**Course Description**

Who is an “exceptional” child? How might an exceptional child think about and experience school and the rest of the world? What is happening inside the brain of an exceptional child? There are many kinds of exceptionality and many atypical developmental pathways, but in the world of education, the Individuals with Disabilities Education Act (IDEA) defines which children are exceptional or “disabled” and, thus, which children are eligible for special education services in public schools. In this course, we will review some specific types of exceptionality included in the IDEA, focusing on the behaviors, both strengths and weaknesses, that define the exceptional child; different approaches to learning, viewing the world, and interacting with others that characterize exceptional children; methods for successfully interacting with and educating exceptional children; and the brain bases of atypical or exceptional development in children.

**Goals and Objectives**

For each student, the goals of the course are to (1) become familiar with exceptionality as defined by federal law in the IDEA; (2) be able to recognize and identify exceptional behaviors; (3) understand current scientific knowledge about exceptional children; (4) begin to use the behavioral and neuroscientific evidence to learn how best to support the development of exceptional children; (5) develop both writing skills and the skills involved in locating, critically reading, and analyzing research articles; and (6) recognize the relevance of much of the course material to life outside of this class.
Required Reading

- All readings for the course are available on-line, at the address provided in the syllabus (a link can also be found on the Canvas site), through searching the Dartmouth Digital Library (designated ☑), or through Electronic Course Reserves (designated ☑, available from the Library homepage and linked through the Canvas site). Exception: readings for which the Library could not get permission (*)
- All readings listed are required reading for the course unless designated [optional reading].

General Requirements and Expectations

- All students are expected to read the material indicated in the Schedule and Reading List by Class below before each class and be prepared to discuss that material in class.
- All students are expected to attend class regularly (including x-periods), on time, and each student is responsible for all material presented and discussed in every class. If you must miss a class, it is your responsibility to borrow the notes from another student, acquire any materials that were handed out, and learn if changes have been made to the syllabus.
- Each student may have two excused absences from class. An absence is excused if a note or e-mail from a College official is provided in a timely manner. All other absences (but see next item) are considered unexcused and will negatively affect the portion of the grade related to attendance and class participation.
- I recognize that some students may wish to take part in religious observances that occur during this academic term. Should you have a religious observance that conflicts with your participation in the course, please speak with me early in the term to discuss appropriate accommodations.
- All students are expected to hand in the assignments outlined below at the beginning of class on the dates specified below and in the Schedule. No extensions of deadlines will be granted without a dean’s letter or other similarly documented excuse. Any late assignment will be accepted only at my discretion, with a loss of at least 2 points.
- All students are expected to uphold all aspects of the Academic Honor Principle (refer to http://www.dartmouth.edu/~uja/honor). Your work should be your own and should be prepared specifically for this class. Whenever you make use of outside sources for findings, facts, language, or ideas (including web sites, books, articles, roommates, etc.) you must acknowledge them in formal APA citations (see below for information on APA style). Failure to do so constitutes plagiarism, a serious academic offense that typically involves suspension from the College for a number of terms. If you have questions about how or when to cite, please ask before handing in your paper.
- Students with disabilities enrolled in this course who may need disability-related academic adjustments and services are encouraged to see me privately as early as possible in the term. Students requiring disability-related accommodations must consult the Student Accessibility Services (SAS) office (205 Collis Student Center, 603.646.9900, Student.Accessibility.Services@Dartmouth.edu). Once SAS has authorized services, please show me the originally signed SAS Services and Consent Form and/or a letter on SAS letterhead. As a first step, if students have questions about whether they qualify to receive academic adjustments and services, they should contact the SAS office. All inquiries and discussions will remain confidential.

Assignments

Four (4) short papers are due throughout the term, as indicated in the Schedule below. Paper 1 is due at the beginning of class on 23 January and should reflect material covered in the Introduction or The Brain classes and readings. Paper 2 is due at the beginning of class on 05 February and should reflect material...
Each paper is on a topic of your choice, based on the readings and classes from the preceding weeks. What was the most interesting part of the readings or classes? What part did you completely disagree with and why? What part reminded you of a classmate who always…? What part surprised you? In short, what part really resonated with you and made you think? Choose one specific aspect of the materials covered in class or in readings to write about. Once you have chosen what to write about, find two (2) peer-reviewed, primary source research articles (not reviewed in class or in readings) relevant to your topic and incorporate information from those articles into your paper. Each paper is a creative opportunity for you to do further research on a specific topic of most interest to you; each is a chance to demonstrate your own learning and understanding and build on class materials.

