

CI 424: Child Development and Technology

Curriculum and Instruction

Credits: 3 (undergraduate); 4 (graduate)

Location: Education 42a

Spring 2015

Dr. Emma Mercier

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Class: Tuesday; Thursday (1.5 hours each)

Office hours: Wednesday 2-4pm

Course Description

Young children are often described as ‘digital natives’, and an ever-increasing number of digital toys, child-friendly computer devices and apps are being made available to support learning and development during the early years. However, there are also questions about whether young children should use technology, and whether the activities that are being replaced by technology are more appropriate to support development and learning.

Course format

In this course, theories of child development (behaviorism, constructivism, social-constructivism, constructionism) will inform an analysis of current technologies that are marketed towards infants and pre-school children. One class each week will focus on lectures and discussions about child development, while the second class will focus on a presentation of a technology or technology genre and evaluation of their value for young children.

Course objectives

After completing this course, you will:

- Understand a range of theories of child development (behaviorism, constructivism, social-constructivism, constructionism).
- Develop a framework for assessing the value of technologies to support development or learning.
- Critically assess the claims of technologies in relation to development and learning

Course information and Pre-requisites

Graduate students may register with the consent of the instructor. There are no pre-requisites classes.

Course Requirements and Assessment Overview

Final grades will be made up of:

- Weekly reflection papers: 15%
- One technology presentation: 15% (5% for description/demo; 10% for integration of assessment with course topics).
- Mid-term: 30%
- Final paper: 40%

Weekly Reflection Paper

- Submit a reflection on one reading each week (due 11.59pm Monday)
- This should consist of a short summary of the reading (about a paragraph) and a reflection on the reading in relation to the course topic (about a paragraph). See handout for details and ideas of how to structure this activity.
- Each paper is worth 1%
- Week 1 reflection will not be on readings, and will be due before class on Jan 22nd.
- Late reflection papers (due to illness etc.) must be discussed with the instructor before submission to receive credit.

Technology Presentation

- Technologies are listed in weekly schedule
- Sign up for presentation in week 1
- Collect your technology from me at least one week before your presentation.
- Individually, or in pairs, you will take turns showing a technology to the class, and presenting an evaluation of its value for children's learning and development.
- Class discussion of technology will be informed by reading and course lectures.
- Presentations will be evaluated on
 - o Clarity of description and/or demonstration of technology (5%)
 - o Integration of assessment with current and previous topics (10%)

Mid-term and Final

The final assignment will require each student to describe and evaluate an app (application) of their choice, that has some learning or development purpose (or claims to have). The mid-term assignment will require students to select the app, and develop a rubric to evaluate the app. Feedback on the mid-term assignment will be used to finalize the rubric to be used for the final paper. The final paper will consist of an evaluation of the app, using the rubric, and discussion of the rubric and tool in relation to appropriate topics from the course.

Mid-term

- Due March 23rd
- 5-8 pages
- Short description of app
- Detailed rubric for evaluation of app.

Final

- Due May 5th
- 10-15 pages
- Description of app.
- Application of rubric
- Analysis of app in relation to rubric and topics from course
- Recommendations for changes to the app to improve learning potential
- If extensive revisions were made to your rubric after the mid-term, include it as an appendix.

Requirements for Graduate students

The final paper for graduate students must be 20-25 pages in length. This paper should include a review of the relevant literature and show evidence of developing conceptual

understanding of the links between the course topic and the field as a whole, in addition the requirements outlined for the final paper for undergraduate students.

Grades and Grading Scale

Students may elect a course grade or satisfactory/unsatisfactory. Letter grades will be the default option.

Plus and minus grades will be assigned for the semester grades. Grades will be assigned as follows:

A+	97-100 %	C+	77-79.9%
A	93-96.9%	C	73-76.9%
A-	90-92.9%	C-	70-72.9%
B+	87-89.9%	D+	67-69.9%
B	83-86.9%	D	63-66.9%
B-	80-82.9%	D-	60-62.9%
		F	Less than 60%

Course Readings and Books

Smith, P.K., Cowie, H., and Blades, M. (2011) *Understanding Children's Development* (5th Edition). Wiley-Blackwell.

Sheridan, M., Howard, J., & Alderson, D. (2011) *Play in Early Childhood: From birth to six years*. Routledge

A range of readings will be posted on the course Moodle site.

