

Play and Learning in a Living System

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Beginning in the Fall of 2010, the Laboratory for Comparative Human Cognition (LCHC) at the University of California, San Diego (UCSD) began a collaboration with the Quest Atlantis research group at Indiana University, which brought an educational computer game to an after-school program at a charter elementary school.

Originally intended for middle school age players, the *Quest Atlantis* game in its new environment at Extended Day Academy (XDA) found itself in the hands of a kindergarten to grade 6 population, assisted by undergraduates from UCSD. Designed for a classroom environment where it would be embedded in a curriculum in science or social studies and language arts with guidance from a professional teacher, at XDA it was housed in an after-school program with no teachers, no curriculum, and a definite preference for having fun over learning academic content.

What happens to learning, and particularly to the relationship between learning and play, when the carefully controlled structures of classrooms are absent, kids can choose whether to participate in an activity or not, and the adults present are enacting a role closer to that of big sister or big brother (a “buddy” in the terminology of other LCHC programs) than to that of a teacher? How do feelings and emotions play a role in activities in which complex meanings are being made and significant learning is potentially taking place? How can we document and study the interesting phenomena that emerge in this setting, when we don’t know in advance what they are going to be?

The Setting and its History

Extended Day Academy is a charter school in a city center, in a somewhat upscale but more broadly socio-economically mixed neighborhood, adjacent to a large, pleasant park. It houses kindergarten through grade 8, and its philosophy and curriculum are “project based”, meaning that specific subject matter learning is embedded in interesting, longer term projects that kids do together and with teacher guidance. It is a relatively new school, started in 200x.

Parents are very supportive of the school, volunteering to help maintain its computer center (a single room with approximately xx workstations), garden projects, library collection, special activities, etc. In turn the school caters for the need of many parents to have their children looked after beyond the end of the normal school day, until they can pick them up after normal working hours. The school therefore offers, for an additional fee, “after care” from the approximately 3:30 dismissal of regular classes, until 5:30 or later. It is during this “extended

day” period that our project brings UCSD undergraduates and their ideas for activities to XDA.

The extended day program is staffed by two paid assistants, who are not teachers. Their role is mainly to keep a reasonable level of safety and order, and with the structure which they enforce, sometimes more leniently sometimes more strictly, our project operates.

The project itself is a variation on the well-known “Fifth Dimension” after-school programs begun in 198x by the LCHC under the leadership of Professor Michael Cole, but conducted in a very collegial and egalitarian spirit by faculty, graduate research students, and undergraduates who receive course credit for courses linked to the program. These courses have serious academic readings, the undergraduates are expected to post substantive fieldnotes describing their experiences on a twice-weekly basis to a database that now houses more than 20 years of such notes, and they also write end-of-term individual project and overall reflection papers. They travel twice a week to XDA to work with the kids in a mix of having fun, getting to know one another, and learning something. This has been a very successful model over many years.

Meanwhile, at Indiana University, Sasha Barab and his research group have been developing since 200x an educational computer game, Quest Atlantis, which is meant to be a supplement to existing curricula and instruction in middle schools. Funded originally by the U.S. National Science Foundation, it moved in time beyond curriculum content oriented to science and environmental education, to also include concepts from statistics, and units devoted to persuasive writing, arts, history, and culture. The research side of this work aimed to test the thesis that “transformative play” could aid learning as well as ethical development by creating virtual worlds and scenarios in which students had to make choices, based on both intellectual and moral criteria, and could then experience some of the potential consequences of their choices and reflect on these in writing. Writing within the game was also used as a tool to help students learn and make choices.

Contacts between these two groups (UCSD and Indiana) led to the current project, in which Quest Atlantis was installed on all the computers in the XDA computer lab, and the plan was that UCSD undergraduates would help the kids learn to play the game and work through its missions. What actually happened was both somewhat less and a lot more than this.

The Aims of the Research

Most research on learning assumes a very structured setting where the goals of learning are set out in advance and different factors in the structure are evaluated for their effect on learning outcomes. But people learn all the time, in everyday life, and not just in schools. Over time, we learn far more in settings in which learning is not the primary goal and formal instruction is absent, than we do in formal educational institutions. Even while we are enrolled in such institutions, we are learning a great deal outside their curricula, in social

interactions with peers and others, personal explorations of our interests, informal communities (including today, increasingly, online communities), etc.