There are a number of ways to locate research articles for your papers. Dartmouth has an impressive Digital Library (http://library.dartmouth.edu) that makes locating articles easy and is more reliable than a general search engine like Google Scholar. Through the Library, you can access relevant databases such as Medline, PsycInfo, ERIC, or EBSCO Academic Search Premier. By conducting a subject or keyword search within these databases, you can find articles related to your topic of choice. Articles should be primary source research articles (not commentaries or opinion pieces, research reviews, or meta-analyses) and should be published in peer-reviewed journals (check the box next to Peer Reviewed).

• Each paper should be typed in a conventional 12-point font (like Times New Roman) and double-spaced, with one inch margins on all sides (note that this is not the default for Word). Each paper should be 3 to 4 pages in length and all pages should be numbered and stapled (not paper-clipped) together. Double-sided printing is acceptable.
• In-text citations should be in APA style and a reference list in APA style should be included (not included in page limit). For details about APA style, refer to the APA Style Summary Sheet for the course (available on the Canvas site) or directly to The Publication Manual of the American Psychological Association, 6th Ed. (2010).
• A copy of the first page, including abstract, of any referenced article should be turned in with your paper. Please turn in the first page of the actual article, not the results of a database search. You do not need to include a copy of the first page of any article or chapter included in the reading list for the course when you make references to course materials.
• Papers will be graded based on content (engagement and demonstrated understanding of the material, appropriate use of research materials, etc.) and style (spelling, grammar, organization, etc.). Please proofread your assignments carefully before turning them in. For details about grading for each assignment, refer to the Grading Criteria document available on the Canvas site; it will be helpful to refer to this document as you work on each paper.
• Papers are due at the beginning of class – before lecture or activities begin – on each due date. Graded papers will be returned in class (Paper 4 will be returned at the final exam).
• Share with your classmates what you discovered during each paper assignment by posting a summary in the Discussion on the Canvas site after you hand in your paper and before the beginning of the next class.
• For students admitted to or thinking about applying to the Teacher Education Program: Your papers for this class can be used to address state standards and competencies. Think about writing at least some

covered in the Atypical Senses, Atypical Attention, or Atypical Social Interaction classes and readings. Paper 3 is due at the beginning of class on 20 February and should reflect material covered in the Atypical Mood, Atypical Environment, or Atypical Mathematics classes and readings. Paper 4 is due at the beginning of class on 09 March and should reflect material covered in the Atypical Language, Atypical Reading, or Atypical Writing classes and readings.
of your papers from a classroom- or practice-based perspective. Remember to save your work from this course for later use in EDUC 41/45 and 42/46 as you develop your NH TCAP materials.

• For students who are or are thinking about being Neuroscience majors: In order for this course to count as an elective for the major, your papers must have a neuroscience focus; note that this does not necessarily mean that your papers cannot also have a behavioral or educational focus, but that you must consistently and meaningfully engage with the neuroscience aspect in order for the course to count towards your Neuroscience major. Please write “Neuroscience” at the end of the reference lists for each of your papers if you intend the course to count towards your Neuroscience major.

• If you are finding the papers difficult or frustrating in some way, please talk with me before or after class, stop by my office, or make an appointment to meet with me. It is very likely that we will be able to find strategies that will make the papers a more enjoyable learning experience for you.

Canvas (https://canvas.dartmouth.edu/)

• Numerous class resources can be found on the Canvas site for the course, including a copy of the Syllabus, the APA Style Summary Sheet, the Paper Grading Criteria summary sheet, and direct links to Electronic Course Reserves and readings on the web outside of the Digital Library.

• Lecture outlines for each topic will be posted on the site prior to the beginning of each unit. The outlines may be printed and brought to class, and may be helpful in organizing your notes.

• The Discussion function on the Canvas site is enabled. Discussion allows you to reflect on material from readings and class with other students. You may contribute by posting ideas, questions, or reflections and by replying to others’ comments. Take advantage of the Discussion Board in order to engage people you might not otherwise talk with outside of class and to ask for and offer help. This is your shared space to continue a discussion that was just getting interesting as class ended, to start a discussion that we didn’t have in class, to hear the opinions of all of your classmates, and to learn from your classmates outside of class.

Quizzes and Final Exam

• There will be a number of unannounced quizzes throughout the term, with short questions based on the assigned readings/activities for that day. It may be helpful to read the research articles with the following questions in mind: What was the authors’ question and why was it important? What did the authors do to answer their question? What did the authors find and why was it important? Always read the assigned materials for the main ideas. There are no “make up” opportunities for missed quizzes.

