THE UNIVERSITY OF BRITISH COLUMBIA: TEACHER EDUCATION / CURRICULUM & PEDAGOGY

[EDUC 371.951]

DESIGN + TECHNOLOGY
ACROSS THE CURRICULUM

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Summer 2014

COURSE DESCRIPTION

This course provides educators with fundamentals for teaching design and technology at elementary (K-5) and middle (6-8) school levels. Our Summer 2014 session includes make and share activities with iPads, cameras, and robots for teachers and learners. Along with hands-on activities and skills, we will examine benefits and problems associated with design and technology in the school curriculum. This overview involves: developing an online collection of instructional strategies for social media; analyzing design processes and pedagogies; and creating technology-supported learning environments.

This course is designed to provoke critical understanding of our complex relationships to teaching and learning with/against technology (both digital and non-digital) from cultural, personal, and cognitive perspectives. Four main themes will be explored: 1) understanding technology as a process, an artifact, and an environment that we are part of; 2) thinking about identity and how it is both shaped by and shaping technology; 3) investigating the use of technology in educational settings across the curriculum; and 4) examining the dynamic relationships between technology, teaching, and learning.

The course content balances the art and craft of design with a cornucopia of new digital technology approaches. **The operative word for this course is INTEGRATION**: integration of hand, head, heart, and feet—body, mind, soul, and action—materials, subjects, people, creativity, and emotion with cognition!

As a result of fully engaged participation in this course, students will develop skills to:

- Create learning resources for teaching in and about technology.
- Describe significant curriculum initiatives from international, national, and provincial domains.
- Examine the issues and opportunities arising between teaching, learning, technology, and school.
- Articulate a personal philosophical approach for teaching with/against design and technology.
- Participate as part of a learning collective and as a member of a technology design team.
- Foster designerly ways of thinking, growth-minded attitudes, creativity, and ingenuity.
- Have fun and feel confident teaching in and about technology in diverse school settings.

"Tell me and I forget. Show me and I remember. Involve me and I understand."
Chinese Proverb

"There is no such thing as genuine knowledge and fruitful understanding except as the offspring of doing." John Dewey

"Education is the point at which we decide whether we love the world enough to assume responsibility for it and by the same token save it from that ruin… Education, too, is where we decide whether we love our children enough not to expel them from our world and leave them to their own devices, nor to strike from their hands their chance of undertaking something new, something unforeseen by us, but to prepare them in advance for the task of renewing a common world."
Hanna Arendt

"We only think when confronted with a problem." John Dewey

COURSE POLICIES

This course values the university classroom as a space for unconditional questioning. To this end, we will use the guideline that you can say and ask anything in class, but that you cannot declare what you (or others) have said or asked off-limits for questioning. Keep in mind that participation doesn't mean simply speaking up in class or doing assigned work, but actively working to make the class a positive learning experience for you and your colleagues— **please treat each other with integrity, kindness and respect.**

This course is developmental, in both theory and practice, requiring **100% attendance and 100% participation in ALL learning activities, assignments and class experiences**. Students who are unavoidably absent must advise the instructor as soon as possible (email or text message preferred). Students who miss more than 15% of their classes for unexplained reasons are normally expected to repeat the course (refer to Section V, "Academic Regulations," of the UBC Calendar).

UBC recognizes its moral and legal duty to provide academic accommodation for students with disabilities. The goal is **to ensure fair and consistent treatment of all students**, including students with a disability, in accordance with their distinct needs and in a manner consistent with academic principles. Students with a disability who wish to have an academic accommodation should contact the Disability Resource Centre without delay (UBC Policy 73, www.universitycounsel.ubc.ca/policies/policy73.pdf).

COURSE EVALUATION

This is a pass/fail course. The professional program in teacher education at UBC is committed to a high level of performance among all teacher candidates, and with this in mind, a pass/fail system has been instituted. Achieving a passing mark in this course is contingent upon a **HIGH standard of performance** in ALL learning activities, assignments and experiences. Substandard work will be returned for resubmission, however, if there is no improvement, then the work will be considered a fail.

