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## **It is Over: Education As We knew It**

### **Introduction**

Too often the discourse in education on technology and other teaching/learning devices circles around procedural and management concerns: the how to and the methods of implementation and integration. This dialog rarely, if ever, centers on the historical, social, theoretical, or epistemological issues that form the foundations to the debate on teaching machines. In decontextualizing and limiting this discourse to institutional and bureaucratic concerns, questions and inquiries of a social and historical nature become marginalized. In the worst case, the discourse concerning technology and teaching machines has eliminated the social from legitimate debate and replaced it with a debate centered on instrumental reasoning. As a result, the debate and inquiry into computers as teaching machines and their educational role rarely addresses the construction and reconstruction of knowledge, the machine's effects on the labor teachers and students perform, and on questions of power and control.

Again, to ground the conversation on technology only in instructional or management concerns is to eliminate historical and social conditions and the struggles of individuals and interest groups from serious consideration. Dismissing or trivializing issues addressing gender and knowledge, legitimization and normalization, labor, and the unmasking of the symbolic, merely maintains the status quo and de-socializes and limits the debate. The challenge then is to move the social and the political to center stage as a legitimate style of discourse in schools of education and in the daily conversations found in schools and classrooms. However, this is no simple matter, for to unravel and reconstruct reality is no easy task; to legitimize it within a hostile forum is another question all together. But, not to attempt this reifies the institutional position as one being disinterested and neutral, concerned only with efficiency and effectiveness as defined by a rationalized techno-bureaucratic, positivist paradigm.

Our purpose here is not to debate the past but to understand it, place our priorities in order, and to challenge the status quo. As I suggested above, the discourse on education has been on the needs of business, social order, and control. As we all realize this has not worked for the great majority of learners and societies, especially in an age of digitalization, social networking, and the Internet. In light technological developments, emerging learning theories, and brain research, we cannot think or frame discourse concerning education as we have in the past.

We now have systems that can replace and be more effective than face-to-face classroom teachers, but yet we overload classrooms with hard working teachers with limited

resources, and expect students to learn. We are currently able to redefine what it means to know and practice. But, in my opinion, educational and business leaders, and society in general are not willing to invest the time and the money to change educational learning environments. We keep trying to “walk the walk” in old shoes that hurt our feet.

In traditional schooling teachers still use the lecture mode for teaching, discussions are teacher or curriculum centered focused on already know outcomes, and students are walled in, and evaluated as individuals and not part of a learning community. Rewards and punishments are based upon a modernist sense of being. In many ways teaching and learning still reflect behaviorist theories reaching for pre-defined “right” answers, correct behaviors, and the one way of knowing and expression.

Over the last twenty plus years, with the development of the Internet, digital devices, brain research, and creative programs focused on the learner, matched with a constructivist learning theory, provides education the opportunity to change how it does business. Collaborative learning, global perspectives, cross-cultural exchanges, the changing nature of knowledge, and the “experiencing” of experience, provides educational programs and students alike an occasion to inquire into the nature of creativity, interpretation, meaning construction and deconstruction of signification, and what it means to know.

Not only has the nature of the learning experience changed, but the reader of the “text” as well; the learner has become the digital native. Drawing upon the emerging creative and intellectual tools, the connective nature of a singularity, the emergence of new visions of what learning is, what it means to be human and trans-biological, education to remain relevant, needs to transform itself and embrace the potential of the singularity, of the post-biological.

By post-biological I refer not to notions of transhumanism, but to the merging of the biological with the non. For example, the glasses you wear, the fillings in your teeth, your hearing aid, the drugs you take, your human replacement parts, nano-biological combinations with your biological make-up, the chips to soon be placed in your brain – you are your brain – your memory stored on a hard drive, and your thoughts living in the cloud. When was the last time you backed-up your brain?

We have and are becoming cyborgs, post-biological beings that exist outside of our physical self. The Internet has become our collective consciousness.

Considering “Technology in education”, the emergence of digital networked technologies, and a paradigmatic shift in learning theory, we are provided with a framework for both epistemological and pedagogical behavior. In short a challenge to the traditional framework and structure of teaching and learning.

