Union College: Eighth Symposium on Engineering and Liberal Education

A Perspective on Users

Name	**Topic for discussion; links; etc.**
Audrey	1. For which users should we be designing? 2. How do you build empathy in students for remote users who may be located in other regions of the world? 3. What is the role of technology in accessing and understanding users? 4. How do we engage users in identifying human needs, ideating for innovation or appropriation, and implementing and evaluating solutions?
Alex Dale	2. Virtual guest lectures and mentors from remote contexts (a la WPSI) Student-student connections for skype tours of other places Cell phone picture-messaging for design evaluation, ideation, and maintenance [knowledge] requests Work to develop empathy with users that are more local to allow repeated exposure and potential immersion/experience.
Haungs	Constant user testing--users dont necessarily know what they want, but the know what they dont want. Design for non-average person? We seem to persistently insert a middle man: “I’m going to interpret your problem through my lens, and then design for you” (where the middle man is a simulation or other stand-in). Agile vs waterfall.
Haungs	Oculus Rift (www.oculus.com); Second-life interactions. Rather than simulate users, use as communication between users and designers.
Jim Hedrick	How do we keep it from being superficial? Empathy can be very hard to develop because we find it hard to put ourselves in the situation - not just being hungry, but feeling desparate from not knowing where the next meal would come from (or how to feed one’s kids).
Ulrike	Establish local contact(s) as information broker --- contact “broker” via Skype, FaceTime, where available. We want to avoid “pity” because that is empathy plus judgement. Twinning: if you are studying drought, for example, find a partner in a drought-ridden area.
Jane	There are alternatives to VR -- reading for example, and producing knowledge about a culture based on analysis of primary and secondary sources (so becoming culturally competent is understood as a process just as design is).
Ulrike	Role play: have one person become the user, the other the designer.
Jane	How do you address guilt (which often emerges en route to empathy)? (Similar, perhaps, to discussion about pity?)

	Is empathy actually the right goal? Does empathy still focus on individual to individual identification? Is that enough to produce more socially just and socially responsible and responsive design? co-design, co-knowledge production, co-learning about the 'other', co-reflection, co-learning … MUTUALITY Turning users into co-designers is not to minimize expertise, but to multiply it.

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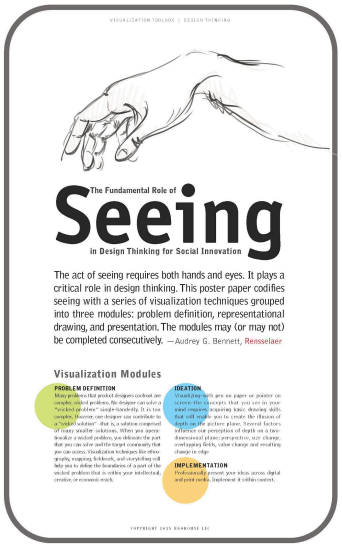
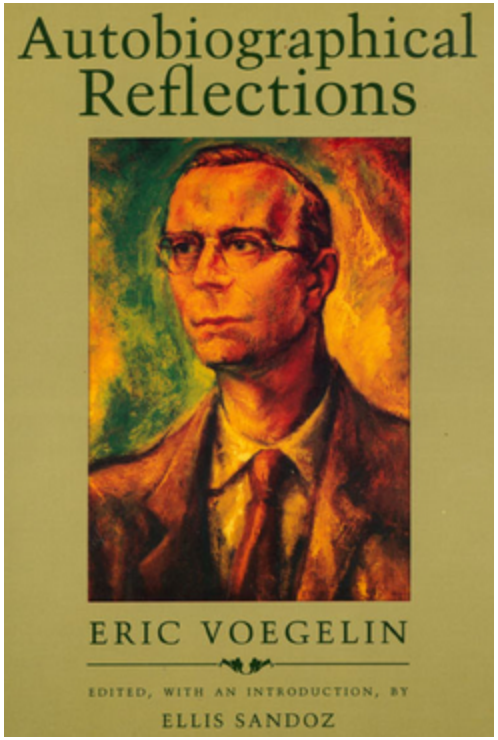
Ron Eglash	PDI studio 5 projects are archived here: http://pdi-studio5.wp.rpi.edu/; syllabus is here. Many students come to the design program with a conceptual framework -- a "basin of attraction" or "trope" which prevents them from developing designs which incorporate social justice perspectives. How can we identify these challenges and address them, without imposing our belief system and values? How can better education address these issues?
Ron	Sample discussion question for students: How do normative issues ("values," "ideology") enter into STS? What is "the politics of design?"