GRADE: PASS [WORK OF OUTSTANDING QUALITY]

- Demonstrates excellent comprehension of the course materials.
- Consistently applies a high level of critical scrutiny to analyze the course materials.
- Articulates original insights and innovative ideas.
- Expresses a high degree of personal engagement with the course materials.
- Contributes significantly to group discussions and to collective knowledge development.
- Understands and integrates teaching with technology to diverse educational settings across the curriculum.

GRADE: REWRITE & RESUBMIT [MINIMALLY ADEQUATE WORK]

- Demonstrates serious flaws or deficits in understanding the course materials.
- Consistently lacks effort and/or critical insight to engage with the course materials.
- Expresses lack of personal involvement and a lack of original thought.
- Does not contribute to group discussions or collective knowledge development.
- Unable to integrate and apply teaching with technology to diverse educational settings across the curriculum.

GRADE: FAIL [FAILING WORK]

- Student did not complete assigned work.
- Student did not fully participate due to unexcused absences.
- Student did not fully participate due to disruptive and uncooperative behavior in class.

COURSE REQUIREMENTS

1. D&T LEARNING ARTIFACTS

Students are expected to prepare eight analytical responses (one-page or digital artifact equivalent) to the EDCP 371 course materials: assigned readings, class discussions, course activities, and the work of your peers. The daily assignments are intended for you to explore and examine the issues associated with teaching in and about technology across the elementary and middle years curriculum. Use them as an opportunity to prepare for class through self-analysis and critical synthesis of concepts, ideas, and perspectives. **Please upload your work to our private course wiki** [www.371design.wikispaces.com].

#1	July 22	**Design Squad** (I wish for your most creative invention)
#2	July 24	**Digital Storymaking**
#3	July 25	**iPad App Review** (mobile learning for classroom use)
#4	July 28	**Create a Comic Strip Starring You** (Toonlet; Flip Boom Cartoon; Toontastic)
#5	July 29	**Mind Mapping** (Popplet; iBrainstorm; Mindmeister; Inspiration; iBlueSky, Freemind; Maptini; iMindQ; Mindo; Idea Sketch; Mind Node; iThoughts HD; SimpleMind +)
#6	July 30	**iPad Pic Collage** (www.pic-collage.com; www.glogster.com)
#7	July 31	**D&T Proposal** (describe the ideas, medium, and plans you have for your project)
#8	Aug 1	**D&T Project** Evaluation Framework

2. SCHOLARLY READING GROUPS

Learners will sign up to facilitate a reading group (of three members) responsible for leading a high-level class discussion (15-20 minutes). Each reading group must prepare a list of discussion questions to challenge the class with provocative ideas that include a wide range of viewpoints and **for/against** perspectives. Plan to lead your peers in an engaging D&T activity (10-15 min) related to the reading(s).

3. "MY REMARKABLE" D&T PROJECT

How can you use design and technology to transform teaching and learning in your classroom?

With guidance from the course instructors, you will have a valuable opportunity to propose, research, and develop a self-directed design and technology project pertaining to an educational issue or an area of chosen interest that really matters to you (e.g., mentoring, managing workload, classroom learning environment, social justice, sustainability, or integrating gaming into curriculum). We will work together in class as a team to generate topics, cross-pollinate ideas, share resources, and peer-review your projects. You may work individually or on project teams. Remember: design processes, peer collaboration, and technological ingenuity are just as significant as the quality of your completed works.

Our classroom is a fun, motivating, safe environment for learning design thinking. Recognizing that each participant enters the class with diverse conceptual abilities and technological capabilities, the D&T project evaluations will emphasize your journey of personal development and professional growth, as well as achievement of the more formal design and technical goals specific to each project. Know that it is better to aim too high and "fail," than to aim too low and succeed: failure is a powerful teacher and a critical part of the design process! As such, feel encouraged (and supported) to move out of your comfort zone, take creative risks, learn new skills, and really challenge yourself. Final D&T projects are due for presentation and peer evaluation on the last day of class, Friday, August 8.

