

CONSTRUCTIONS OF CONSTRUCTIVISM

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Fitzsimons has used Foucault to discuss my portrayal of the formation of the Science Education Curriculum as a 'garbage stream model of curriculum policy making'. In doing so, he too has taken the debate over constructivism in science education into social theory. Fitzsimons has interpreted my discussion of the curriculum development process as an example of a 'regime of practices' which would constitute what Foucault has called 'governmentality'. He has also introduced the importance of the neo-liberal logic underpinning many of the recent reforms in education. Fitzsimons, thus, also illustrates the limitations of dealing with notions such as constructivism at face value as epistemological or psychological concerns. To focus on school curriculum within these domains as rational process has limited the debate and rendered invisible the complexity of the broader processes.

With 'governmentality' as his central organising concept, Fitzsimons illustrates the limited nature of agency, either for the teachers or the policy-makers. He has alluded to the extent to which various 'regimes of practices' including psychology shape the life space of the participants. Fitzsimons identifies "that the development of the Document has more to do with governance than with science or science education per se", in this he is substantially correct.

Using Foucault to discuss the particularity of a State political document creates a problem in terms of the levels of abstraction he has chosen. What is the process of curriculum formation and where does it sit in the formation of the Foucauldian discourse of sovereignty? Is sovereignty about the overall governance of individuals or is it the formation (construction) of the sovereign individuals, or is it part of the legitimacy mechanisms of the State as sovereign?

'Governmentality' includes both the formation of individuals and the organisation and arrangement of society. The concept, therefore, leapfrogs the State yet, at the same time, it can be used to describe specific State practices along with all the other social relations. 'Governmentality' portrays the creation of a determined human in what is a fragmented society, but allows no real agency for people in that process, except perhaps history.

My approach is to see curriculum development as a form of political policy making. School curriculum is subject to contestable developments in the administrative State. Developments in the economic sector produce different pressures. These tensions and pressures can be analysed politically to explain particular outcomes.

In identifying the neo-liberal drives of the current changes, Fitzsimons portrays the driving mechanisms of educational change as a juggernaut of economic thought. Here we have an idea as agency. This shifts the meaning of 'governmentality' to a more instrumental level. The concept moves closer to describing an economic drive to create everything as part of a market. This produces a parallel reading of 'governmentality' as also being the construction of individuals as consumers. In this reading the Foucauldian 'regimes of practice' become

similar to what the political economists of the regulation school would call modes of regulation (Lipietz, 1992).

The relationships between education, the economy, the construction of the life world of various human personae and the nation state are a complex myriad of varied relations or practices. These need to be examined, both in the specificity of their material forms, and in the generalisability of their particular functions. However constructivism as a psychologising practice can, and should, be examined as part of a 'regime of practices' (Fitzsimon's term) or 'modes of regulation', to reveal the construction of the instantly-knowing, self-learning, autonomous individual. Individuals are thus being constructed as knowing themselves to be responsible for gaining their own learning and the way/s that they make sense of or use of that learning, and the teachers as facilitating that process of knowing. The constructed reality is the individual in control of the decisions in his/her own life world.

Extending the discussion in this direction has implications that the epistemology of rational science may be transitory. It is part of an already occurring 'epistemic shift' (to continue Fitzsimon's Foucauldian interpretation). Constructivism as a theory of children's learning and the developments in science education are thus sited in the development of a neo-fordist, or post-industrial new-ageism creating not *homo economis* as a mass production force, but various individual *homo consumptii*. *Homo consumptii* is being constructed within a society, in which science is becoming a commodity for sale. Science is now a component of atomised mass culture.

In extending the debate about constructivism, Fitzsimons has assisted efforts to open up the arena of science education as social process rather than as rational procedure.

REFERENCES

- Lipietz, A. (1992) *Towards a new economic order: Post-fordism, Ecology and Democracy*. Cambridge: Polity Press.