Symposium: Higher Education in a Complex World

Agency as emergent: systems perspectives on the social production of small-group teaching (0030)

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Introduction
Complexity theory presents society as a complex adaptive system. It has been argued that such an account provides a comprehensive means to explain the development of new forms of social practice, in contrast to perspectives such as structuration theory and habitus which concentrate on social reproduction (Morrison, 2005). Critical realism, meanwhile, adopts a similar stance to complexity theory, characteristically portraying social reality as an open system in which factors are in dynamic interaction with their environment (Archer et al, 1998). However, it is clear that complexity theory and critical realism operate as relatively high-level paradigms. It is important also to develop mediating frameworks to account for social reality in specific domains. The aim in part is to ensure that appropriate explanatory power is brought to bear on given research questions.

This paper looks at a group of medical educators teaching on the MBChB at the University of Liverpool as they exercise agency in facilitating small groups. We investigate how new forms of practice in emerge in the given setting, exploring the interaction between structure and agency that Ashwin (2008) argues have been neglected in research on teaching and learning.

Methodology
The study was designed to explore the possibility that the introduction of new approaches to facilitating small-group learning is affected by factors in dynamic interaction with their environment, and that it thus constitutes an open system (Hartwig, 2007, p451). Set within the wider field of critical realism, Margaret Archer's model of the way in which cultural and structural properties impinge upon individuals as agents (2003) offered a starting point to expose interplay between structure and agency. Practices develop through a progressive specification of courses of action, involving the trajectory *concerns → projects → practices*. The trajectory is drive by reflexive deliberation on one's objective circumstances (Archer, 2003, p133). Scope also exists to supplement this model with further factors, as pertaining to the other levels of social reality (Bhaskar, 1998).

A case-study approach was taken, offering scope to address variation between tutors. We report here on three of the seven educators included within the study (with Tutors A and C facilitating problem-based learning; and Tutor B small-group clinical teaching). Tutors were observed conducting a small-group session, followed by a semi-structured interview. Archer's model contributed to the category identification, with data analysis subsequently focused on identifying extracts from each interview that were coded with more than one category. The aim was to establish connections between the categories, as manifested within a given case. Explanation building could then occur (Robson, 2002), working from within cases and building from the initial explanation provided by Archer.

Agency as emergent from a complex adaptive system
We offer here an outline of the emerging analysis, with a range of interacting factors in evidence for Tutors A (see Figure 1, but also comparably for Tutor B). Facilitation practices develop, at least in part, through a progressive specification of concrete courses of action; that is, if we regard a project as the initial introduction of any given practice. The concerns displayed for these two cases pertain to the exercise of varied forms of reflexivity, mirroring the social basis for the practice, its professional context, and the experience relevant to facilitation. This contrasts with Archer's findings in relation to social mobility, where individuals were characterised as exhibiting a single dominant form of reflexivity (2003).
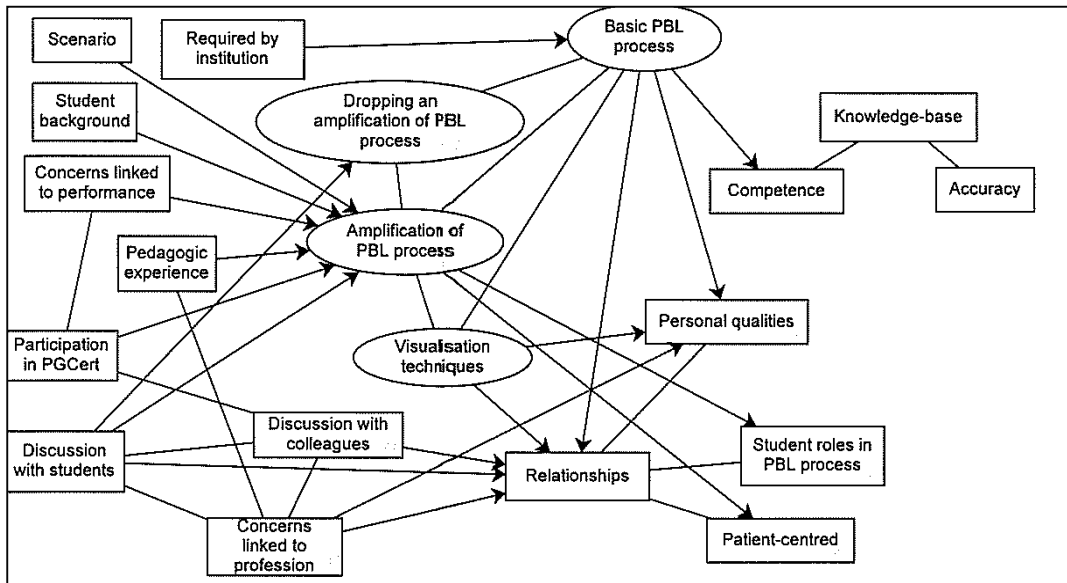
Figure 1   Facilitation practices for Tutor A (contained within ellipses), with their identified origins (in rectangles to the left) and the foci of attention that each practice is seen to promote (to the right).

