

Children and New Technologies
Tuesdays 1:30-4pm
Eliot-Pearson Department of Child Development
Curriculum Lab

Prof. Marina Bers
Marina.Bers@tufts.edu

Office hours: Mondays 9-10am or by appointment

Course Description

Exploration of impact of new technologies in the lives of young people. Interdisciplinary course. Focus on both theory and design of technology-rich programs and experiences for children. Attention to different settings such as home, school, after school, hospitals and museums.

Course Requirements

- **Readings.** All students are expected to do all the readings
- **Class participation.** All students are expected to participate in discussions of the readings in class. Readings will be on-line or distributed in class.
- **Class presentation.** All students are expected to present in class the readings for one of the sessions.
- **Pecha Kucha presentation (due on 9/27).** This is a presentation format in which content can be easily, efficiently and informally shown. Each student will present 20 images for 20 seconds apiece, for a total time of 6 minutes, 40 seconds¹. The presentation should focus on the student's personal relationship with technologies.
- **Mid-term assignment (due on 11/15).** Students will develop a Scratch program to help young children explore math or literacy in a playful way. They will implement it in a classroom with young children. They will write a paper describing the experience. Please e-mail the assignment to Prof. Bers and bring a hard copy to class
- **Final assignment. Robotics (due on 12/6)**

Tentative Schedule

¹ The Pecha Kucha presentation format was devised in 2003 by two architects, Astrid Klein and Mark Dytham in Tokyo, who sought to give young designers a venue to meet, network, and show their work. They devised a format that kept presentations very concise in order to encourage audience attention and increase the number of presenters within the course of one night. They took the name Pecha Kucha from a Japanese term for the sound of conversation ("chit-chat"). Klein and Dytham's event, called Pecha Kucha Night, has spread virally around the world. More than 170 cities now host such events. Businesses use the Pecha Kucha format, especially for internal presentations, primarily as a device to limit the length of presentations, force presenters to focus their messages and reduce interruptions.

Day 1: Introduction (9/6)

This week Prof. Bers will introduce the course materials and goals, herself and the research she is directing at the [DevTech's research group](#). Students will introduce themselves. There will also be an introduction to the theoretical frameworks for the class and an in-class robotics exercise.

Design studio (2:30-4)

Louise Flannery: Dancing robots with TangibleK

Day 2 : The Digital landscapes for youth: early childhood (9/13)

This session will be an overview of the state-of-the art regarding the emerging field of child and youth development and technology with a special focus on technology in early childhood.

Readings

Bers, M (forthcoming) "Introduction" and "Chapter 1. Digital Playgrounds vs. Virtual Playpens in Early Childhood". In *Designing Digital Experiences for Positive Youth Development: From playpen to playground*. Oxford University Press

Design studio (1:30-2:45): meeting at the CEEO with ME 84 engineering students

Students will form interdisciplinary teams and partake in a robotic competition to get to know each other.

Joint problem will be introduced

Day 3 : The Digital landscapes for youth: elementary school (9/20)

This week will focus on technology as serving developmental and learning goals in the elementary school years.

Readings

Bers, M (forthcoming) "Chapter 2. Multimedia Parks vs. Virtual Malls in the Elementary Years" In *Designing Digital Experiences for Positive Youth Development: From playpen to playground*. Oxford University Press

Design studio (2:30-4)

Programming with Scratch

Day 4 : The Digital landscapes for youth: High school (9/27)

This week will focus on adolescents and new technologies

Readings:

Bers, M (forthcoming) “Chapter 3. Wireless Hangouts vs. a Palace in Time During High School” In *Designing Digital Experiences for Positive Youth Development: From playpen to playground*. Oxford University Press

Assignment due: Presentation of Pecha Kuchas

Day 5: A Framework for Designing Digital Landscapes for Personal Development (10/4)

This session will focus on the concept of Positive Technological Development. Too often youth experiences with technology are framed in negative terms (e.g., cyber bullying, sexual predation, invasion of privacy, addiction to videogames, etc.). This session will present alternative to this deficit discourse about youth experiences with technology.

Readings:

Bers, M (forthcoming) “A Framework for Designing Digital Landscapes for Personal Development. Overview” In *Designing Digital Experiences for Positive Youth Development: From playpen to playground*. Oxford University Press

Design studio (1:30-2:45): Meeting at the curriculum lab with ME84 engineering students

Form teams, engineers teach basic robotics to CD students and CD students teach child development and educational theory to engineers.

Day 6 : The Positive Technological Development framework: the 6 C's (10/11)

Bers, M (forthcoming) “Chapters 4, 5, 6, 7, 8 and 9” In *Designing Digital Experiences for Positive Youth Development: From playpen to playground*. Oxford University Press

Design studio (2:45-4): Developing curriculum module for EPCS

Day 7 : Experience I (10/18)

Design studio: (1:30-3pm) Scratch at EPCS

Developing and revising curriculum module

Day 8 : Experience II (10/25)

Design studio: (1:30-3pm) Scratch at EPCS

Developing and revising curriculum module

Day 9: Experience III (11/1)

Design studio: (1:30-3pm) Scratch at EPCS

Evaluation of curriculum module

11/8 No class. Substitute day

Day 10 : Designing positive technological environments (11/15)

This session will focus on how to design technologically-rich environments for young people.

Readings

Bers, M (forthcoming) "Part III. Plotting Learning Trajectories Through Design Overview Chapter 10. Programs and Policies and Chapter 11. From Developing Curriculum to Designing Experiences" In *Designing Digital Experiences for Positive Youth Development: From playpen to playground*. Oxford University Press

Design studio (1:30-2:45): meeting at the CEEO with ME 84 engineering students

Engineers show first prototypes of "telepresence robot" to CD students and both groups brainstorm on how to adapt/expand into a product for telepresence education and for promoting positive technological development. Groups will choose target age group, target educational and developmental environment (classroom, playground, etc), target goals and user interface.

Assignment due: Mid-term paper

Day 11: Robotics (11/22)

Design studio (1:30-2:45): Work together with ME 84 in Curriculum lab or CEEO TBD by group. Design and fabrication

3-4 TangibleK: Mi Ani and Iditarod presentation

Day 12: Robotics (4/29)

Design studio (1:30-2:45): Work together with ME 84 in Curriculum lab or CEEO TBD by group. Design and fabrication

3-4 Low cost robotics presentation

Day 12: Final presentations (12/6)

Final presentations (1:30-2:45): Students will give a final presentation with ME 84 in Curriculum lab or CEEO TBD by group

3-4 classroom evaluation