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Governing the Anthropocene: the greatest challenge for systems thinking in practice?

Paper presentation

Bridging the Gap: spanning the distance between teaching, learning and application of systems thinking in the workplace

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Abstract

This paper reports on a study looking at teaching, learning and application of systems thinking ideas for the workplace. Based on experiences of teaching distance learning at the Open University, UK, where the ethos is centred on learning through personal change, the paper addresses the challenge of designing learning systems for the workplace when the underlying intent is of transforming people. The paper provides suggestions for designing such learning systems to enhance the application of systems thinking in the workplace.

Drawing upon a qualitative interview process and action research methodology, the research looked at experiences of mature part-time students taking distance learning postgraduate core modules for the systems thinking in practice (STiP) programme at the Open University, UK. The study also investigated the experiences of alumni (from the same programme) as employees seeking to apply the learning from their studies in systems thinking in the workplace, alongside the experiences of employers of the alumni.

The paper briefly describes three phases of the research: firstly, exploring experiences of learning

systems thinking through part-time study; secondly, exploring the experience of applying systems thinking ideas in the workplace; and thirdly, examining better learning design models in the application of systems thinking. A review of the outcomes of this study prompts some key recommendations for future design of part-time postgraduate courses in systems thinking for professional practitioners.

Introduction and background

This paper reports on a study looking at teaching, learning and application of systems thinking ideas for the workplace in meeting the challenges of (i) supporting people to learn to practice systemically in a contemporary context and (ii) supporting distance learning with an intention for personal transformation as well as subject learning.

The paper briefly describes three phases of the research: firstly, exploring experiences of learning systems thinking through part-time study; secondly, exploring the experience of applying systems thinking ideas in the workplace; and thirdly, beginning a collaborative process of examining better learning design models in the application of systems thinking. A review of the outcomes of this study prompts some key recommendations for future design of part-time postgraduate courses in systems thinking for professional practitioners.

Approach

The research was undertaken by a team of 5 systems practitioners involved with the design and delivery of the postgraduate STiP programme. There were three phases to the research. Broadly speaking, the first phase focused upon experiences of learning systems, the second phase focused upon the experience of applying systems ideas in the workplace, whilst the third phase looked ahead to examine better design in the application of systems thinking.

There were three phases to the research. In the first phase, semi-structured interviews were conducted by two research team members with 10 students who were enrolled on one of the two core taught modules. Each researcher interviewed 5 participants for between 45 mins to an hour. In the second phase, the two researchers undertook a series of paired interviews; interviewing an alumnus from the programme and then separately conducting an inteview with the direct line

manager or employer of that alumnus. In total, 8 pairs of interviewees agreed to participate. Finally, a third phase one-day workshop involved bringing together interviewees from the first two phases along with all 5 research team members and other stakeholders including educationalists, systems practitioners, and other employers, to examine initial findings. Broadly speaking, the first phase focused upon experiences of learning about systems thinking, the second phase focused upon the experience of applying systems thinking in the workplace, whilst the third phase looked ahead to examine better design in the application of systems thinking.

Results

The results of the study in relation to the experience of learning about systems thinking suggested that whilst most students valued their study, there were four signficant barriers to learning that we identified.

One of the challenges that students experienced was around making time and commitment for study and contact with tutors and other student. There are several elements to the modules, including module text books, a module website with core and additional study materials, online discussion forums and online tutorials. On their own these would be significant study resources to engage with but most students are also working full time and the combined pressure of study and work can be overwhelming. As one student commented:

> *"Yes, it has been a struggle. As I say, not because of the course content, I enjoy the subject and am very keen to learn about it to be honest but I have just found it too pressurised in dealing with the work situation and trying to deal with study at the same time." (JB1)*

Some students also expressed difficulties with engaging in some of the more philosophical elements of module material. The difficulties of the philosophical inquiry seemed to have been affected by the way in which some students tend to manage their part time study. One student noted that

> *"in a sense I do find it a bit philosophical. In a sense it is because it is like something that is totally new to me...because it is not a full time thing you have to do it in windows of maybe one hour two hours, you know...it is broken up into many small small windows…it takes time to see the overall picture"*

(ZZ1)

Some students enjoyed the specific systems terminology that was used in the module materials, others were more troubled by this language. One student mentioned that

