Envisioning the Future of Research-based Curriculum Design Using Lego Serious Play

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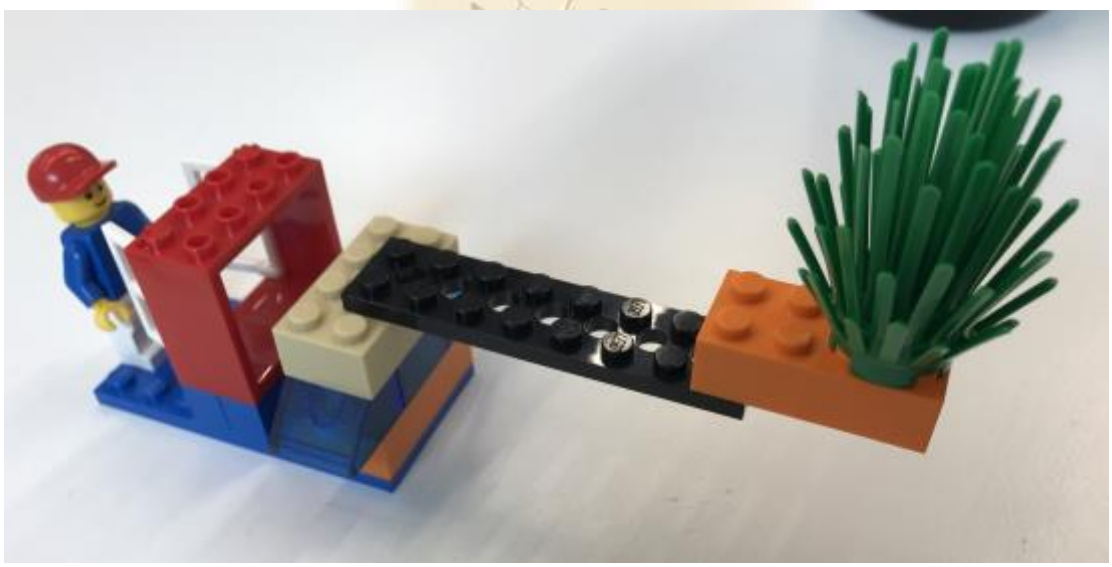
All too often, curriculum design operates as in a vacuum: it is the grand achievement of a single teacherly genius, an ivory tower disconnected from all else and as autonomous as academic culture itself. No doubt there are political, institutional, and interpersonal forces at play that help shape this paradigm. In this conception curriculum works as a closed system: isolated, Newtonian, subject to unchangeable laws and amenable to a controlling design methodology from which student learning outcomes are evacuated as predictably as waste (Katz & Kahn 1966). Frameworks such as MELT or the RSD go some way towards addressing this closed design thinking, but if implemented as top-down models they may serve to reinforce the problem.

In the light of critical system theory, this is a prescriptive approach to curriculum design, and approaching learning as a complex system (as the RSD does) helps us to re-vision some of the most sacred cows of educational theory. One of the most common approaches to curriculum design in Higher Education, at least, is John Biggs' notion of 'constructive alignment' (Biggs & Tang 2007). This approach consists of identifying clear learning outcomes and then designing activities and assessment in alignment with these outcomes, to create a system of learning that has coherence and a logical internal structure. However, a constructively aligned curriculum doesn't always achieve the goals it sets out to, even though it may have other benefits (Habel 2012).

In a world of transparency and neoliberal regulation, 'assurance of learning' is the name of the game. Romy Lawson's work on the 'Curriculum Design Workbench' (a tool for curriculum mapping) proceeds from a strong 'learning assurance' agenda (Lawson et al. 2015). The language here is very familiar to any educator: 'quality enhancement', 'quality assurance', 'tool', 'outcomes', 'standards', 'systematic', 'evidence', 'performance', 'assessment', 'development', 'management', 'continuous improvement', 'accreditation'. (And that's just the first three sentences!)



Look through the window: envisage research-based learning.

However, in the light of complex systems theory, it becomes more and more apparent that such approaches to curriculum design are inherently flawed. An individual course or curriculum is no more a closed or isolated system than a local weather pattern, a single wave on a beach, or a cottage garden bounded with a white picket fence. Under the light of complex systems theory, the gold standard of constructive alignment begins to look more like a linear, cause-and-effect approach that seeks to command and control the learning experience. Curriculum design appears as a 'lever' that we pull on the learning system to produce desired outcomes (leaving aside the disclaimer that 'student success' itself is a wickedly vague concept). Such an approach to research education, for example, begins to look distinctly simple, and even simplistic.

What do we do, then? Do we just abandon hope all ye who enter here, throw our hands up in the air and leave learning to the forces of chaos? Of course not. Our very vocation as educators is predicated on the premise that there is something that we can do to effect transformational change in ourselves and the learners we encounter. The eschewal of ego required in giving up control over a system does not imply a complete eradication of agency: the challenge is to further enhance our own 'systems intelligence' so as to develop a kind of balance between engineering thinking and human sensitivity (Saarinen & Hämäläinen 2007). This is by no means an easy or simple task.

