actions taken by these monarchs over a hundred year period.

Model of progression

Determining the particulars of progression needs to be individualised to the selected topics taught in school programmes and must retain the flexibility to create adequate connections between concepts and bodies of knowledge. A model of progression therefore, cannot be imposed rigidly through prescription upon the horizontally structured knowledge identified by Bernstein. Instead I suggest that a model for progression might take the form of

1. Identifying key concepts which is likely to be familiar but as yet unapplied to the particular context – e.g. monarchy
2. Build progression through related concepts – personal monarchy – royal prerogatives
3. Consider how these concepts differ from other concepts – concepts which challenge them 'personal rule' under Charles I
4. Consider too how they are similar to other concepts in different times and places – Presidential executive orders in the United States compared to personal monarchy, or the Trinity having some things in common with the President and two houses of representatives – Congress and Senate.
5. How these serve abstract thought – thinking about a leader such as Putin – where does he fit?

Vygotsky's explanation of the relationships between concepts is helpful here. He argues that the relations between concepts forms a vertical order, where the general concept frames the relations between subordinate concepts. Thinking about the distinction between general concepts and subordinate concepts means there may be different levels of generality of the concepts and that these concepts need to be arranged in students learning

so that the more general concepts are recognised for their potential to be brought into relations with other concepts at various points in a programme of learning.

The evidence from my empirical studies also suggests that frameworks of knowledge are largely absent from teachers' conceptions and schemes. The ability to cross-reference knowledge and for students to evaluate their substantive knowledge within a wider context to develop interpretive analyses, is not strongly developed in teachers' programme designs.

So, in conclusion, in New Zealand, progression is largely a matter left to chance and reliant upon the professionalism and expertise of teachers and departments in schools. Without a structured approach to developing substantive knowledge students are likely to have difficulty in seeing connections and making sense of the world. To quote Christine Counsell again, 'Knowledge is not free-floating information that gets in the way, but a mental resource for future learning'. Progression relies on the acquisition of knowledge which is cumulative in its impact.

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