> *I think I was in shock when I first started doing the… reading it, reading it because the first around that, as I remember was all the stuff about, I can't remember specifically, the terms about feedback, reinforcing loops and I just thought 'that is another language'. I just thought I had completely and utterly bitten off more that I could chew, so that was a surprise. (AS1)*

Students on the modules come from a whole range of different backgrounds, including but not limited to engineering, environment and ecology, IT, health, education, international development, business, accounting, performance art and more. As a post-graduate module focused upon professional development, most students were aiming to translate and apply the ideas being introduced in the study to their context of work. The module materials included case studies, with many of the examples in one of the modules focsued upon the domain of sustainable development and environment. One significant challenge was that the range and scope of case study materials did not cover the range of domains from which students come.

There were also some specific factors that supported learning that participants identified. These enablers included the

- high quality of study materials,
- the richness and variety of voices on the programme (including those of fellow students on online forums) and
- the integration within module activities to work on applying ideas in practice.

Whilst some of these experiences of learning were shared, we also found that not all students encountered these challenges and enablers in the same way or in equal measure. In trying to make sense of the variety in experiences of students, we developed some outline sketches or archetypes of systems learners that provided an interesting account for the researchers of the variety in which study on the module was encountered.

When the application of systems ideas in practice was discussed, we found that most of the

participants who were attempting to apply the ideas in practice were doing so in something of an under-the-radar or behind-the-scenes manner. We found that explicit use of systems thinking in the workplace was somewhat limited, with many participants tending to work with systems thinking for individual sense making or off-line design work. For some of the practitioners, such an approach seemed to be experienced as a problematic constraint on the scope of their practice, whilst for others it was a more accepted part of organisational circumstance.

We found many factors that seemed to contribute to this approach to using systems thinking: employees understanding and sense of agency, the practitioners confidence in overt application, pressure for action that is 'practical' and within current 'frames' of reference and of course the employees learning from module material (see Figure 1 below). We also found that employers had differing attitudes or modes of engaging with the employees skills in systems thinking which had some influence upon how systems thinking could be used by the learners.

The synthesis of this inquiry is emerging, including proposals for better systemic design in bridging the gap between teaching, learning and application of systems thinking in the workplace; for example, through promotion of action learning amongst alumni and coaching to employers of systems practitioners.

Summary: recommendations for Systemic Design

1. Improve workplace appreciation of contribution/offer from systems thinking skills and systems practitioners. One the issues for those seeking to encourage greater application by learners of systems thinking in their workplace is the significant role that sponsors, line-managers and employees have to play in the quality of application. One possible direction for enhancing this appreciation would be to conduct coaching with employers of systems alumnus as they seek to apply systems thinking. An employer who, for example, simply sees systems learning as an example of personal development and growth may not necessarily see the potential role that a systems practitioner has to offer in terms of supporting the

alumnus to develop their practice in way that can facilitate 'out of frame' transformation and systemic change. A tension within this will be the extent to which interaction with employer can be designed to help them see the possibilities of systems thinking....

2. Promote varied forms of action learning amongst alumni. An online alumni group has been set up by several of the alumni. The group, based on a LinkedIn platform, has a large number of members (over 1000). However, many of these members are not graduates of the study programme. According to some of the alumni the quality of mutually supportive inquiry that the online group is more limited that experienced in the online forums that are part of the learning experience whilst studying. Given that one of the challenges for alumni has been to develop and extend their agency and the potential role that collaborative inquiry might be able to play we see that facilitated action learning may contribute to the development of qualities of systems practice. This support would need to be tailored to the varying qualities and purposes that alumni have upon leaving the programme.
3. Growing a repository of cases through which to appreciate insights about practice and impact. The challenge for developing systems practitioner to make their practice overt might be met in some way by being able to have better access to data and accounts of about the effect of systems practice in a range of domains, both within their own fields and outside.
4. Developing professional recognition and actively shaping the image of a successful systems practitioner. One framing for these various activities is to generate demand for competence in systems thinking. An idea that is emerging along these lines is the development of a competency framework for systems thinking in practice. A challenge in the development of such frameworks is balancing breadth of coverage against applicability across a wide range of roles and functions, and allowing adaptability of praxis rather than prescribing best practice. This tension is perhaps further exacerbated by the way in which systems thinking can function as a meta-discipline within any number of professional areas of practice.
5. Enhancing appreciation of student learning journey's amongst module teams. During the research one of the sense making devices developed by the team were a series of archetypes of systems learners. These archetypes attempt to explain some of the variety in learning experiences that we heard about in our interviews through the mode of a series of archetypal systems learners. We By use of systems archetypes by tutors such that it is possible to develop more targeted support for developing practice both during and upon exit.
6. Challenge 'turf wars' and methodological 'purism' amongst advovates of systems thinking in favour of more adaptive sense of systems practice as 'bricolage'.