EDCP 371 COURSE SCHEDULE

DAY	INQUIRY / RESOURCES / ASSIGNMENTS
JULY 21 [Rachel] [PJ]	**INQUIRY: D&T education in BC** ▪ What is the history of and future for D&T curriculum in BC? ▪ What is most important for students to know? ▪ What is design? What is technology? What is D&T education? ▪ What happens if we move from design to "design thinking"? ▪ What happens if we move from technology to "technology thinking"? ▪ How might D&T open up new and/or divergent ways of thinking about education? ▪ How might you see beyond "already-interpreted" perspectives about teaching about, for, from, and with/against technology? **RESOURCES:** ▪ **Overview of ICT Curriculum (K-12):** http://www.bced.gov.bc.ca/irp/program_delivery/ictk12_overviewchart.pdf ▪ **BC Technology Education Curriculum (8-10):** http://www.bced.gov.bc.ca/irp/pdfs/applied_skills/support_materials/te10_sup.pdf ▪ **BC Key Components of ICTI Performance Standards:** http://www.bced.gov.bc.ca/perf_stands/icti ▪ **BC Information Technology Resource Document (K-7):** http://www.bced.gov.bc.ca/irp/resdocs/itk7.pdf ▪ **Technology Education Curriculum Cycle:** http://www.bced.gov.bc.ca/irp/reports/te_report.pdf
JULY 22 [PJ]	**INQUIRY: D&T ways of teaching** ▪ What do teachers need to know about technology? How are they supposed to learn it? ▪ What are the interrelationships between artifacts, users, tools, and pedagogical practices. ▪ How do we teach D&T effectively, authentically and sustainably in a digital world? ▪ What messages do you convey about the nature and value of D&T by the way you teach (your pedagogical choices, personal values, and unexamined assumptions)? ▪ What kind of teacher are you? How do you want to be in the classroom? What are you educating your students to be good at? ▪ How is "teaching" one of the most highly contested terms you will encounter? ▪ How do you confront the ultimate learning outcome: "we teach who we are?" ▪ How is the accelerating power of technology transforming teacher roles? ▪ Do you think new technologies will ever replace great teachers? ▪ What makes a teacher great? How do we make a teacher remarkable?

	RESOURCES: ▪ Technology in the hands of a great teacher (Schwanbeck, 2013) ▪ Why new technologies could never replace great teaching (Wright, 2013) ▪ Teachers learning technology by design (Koehler & Mishra, 2005) ▪ **TED TALK: Our loss of wisdom** (Feb, 2009) https://www.ted.com/talks/barry_schwartz_on_our_loss_of_wisdom Barry Schwartz argues passionately that the single most important thing kids need to learn is character. They need to learn to respect themselves, their schoolmates, and their teachers. And, most important, they need to learn to respect learning. That's the principle objective. And teachers, the way you teach these things to the kids is by having the teachers and all the other staff embody it every minute of every day.
JULY 23 [Rachel] [PJ]	**ACTIVITY: Experiencing D&T curriculum as lived** ▪ How do we stimulate complex understanding about cross-cultural and diversity issues related to teaching & learning? ▪ How do we define, evaluate and transform D&T education for responsible and sustainable citizenship in a technological society? ▪ What can students learn from D&T that can't be learned in any other way, both in designing and making, but also in appreciating the values that impact our world? **RESOURCES:** ▪ **UBC Museum of Anthropology (MOA)** http://www.moa.ubc.ca MOA is a place that celebrates expressions of human and technological ingenuity, both past and present. ▪ **UBC Nitobe Gardens** http://www.botanicalgarden.ubc.ca How might we enliven meaning and mindfulness in the technology classroom? ▪ **Einstein:** "It is nothing short of a miracle that the modern methods of instruction have not yet entirely strangled the holy curiosity of inquiry; for this delicate little plant, aside from stimulation, stands mainly in need of freedom; without this it goes to wreck and ruin without fail. It is a very grave mistake to think that the enjoyment of seeing and searching can be promoted by means of coercion and a sense of duty." ▪ **TED TALK: The worldwide web of belief and ritual** (Feb 2008) http://www.ted.com/talks/wade_davis_on_the_worldwide_web_of_belief_and_ritual Anthropologist Wade Davis muses on the worldwide web of belief and ritual that makes us human. He shares breathtaking photos and stories of the Elder Brothers, a group of Sierra Nevada Indians whose spiritual practice holds the world in balance.
JULY 24 [PJ]	**INQUIRY: D&T ways of questioning** ▪ What is your personal philosophy for integrating D&T in your teaching and learning environments? ▪ What does McLuhan mean by "the medium is the message"? How are children "the messages" we send to the future? ▪ How are students much more important than the subject matter we teach or the technologies we teach with?

