



ROBERTO MUFFOLETTO

Appalachian State University, USA

The End of Learning As We know It

ABSTRAKT. **Zmierzch uczenia się, jakie znamy.** Przez ostatnie dwadzieścia lat rozwoju Internetu, urządzeń cyfrowych i programów autorskich, w połączeniu z konstruktywistyczną teorią uczenia się, edukacja ma możliwość zmiany sposobu jej uprawiania. Uczenie się we współpracy, perspektywy globalne, wymiany międzykulturowe, zmieniająca się natura uprawiania sztuki oraz „doświadczenie” doświadczeń otwierają możliwości przed programami nauczania i studentami wejżenia w naturę kreatywności, interpretacji, budowania znaczeń i dekonstrukcji znaczenia.

History and Technology in Education

Historically, technology devices and instructional systems have been used to deliver instruction and to maintain control over content. Before World War II the teacher was the center of “control” over the delivery of the curriculum and its form. After World War II it was the system that began to assume more control not only of the curriculum, the content, but its delivery as well. This turning point in education, and the use of media, systemized the process of education in an effort to make it more efficient and effective.

Learning and teaching changed as the result of the introduction of programmed instruction (the Skinner Teaching Machine) and systematic learning (SRA Kits and instructional television). Over the last 50 years teachers have been deskilled in the areas of pedagogy, curriculum development, and

evaluation, as a result of a means-end model (rational instrumentality), with pre-determined outcomes and expectations.

Using the emerging digital devices and networks, the system is reaching for more control over the schooling process. How art education, and art in education replies to the developments in networked digital communications and access technologies will range between the extremes of reproducing the status-quo or a complete reconstruction of the teaching learning environment. Will anything really change?

A short flight through "Second Life" will reveal the reproduction of "the way schools are today" but in a virtual environment. Very little has changed. Avatars for the most part look like humanoids. Second Life in many ways mirrors the reality we have grown up with. Online distant education initiatives have the same outcome expectations as if the form does not change the content or the experience.

In traditional schooling teachers still use the lecture mode for teaching art history, critiques are teacher centered, and students are walled in working as individuals or with those in geographic proximity. Rewards and punishments are based upon a modernist point of being. In many ways teaching and learning still reflect behaviorist theories reaching for pre-defined "right" answers, right images, and the correct way of knowing.

Over the last twenty years with the development of the Internet, digital devices, and creative production programs, and matched with a constructivist learning theory, provides art education the opportunity to change how it does business. Collaborative learning, global perspectives, cross-cultural exchanges, the changing nature of the art making, 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.

Not only has the nature of the aesthetic experience changed (you could argue that the aesthetic experience has not changed, only the form it refers to), but the reader of the "text" as well. Art education, and education in the arts, needs to draw upon other models (I refrain from saying new models) for creating learning environments and not instructional environments. Art and art in education needs to move towards an immersive intelligence, situating the experience within a postmodernist paradigm, engaging various ways of world making and of being.

Drawing upon the emerging creative and intellectual tools, the connective nature of a singularity, the emergence of new visions of what is art and art making, and what it means to be human and transhuman, art education to remain relevant needs to transform itself and embrace the potential of the digital network.

For any transformation to occur 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.

Considering “Art in education” and “Art Education”, the emergence of digital networked technologies and a paradigmatic shift in learning theory provides 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 is 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 dominate 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.

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 “learn-

ers”, 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).

Networked Learning System

The 1940s and into the 50s witnessed the merging of four (4) fields: system engineering, psychology (learning theory), mediating devices or commonly termed technology, and the needs of education. This time period gave birth to Skinner’s Teaching Machine, programmed instruction, the instructional kit, educational television, and latter computer delivered and managed instruction, and integrated learning systems (integrated learning systems, if designed correctly, removed the teacher from the process). Common to all the developments was the notion of instruction, fixed knowledge, and systems, shifting notions of control from the teacher to the program.

Power and control over the delivery of the curriculum and the classroom environment was shifted from the classroom teacher using “audio visual aids” to the “system”. The system was viewed as delivering the instruction with the teacher as a replaceable part.

The last twenty years gave way to networked communications systems, production applications, online creative collaborative environments, the publishing and distribution of creative work, smaller, cheaper, and more powerful devices, and the publishing and accessing of information on a global scale, mirroring the growth of the Internet. In a sense the above is the Internet cloud as we know it. Creative efforts, publishing, communications, collaborative cloud technologies, have created an environment that is decentralized, and for those who have access and can contribute, democratic. Compared to broadcast technologies (radio and television) the interactive nature of the Internet engages participation giving voice and presence to all who can give and take. Communities of practice, learning and knowledge

communities, and social networking, have changed who we are (I do realize that participation in the net is limited to those with the economic and technological base to do so).

