AN APPLIED EDUCATIONAL LEARNING CONCEPT FOR "LIVING SYSTEM" FIELDWORK

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ABSTRACT

The dynamic interactions of very large living systems in which we find ourselves existing and engaging with, can, at the very least be difficult to navigate, or at worst, dictate disastrous directions (Garduno et al. 2013). There have been various descriptions that are based more on perceptions that influence and stress different areas of sustainable development and sustainability. The Brundtland Report discussed the 'inequality is the planet's main "environ-mental" problem' (WCED 1987, p 6), linking poverty and pollution, social justice with unsustainability. It did however; link these issues, even though there was a focus on the symptoms rather than the cause' (Asghar 2001).

However, more recently it has been possible to view these issues as living systems, that are in themselves, adaptive complex systems, with many multiple components and properties (Nousala et al 2012: Nousala and Hall 2008: Hall et al 2010). Asghar (2001) discusses a broader perspective, by referring to the Brundtland Report (WCED 1987, p3) and the futility of focusing or dealing with the environmental problems without viewing these issues through a wider lens, to encompass the factors that underpin world poverty and international inequality.

These perceptions have also been challenged by increased understanding of richer based contexts, supported by multi-disciplinary processes of all kinds, not least of all, the expansion of educational platforms of exchange, that rely on action based research, but also statistical data base analysis.

This paper discusses the concepts of sustainability, community engagement, methodological approaches (through a social complex adaptive systems lens) and educational experiences based an educational pilot project, namely Aalto LAB Mexico (ALM). This experimental case study was based on previous research, current literature and fieldwork engagement with specific rural communities in Mexico (Garduno et al. 2013).

1. INTRODUCTION

The difficulty of navigating between the micro community issues, and the macro sustainability question is the nexus where complexity and holistic thinking may provide a much-needed dynamic navigational approach. Haenn (2004) discusses this micro- and macro-level view through governance and land use issues in Mexico (from the same region where the ALM was conducted). Haenn describes this as a layered approach, "the Mexican constitution has been challenged to bridge micro- and macro-level data and illuminate a general refusal to privatize land. Here, a layered approach poses a few possible answers". Haenn (2004) goes on to say how

the research has drawn on data from this Mexican region, Campeche, and how it relates to the rural community members through various reforms and counter-reforms and combined actions of federal policies, local administrators, and the mixed common and private property tenures. Haenn cites Cornelius and Myhre (1998b) and Ibarra Menivil (1996) and discusses their views on the required layered understanding and the nature of the issues at hand, both locally and globally, again underlining the micro-and -macro level nature of sustainability and land use, "Fundamentally, contradictions arise from the way national and international policies aim to change the ejido's legal underpinnings, while infusing the ejido's collectivism with a spirit of commercialism and individuality" (ejido local type land use).

This type of fieldwork and research must trigger questions regarding sustainability, such as, what is sustainable, why is sustainability appropriate for a given situation, human (including cultural, social) or natural. Asghar (2001) asks the question, "…is sustainable development the same as sustainability? Asghar describes and quotes Dobson (1998) with a view that at first is narrow, then broadens to second-level focus issue, "...sustainable development amounts to one conception or theory of environmental sustainability rather than the two things being synonymous. It is a conception of sustainability in that it contains views on what is to be sustained, on why, on what the object(s) of concern are, and (often implicitly) on the degree of substitutability of human made capital for natural capital.... It is a theory of environmental sustainability in that it argues that a particular interpretation of the causes of unsustainability leads to a determinate view of the remedies for it (p. 60, original emphasis)."

Asghar (2001) suggests that this "…may be a better way forward, given the highly ideological and contested nature of sustainable development, but problem is not much solved…" Asghar goes on to say that what Dobson (1998), "…seems to be suggesting, could potentially become yet another contestation depending on different deeper ontological and epistemological understanding of 'environment', 'nature', or society-nature relationship, out of which stems conceptions of self, other, freedom, needs, justice, contentment or happiness etc."

Asghar (2001) describes a process of sustainability by which to "distribute, support, protect", posing the question what should be developed, maintained, sustain, and most importantly, why:
"Every possible aspect of the dynamic interaction of any community of human beings will encompass the scalular, simultaneous effects of continuous processes from which emerge all manner of tacit aspects that is to live, to strive for well being, living well. This concept of living however, is viewed almost exclusively within the confines of the human domain".