Anyone who has taught in a classroom knows the challenges involved. In reality, learning is messy, unpredictable, dynamic, and often completely crazy. In a live setting, curriculum takes on the characteristics of an open, living system, with connections to outside forces that are hard to predict but are nonetheless essential to the functioning of the whole (Wells & McLean 2013).

Donnella Meadows suggests that while it may not be possible to *control* open systems, it is possible to create the conditions for them to thrive. It requires a type of 'dancing', which is quite distinct from the usual command and control styles of management and design in education and elsewhere (Meadows 2002). One may not be a chemist who can produce perfectly predictable reactions, but one may be a gardener who applies the wisdom of ages in an active-research method to encourage healthy growth of a system that may not be completely understood, but may be nurtured. More specifically, Meadows writes that with enough human sensibility, 'The future can't be predicted, but it can be envisioned and brought lovingly into being' (Meadows 2002).

The challenges that open systems theory presents to our values and philosophies of learning and teaching are significant. Even when explicitly adopting metaphors of open systems to apply to a specific concept, as Baykal (2009) does with the Turkish educational system, the insights can be limited. Indeed, creating specific outcomes through concerted effort is a fundamental pillar of educational theory and practice, and Meadows' 'dance' can perhaps only be adopted with a more thorough paradigm shift (Kuhn 1962). Dancing with living systems demands nothing less than 'surrendering any pretension to prediction or control' (Wells & McLean 2013).

> Systems can't be controlled, but they can be designed and redesigned. We can't surge forward with certainty into a world of no surprises, but we can expect surprises and learn from them and even profit from them. We can't impose our will upon a system. We can listen to what the system tells us, and discover how its properties and our values can work together to bring forth something much better than could ever be produced by our will alone.
>
> We can't control systems or figure them out. But we can dance with them! (Meadows 2002, p.18)

If learning is open, complex, and messy, approaches such as the Research Skill Development (RSD) framework work best not as a formula to design the optimal curriculum and control learning. Instead, such frameworks work as windows onto a complex and open system: at its best, the RSD facilitates conversations wherein educators progressively define their terms in conversation with others, and compare their conceptualisations of learning: what it looks like, its inputs, outputs, and the multitudes of ways in which it can reflect and constitute the human experience of slowly building knowledge. For this, dialogue is not only useful, it's essential (Banathy & Jenlink 2005, p.ix). At its very best, the RSD helps us to envisage what research-based learning looks like through this kind of dialogic conversation.

It is therefore no surprise that some of the best work in the tradition of the RSD has engaged with learning in the most subtle and profound ways. From the number of sister frameworks that have developed from

the original insights of the RSD, to the 'Research Mountain', to the Meltoon and the multitude of rubrics, learning activities, and curricular documents that have been envisaged through discussions prompted by the RSD, there is a strong tradition of envisaging the future of research-based learning through nurturing the open systems of curricula that structure the lived experience of learners and educators.

This workshop proposes a modest contribution to this envisioning of the future of research-based learning using a methodology that is in some ways new but in other ways will evoke the childhood experiences of playful learning that are core to many participants' childhoods. Lego Serious Play builds on the original business model of the founder of Lego to educate a future generation of engineers but applies it to a much broader range of potential learning experiences. It is an open-ended method for building models using Lego and using them for reflection and narration with unique insights into human understanding and experience.

This deeply interactive storytelling approach not only brings ideas, perceptions, and values to the fore; it energises a process of collective envisioning. ‘Perceived differences in priority or “agenda”, and perceived power differentials operating outside the envisioning process, succumb to the levelling impact of story-telling, in which each voice is equally honoured and every story is “gathered up” in the process of shaping a shared story or vision that is not “consensus” or “lowest common denominator”, but tells everyone’s story in one.’ (Wells & McLean 2013).

In this workshop participants will be tasked with collaboratively building models of the RSD facets using Lego Serious Play sets, and 'talking to' these models in a way that opens discussions on what research is, and how it is experienced by learners. For example, one group will be asked to build a model to represent ‘Embark and Clarify’, while another will represent ‘Communicate and Apply’. Participants will thus describe, question, critique, and build on each other’s models in a collaborative reflection exercise.

This modelling is by no means definitive or exclusive: it is designed to open conversations about the nature of research-based learning at all levels, and to enrich conversations that are happening at this conference and in participants’ home institutions. These conversations will be facilitated as a means of exploring definitions and interpretations of the RSD facets, and we will attempt to ‘capture’ these representations in photographs, vignettes and possibly videos that can be recorded as artefacts and disseminated via the conference website and various social media channels.

We can't guarantee that it will resolve all your curriculum design challenges, but we can guarantee that it will be fun. At the very least you will gain insight into various conceptions of research-based learning in a memorably creative learning environment.

Please note: due to practical constraints, this workshop is restricted to 30 participants: first in, best dressed.

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