Some cautionary words about constructivism

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Constructivism in education

Constructivism in education is a highly influential movement that consists in a number of theoretical and practical claims. In practical terms, constructivism advocates various teaching techniques and principles. These include: recognition of students' pre-existing concepts and understandings, inquiry based learning, reflection upon the learning process, and collaboration among students and teachers[1].

The educational value of constructivist practices is frequently commended (see, for example, Keogh and Naylor 1997) and its impact in curriculum design and guides for good teaching practices is evident, although usually not explicit. The New Zealand Curriculum provides a good example of how national teaching planning is clearly influenced by constructivist ideas about teaching:

> Reflective learners assimilate new learning, relate it to what they already know, adapt it for their own purposes, and translate thought into action […] Everyone, including the teacher, is a learner; learning conversations and learning partnerships are encouraged; and challenge, support, and feedback are always available. As they engage in reflective discourse with others, students build the language that they need to take their learning further (The New Zealand Curriculum, 2007: 34).

Photo: Commonwealth Secretariat

Questions and answers: 'constructed' by the learner?

But the theory behind constructivist educational practices is apt to provoke strong negative responses:

> [Constructivism is a candidate for] the most dangerous contemporary intellectual tendency […] it attacks the immune system that saves us from silliness (Devitt, 1991: ix).

If constructivism were seen merely as a label for a constellation of reputedly effective teaching practices and principles, it would be hard to see what the fuss is about. Assessment of constructivism would proceed on a case-by-case basis involving judgement over whether the various constructivist techniques are genuinely effective in terms of promoting understanding, critical thinking, open-mindedness, knowledge, respect for the ideas of others and other generally accepted educational virtues. The problems start to arise when constructivism is seen as more than this, as a collection of ideas about teaching motivated by deep theoretical claims rather than practical merit. In this paper I wish to add, only slightly, to the criticism of this theory and its connection to educational practices.

Constructivist theory

While there are many formulations of constructivist theory, it is fair to say that its core claim is that knowledge is a construction that is arrived at via an active process[2]. By itself such a claim does not tell us very much, but it can be fleshed out in various ways according to how one thinks that knowledge is *constructed*, and what one means by saying that this is achieved *actively*. To regard knowledge as constructed is to say that it is *made*, rather than *discovered*. This distinction reflects a division between those views of knowledge that regard it as a relation to the world and those that take it to be an organisation of one's experiences and conceptual schemes that succeeds in making sense. And this can be understood to mean that the knower is able, through this organisation, to cope with the world.

> […] knowledge cannot and need not be 'true' in the sense that it matches ontological reality, it only has to be 'viable' in the sense that it fits within the experiential constraints that limit the cognizing organism's possibilities of acting and thinking (von Glasersfeld, 1989: 162).

Construction of knowledge is achieved actively, through learners striving to make sense of troublesome experiences. In doing so they utilise their pre-existing conceptual schemes and understanding, resulting in new knowledge structures (new ways of coping with the world).

Learning comes about when those [knowledge] schemes change through the resolution of disequilibration. Such resolution requires internal mental activity and results in a previous knowledge scheme being modified (Driver et al., 1994: 6).

These central claims made by constructivist theory are controversial and concern some very fundamental philosophical issues[3]. In fact, it is hard to overstate just how important these issues are.

Concerns over the possibility of knowledge trace back, in the modern era, to René Descartes and his tremendously influential split between mind and body together with the attendant

Box 1

Openness in education: extracts from *Civil Paths to Peace* (2007)

- [It is] hard to exaggerate the importance of non-sectarian and non-parochial education that expand, rather than reduce, the reach of understanding and reason.

- We have to distinguish between respecting persons (including, of course, their right to hold their own views) and indiscriminately 'respecting every doctrine' held by anyone … Respect does, however, demand trying to understand the points of view of others and why they are held, and appreciating the shared interest that people of diverse groups have in cultivating common objectives and finding common ground.

- Understanding implies an ability to grasp what someone else is saying in order to get to the heart of what they are trying to communicate. To do this requires a willingness to put aside one's own preconceived notions in order to appreciate their worldview. Understanding, therefore, involves the acknowledgement that one's own culture and experience are not the only models for thinking or acting.

- Like respect, understanding does not necessarily involve agreement with the views or beliefs others hold. A consensus to do something jointly, therefore, given the different views that people hold, is not preconditioned by the necessity of any unanimity of view. No one or nobody should hold a veto that requires subordination of all to a single view or belief.

- From a Commonwealth perspective, any viable account of respect and understanding must draw sensitively on the discourses of human rights; democracy; equitable development; and as an expression of all of these, gender equality.

- Young people do need positive role models in authority. But, crucially, they also need spaces in which to build their own confidence and capabilities and have their views taken into account.

Civil Paths to Peace, the report of the Commonwealth Commission on Respect and Understanding, was researched and drafted under the chairmanship of Nobel Prizewinner Amartya Sen.

problems this creates. How does our mind get beyond itself to have knowledge of anything beyond it? The constructivist approach sketched here is part of a tradition that tries to resolve this problem by rejecting the idea that truth and our knowledge of the world requires a 'match' between mind and extra mental reality. For the constructivist, knowledge is not a true or accurate representation of an external reality, but a kind of organisation of concepts, expectations and abilities that enables successful coping with the world that we experience. And so the worry about bridging the gap between the mental and the non-mental simply does not arise, for this is not what knowledge requires. It is important to stress that there is an equally strong tradition of trying to understand knowledge in terms of connection or correspondence to a world independent of the mind.