• There will be a cumulative final exam consisting of multiple choice, fill-in-the-blank, short answer, and essay questions. You may refer to handwritten notes on one side of one sheet of standard 8½ × 11-inch paper during the exam; these notes must be handed in with the exam and will not be returned. The final exam will be given during exam period, on Monday 16 March at 8:00 am, and, in accordance with College regulations, cannot be taken at any other time.

Course Grade

Grades for the course are based on class attendance and participation, including meaningful participation in Canvas Discussions (13%); grades on each of the four papers due throughout the term (15% each); grades on the quizzes (12%); and the grade on the final exam (15%). Grading is consistent with the ORC description of scholarship ratings (http://www.dartmouth.edu/~reg/transcript/grade_descriptions.html).
<table>
<thead>
<tr>
<th><strong>DATE</strong></th>
<th><strong>TOPIC(S)</strong></th>
<th><strong>WHAT TO READ</strong></th>
<th><strong>WHAT'S DUE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week One</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05 January</td>
<td>Introduction to the Course</td>
<td>Syllabus, Warby, Burns, Alberts</td>
<td>post</td>
</tr>
<tr>
<td>07 January</td>
<td>Introduction: Nature &amp; Nurture</td>
<td>Bruer, Murray, Black, Canli</td>
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<tr>
<td>09 January</td>
<td>Introduction: Strengths &amp; Weaknesses</td>
<td>Gardner, Levine, Mayer, Dweck, Begley</td>
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<tr>
<td><strong>Week Two</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>12 January</td>
<td>Introduction: IDEA &amp; IEPs</td>
<td>Heward, Weissman, Brown-Chidsey, NICHCY, OSERS</td>
<td></td>
</tr>
<tr>
<td>14 January</td>
<td>Introduction: IDEA &amp; IEPs</td>
<td>deBettencourt, Yell, McGuire, Raskind</td>
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</tr>
<tr>
<td>15 January</td>
<td><em>Ghost in your genes</em></td>
<td><em>In-class film</em></td>
<td></td>
</tr>
<tr>
<td>16 January</td>
<td>The Brain: Neuroanatomy</td>
<td>Byrnes, Gazzaniga</td>
<td></td>
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<tr>
<td><strong>Week Three</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>19 January</td>
<td>No class: Martin Luther King, Jr. Day</td>
<td>No class</td>
<td></td>
</tr>
<tr>
<td>21 January</td>
<td>The Brain: Neuro &amp; Techniques</td>
<td>Rose &amp; Meyer, Poldrack, Cicchetti</td>
<td></td>
</tr>
<tr>
<td>22 January</td>
<td>Atypical Senses: Deafness</td>
<td>Pakulski, Cohen, Finney</td>
<td></td>
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<tr>
<td>23 January</td>
<td>Atypical Attention: ADD/ADHD</td>
<td>Barkley, Hallowell, Mather, Dawson</td>
<td>Paper 1</td>
</tr>
<tr>
<td><strong>Week Four</strong></td>
<td></td>
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<td></td>
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<tr>
<td>26 January</td>
<td>Atypical Attention: ADD/ADHD</td>
<td>Biederman, Hallowell, Shaw, Couzin, Vastag</td>
<td>post</td>
</tr>
<tr>
<td>28 January</td>
<td>Atypical Social Interaction: Autism</td>
<td>Hughes, Beals, Bernstein, Grandin, Silberman</td>
<td></td>
</tr>
<tr>
<td>29 January</td>
<td><em>Odd kid out</em></td>
<td><em>In-class film</em></td>
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<td>30 January</td>
<td>Atypical Social Interaction: Autism</td>
<td>Lovaas, Dawson, McConnell, Green</td>
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<tr>
<td><strong>Week Five</strong></td>
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<td></td>
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<tr>
<td>02 February</td>
<td>Atypical Social Interaction: Autism</td>
<td>Hill &amp; Frith, Ramachandran, Wickelgren</td>
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<tr>
<td>04 February</td>
<td>Atypical Mood: Depression</td>
<td>Wright-Strawderman, Crundwell, Solomon, Holden</td>
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<tr>
<td>05 February</td>
<td><em>Reaching the autistic mind</em></td>
<td><em>In-class film</em></td>
<td>Paper 2</td>
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<tr>
<td>06 February</td>
<td>No class: Carnival</td>
<td>No class</td>
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<tr>
<td><strong>Week Six</strong></td>
<td></td>
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<tr>
<td>09 February</td>
<td>Atypical Mood: Depression</td>
<td>Davidson, Sheline, Couzin, Jamison, Bostic</td>
<td>post</td>
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<tr>
<td>11 February</td>
<td>Atypical Mood: EBD</td>
<td>Mathur, Frey, Niesyn, Rappaport, Blake, Sugai</td>
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<tr>
<td>12 February</td>
<td>Atypical Environment: Stress &amp; Abuse</td>
<td>Sapskoy, Freyd, Yanowitz, Hart, NH</td>
<td></td>
</tr>
<tr>
<td>13 February</td>
<td>Atypical Mathematics: Dyscalculia</td>
<td>Abeel, Geary, Griffin, Rattan</td>
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<tr>
<td><strong>Week Seven</strong></td>
<td></td>
<td></td>
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<tr>
<td>16 February</td>
<td>Atypical Mathematics: Dyscalculia</td>
<td>Flora, Butterworth, Dehaene, Isaacs, Price</td>
<td></td>
</tr>
<tr>
<td>18 February</td>
<td>Atypical Language: SLI or LD</td>
<td>Dollaghan, Leonard (2), Schuele, Bishop</td>
<td></td>
</tr>
<tr>
<td>19 February</td>
<td><em>Thinking with numbers</em></td>
<td><em>In-class film</em></td>
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<tr>
<td>20 February</td>
<td>Atypical Language: SLI or LD</td>
<td>Rice, Tallal, Gillam, RALLI</td>
<td>Paper 3</td>
</tr>
<tr>
<td><strong>Week Eight</strong></td>
<td></td>
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<tr>
<td>23 February</td>
<td>Atypical Language: SLI or LD</td>
<td>Wang, Shafer, Gauger</td>
<td>post</td>
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<tr>
<td>25 February</td>
<td>Atypical Reading: Dyslexia</td>
<td>Morris, Simpson, IDA, Mather, Fink</td>
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<tr>
<td>27 February</td>
<td>Atypical Reading: Dyslexia</td>
<td>Lyon, Shaywitz, Deeney, Stein</td>
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<tr>
<td><strong>Week Nine</strong></td>
<td></td>
<td></td>
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<tr>
<td>02 March</td>
<td>Atypical Reading: Dyslexia</td>
<td>Murphy, Eden, Shaywitz, Temple</td>
<td></td>
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<tr>
<td>04 March</td>
<td><em>A dyslexic family diary</em></td>
<td><em>In-class film</em></td>
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<tr>
<td>06 March</td>
<td>Atypical Writing: Dysgraphia</td>
<td>Richards, NCLD, Tyre, Rosenblum, Graham, Menon</td>
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<tr>
<td><strong>Week Ten</strong></td>
<td></td>
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<tr>
<td>09 March</td>
<td>Summary and Review</td>
<td>Kagan</td>
<td>Paper 4, post 2</td>
</tr>
<tr>
<td><strong>Final Exam</strong></td>
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<tr>
<td>13-17 March</td>
<td>Final Exam: 16 March at 8:00 am</td>
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</table>