Course Policies

Attendance and late assignments

Attendance is very important during this course. If you are going to be absent for a particular class, please let me know as soon as possible. A maximum of two unexplained absences are allowed during the semester.

Weekly assignments are due on Monday night each week to receive credit. Late reflections must be discussed with me before submission to receive credit.

Late submission of the mid-term or final is not encouraged. Get in touch with me as soon as you can to discuss any issues arising with submission of these assignments.

Statement of Academic Integrity

The Code of Policies and Regulations Applying to All Students will be applied in all instances of academic misconduct committed by students. This applies to all exams, presentations, assignments and materials distributed or used in this course.

http://admin.illinois.edu/policy/code/article1_part4_1-401.html

Equal Opportunity and Access Statement

Your success as a student is of utmost importance to me. If you have a disability or any other special circumstance that may have some impact on your work in this class, and for which you

may require special accommodations, please contact me within the first two weeks in the semester so that accommodations can be made in a timely manner.

<http://www.disability.illinois.edu/>

Class Schedule

Week 1: Introduction

Tues: Introduction

Thurs: Technology and Children.

Reading:

Plowman, L., & McPake, J. (2013). Seven Myths About Young Children and Technology. *Childhood Education, 89*(1), 27–33. doi:10.1080/00094056.2013.757490

Wartella, E., & Jennings, N. (2000). Children and Computers : New Technology — Old Concerns. *Future of Children, 10*(2), 31-43.

Reflection Activity (due before class Thursday)

Think about the toys and technologies you played with as a child.

- Select one toy/technology (the toy does not have to have been technological)
- Describe the toy/technology
- Describe how and when you used it
 - o What age were you?
 - o Who else was around when you used it?
 - o How did you learn to use it?
 - o Did you adapt its use in any way?
 - o What do you think you might have learned from using it?

Week 2: What is development; Toys for infants

Toys: My First Gadget Set (ELC; From 1 year)

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Smith, Cowie & Blades (2011). Chapter 1: Studying Development.

McPake, J., Plowman, L., & Stephen, C. (2013). Pre-school children creating and communicating with digital technologies in the home. *British Journal of Educational Technology, 44*(3), 421–431. doi:10.1111/j.1467-8535.2012.01323.x

Thompson, R. (2001). Development in the first years of life. *The Future of Children, 11*(1) 21–33.

Week 3: Constructivism and Stage model of Development

Toys: Science kit

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Smith, Cowie & Blades (2011). Chapter 13: Cognition: Piaget's Theory

Dickerson, D., Clark, M., Dawkins, K., & Horne, C. (2006). Using science kits to construct content understandings in elementary schools. *Journal of Elementary Science Education*, 18(1), 43–56. doi:10.1007/BF03170653

Week 4: Socio-cognitive

Toys: Child-friendly laptop (e.g. Kurio Tablet; Vtech Brilliant Creations; OLPC)

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Smith, Cowie & Blades (2011). Chapter 16: Learning in a Social Context

Hines, P., Jasny, B., & Mervis, J. (2009). Adding a T to the three R's. *Science*, 323 (January), 53.

Warschauer, M. (2005). Going one-to-one. *Educational Leadership*, 63(4), 34–38.

Week 5: Behaviorism

Toys: Build it up / Clean up (iPad apps)

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Schunk, D. (2012) *Learning Theories: An Educational Perspective* (6th Edition). Pearson. Chapter 3

Haydon, T., Hawkins, R., Denune, H., Kimener, L., Mccoy, D., & Basham, J. (2010). A Comparison of iPads and Worksheets on Math Skills of High School Students with Emotional Disturbance. *Behavioral Disorders*, 37(4), 232–243.

Week 6: Constructivism

Toys: Lego Mindstorms; Baa (iPad App)

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Kazakoff, E., & Bers, M. (2012). Programming in a robotics context in the kindergarten

classroom: The impact on sequencing skills. *Journal of Educational Multimedia and Hypermedia*, 21(4), 371-391.

Papert, S. (1980) *Mindstorms*. Basic Books. Forward and Chapter 7.

Week 7: Play (1)

Mid-term due

Toys: FurReal Friends / Furbies

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Sheridan, M., Howard, J., & Alderson, D. (2011) *Play in Early Childhood: From birth to six years*. Routledge. Chapters 1 and 2

Pesce, M. (2000). *The Playful World: How Technology is Transforming our Imagination*. Ballantine Books. Chapter 1 (Furby Fables).