## **Shifting Paradigms**

Challenging the dominant paradigm of neo-behaviorism, where education becomes instruction, knowledge is fixed, and its currency exchangeable, constructivism offers to the educational initiative, a student centered, fluid way of knowing, and a shifting horizon line. Constructivism challenges the notion of “instrumental rationalism” and “fixed identifiable knowledge”. As a result, the means-end model of pre-defined outcomes are replaced with the social and historical construction of knowledge by individuals and communities. Social

constructivism locates knowledge in the individual's relationship between experience, ideas, and history. The understanding of experience is an historical process (situating oneself in time) steered by power relationships found within the space between experience and knowing (power here refers to the recognition that dominant power structures define what it means to know). Constructivism, different from neo-behaviorism, welcomes the notion of "truth" as offered by post-modern theories. Truth, no longer is singular and fixed, but fluid, contextual, and historical in that "a" history, a context, determines what is believed to be true; change the history, change the context, and you change the truth. Post-modernism, as opposed to modernism, argues that there is not a single "Truth" but multiple truths, truths with a small "t". In shifting from a neo-behaviorist model of teaching and learning to a social constructivist one, not only is the location of truth shifted from the external to the internal, challenging the structural foundations of modern education, but definitions of learners and teachers change.

## **A Brief History**

Historically teachers have been viewed at the center of student learning. Instruction was key to a successful learning experience; that is achieving the pre-determined measurable outcomes. Teachers, and the system, pre-determined the instructional environment, the role and definition of "learners", appropriate models of behavior by the teacher as well as the student, and the form and function of instruments for evaluating learning. To deviate from pre-determined methodology and practice was punishable. To challenge the status quo, to deviate to far from the normal, was and is viewed as poor teaching. Good teaching produced the pre-determined outcomes in an efficient manner.

Shifting from a teacher centered, knowledge centered instructional environment to a student centered, learning environment (over an instructional one) where knowledge is understood and accepted as fluid, changes the nature of education. Educational discourse changes from instruction to learning, knowledge is not fixed, and the student and teacher as members of a learning community, become partners in exploring possibilities and horizons. Science and art exchange places (a science of instruction to the art of learning).

During the first part of the twentieth century, educational reform movements attacked what was labeled as an inefficient and non-productive traditional educational system in the modern industrial world. Schools were viewed as not meeting the needs of a growing industrialized society with new needs and requirements [Callahan, 1962; Kliebard, 1986]. The role of the expert in identifying educational problems and in predicting their solutions both in the management and instructional arenas became a major force in American education by the end of the first decade of the twentieth century. As education looked to experts, now residing in the university in departments of computer science, psychology and education, to solve management and instructional problems, a scientific pedagogy evolved. "A scientific pedagogy was to ... provide ways of understanding teaching, of judging behavior, and establishing purpose". It was the melding of technobureaucratic ideologies of capitalism with the "technics" of positivism and psychology that eventually established the consciousness of a scientific management of instruction [Callahan, 1962; Saettler, 1968]. Thorndike's turn of the century science of instruction and Taylor's model for "Scientific

Management” eventually led in the 1920s and 1930s under Charters and Bobbit to a “system’s approach” to identifying and solving educational needs. Taylor’s model provided the mechanics of management and control; Thorndike provided the instructional rationalization within a science of educational psychology. Combined they became a technology of instruction. A quest for efficiency in education to meet the needs of a modern industrial society submerged the social and moral foundations under the facade of a neutral science, the disinterested expert, and a progressive curriculum [Saettler, 1968; Kliebard, 1986]. concerned with social injustice and inequalities. Society needed skilled adults with practical training. The social efficiency movement became a driving force in American education [Kliebard, 1986]. Many of the same arguments and concerns exist today in the early 21<sup>st</sup> century.

Today is different. We have other learning theories, diverse forms for the construction of learning environments, new tools for the learner and the teacher, and most importantly, an evolving frame-of-mind which contextualizes public and private educational institutions in a different light. What we as a global society require to make education is the will and the power.

For any transformation to occur in education the process needs to be viewed within a systemic framework. To view education through a narrow perspective, and to change only a few relationships, the much larger system will not be affected. In short, any change to education needs to engage the broader network of relationships and the question of knowing, purpose, benefit, and power.

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