Saturation Overload: The Ethical Dilemma of the Technological Revolution

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Synopsis: Impacts of technologies and digital innovation are now starting to be seen for the first time in the post-techno world. Social, cultural and environmental hazards are guiding our technological revolution toward, corporate and product control, network collapse and a technology gap. Media and digital technologies lack ethics today, and thus saturation overload has taken hold of our daily lives, now it threatens our society with a learning deficit in technology. However, the solution presents its self in art education in STEM (Science, Technology, Engineering and Math), allowing students to create deeper understanding of ethics and inventive behavior.

Saturation Overload, the Ethical Dilemma of the Technological Revolution

Impacts of new technologies, network practices and digital innovation can be seen in society and nature, as we loose our connections with each other face to face. Replacing live interactions with less reliable connections through fiber-optic filtered networks. Technologies encroaching upon every aspect of human development and industrial sustainability, we are now approaching an age, where we have evolved new socio-cultural, and environmental hazards, which are finally at the forefront of the technology revolution. This crisis calls for us to not just react, but to interact with nature and technology on a dialogue of ethics.

The impacts of technology are not just limited to humans, these impacts, or trickle down effects, change the way in which our environments evolve. We are not just talking about climate change. Scary as it sounds, nature even mimics technology today, David Attenborough captured this unique bird imitating human technologies. The Lyre Bird of Australia, proudly imitates the sounds of cameras, car alarms and even chain saws. Its unique mating rituals, have inspired it to mimic anything it is in contact with, even human technologies. Ironically many of the sounds imitate the same technologies used in the subconscious act of endangering the species with possible extinction.

http://www.youtube.com/watch?v=VjE0Kdfos4Y

Technology and digital innovations are bombarding the earth, 24/7 with a relentless battery of blinking binary information translated into multitudes of creative and inventive developments. But are we at risk of loosing our connection to nature, because of our desire to invent and create? Or, is it morally accepted to choose technology over our natural environment, because there is hope in it saving us?

There are both positive and negative opinions on technology in today's cultures. However, the issue is not black or white, we cannot simply reverse time and return to life 200 years ago. Things are constantly changing, and life is an amorphous journey. Can technology and nature find a common thread by educating and fostering ethically

inventive thinking in STEM-A (Science, Technology, Engineering and Math through Art)?

Art is a key factor for creating feelings and evoking emotions of responsibility, stewardship, ownership, and ethics. Art is also a way to inspire creative and inventive behaviors. It is a place where dialogue can erupt into life changing experiences. Art is a place where failure is irrelevant, and sometimes encouraged. Art is boundless, and open to all mediums, especially STEM.

The level of sophistication in technology today is staggering. As we transgress our technological age, many end up lost in digital translations, and versions long outdated. We are processing so much info, that it is difficult to fully understand and decipher the larger picture. Time is our new 'nemesis' and with little time left; most of it is consumed by technology, media and 'work time,' to pay for it.

However inventive behavior, concentration skills, and simple human survival are in great jeopardy because of the relentless bombardment of images and sounds from media and techno-savvy products which take maximum aim for our time and money. Studies are showing increasing rates of "Attention Deficit" type syndromes, for example technology is blamed for creating an epidemic of ADT (Attention Deficit Trait)

"Attention Deficit Trait (ADT) is this over stimulation and saturation which eventually creates this ADD like condition, where the'multi-tasker' is overwhelmed, and distracted by technology and all its nuances," As defined by wikipedia. Persons whom multi-task so much, that they find it difficult to concentrate. Technology is said to play a major role in ADT, as suffers start to feel overwhelmed by the sheer volume of technology present in today's daily routine. The reality is that we work more now, with technology, because we are constantly connected and required to participate virtually anytime, anywhere; without regard to personal time or space. People constantly are on the phone, talking in lines, answering phone calls, while ordering food in a restaurant.

How do we weed through the 'shit' without getting lost in the process of weeding our virtual and local gardens? How many of us, even have physical growing gardens, or even understand plant, insect, animal or human life cycles? More of us live in cities, than live rurally, a complete reversal from 100 years ago. And this is the first time in history, that this shift has taken place. We are loosing touch with nature, and we are spending more time in concrete cities, behind flickering screens, lost and separate from nature.