Theories of learning by and large do not pay much attention to the role of feelings, emotions, and affect in learning, despite near-universal agreement that such things matter a great deal. Our intellectual traditions have denigrated emotion as an antithesis to Reason and a distraction from serious learning. Nevertheless, feeling is an integral part of thinking and learning, and nowhere is this more obvious than in learning through play. Again our traditions mislead us in pitting play against serious learning by close analogy with the opposition that is construed between leisure and work. In these respects, I believe our dominant cultural traditions are dysfunctional and work against better understanding and better practice in supporting learning and intellectual-personal development.

What would we find if we looked carefully at the ways in which feeling and meaning, play and learning interact and mutually support one another in activities and settings where they are not placed in opposition to one another?

Answering this question, however tentatively, is the primary goal of this research, but far from the only one. There is a lot more going on in this project at XDA than just learning, though learning is going on in every aspect of the project.

First, there is not just the learning of the kids, but also that of the undergraduates who are working, and playing, with them. How do their developing relationships with the kids affect learning on both sides? How do their feelings for each other, and the emotional aspects of their experiences with one another, play a role in their opportunities to learn and what they make of those opportunities?

Then there is another “actor” in the project: the Quest Atlantis (hereafter QA) game. It is not a fixed entity. It changes in its functional operation within the project in various ways as we collaborate with its designers in Indiana and share research findings with them. We request changes and modifications to accommodate our special situation, and our QA is by now no longer the classical QA experienced by many other groups engaged with the game. The QA design team is also learning from us, and in a sense the QA system as we experience it at XDA is “learning” how to interact with us. Our practices and its affordances are co-evolving in a living, dynamically changing, socio-technical ecology.

And then there is the larger dynamical system of the project itself, as it happens at XDA, and as it brings together and connects kids, undergraduates, researchers, school staff, built environment, information technologies, institutional resources and constraints at XDA, LCHC, UCSD, and Indiana University. These are all very real, they are all tightly networked in their interactions, and together they form a “system” that is not just metaphorically “alive”. And as a living system (or living socio-technical network), there is always the possibility that it may die. Our research is thus inevitably also about the sustainability of such projects and systems and the factors that play a role in their life, growth/development, and death.

It is within this largest system context that we can also see the effects of the project back on its sources: on LCHC, on UCSD, on the design team and their host institution at Indiana University, and potentially on the funders of the research, which cumulatively include not just the institutions already mentioned, but the National Science Foundation, the MacArthur Foundation, and the Bill & Melinda Gates Foundation (most recently and among many others).

Through LCHC, the XDA project is also linked to the work which our lab and its members do at other sites, notably the Town & Country Learning Center, a community center for youth attached to a public housing development in an economically marginalized neighborhood in the same city, and with a population of primarily African-American kids and teenagers. Members of the lab who work mainly at that center, also using virtual world and computer simulation technologies in various mixes with other media to promote learning, have also had roles at XDA and been in extended conversation with those who work primarily at XDA. Ideas for closer linkages between the sites come up regularly and sooner or later will take concrete form, whether successfully or not.

So there are many actors in our living system. Some are people, some are institutions, some are social groups, some are technical systems, and some are simply practices and activities. All are changing, in various respects and on various timescales. All are interacting, some more directly, others through long chains of intermediates. Some are fragile and may only last for hours, days, or weeks. Others have been around in one form or another for decades.

A hallmark of such complex dynamical developing systems is that they are in many respects unpredictable. New phenomena emerge from the interactions of people, practices, resources, constraints, artifacts, and technologies that no one foresaw or sought. These may also be transient or become persistent, though for how long, one can only say in retrospect.

How do you study such a living, changing, unpredictable system? How do you know where to point your camera, when a half-dozen or more activities are going on in the same room, and the next important innovation or change or instance of significant learning could be anywhere? How do you analyze hundreds of video clips or dozens of hours of video recordings, hundreds of pages of fieldnotes, archives of photographs, interviews, event logs, etc.?

How do you define “learning” when it is as likely to diverge from any pre-set curriculum goals or contents as to achieve them? When it is not a matter of “learning X” but of “what was learned”, whatever that might have been? Not a matter of how much of X was learned, but of how valuable or significant whatever it was that *was* learned is judged to be?

The aims of our research are to answer these questions, to the extent our data allows. And to discover new questions that we should be asking.

[Note: This is a draft introduction to a longer paper in preparation.]