It is my belief that we must avoid implementing educational policy, which has such a profound effect upon human life, on a constructivist basis. Not because there is anything necessarily wrong with the claims themselves, but rather because there is something wrong and self-defeating about placing them at the heart of educational practice.

The need to maintain openness in education

The adoption of constructivist principles in education leads to an explicit endorsement of its theoretical commitments. This can happen through prescriptions over how to teach, as illustrated in this quotation from Ernst von Glasersfeld:

In mathematics, for instance, the teacher should explain that the step in calculus that leads from infinitesimal bits to continuity is a conceptual decision, not a logical consequence […] In science, on the other hand, the first thing to make clear is that scientists do not 'unveil' the objective order of a pre-existing universe, but invent viable ways of co-ordinating and managing experiences – where the range of experiences is always limited by the particular interests of the given period (von Glasersfeld, 1991: 182).

And it can also happen through a general adoption of a way of speaking that describes what teachers and learners are doing in a theoretically loaded way. Peter Slezak graphically highlights this when he writes:

Instead of merely saying 'talking among teachers and students', we can say 'the discursive practices that support the co-construction of scientific knowledge by teachers and students' [from Driver et al., 1994]. Instead of saying simply that 'teachers explain new ideas', we can say the teacher's role is characterized as that of mediating between students' personal meanings and culturally established mathematical meanings of wider society [from Cobb, 1994] (Slezak, 2005).

Slezak disparagingly refers to this kind of talk as 'constructivese' and regards it as a mere dressing-up of ordinary non-technical ways of talking about teaching and learning. But there is more going on here than just a complication of common ways of talking. It is articulating what it takes to underlie commonplace ways of talking. And by adopting this language, one endorses and disseminates the commitments of constructivist theory.

Constructivist teaching practices motivated by constructivist theory introduce particular views about the nature of knowledge into the classroom. These views are not something that should end up being taken for granted, but should be open to intellectual scrutiny by teachers and students themselves. Widespread endorsement of the theory through its being nested within teaching practice and curriculum design may result in its presentation in educational settings as the pre-established truth, as teachers and learners would be immersed in one particular conception of knowledge, learning and teaching. This is dangerous, because it would erect a barrier to open and unbiased discussion about fundamental philosophical issues about the nature of reality and our relation to it.

The ideas at the heart of constructivist theory are in fact the very sorts of ideas that should be intellectually explored in educational settings. Questions about the nature of knowledge are fundamental in teaching philosophy at all levels of education – and these enquiries can hardly be carried out within a teaching context that assumes the answers. If, in such a situation, students come to an understanding of 'truth', or 'knowledge' that is at odds with the assumptions explicitly put forward as supposedly driving their coming to this view and motivating the actions of their teachers, what is the appropriate response of either teacher or student? How does the debate, the dynamic interaction between student and teacher, progress? The student will reject the very language that the teacher uses to explain and justify what they are trying to do within the educational context. And the teacher will feel that their approach has led to the very rejection of that which motivates the approach.

Furthermore, the lack of openness that the constructivist paradigm has with regards to such fundamental philosophical questions threatens the ability to engage with these questions in a free and unconstrained way. If both teacher and student are aware of the commitments of the constructivist learning environment they inhabit, it may curb the student's criticism of those commitments and inhibit the teacher's ability to engage with any criticism that does arise.

The problem of teachers' and institutions' pre-existing beliefs in relation to open and fair discussion is, of course, nothing new. It is certainly not restricted to the sorts of beliefs a proponent of constructivism may hold. But this kind of conflict between teacher and student should be avoided if possible. The problem with constructivism is that it makes this sort of conflict and lack of openness *virtually certain*, because as with any teaching paradigm that has at its heart far-reaching philosophical, psychological or sociological commitments, sooner or later these commitments will have to be discussed *in a way that assumes their correctness*. Needless to say, this is a contradiction for education systems in the Commonwealth (whether faith-based or secular) because Commonwealth jurisdictions have all made some form of commitment to deliberative democracy, freedom of expression, respect and understanding through intellectual dialogue, and so forth.

I am not saying that we should reject the theory of truth and knowledge at the heart of constructivism – that it inevitably leads to relativism, or that it rejects the reality of the world, or that realism about the world is the right thing to believe, or that truth is

something other than viability. Simply this: nothing that makes claims about such fundamental issues should be at the heart of our educational practice, for such claims must themselves be available for fair and open treatment within educational settings.

Endnotes

[1] See, for example Brooks et al. (1999).

[2] Different types of constructivist theory include Piagetian constructivism, social constructivism and radical constructivism. For more detailed analysis of the commonalities between them, see Phillips (1995).

[3] There are many kinds of constructivism within the domain of educational theory, but claims like these are fairly typical. For an overview of the terrain, see Phillips (1995) and Fox (2001).

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