Week 8: Play (2)

Toys: iDog / Aibo / tamagotchi

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Sheridan, M., Howard, J., & Alderson, D. (2011) *Play in Early Childhood: From birth to six years*. Routledge. Chapters 3&4

Kahn, P., Freidman, B., Perez-Grandos, D., & Frier, N. (2006). Robotic Pets in the Lives of Preschool Children. *Interaction Studies*, 7(3) 405-436.

Week 9: Screen time

Toys: Baby Mozart DVD

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Richert, R.A., Robb, M.B., Smith, E.I. (2011). Media as social partners: The social nature of young children's learning from screen media. *Child Development*, 82-59.

Fender, J.G., Richert, R.A., Robb, M.B., Wartella, E. (2010). Parent teaching focus and toddlers learning' from an infant DVD. *Infant and Child Development*, 19 (6), 613-627.

Takeuchi, L. & Stevens, R. (2011). *The New Co-Viewing: Designing for Learning through Joint Engagement with Media*. New York: Joan Ganz Cooney Center

SPRING BREAK

Week 10: Gender, technology and toys

Toys: Legos and Lego Friends

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Maccoby, E. E. (2000). Perspectives on gender development. *International Journal of Behavioral Development*, 24(4), 398.

Miller, F., & Gray, E. (2012). LEGO Friends Petition: Parents, Women And Girls Ask Toy Companies To Stop Gender-Based Marketing. *The Huffington Post*.

Von Klitzing, K., Kelsay, K., Emde, R. N., Robinson, J., & Schmitz, S. (2000). Gender-specific characteristics of 5-year-olds' play narratives and associations with behavior ratings. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39(8), 1017–23.

Week 11: Literacy development

Toys: LeapPad Ultra

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Pellegrini, A. & Jones, I. (1994). Plays, Toys, and Language. In: J.H. Goldstein (Ed.), Toys, Play, and Child Development (pp. 27-45). Cambridge University Press

Armstrong, A., & Casement, C. (2000). The child and the machine: How computers put our children's education at risk. Robins Lane Press. Chapter 5: The Young Reader and the Screen.

Week 12: Story Telling

Toys: ToonTastic (iPad app)

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Blagojevic, B., Chevalier, S., Macisaac, A., Hitchcock, L., & Frechette, B. (2010). Young Children and Computers: Storytelling and Learning in a Digital Age. *Teaching Young Children*, 3(5), 1–5.

Cassell, Justine (2004). Towards a Model of Technology and Literacy Development: Story Listening Systems. *Applied Developmental Psychology* 25 (1): 75-105.

Guernsey, L., Levine, M., Chiong, C., Severns, M. (2012). Pioneering literacy in the digital wildwest: Empowering parents and educators. New York: Joan Ganz Cooney Center.

Week 13: Number sense and math

Toys: MotionMath (iPad app)

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Clements, D., & Sarama, J. (2002). The Role of Technology in Early Childhood Learning. *Teaching Children Mathematics*, 8(6), 340–343.

Devlin, K. (2005) *The Math Instinct: Why You're a Mathematical Genius (Along with Lobsters, Birds, Cats and Dogs)*. Thunder's Mouth Press. Chapter 1: Out of the Minds of Babes.

Flores, A. (2002). Learning and Teaching Mathematics with Technology. *Teaching Children Mathematics*, 8(6), 308–310.

Week 14: Online / Social Media

Toys: Club Penguin / WhyVille

Reflection: Submit a summary and reflection on one of the readings.

Reading:

Boyd, D. (2014) *It's Complicated: The Social Lives of Networked Teens*. Yale University Press. Ch. 3: Addiction

Leinhard, A. (2011). *Teens, kindness and cruelty on social networking sites: How American teens navigate the new world of "digital citizenship"*. Pew Internet Project. <http://www.pewinternet.org/2011/11/09/teens-kindness-and-cruelty-on-social-network-sites/>

Subrahmanyam, K., & Greenfield, P. (2008). Online communication and adolescent relationships. *The Future of Children*, 18(1), 119–46.

Week 15: Review

Class only on Tuesday (semester ends Wednesday).

Final paper due

Reflection: Submit a reflection on what you consider to be the most important idea from this course.