The questions that media educators, and leadership in general need to consider focuses on the possibilities and potential of networked digital media for education. How will education reply to the potential of learners and teachers not being place or time bound, knowledge that is not fixed, cross and inter-cultural ways of “being”, and understandings which question traditional ways of knowing “self” and one’s identity. When it is now possible for voices/images/ and ideas to be everywhere and still be nowhere. When it is almost normalized to carry on conversations with others who may be anywhere (with access and bandwidth), and the original is nowhere to be found. We are living in a simulation.

The challenge for education is to step back from the technological business as usual box and break down the walls of behaviorism, free isolated individuals from their desk or studio, and embrace the opportunities of community and collaboration, shared knowledge and diverse voices.

A Wink of a Vision

What could education look like, what would it feel like, and how might it function?

Enter Lucy.

Lucy is an average art student living in Poznan, Poland. Lucy has grown up with computers and satellite television (accessing over 120 channels); she has accessed information through screen based interfaces most of her life. The screen, as an interface between her and the “web of knowledge and social interaction” has played a big part in Lucy’s cognitive and social development. She has come to know the world and others in it through the screen: the television screen, the movie screen, her video cell phone screen, and her computer screen. Lucy’s i-Pod and i-Pad keeps her love of music and video at easy reach, and her DVD player and audio system brings the reality of the mediated 3-D augmented reality into her home. Through digital language systems Lucy has learned the basics of a few languages, and uses the Internet to enhance her non-Polish language development through regional chats in Italy, Brazil, and China. Lucy also accesses the major online newspapers published in the native language she is studying, as well as enhancing her understanding of art through virtual visits to exhibitions, artist published works, and the writings of theoreticians, artist, historians, and critics.

We catch up Lucy as she arrives at her communities learning center. It is nine in the morning in Poland; and university students are starting to arrive at

their communities real and virtual “learning center” in Poznan and else where. (Learning centers have replaced the notion of a university because the organization and structure of a learning center did not fit the traditional school concept.) Lucy, a 20 year-old art student in Poznan, Poland, greets some of her friends as she walks into the main area of the learning center. This area is full of tables, big pillows, soft chairs, plants, artwork on the walls, and reference and resource materials. (let us not forget the café) I should note that the learning center, and area around it, provides wireless access to the Internet allowing students to be anywhere in the center and be connected to the network. Lucy stops at her favorite spot, sits in a large comfortable chair and pulls her laptop computer out of her backpack. Within moments she is logged into her email, checking on important messages from friends and classmates. After reading 10-20 emails Lucy checks in on her study team to see if anyone is online and in chat.

Antonio, a member of her team from Italy, and Sig, another member from Ice Land, are in “video chat” talking about the data they have collected on their team’s current art and science project which explores the visualization of science through images. Lucy enters the discussion and tells them of the information she found in the history of science that helps to create a better context for their project. As they are talking, Anita and Janusz from Columbia and Poland also log in to the video chat room. Now, the whole team is there, as they planned a few days before. Anita directs the team to a new set of images she created to express the climatic impact of a weather front in the South Pacific Ocean that will have an impact on their visualization analysis. Lucy adds that she will have graphic animations up on line and linked from the project homepage before lunch, Poland time. Before the team breaks for the day, they check their schedules and assignments to make sure everyone is clear as to their responsibilities to the project and to each other. Antonio, who is the group leader for this phase of the project, reminds everyone to post their ideas and thoughts to the discussion board for everyone to consider. Before the group ends their meeting, Janusz comes back and informs the group that he has found 4 other teams working on a similar project and that they would like to meet to discuss their findings. The one team centered in Finland with the others in Kenya, Egypt, and Vietnam, has suggested that they create an online journal with published works from all the teams. Lucy’s team lends their support and ends their weekly team meeting.

After a short break and a quick check of email, Lucy downloads a new song by her favorite musical group: “The children of the Rolling Stones”. As she is listening to her song Lucy receives a local network call from her “Author Club” friends. It seems that they will be meeting and sharing their short stories with a local storyteller and they would like her to meet with them later that day. Lucy quickly accesses her new short story, creates a Quick-Time movie of herself reading the story, and then forwards the movie to the members of her local “Author Club” as well as the visiting storyteller.

Lucy finishes her day at the learning center with a short “face-to-face” visit with her academic mentor discussing her progress through various curriculum areas. After her meeting she spends some time reviewing her inquiry into the

history of non-western art, calling upon her digital tutor to provide some examples to help her understand the historical cultural context she needs to place the images in a cultural perspective.