Consumers, inventors, and everyone who even picks up a cell phone, i-pod, laptop or almost anything is connected to this technology driven social system; and its sucking our time, energy and natural behavior right out of us.

For example, even the RFID chips in our products, are contributing to the greater loss of our human nature and consumed energy. Think about the time and energy spent in creating the product and technology. All this development is from the lack of ethics; could be people aren't responsible enough to respect property rights. Or maybe it's the developers and the marketing of the product. The fear that they sold the consumer, about the thief who would take their other material possessions, all sold to them too, of course. Once again ethics plays a major role, and who is wrong or right? Who is to be trusted if the RFID exists or not?

Another, simple example of technology affecting human social development and learning is the use of Spell Check in word processing software. The technology we invented to help us save time, is actually contributing to our continued learning deficit. In this case the decreased ability to spell words correct. Everywhere from the simplest of inventions to the most complex problems, technology, data and media are consuming our energy. We are becoming inferior to technology, and its control over our time and interests suck the life out of us with the endless plastic/petro techno-culture. Has technology corrupted our society as Ted Kaczynski predicted?

Theodore John Kaczynski (pronounced /kəˈzɪnski/; born May 22, 1942), also known as the Unabomber (University and Airline Bomber), is an American murderer, mathematician, and neo-Luddite social critic who carried out a campaign of mail bombings. Kacynski wrote a 35,000 word paper "Industrial Society and the Future" also known as the (Unabomber Manifesto)

In his paper he argues that society will become more violent and isolated from nature and even each other. Kaczynski is an extreme example of social critic, who speaks against technology and progress.

It is well known that crowding increases stress and aggression. The degree of crowding that exists today and the isolation of man from nature are consequences of technological progress. All pre-industrial societies were predominantly rural. The industrial Revolution vastly increased the size of cities and the proportion of the population that lives in them, and modern agricultural technology has made it possible for the Earth to support a far denser population than it ever did before.

With technology consuming more of our time, we find it difficult to even leave the connected world behind for a little RnR (Rest and Relaxation). Today we are finding our peace of mind in yoga studios and mediation spa's in the heart of our urban shopping mall, complete with a monthly fee and complimentary towel. Some people are even now afraid of nature, fearing the wild and free abilities of nature.

However it is apparent, Kaczynski lost sight, when he tried to blame technology, and inevitably inventive behavior. He was so caught up in the act of fighting technology, he forgot about the creative aspects, and possibilities for critical analysis of key aspects to technology. For example, Kaczynski argues in his essay.

Also, technology exacerbates the effects of crowding because it puts increased disruptive powers in people's hands. For example, a variety of noise-making devices: power mowers, radios, motorcycles, etc. If the use of these devices is unrestricted, people who want peace and quiet are frustrated by the noise. If their use is restricted, people who use the devices are frustrated by the regulations... But if these machines had never been invented there would have been no conflict and no frustration generated by them. (wikipedia)

I would argue with Kaczynski and say that it's the lack of ethics, and responsible behavior, is what plagues our social system. If people were taught ethics and digital etiquette then, they would likely be aware of the products they use, and the noise and annoyance of them. Humans may stop destroying the rainforest for computers which out-

date 9months post-purchase. Electro/petro-products may stop being invented, only to end up shipped to china to be ripped apart, salvaged and eventually burned in a huge toxic fire, contributing further to the degradation of our planet.

One could also consider the esthetic value in noise, and ambience. These are all subject to perspective, opinion and frame of reference. All of these factors are necessary in the consideration of ethics in STEM, thus fostering positive behavior and understanding of integration and tolerance in society. Violence is never a solution to an ethical dilemma, especially one which should be discussed, and hopefully understood greater through creative expression and participation.

How can we instill ethics and digital etiquette into our technological culture? Ethics in digital culture and technology does not mean to stifle growth, because we (humans) are after all; just another organism, which seeks to survive. However, we cannot survive this planet, and learn to colonize space, if we cannot learn to sustain and contribute to our entire global ecosystem, while still promoting inventive technologies. Humans will not survive this earth if we do not learn how to limit our impacts on our environments, if we do not learn how to live in harmony with the planet earth and the technologies we develop here.