	▪ How do we make teaching and learning with technology more equitable and sustainable? Where do we put e-waste? How is technology enhanced learning simultaneously "good, bad, and ugly"? **RESOURCES:** ▪ Technology enhanced learning: The good, the bad, and the ugly (Dror, 2008) ▪ Technology in the classroom: The good and bad (Braiker, 2013) ▪ **Grant Wiggins** (1989): "Developing in students a love of discovery should be our aim. To do so, however, teachers and students must have the intellectual freedom to follow the lead of their own questions... Our aim should be to develop a thirst for inquiry… to see how knowledge grows out of, resolves, and produces questions." ▪ **THE STORY OF STUFF PROJECT: The story of electronics** (Nov, 2010) http://storyofstuff.org/movies/story-of-electronics Annie Leonard argues why "designed for the dump" is toxic for people and the planet. Her cartoon video specifically targets e-waste, describing the familiar cycle of buying a new gadget that rapidly becomes outdated, requiring you to buy a new gadget and dispose of the old one. Annie's proposed solution is encapsulated in a simple but sustainable slogan: "Make 'Em Safe. Make 'Em Last. Take 'Em Back."
JULY 25 [Rachel]	**INQUIRY: D&T ways of playing** ▪ What is FUN in this world? ▪ How can we help others by having a good time? ▪ How do we make responsibility, sustainability, generosity, and compassion FUN? ▪ How (and why) is playing significant for teaching and learning in and about D&T? ▪ What are the affordances and constraints of "playing to learn"? ▪ How do we nurture and value diverse ways of playing in the classroom? **RESOURCES:** ▪ All I really need to know (about creative thinking) I learned (by studying how children learn) in kindergarten (Resnick, 2007) ▪ **Neville V. Scarfe** (1962), renowned UBC Dean of Education, argues that play is education: "Play is the most complete educational process of the mind— Nature's ingenious device for ensuring that each individual achieves knowledge and wisdom... The spirit of play is vital to all humanity: the basis of most of the happiness of [human]kind; the means by which humanity advances creatively, scientifically, intellectually and socially. The spirit of play is vital not only to childhood but to all [human]kind." ▪ **Toys From Trash:** http://www.arvindguptatoys.com/toys.html ▪ **TED TALK: Arvind Gupta: Turning trash into toys for learning** (Dec, 2010) https://www.ted.com/talks/arvind_gupta_turning_trash_into_toys_for_learning Arvind Gupta shares simple yet stunning plans for turning trash into seriously entertaining, well-designed toys that kids can build themselves— while learning basic principles of technology and design.

