

# CI 499: Attention, Learning and Technology

Spring 2016

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Class: TBD  
Office hours: Tuesday 10-12

## **Purpose**

As the range and presence of technology increases in our world, more and more experiences are either mediated or interrupted by these technologies. Concerns about the effect of interruptions are coupled with enthusiasm for the potential of technology to radically alter the learning environment. In this class, we'll look at the research on the relationship between attention and learning, recent work on the effects of multi-tasking and the influence that using technology in classrooms has on students' engagement and attention. We'll also look at arguments about how the changes in technology influences the speed (and depth) of thought, attention disorders and the use of technology and consider how the management of attention is a key tool for learners to develop.

## **Assignments and Grading**

### **Attendance and Participation: 10%**

Class sessions will require discussion of the articles and be a number of collaborative activities to take part in during and between classes, as such, attendance and participation are essential to everyone having successful learning experiences during the course.

### **Weekly reflection blog: 15% (10% for responses to prompts; 5% for comments)**

The class blog page is here:

Each week, you should respond to the reflection prompt on the blog before Wednesday night. You are also encouraged to read and comment on other people's posts before coming to class.

### **Wearable assignment presentation: 20%**

You will choose 2 devices to test (for at least 2 days each). Devices are for activity tracking and/or notification. Present in class in week 7.

### **Final Project: 55%**

Design and conduct a study (observational, interview, experimental etc.) that examines some aspect of learning, attention and technology. You can work in groups for the project and presentation; individual papers are required.

Due dates:

**Proposal (1-2 pages): March 12<sup>th</sup>**

**Presentation: April 30<sup>th</sup> (15%)**

**Paper submission: May 7<sup>th</sup> (40%)**

**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. You can review these policies at the following web site: [http://admin.illinois.edu/policy/code/article1\\_part4\\_1-401.html](http://admin.illinois.edu/policy/code/article1_part4_1-401.html)

**Accommodations:** 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.

**Syllabus outline:**

	Date and Topic		Reading & activity Due
1	Jan 22 <sup>nd</sup>	Introduction	
2	Jan 29 <sup>th</sup>	What is attention	Eysenck and Keane (2010) ch 5  Turtle (2011) Ch 9  Watch: <a href="http://gawker.com/short-film-about-smartphone-overuse-is-smart-poignant-1189811144">http://gawker.com/short-film-about-smartphone-overuse-is-smart-poignant-1189811144</a>  Activity: Turn off devices/connectivity for 1 hour while working; Respond to blog prompt
3	Feb 5 <sup>th</sup>	Attention, learning & Neuropsychology of attention	Kuhl, 2007 Draganski et al., 2004 <a href="http://www.newyorker.com/tech/elements/anatomy-attention">http://www.newyorker.com/tech/elements/anatomy-attention</a>  Activity: Turn off devices while in a class ☺ ; respond to blog prompt
4	Feb 12 <sup>th</sup>	Multi-tasking	Minear, Brasher, McCurdy, Lewis, & Younggren, 2013; Ophir, Nass, & Wagner, 2009; Stoet, O'Connor, Conner, & Laws, 2013.  Activity: Complete MMI
5	Feb 19 <sup>th</sup>	Multi-tasking and screen use	Sana, Weston, & Cepeda, 2013; Lui & Wong, 2012; Wallis, 2010; The multi-screen world report (ppt slides)  Activity: Track activity across devices;
6	Feb 26 <sup>th</sup>	Mindfulness	Barley, Meyerson, & Grodal, 2010; González & Mark, 2004; Henkel, 2013;

			Lutz, Slagter, Dunne, & Davidson, 2008  <a href="http://www.mindful.org/the-science/you-can-meditate-but-can-you-learn-to-ride-a-bike">http://www.mindful.org/the-science/you-can-meditate-but-can-you-learn-to-ride-a-bike</a>
7	March 5 <sup>th</sup>	Wearable presentations	PRESENTATIONS (no readings)
8	March 12 <sup>th</sup>	Digital Literacies	Miller & Warschauer, 2013; Davidson, 2011, ch 3.; New London Group, 1996 (Jones, 2012)
9	March 19 <sup>th</sup>	Technology, attention and the classroom	(Crossgrove & Curran, 2008; Fried, 2008; Gaudreau, Miranda, & Gareau, 2013; Hembrooke & Gay, 2003)
Spring Break Assignment over break: Observe use of digital technologies during a social event (as participant or non-participant observer). Write up your observations.			
10	April 2 <sup>nd</sup>	Technology, attention and the classroom	Aguilar-Roca, Williams, & O'Dowd, 2012; Andersson, Hatakka, Grönlund, & Wiklund, 2013; Duncan, Hoekstra, & Wilcox, 2012; Richardson, 2013; Williams, Berg, & Gerber, 2011; Wotring, Alpers, & Jarrell, 2011
11	April 9 <sup>th</sup>	Developmental and Attention Disorders	Barkley, 1997 Steiner et al, 2011 Weiss & Harris, 2001
12	April 16 <sup>th</sup>	AERA – no class  Watch: <a href="https://www.youtube.com/watch?v=ReRcHdeUG9Y">https://www.youtube.com/watch?v=ReRcHdeUG9Y</a>	
13	April 23 <sup>rd</sup>	Developmental and Attention disorders and technology	Raggi & Chronis, 2006; Hourcade, Bullock-Rest, & Hansen, 2011; Venkatesh, Greenhill, Phung, & Adams, 2011
14	April 30 <sup>th</sup>	Final Class	(Land, 2011; Levy, 2007)Presentations