As Asghar (2001) quotes from Linklater (1990, p. 149), he describes boundaries placed on local levels by more global concerns, "The State, as it has developed from the European experience through the treaty of Westphaplia in 1648 and onwards…sought to limit the scope of both sub-national and transnational solidarities and identities… because of the fear of its internationalization, the idea of community has thus remained limited to the boundary of the nation-state". Asghar agrees with Low and Gleeson (1998) makes the argument that "If within this kind of framework moral and political inclusion remains fixated with concern for human beings within state boundaries, it is almost impossible to imagine the inclusion of non-human species to make up a 'community' of life forms, a dominant concern of 'ecological justice'".

So to contribute to the exploration of this argument, case study work was carried out to extend beyond the human and experience an educational holistic approach to also include the scalular.

2. A PARTICULAR TYPE OF FOCUS WITHIN THE FIELDWORK EXPERIENCE

The fieldwork included methods that focused on approaches for examining and discussing descriptors, intended for common usage for interactive disciplinary activity, a common approach and the emergence of a new term "poly-disciplinary" in relation to social complex adaptive systems (Nousala et al. 2012).

The value of using a range of disciplines and interactive approaches, offered the possibility of providing a range of descriptors to adequately describe key or interactive points within or between dynamic systems (including new and emergent methodologies and a range of disciplinary approaches), beyond human.

3. THE CASE AND FIELDWORK DISCUSSION

Garduno (et al. 2013) explains that the Aalto LAB Mexico (ALM) was an experimental case, aimed at holistic, multi-disciplinary approaches, also enhanced by fieldwork engagement. Through project based learning (including links between engineering, arts and economics, with design as a contextual "back drop" for participants' engagement) Garduno (et al. 2013) goes on to state, "The contribution of the ALM research aimed at enhancing recognition of the potential for design thinking to translate the learning process, through a communicative platform in a poly-disciplinary context. The ALM project also addressed the importance of an empathic approach and awareness of intercultural problems. Both of these aspects were required from all fields to address sustainability issues, which impacted social complex adaptive systems, on multiple scales".

Garduno (et al. 2013) also stated that "The ALM project continues as an educational exercise that aims (among other layers)… to nudge the students' interest towards matters traditionally exclusive to the humanities field through design thinking…", this also included "going beyond" to include those topics that are non-human based issues and concepts, viewed through the complex system lens.

The ALM project was based on a combination of the initial, virtual learning experiences and exchanges between participants, that focused on a final geographically remote, ethnographically based fieldtrip that included a research period. Garduno (et al. 2013) discusses this approach "…which also included action based research methods which encompassed project based learning techniques. The project was designed to actively engage the students in producing knowledge and raising their social awareness".

This approach also highlighted the commonalities between theoretical and applied adaptive complex systems elements and the holistic nature and aspects of the design discipline.