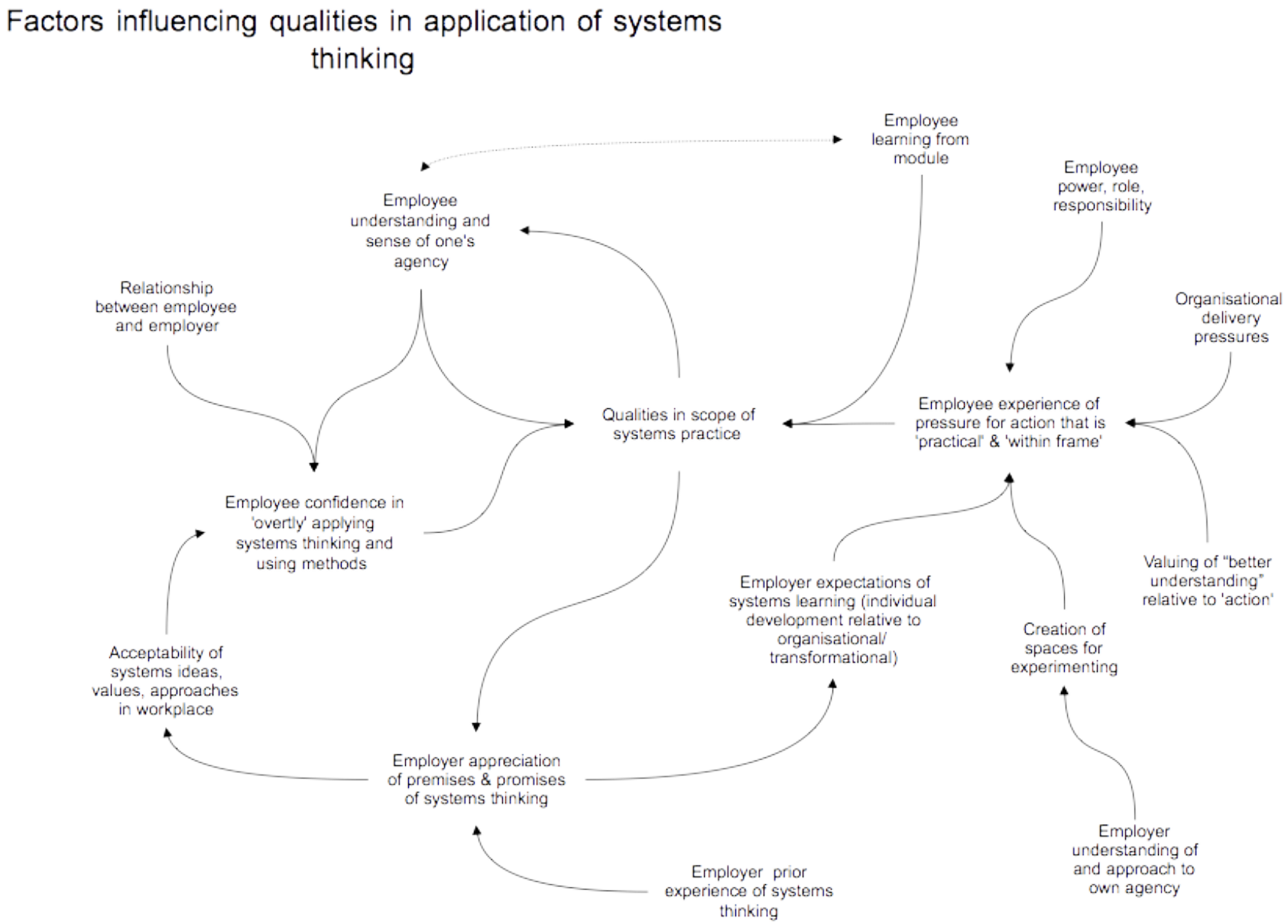

Figure 1: Factors influencing qualities in scope of systems practice