§ note that the Schedule is subject to change  † see detailed list below
READING LIST BY CLASS

® designates readings available on-line through Electronic Course Reserves (link through Library or from Canvas site); * indicates that the physical book is at the Baker Reserve Desk instead

Æ designates readings available on-line at the address provided (links can also be found on the Canvas site) or, if no address is provided, available through the Dartmouth Digital Library

Also note that the Neurodevelopmental Disorders section of the DSM-V is available on-line at: http://dsm.psychiatryonline.org/doi/full/10.1176/appi.books.9780890425596.dsm01

Week One

Monday, 05 January – Introduction to the Course

POST AN INTRODUCTION

An overview of the course content, structure, and requirements. Please read the Syllabus carefully and introduce yourself to your classmates by posting to the Welcome and Introductions Discussion on the Canvas site for the class. The readings for today help to set the conceptual stage for the course: Warby et al. review how to read a research article, specifically in terms of making connections between research findings and classroom practice; Burns and Ysseldyke discuss using evidence-based practices in special education; and Alberts argues for a science of education. NB: Read for the main ideas.


Wednesday, 07 January – Introduction: Nature & Nurture

An introduction to issues surrounding biology, environment, and individual differences as they relate to typical and atypical human development; connections between brain science and education. NB: This may look like a lot of reading, but each article is quite short.