JULY 28 [PJ]	**INQUIRY: D&T ways of doing** ▪ How is "embodied cognition," a lens through which to look at educational technology? ▪ How might incorporating bodily movements—even subtle ones— improve the learning that's done on computers? ▪ Why do we need to remember that students are more than mental machines? ▪ How might we counter acceleration and fragmentation with slowness/wholeness? ▪ What are five dangerous things that you should let your students do?! ▪ How might we join school learning to living well and well-being? ▪ If we believe in "learning by doing," then how do we create learning environments where this happens successfully and sustainably? ▪ What is the significance of learning with our hands, head, heart and feet (body, mind, soul and action)? **RESOURCES:** ▪ Educational technology's next move: Tools to help kids learn with their bodies (Paul, 2014) ▪ Standards for Technological Literacy (International Technology Education Association) http://www.iteaconnect.org/TAA/PDFs/Execsum.pdf ▪ Advancing Excellence in Technological Literacy (International Technology Education Association) http://www.iteaconnect.org/TAA/PDFs/AETL.pdf ▪ **Bottrill** (1995, p. 5) emphasizes: "Design activity in school can enable students to appreciate the human-made world in which they live and work; and through taking action with technology, students can begin to shape their future environment." ▪ **TED TALK: A short intro into the studio school** (July, 2011) https://www.ted.com/talks/geoff_mulgan_a_short_intro_to_the_studio_school Some kids learn by listening; others learn by doing. Geoff Mulgan gives a short introduction to the Studio School, a new kind of school in the UK where small teams of kids learn by working on projects that are, as Mulgan puts it, "for real."
JULY 29 [Rachel]	**INQUIRY: D&T ways of learning** ▪ What is most important for kids to learn for the future and how can they best learn it? ▪ How do boys and girls learn and interact with technology? How are boys and girls learning about, for, from, and with/against technology in today's classrooms? ▪ How do we educate future innovators (beyond conformists or consumers) who are confidently prepared for the opportunities, responsibilities and experiences of life? ▪ If today's students are "anytime, anywhere digital learners," then what are the social, cultural and cognitive implications for classroom learning environments? ▪ How does technology (as an extension of the human body) effect upon our ways of learning in the classroom? ▪ How do we learn from our selves and our own experiences?

	RESOURCES: ▪ Girls & Technology (Online News Hour); What about the Boys? (Kimmel, 1999) ▪ Technology, pedagogy and digital production: A Case Study of Children Learning New Media Skills (Willett, 2007) ▪ **OWP/P Architects et al.** (2010): "The child starting kindergarten this fall will graduate in the 3rd decade of the 21st century. All we can know about the world he/she will step into is that it will have challenges and opportunities beyond what we can predict, with new possibilities and problems that will demand creativity, ingenuity, responsibility, and compassion. Whether this year's kindergarten student will merely survive or positively thrive in the decades to come depends in large measure on the experiences she/he has in school." ▪ **TED TALK: Gaming to re-engage boys in learning** (Oct, 2010) www.ted.com/talks/ali_carr_chellman_gaming_to_re_engage_boys_in_learning In her talk, Ali Carr-Chellman pinpoints three reasons boys are tuning out of school in droves, and lays out her bold plan to re-engage them: bringing their culture into the classroom, with new rules that let boys be boys, and video games that teach as well as entertain.
JULY 30 [Rachel]	**INQUIRY: D&T ways of planning** ▪ What is most important for today's students to learn for the future, and how can they best learn it? ▪ What do you want your students to know, do, and be? ▪ How might we re/design today's classrooms to create future innovators and to make more sustainable learning futures that have meaning and quality of life for all? ▪ Do we really believe that all students can learn and thus plan our lessons to engage all learners with equal opportunities? ▪ How do we involve students in curriculum planning, teaching and assessment? ▪ How can we plan to meet the needs of students with special educational needs (physical, sensory, intellectual, emotional and behavioral learning difficulties)? **RESOURCES:** ▪ A framework for selecting and using technology (Bates & Poole, 2003) ▪ Assessing technology using the SECTIONS model (CTLT, 2011) ▪ **Downes** (2010): "We need to move beyond the idea that education is something that is provided for us, and toward the idea that education is something that we create ourselves." ▪ **TED TALK: Kids, take charge** (Nov, 2009) http://www.ted.com/talks/kiran_bir_sethi_teaches_kids_to_take_charge Kiran Bir Sethi's training as a designer is clear in her work as an educator-- she looks beyond what exists, to ask, "could we do this a better way?" She founded Riverside School in India, designing the primary school's curriculum (and its building) from the ground up. Watch students take local issues into their own hands, lead other young people, educate their parents, and learn one of life's most valuable lesson: "I can."