The relevance of interactions across further factors is also apparent. Interactions with colleagues contribute to the development of new practices and to setting the foci of attention employed within the small group setting, whether stemming from professional development or (particularly for tutor B) the exchange of resources. Furthermore, we see in Figure 1 personal powers affecting the focus of attention within the small group setting. Professional experience is particularly brought into play, in determining whether any given focus or technique is appropriate; as is expert knowledge. This suggests further personal powers beyond deliberation are relevant to the progressive specification of new practices.

Agency emerges from the inter-connected elements, with undecidability present as an integral feature. The focus is on contexualised and contingent systems, which Mason (2008) argues is characteristic of complexity theory. But equally, such connectedness does not occur by necessity. In Figure 2, teaching operates as a closed system, with behaviour shaped by the rules of the system. While reflexive deliberation occurs within the session itself, this is linked to the accuracy of the student contributions rather than to the facilitation practices employed.
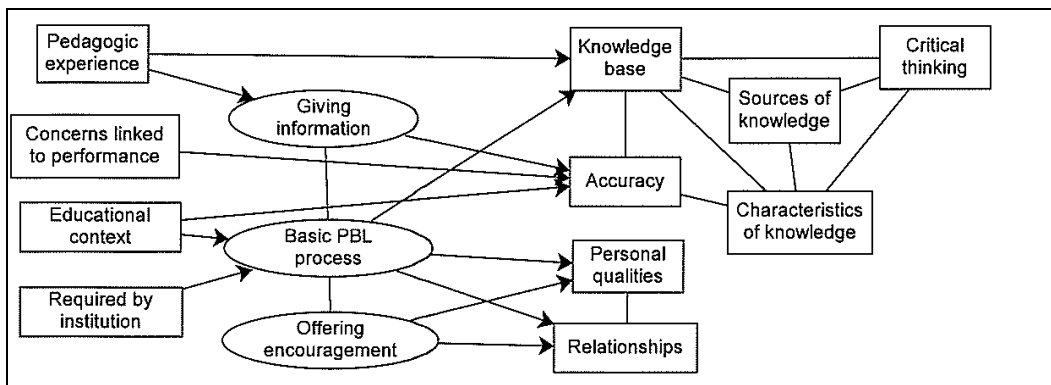

Figure 2   Facilitation practices for Tutor B (as Figure 1)

Conclusions

We have argued that the connectedness evident in the origin of the tutors' facilitation practices lends itself to an account grounded in both complexity theory and critical realism. The exercise of agency in the transformation of practice is explained as an emergent property of a system, stemming from the system's connectivity. In this way we have sought to develop a mediating framework that will assist in the application of these high-level paradigms to the study of higher education. Furthermore, we argue that there is value in adopting a research methodology that highlights connections between factors identified as relevant to the development of new practices. As Ashwin (2008) argues, it is in approaches to data analysis (as well as in the selection of research questions) that researchers particularly shape their explanations. Insights emerge, also, to support the ongoing development of tutors' facilitation practices, with a value, for instance, in focusing on professional, pedagogic and social concerns within the context of a given professional community. But while one may intervene to strengthen those elements of the system which support individuals in carrying out agency, it remains inherently difficult to predict the influence of such interventions.

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