We can't afford to be too busy, checking email, voicemail, twitter, and Facebook. There are hundreds of messages and pages of information to go through daily, but really, do you need to spend all that time? When is it time to take control? How can we balance our lives within the natural cycles of inventive and ethical behavior? How can we promote responsible STEM development?

A recent article in PC Magazine addresses the current economic downturn a discussion of sustainable technologies and its need to carry the economy back to balance. This hope that these new 'green technologies' can save us, and our energy dependent life styles.

> At an afternoon panel at Fortune Brainstorm Tech, there was a lot of discussion of technology and its role in the recession, and the reverse. Moderator Stephanie Mehta brought up a Fortune story that suggested that there was no big idea as important as the semiconductor or the browser. John Chen, CEO of Sybase disagreed, talking about the importance of mobile and green tech, while eSolar CEO Bill Gross said he thought we were on the brink of a new industrial revolution, replacing "burning stuff" with renewable energy. (PC Magazine)

The transition to alternative energies, beyond petroleum is key, however, we have to go further than this, and start to think about how we use energy, and what the impacts are of human energy dependence. We have to consider how we use our time, and energies, and what we consume, and its energy print.

> Brad Johnson of McKinsey said the biggest impact of technology was not the technology itself but the applications of it, using Wal-Mart as an example.   It was the role of technology as an enabler that is most important in the overall economy, he said. (PC Magazine)

The role of technology enabling consumers to consume products sold to us by manipulation of media to help stimulate and convince us that there is a perceived 'need'

for a product, brand or service. For example, 'green-washing' is a branding strategy where the promoter creates "green" looking products to place them at a higher market value, to fit popular demand is another fear of the savvy eco-tech. The only defense from these type of media and product promotion tricks are education in digital and media ethics.

A number of questions revolved around the government's role in innovation. Chen said the environment in the United States is best for innovation, but he complained about too much regulation. (PC Magazine)

Currently building codes in most local governments do not allow for alternative or experimental building technologies. This is one of the major hindrances to alternative energy and building in the United States. Michael Reynolds of New Mexico faced many years of government battles to save his experimental Earthships from being destroyed, and condemned. However his persistence in educating and communicating with those who questioned his actions, eventually paid off, when local and national laws were changed in his favor. Yet is was technology, the web, the internet, media, which helped him to deliver his methods in ethical building and engineering to the masses, and to his greater community of support.

Are human ideas far reaching enough, or do they still rely on the system or even technology to save us. Derrick Jensen explains in Beyond Hope, Removing a major stumbling block to acting on behalf of the Earth.

Frankly, I don't have much hope. But I think that's a good thing. Hope is what keeps us chained to the system, the conglomerate of people and ideas and ideals that is causing the destruction of the earth. (Barry Lopez)

To start, there is the false hope that suddenly somehow the system may inexplicably change. Or that technology will save us. Or the Great Mother. Or beings from Alpha Centauri. Or Jesus Christ. Or Santa Claus. All of these false hopes lead to inaction, or at least to ineffectiveness. False hopes blind us to unlivable situations, and blind us to real possibilities. (Barry Lopez)

When we consider all the media saturation, its not difficult to wonder how this affects the minds of future and current students. The modern adolescent is consuming more media than ever before, and their lives are inundated with technologies, like dvd players, mp3 players, phones, x-box, wii, game boys and on and on through the next hyped product to hit the market.

Although teenagers typically drive the consumption and development of new media platforms, teens age 12-17 viewed 3% more traditional television during the full day than in the 2004-2005 television year. This increase was driven primarily by teenage girls, who increased their Total Day viewing by 6%. Increases among teenage girls were particularly high during early morning (6:00 a.m. to 9:00 a.m.) and late night (11:30 p.m. to 2:00 a.m.) viewing, which were up 12% and 6%, respectively. (The Nielsen Company)

This is an alarming trend, that could also explain the reason stereo types play a huge role in education of STEM, and how those messages are still being pushed though

media and technology. The Neilsen Company surveys convey strong messages about educating youth, with in a technology and media saturated society.