JULY 31 [PJ]	**ACTIVITY: PicoCricket Robotics** ▪ **TED TALK: And for my next trick, a robot** (March, 2014) http://www.ted.com/talks/marco_tempest_maybe_the_best_robot_demo_ever Marco Tempest uses stagecraft to demo EDI, the charming robot designed to work very closely with humans. Less a magic trick than an intricately choreographed performance, Tempest shows off the robot's sensing technology, safety features and strength, and makes the case for a closer human-robot relationship.
AUGUST 1 [Rachel]	**ACTIVITY: iPad Storymaking** ▪ **TED TALK: The technology of storytelling** (May 2011) https://www.ted.com/talks/joe_sabia_the_technology_of_storytelling iPad storyteller Joe Sabia introduces us to Lothar Meggendorfer, who created a bold technology for storytelling: the pop-up book. Sabia shows how new technology has always helped us tell our own stories, from the walls of caves to his onstage iPad.
AUGUST 5 [PJ]	**INQUIRY: D&T ways of finding and solving problems** ▪ **THE STORY OF STUFF PROJECT: The story of solutions** (Oct, 2013) http://storyofstuff.org/movies/the-story-of-solutions Annie Leonard questions: What if the goal of our economy wasn't more, but better—better education, better jobs, better health, and a better chance to survive on the planet? Shouldn't that be what "winning the game" means? How can we re/design our education and economic systems in a more sustainable and just direction?
August 6 [Rachel]	**INQUIRY: D&T ways of evaluating** ▪ **TED TALK: Teachers need real feedback** (May 2013) https://www.ted.com/talks/bill_gates_teachers_need_real_feedback Until recently, many teachers only got one word of feedback a year: "satisfactory." And with no feedback, no coaching, there's just no way to improve. Bill Gates suggests that even great teachers can get better with smart feedback— and lays out a program from his foundation to bring it to every classroom.
August 7	**Design & Technology Project Presentations & Celebrationof Learning** [Rachel & PJ]
August 8	**Design & Technology Project Presentations & Celebration of Learning** [Rachel & PJ]

ATTAINMENT OF STANDARDS

This course will explicitly address several of the "Standards for the Education, Competence and Professional Conduct of Educators in British Columbia," as developed by the BC College of Teachers (visit: http://www.bcteacherregulation.ca/standards/StandardsDevelopment.aspx):

Standard 1: Educators value and care for all students and act in their best interests.
Standard 5: Educators implement effective practices in areas of planning, instruction, assessment, evaluation and reporting.
Standard 6: Educators have a broad knowledge base and understand subject areas they teach.
Standard 7: Educators engage in professional career-long learning.
Standard 8: Educators contribute to the profession.

Curriculum:

Overview of ICT Curriculum (K-12):
http://www.bced.gov.bc.ca/irp/program_delivery/ictk12_overviewchart.pdf

BC Technology Education Curriculum (8-10):
http://www.bced.gov.bc.ca/irp/pdfs/applied_skills/support_materials/te10_sup.pdf

BC Key Components of ICTI Performance Standards:
http://www.bced.gov.bc.ca/perf_stands/icti

BC Information Technology Resource Document (K-7):
http://www.bced.gov.bc.ca/irp/resdocs/itk7.pdf

Technology Education Curriculum Cycle:
http://www.bced.gov.bc.ca/irp/reports/te_report.pdf

The Design & Technology Association:
https://www.data.org.uk/for-education/primary

Nuffield Curriculum Program:
http://www.nuffieldcurriculumcentre.org

Standards for Technological Literacy (International Technology Education Association):
http://www.iteaconnect.org/TAA/PDFs/Execsum.pdf

Advancing Excellence in Technological Literacy (International Technology Education Association):
http://www.iteaconnect.org/TAA/PDFs/AETL.pdf

Websites:

Adbusters Magazine: http://www.adbusters.org

Apple Learning Interchange: http://edcommunity.apple.com/ali

Children's Technology Workshop: http://www.ctworkshop.com

CIDA: http://www.acdi-cida.gc.ca (teachers and youth)