Lucy then arrives at home, works on her digital photographs for a virtual exhibition on a community art web site. After dinner she meets in a chat area to discuss with her "Art Team" what topics will be covered in their history of photography website. This is part of a global study group on "photography as art." In this class there are 4 students from Poland, 2 from the United States, 6 from Chile, and 1 from Mexico.

Education can never go back to the box.

Post-considerations

We hear the term "digital natives", Lucy in the scenario was a digital native, and think only of devices, gadgets, and instruments. We need to realize that the "frames of mind", how people think of themselves in the world has changed. This change is also connected to the way we communicate, access out networked minds, and store our knowledge outside our body. We have entered not into a post-humanist period but we are approaching a post-biological one. No longer are humans purely biological, maybe we never were. With non-biological devices we have changed how people exist in the world. With nano-technologies and nano-biology we are shaping the future of human kind.

I find it interesting that science and engineers can master a plan and build a device that will land on Mars, analyze the environment, and ship data back to Earth, and we can not make schools work for all children. If I was searching for the root of the problem, I would turn a sharp eye on political and business leaders, educational leaders and universities.

We know how to improve education, and that may mean the elimination of the degree and the university as we have come to know them. If we look to the models being developed between major universities in providing free education and certification, you will understand that the need for school buildings and university programs are out of date.

Then again, do we really want to improve educational opportunity for all children?

Reading List

APPLE M. (1979): *Ideology and curriculum*, Routledge, Kegan Paul.

APPLE M. (1986): *Teachers and texts*, Routledge Press, New York.

APPLE M. (1996): *Cultural politics and education*, Teachers College Press, New York.

- APPLE M., BEANE J. (1995): *Democratic schools*, Association for supervision and Curriculum Development, Alexandria VA.
- CALLAHAN R. (1962): *Education and the cult of efficiency*, Univ. of Chicago Press, Chicago.
- CUBAN L. (1986): *Teacher and machines: the classroom use of technology since 1920*, Teachers college Press, New York.
- DREES U. (2006, in-press): *Artificial intelligence becoming an over-powerful dynamic, one that will master humanity*, [in:] R. Fisher, M. Breen (eds), *Probing the boundaries/at the interface*, Rodopi Press, London.
- FRUEDMAN T. (2000): *The lexus and the olive tree*, Anshor books, New York.
- GOULDER A. (1926): *The dialectic of ideology and technology*, Oxford Univ. Press, New York.
- HARBERMAS J. (1968): *Knowledge and human interest*, Beacon Press, Boston.
- HEIDEGGAR M. (1977): *The question concerning technology and other essays*, Harper&Row Publishers, New York.
- KLIEBARD H. (1987): *The struggle for the american curriculum: 1893–1958*, Routledge, London.
- KURZWEIL R. (1999): *The age of spiritual machines: when computers exceed human intelligence*, Penguin Books, New York.
- KURZWEIL R. (2005): *The singularity is near*, Viking Press, New York.
- MUFFOLETTO R. (1993): *The expert teaching machine: unpacking the mask*, [in:] R. Muffoletto, N. Knupfer (ed.), *Computers in education*, Hampton Press, New Jersey.
- MUFFOLETTO R. (1995): *Thinking about diversity: Paradigms, meanings, and representations*, [in:] R. Martin (ed.), *Practicing what we teach: Confronting diversity in teacher education*, State Univ. of New York Press, New York.
- MUFFOLETTO R. (2001): *The need for critical theory and reflective practices in educational technology*, [in:] R. Muffoletto (ed.), *Education & technology: Critical and reflective practices*, Hampton Press, Cresskill, NJ.
- MUFFOLETTO R. (2006 in-press): *New media, representation, and education*, [in:] R. Muffoletto, J. Horton, *Multicultural education, the internet and the new media*, Hampton Press, Cresskill.
- POSTMAN N. (1992): *Technopoly: the surrender of culture to technology*, Knopf, New York.
- SHOR I. (1992): *Culture Wars: school and society in the conservative restoration*, Univ. of Chicago Press, Chicago.
- SLEETER C. (1996): *Multicultural education as social activism*, State Univ. of New York Press, Albany.
- REINGOLD H. (2002): *Smart mobs: the next social revolution*, Basic books, New York.
- SKINNER B.F. (1968): *The technology of teaching*, Appleton-Century-Crofts, New York.
- VYGOTSKY L. (1986): *Thought and language*, MIT Press, Cambridge.
- WINK J., PUTTNEY L. (2002): *A vision of vygotsky*, Allyn and Bacon, Boston.