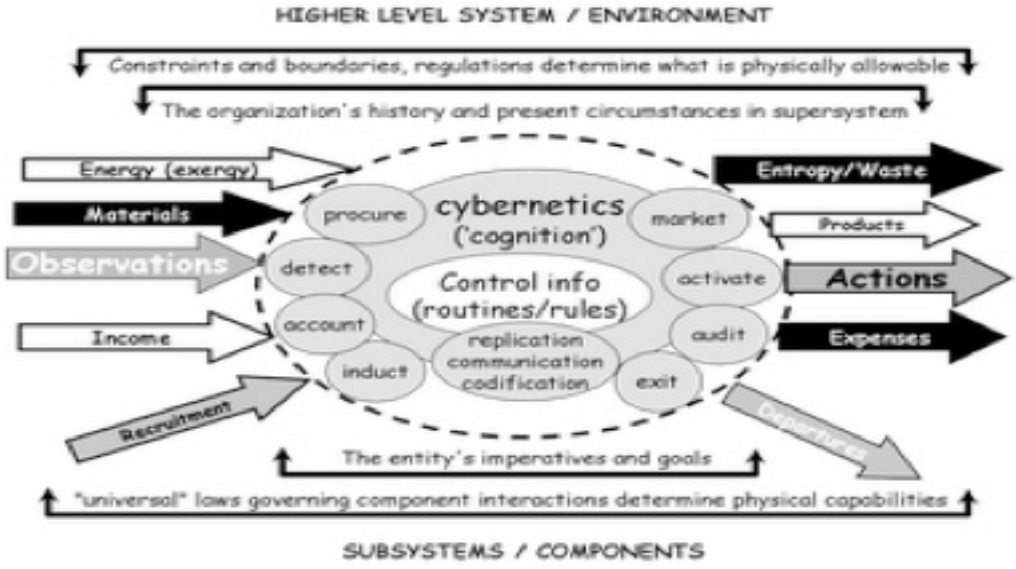


Fig 1. (Nousala et al. 2012) "Complex Adaptive Systems currently utilize various combinations (including methods outside the various disciplinary approaches) of disciplinary approaches during the course of describing theoretical and applied work. Analysis of these complex systems rely upon tracking and mapping knowledge that is formulated and applied as living systems (Hall et al. 2010, Hall 2003, 2005, 2006; Hall et al. 2005) across several hierarchical levels of organization (Miller 1978; Salthe 1985, 1993) including living cells, multicellular organisms including people, and social and economic organizations (Hall et al. 2010, Nousala and Hall 2008; Hall and Nousala 2010, Nousala 2009)".

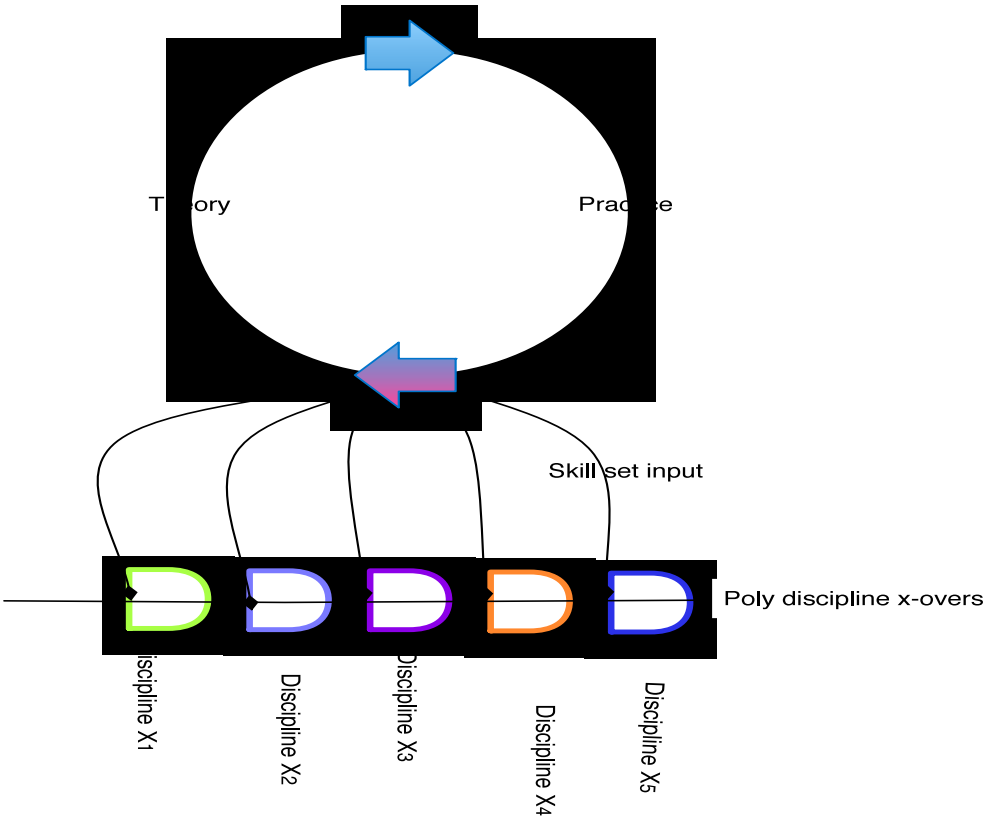
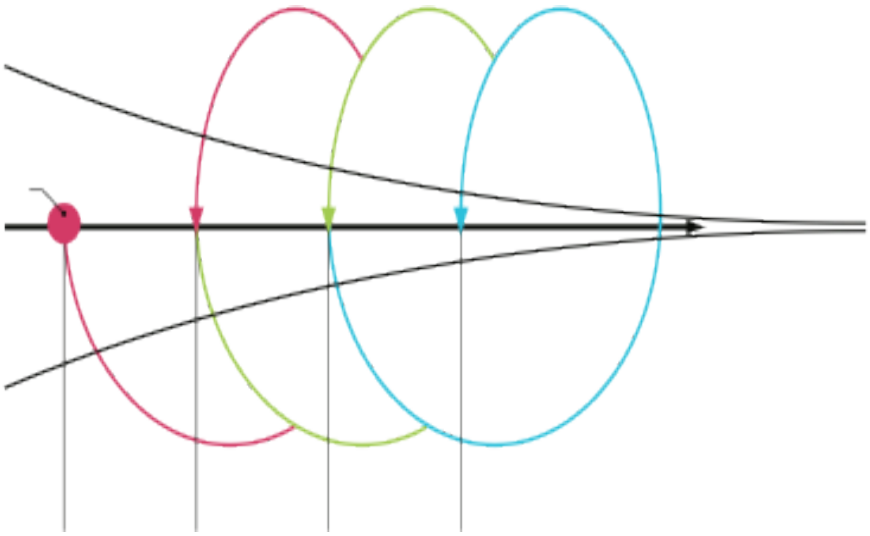