Design Squad: http://pbskids.org/designsquad

Digital Puppetry: http://www.digitalpuppetry.com

Geez Magazine: http://www.geezmagazine.org

George Lucas Foundation, Edutopia Online: http://www.edutopia.org

International Technology Education Association: http://www.iteaconnect.org

K-12 Community Learning Network: http://www.cln.org/index.html

Lego Mindstorm Robotics: http://www.lego.com:80/eng/education/mindstorms/default.asp

Media Awareness Network: http://www.media-awareness.ca (search the lesson library)

NOVA Teachers Technology Activities: http://www.pbs.org/wgbh/nova/teachers/resources/title.html

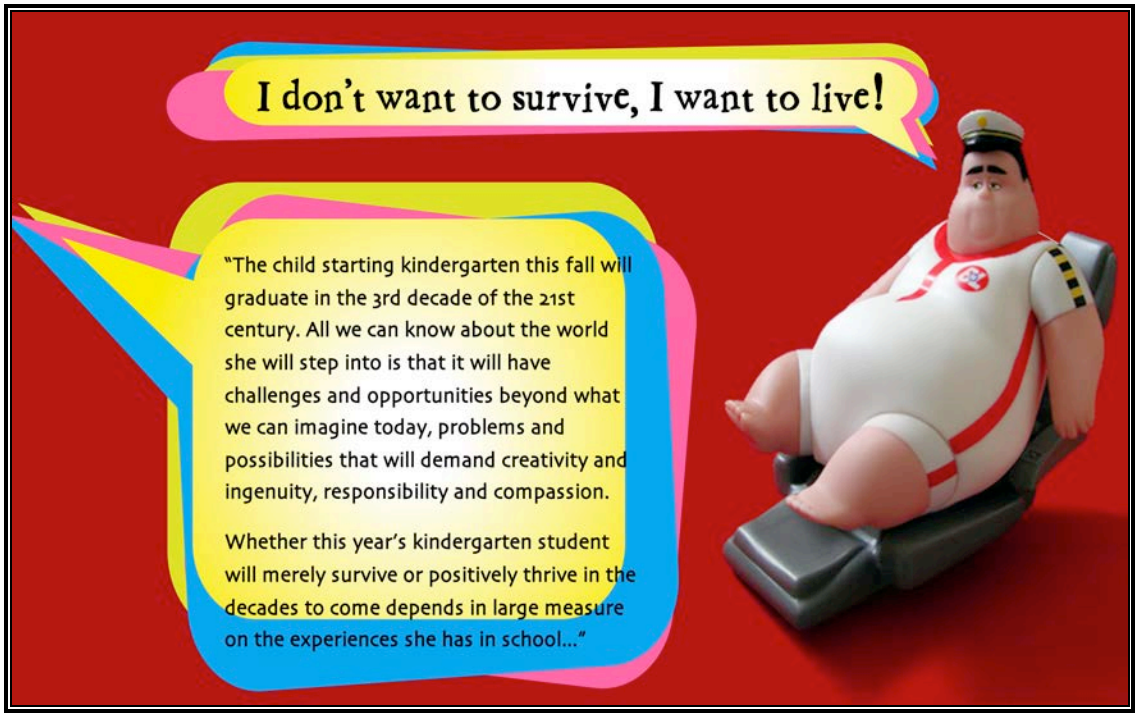
Paper Engineering: http://www.popupbooks.com

Social Impact Games: http://www.socialimpactgames.com

Technology Education for Children Council: http://www.ncat.edu/~childres/tecchome.html

The Design & Technology Association: http://www.data.org.uk

The Guerrilla Girls: http://www.guerrillagirls.com



Quotations from: 1) Captain of the movie WALL-E (2008); and 2) OWP/P Architects et al. (2010).

MY "REMARKABLE" D&T PROJECT

How can you use design and technology to transform teaching and learning in your classroom?