## Reading list

### Books

Davidson, C.N. (2011) Now You See It: How the brain science of attention will transform the way we live, work and learn. Viking.

Eysenck, M.W. & Keane, M.T. (2010) Cognitive Psychology: A student's handbook (6<sup>th</sup> ed). Psychology Press

Steiner, H. (Ed.) (2011) Handbook of Developmental Psychiatry. World Scientific.

Turkle, S. (2011) *Alone Together: Why we expect more from technology and less from each other*. Basic Books.

## Articles

Aguilar-Roca, N. M., Williams, A. E., & O'Dowd, D. K. (2012). The impact of laptop-free zones on student performance and attitudes in large lectures. *Computers & Education*, *59*(4), 1300–1308. doi:10.1016/j.compedu.2012.05.002

Andersson, A., Hatakka, M., Grönlund, Å., & Wiklund, M. (2013). Reclaiming the students – coping with social media in 1:1 schools. *Learning, Media and Technology*, (December 2013), 1–16. doi:10.1080/17439884.2012.756518

Barkley, R. a. (1997). Behavioral inhibition, sustained attention, and executive functions: constructing a unifying theory of ADHD. *Psychological Bulletin*, *121*(1), 65–94. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9000892>

Barley, S. R., Meyerson, D. E., & Grodal, S. (2010). E-mail as a Source and Symbol of Stress. *Organization Science*, *22*(4), 887–906. doi:10.1287/orsc.1100.0573

Busch, V., Schuierer, G., Bogdahn, U., & May, A. (2004). Changes in grey matter induced by training: Newly honed juggling skills show up as a transient feature on a brain-imaging scan . *Nature*, *427*, 311–312.

Crossgrove, K., & Curran, K. (2008). Using clickers in nonmajors-and majors-level biology courses: student opinion, learning, and long-term retention of course material. *CBE-Life Sciences Education*, *7*, 146–154. doi:10.1187/cbe.07

Draganski, B., Gaser, C., Busch, V., Schuierer, G., Bogdahn, U., & May, A. (2004). Changes in grey matter induced by training Newly honed juggling skills show up as a transient feature on a brain-imaging scan . *Nature*, *427*, 311–312. doi:10.1038/427311a

Duncan, D., Hoekstra, A., & Wilcox, B. (2012). Digital Devices, Distraction, and Student Performance: Does In-Class Cell Phone Use Reduce Learning? *Astronomy Education Review*, 1–4. Retrieved from <http://link.aip.org/link/?AERSCZ/11/010108/1>

Fried, C. B. (2008). In-class laptop use and its effects on student learning. *Computers & Education*, *50*(3), 906–914. doi:10.1016/j.compedu.2006.09.006

Gaudreau, P., Miranda, D., & Gareau, A. (2013). Canadian University Students in Wireless Classrooms: What do They Do on Their Laptops and Does it Really Matter? *Computers & Education*, *70*, 245–255. doi:10.1016/j.compedu.2013.08.019

González, V., & Mark, G. (2004). Constant, constant, multi-tasking craziness: managing multiple working spheres. In *Proceedings of the SIGCHI conference*

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<http://dl.acm.org/citation.cfm?id=985707>

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<http://digilib.bu.edu/journals/ojs/index.php/trs/article/view/296>
- Hembrooke, H., & Gay, G. (2003). The laptop and the lecture: The effects of multitasking in learning environments. *Journal of Computing in Higher Education*, 15(1), 46–64. doi:10.1007/BF02940852
- Henkel, L. a. (2013). Point-and-Shoot Memories: The Influence of Taking Photos on Memory for a Museum Tour. *Psychological Science*, (December). doi:10.1177/0956797613504438
- Hourcade, J. P., Bullock-Rest, N. E., & Hansen, T. E. (2011). Multitouch tablet applications and activities to enhance the social skills of children with autism spectrum disorders. *Personal and Ubiquitous Computing*, 16(2), 157–168. doi:10.1007/s00779-011-0383-3
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- Richardson, J. M. (2013). Powerful devices: how teens' smartphones disrupt power in the theatre, classroom and beyond. *Learning, Media and Technology*, 0(0), 1–18. doi:10.1080/17439884.2013.867867
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