> By second grade, when students (both boys and girls) are asked to draw a scientist, most portray a white male in a lab coat. The drawings generally show an isolated person with a beaker or test tube. (The Nielsen Company)

> The persistence of the stereotypes start to turn girls off, and by eighth grade, boys are twice as interested in STEM careers as girls are. The female attrition continues throughout high school, college, and even the work force. Women with STEM higher education degrees are twice as likely to leave a scientific or engineering job as men with comparable STEM degrees. (The Nielsen Company)

> Media literate people understand that media are constructed to convey ideas, information and news from someone else's perspective. They understand that specific techniques are used to create emotional effects. They can identify those techniques and their intended and actual effects. They are aware that the media benefit some people, but leave others out. They can (pose and sometimes answer) questions about who benefits, who is left out, and why. Media literate people seek alternative sources of information and entertainment. Media literate people use the media for their own advantage and enjoyment. Media literate people know how to act, rather than being acted upon. In this way, media literate people are better citizens. (Pat Kipping)

With all the latest in social networking sites, places like MySpace, Facebook, Twitter, Twitter Flutter, skype, aol, yahoo, and countless others are starting to be sliced thin. Its an endless overwhelming amount of information to process, it is becoming critical to learn how to filter the saturation, and meaningless gossip which clogs the data-streams with the latest fad in connectivity. However these interactions are less than genuine, and often frivolous for the amount of time consumed in connecting over random twitters of information. Needless to say, now it seems we are a bit more disconnected even with all the attempts to connect.

And what does all this say about our current learning styles and structures. How are our educators standing up to the social technology gap? There is reason to be concerned, because students are slipping behind, in STEM, ironically at a time when we are the most technologically advanced in history. Technology saturation could possibly be affecting our ability to keep up with the technology demand, and our inventive curve is slipping. The sheer over production of media, and useless technology, which consumes our fad filled lives, is dumbing us down, and soon a social technology gap will occur. Are our youth too consumed with media and technology, to be able to learn the basic skills needed to create and invent newer technologies?

> A recent study conducted by the International Association for the Evaluation of Education Achievement compared students, 10-year-olds, 14-year-olds, and 17-year-olds, among various countries. American 17-year-olds ranked in the bottom 25 percent in biology, chemistry and physics, behind students from

England, Hong Kong, Singapore, Hungary, Poland, and Japan, to name a few. Out of seventeen countries, American 14-year-olds ranked fourteenth in science and mathematics, and American 10-year-olds finished in the middle of the group. Results from different American schools varied widely. The American showing was in fact similar to that of developing countries that display sharp contrasts between elite schools and other schools. They concluded the summary with the understatement, "For a technologically advanced country, it would appear that a reexamination of how science is represented and studied is required." (Tim Berra)

The time has come for humans to develop new standards in pedagogy. However this won't happen without changing some of the social stigmas surrounding technology and nature. Change in standards won't come, if the standards are not raised, and if ethics are not taught to future inventors, consumers and users alike.

"In our zest for making them aware of and responsible for the world's problems, we cut our children off from their roots," explains David Sobel in Beyond Ecophobia an essay in The Future of Nature. David continues, "If we fill our classrooms with examples of environmental abuse, we may be engendering a subtle form of dissociation." His fear is that, "environmentally correct curriculum similarly ends up distancing children from, rather than connecting them with, the natural world. The natural world is being abused and they just don't want to have to deal with it." I believe the same is true for any stereo typing, and we have to address this educational dilemma before change can occur.

With this concern in mind, and with the understanding of over saturated media and technology stimulation, we need to discover new philosophies of educating STEM while also allowing ethical inquiry to unfold in the classroom. Art is an important tool for teaching STEM, because we can inspire the next generation to create solutions and help evolve our future generation learners. Art will give them passions to live, passions to create, and this will hopefully work with ethics to create a community of responsible humans, working with STEM and nature, through art.

STEM-A (Science, Technology, Engineering and Mathematics through Art) is a new pedagogy for the next generation student. Encouraging ecological ethics in STEM through unique art experiences as a means of translating interactive curriculum. Ethical art education is a key approach for STEM-A, with emphasis is on inventive practice and participation. RUST-E (Radically Urban Sustainable Technology Exploration) is an arts component partnered with and founded with STEM-A in order to promote this new teaching style. RUST-E will help to foster a culture of ecological ethics in Art and Technology, while working with STEM-A to build educational programs incorporating inventive STEM behavior in students and teachers alike.

http:STEM-A.org
http:RUST-E.org

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