With guidance from the course instructors, you have the valuable opportunity to propose, research, and develop a self-directed D&T project pertaining to an educational issue or an area of chosen interest that really matters to you (e.g., mentoring, managing workload, classroom learning environment, social justice, school sustainability, or integrating gaming into curriculum). This project is wide-open to possibilities. Some meaningful ideas include: technology education resource website, public service announcement, school walking tour, blueprint for improving your classroom learning environment, "my teaching story" video, D&T staff development workshop, pop-up book, prezi, webquest, podcast, class blog or wiki.

We will work together in class as a team to generate topics, cross-pollinate ideas, share resources, and peer-review your projects. You may work individually or on project teams (maximum three learners). Once the project topic (or design problem) is decided upon, each team will upload a one-page proposal to the course wiki. The approved proposal will serve as the frame of reference for assessment (i.e., each project will have unique goals and expectations). Learners will use a design approach to more deeply understand their D&T problem(s), develop and test prototype(s), and present their design solution(s) to a panel of technology experts. Remember: design processes, collaboration, pedagogical purpose, and technological ingenuity are just as significant as the quality of your completed work.

Our classroom environment offers a fun, motivating, and safe space for learning design thinking. Recognizing that each learner enters the class with diverse conceptual abilities and technological capabilities, the D&T project evaluations will emphasize your journey of personal development and professional growth, as well as achievement of the more formal design and technical goals specific to each project. Know that it is better to aim too high and "fail," than to aim too low and succeed (Robinson, 2001). "Failure" is a powerful teacher and a critical part of the design process! As such, feel encouraged (and supported) to move out of your comfort zone, take creative risks, learn new skills, and really challenge yourself. Final D&T projects are due for presentation and peer evaluation on the last day of class, Friday, August 8.

D&T TOPIC IDEAS

1. **Designerly Learning Environment** – Design the ideal teaching and learning spaces of your (future) classroom: how does it look like and feel? How does it sit in its community, in its landscape, and in the world? Evaluate ideas, features, and materials for the learning environment on their sensitivity to color, light, and texture. Trigger the senses: sound, smell, taste, touch, and movement all work together to power memory. A learning environment rich in sensory experiences helps students to retain and retrieve what they learn.

2. **Exploration of iPad for a Pedagogical Purpose** – Design and develop a school walking tour (audio or visual podcast), educational public service announcement, instructional video, Ted Talk about a pedagogical issue or strategy, alternate reality game for learning, etc.

3. **Wikispace in Specific Curriculum Area** – Set up a wiki that your students can use as a space to share information, a place to submit completed assignments, and a forum for communicating with other students and teachers (locally and around the world).

4. **Projects in Specific Software or Social Media Applications** – Design an extensive lesson plan for teaching Photoshop, Comic Life, Edmodo, Facebook, iMovie, etc.

5. **Pop-Up Book** – Write a story, create a pop-up storybook, and support it with pop-up engineering activities for your students.

6. **Lesson Website or Webquest** – Create a webpage or webquest for a design and technology lesson or unit. Include objectives, activities, resources, and other appropriate media to further teaching and learning of the key concepts.

7. **Advanced Exploration of Technology** – Explore what teachers are doing with design and technology in a specific subject area; compile "the best of/worst of" examples; provide recommendations using established criteria from educational literature; and reference what you think teachers should be doing.

8. **Software/Website Review Site** – Create a site which features educational software, apps and/or gaming reviews for a specific target audience (subject area and grade).

9. **D&T Issue** – Investigate an issue related to design, technology, teaching, and/or learning using an arts-based or dramatic approach. Write a script or dialogue to artfully explore the tensions related to your chosen issue. Perform it live or make a short video of your work.

10. **Sustainable Schooling** – Design a blueprint for creating an outdoor schooling space that promotes healthy, imaginative, and educational experiences for children— as well as improving the social and ecological well being of local communities.

11. **Professional Teacher Website** – Develop a teacher resource (for communication between yourself, parents, students, and other educators) highlighting specific areas of your subject areas, teaching philosophy, expertise in education, etc. You may want to explain the advantages and disadvantages associated with technological learning and thinking in your classroom.

12. **Topic of Your Choice** – Got a better idea? We'd love to hear it!