	a. Technophobe view: technology is inherently evil. (e.g. unibomber) b. Techno-utopian view: technology is inherently good. (e.g. Walt Disney) c. Technology is neutral view: “a hammer can be used to murder or to build a house. The technological artifacts themselves are therefore politically neutral.” d. STS takes a 4th approach – one informed by Social Constructionist perspectives.
Ron	Sample discussion question for students: Given the vast number of social problems -- crime, poverty, pollution, health, racism, war, sexism, housing shortage, job shortage, starvation, teen pregnancy, drug addiction, etc. -- we might expect an equal diversity of design solutions. But instead, the vast majority of examples of "social awareness" in design focus on medical (e.g. design for the disabled) or environment (e.g. "green design). Why this contradiction?
Ron	The right/left political division creates a pair of such basins of attraction. For example right wing students often say there is no design solution for poverty because poor people are lazy. Left wing students often say there is no design solution for poverty because socialism is the only solution. Thus: i. Marxist analysis as a valuable critique of social problems: extraction of surplus value. ii Marxist analysis as a disappointing solution to social problems: engineering disasters in the USSR
Ron	“Victimhood” creates another pair of basins of attraction -- right wing students often see social justice as pandering; left wing students emphasize lack or oppression. One way to address that is to think about ways that design can help leverage unrecognized local resources, as we have done here with cultural capital: http://csdt.rpi.edu/
Audrey	Visualization techniques (http://baohouse.org/wp-content/uploads/seeing4designinnovation.pdf) that engage students in problem definition, ideation, implementation, and evaluation. Some of these tools can be used to challenge normative behaviors and beliefs.  The Fundamental Role of Seeing in Design Thinking for Social Innovation The act of seeing requires both hands and eyes. It plays a critical role in design thinking. This poster paper codifies seeing with a series of visualization techniques grouped into three modules: problem definition, representational drawing, and presentation. The modules may (or may not) be completed consecutively. —Audrey G. Bennett, Rensselaer Visualization Modules PROBLEM DEFINITION IDEATION IMPLEMENTATION

Mary O'Keeffe	http://www.povertyactionlab.org/evaluation/encouraging-teacher-attendance-through-monitoring-cameras-rural-udaipur-india is a counter-example to the tendency of engineering schools to ignore poverty. Giving a digital camera to teachers in rural India and asking them to send in time/date stamped photos of themselves with their students every morning and afternoon greatly increased teacher attendance and student educational outcomes. More generally, there are many other antipoverty research projects going on here: http://www.povertyactionlab.org/ Ap for teaching computer science at Girls' Inc in Albany https://apps2.societyforscience.org/intelisef2014/project.cfm?PID=CS038 Guerrilla math circles: http://albanyareamathcircle.blogspot.com/2012/05/guerrilla-math-circles-brainstorming.html http://albanyareamathcircle.blogspot.com/2012/06/pascals-triangle-in-sidewalk-chalk.html (sidewalk chalk, poker chips)
Lorraine	Brazilian artist Vik Munez. *Waste Land* When you bring up race, students feel attacked.
Jim Hedrick	Engineers lose sensory experience in order to mass produce white collar labor
Erin Lennox	There are "glamorous" examples like the socket soccer; http://mobile.nytimes.com/blogs/parenting/2015/05/17/giving-up-a-3-d-printed-prosthetic-for-a-different-vision-of-perfect/?smid=fb-share&_r=0&referrer=A
Rafael Burgos-Mirabal	Student to generate autobiographical reflection (auto ethnography) on his/her societal circumstances (socio-cultural-historical). This reflection/analysis is guided/facilitated by instructor.This is a general approach, and it should need to be focused through specifics, chosen perhaps from the context in which the instruction is being deployed. Storytelling? Poetry? Program for artwork?

	
Erin	http://mobile.nytimes.com/blogs/parenting/2015/05/17/giving-up-a-3-d-printed-prosthetic-for-a-different-vision-of-perfect/?smid=fb-share&_r=0&referrer=A

A Perspective on Users

Name	**Topic for discussion; links; etc.**
Audrey	How do we differentiate between empathy and sympathy (pity); pity can be the gateway to empathy 5. For which users should we be designing? 6. How do you build empathy in students for remote users who may be located in other regions of the world? Storytelling (James Burke Connections), Reading, Socio-historical connections and relating the present to the past 7. What is the role of technology in accessing and understanding users? Where are you getting your images?How do you make it real? Empathic training prior to arriving in the real context. 8. How do we engage users in identifying human needs, ideating for innovation or appropriation, and implementing and evaluating solutions?

twinning (partnering), empathy can lead to theorizing difference and social justice?