Fig 2. (Nousala el al. 2012) "Our investigation suggests that each discipline should be seen as independent with explicit points of crossover, and these disciplines contribute to a single theory / practice development loop".

3.1 The Longitudinal elements

The ALM project was carried out as (is currently continuing) an experiment of a holistic educational platform (within the context of design education and thinking) "…that intended to provoke interest to construct knowledge in the humanities through design thinking. The model is supported by the statements that Humanities are fundamental and necessary for understanding the process of constructing a democratic society…" (Garduno et al 2013: Nussbaum 2010). This type of educational platform and emergent experience is something that requires understanding and awareness of the layers of the system at hand and a holistic approach to influenced education. This is something that truly encourages real learning and experience that is a crucial factor for a learning community to construct knowledge, generating new emergent activities and collective effort (Nousala 2012: Nousala and Hall 2008: Jones et al. 1997).

The ALM project provided a common platform for disciplines to interact, with participants being able to recognize (albeit at differing levels) "…the relevance of their participation in bringing forward their relevant field's perspective and enjoyed the methods. Most of them were enthusiastic to introduce what they learned into their own fields…" (Garduno et al. 2013: Nousala et al. 2012: Nousala and Hall 2008).



6 months preparation and fieldtrip 1

6 months reflection

6 months preparation and fieldtrip 2

Figure 3: TIME, Accuracy of understanding, OODA* CYCLE, Problem solution,*OODA: Observe, Orient, Decide, Act.

4. CONCLUSION

What became evident (during this experimental process) were the layers by which various project participants engaged and over time began to create new networks that again linked with different levels of the issues at hand, which in turn, invited new participants. The time element was a critical factor, as the overlapping exchanges of disciplinary experiences and approaches produced emergent concepts and responses to events. These responses were more critical than mere "solutions", since the responses themselves were the result several cycles of trial and error, and therefore less likely to be declared as "the" preferred outcome. These emergent type experiences were a part of the process, of an on-going cycle which may seem self evident, but is less to when working in the field with new learning, emergent platforms.

With regards to build teams and working with group dynamics Garduno (et al. 2013) discusses how Steen (2011) pondered the same issues, "…wondered how to balance the users' concerns with the project team members' ambitions in these types of projects".

In ALM project participants experienced the preparation period as a positive affect which also impacted the attitude in the field "…all of them arrived in the community willing to learn and listen; they wanted to contribute in improving the community, and made an effort to remain neutral rather than be imposing. The fact that it was self-directed created some confusion, but also motivated them to be more active" (Garduno et al. 2013: Nousala et al. 2012).

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