Æ Murray, B. (2000). From brain scan to lesson plan. Monitor on Psychology, 31(3). This article can be found at http://www.apa.org/monitor/mar00/brainscan.aspx


Friday, 09 January – Introduction: Strengths & Weaknesses

An introduction to thinking about exceptionality in terms of strengths and weaknesses; the role of beliefs and expectations.


Monday, 12 January – Introduction: The Individuals with Disabilities Education Act (IDEA) & Individualized Education Plans (IEPs)
An introduction to special education law in terms of IDEA, the categories and labels included in IDEA, and the process of creating documents (IEPs) that outline types of special education for exceptional children.

Heward, W. L. (2013). Exceptional children: an introduction to special education (10th Ed.). Boston, MA: Pearson. Chapter 1: The purpose and promise of special education (pp. 4-41). NB: For purposes of the course, it is unnecessary to memorize the legislation regarding special education listed in this chapter; concentrate on the main ideas in the main text.


A guide to the individualized education program (July 2000). Office of Special Education and Rehabilitative Services, US Department of Education. Sample IEP Form (pp. 17-21). This document can be found at http://www2.ed.gov/parents/needs/speced/iepguide/iepguide.pdf

Accommodations and instructional strategies that can help students (21 September 2009). Vermont Department of Education, Education Support System. This document can be found at http://education.vermont.gov/documents/educ_accommodations_strategies.pdf [optional reading - but a useful list of possibilities for accommodations]


Wednesday, 14 January – Introduction: The Individuals with Disabilities Education Act (IDEA) & Individualized Education Plans (IEPs)
Continued discussion of IDEA and IEPs, including a comparison with a revised version of the IDEA (IDELA), and a consideration of universal design (how special is special education?).


*Thursday, 15 January – Introduction: Nature & Nurture revisited
X-period. We will be viewing the program Ghost in your genes today in class (56 min.).
**Exceptional Child**

**Winter 2014-2015**

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**Friday, 16 January – The Brain: Neuroanatomy**

An introduction to basic neuroanatomy and brain function. NB: The Gazzaniga et al. chapter is quite dense. You do not need to memorize the information in this chapter. The chapter is provided so that you will have a resource to which to refer when we read neuroscientific articles later in the course. For now, work through it at a cursory level after reading Byrnes as background to gain a general idea of the type of information that it reviews so that you know when to use it in the future.


**Monday, 19 January – No class: Martin Luther King, Jr. Day**

**Wednesday, 21 January – The Brain: Neuroanatomy & Techniques**

Continued discussion of basic neuroanatomy, with application to development and education.


**Thursday, 22 January – Atypical Senses: Deafness**

X-period. Deafness is one of the sensory disability categories identified in the IDEA; we will briefly review some of the related educational and neural literature. NB: Read the technical reports for the main ideas.


**Friday, 23 January – Atypical Attention: Attention-Deficit/Hyperactivity Disorder (ADD/ADHD)**

**PAPER 1 DUE TODAY**

An introduction to the definition, behavioral characteristics, and treatment of ADHD.

Monday, 26 January – Atypical Attention: Attention-Deficit/Hyperactivity Disorder (ADD/ADHD)

**POST A SUMMARY OF YOUR PAPER 1 TOPIC/FINDINGS/CONCLUSIONS**

What might be happening in the brain of a child with ADHD?

- **Shaw, P. (2013).** ADHD: 10 years later. *Cerebrum.* This article is available at http://www.dana.org/Cerebrum/2013/ADHD__10_Years_Later/ [optional reading]

Wednesday, 28 January – Atypical Social Interaction: Autism

An introduction to the definitions and behavioral characteristics of autism.

- **Watch the short film *Autism every day* (13 min.) available on the web at http://www.youtube.com/watch?v=O0vCz2KWMM0
- **Silberman, S. (2001, December).** The geek syndrome. *Wired, 9.* This article can be found at http://www.wired.com/wired/archive/9.12/aspersgers_pr.html

*Thursday, 29 January – Atypical Attention: Attention Deficit/Hyperactivity Disorder (ADD/ADHD) revisited*

X-period. We will be viewing the film *Odd kid out: living with attention deficit disorder* today in class (52 min.).

Friday, 30 January – Atypical Social Interaction: Autism
A discussion about treatment approaches for children with autism. NB: Skim the McConnell article to get a sense of the range of social interventions available, not necessarily for the details.

Week Five

Monday, 02 February – Atypical Social Interaction: Autism
What might be happening in the brain of a child with autism? There are a number of theories, some more general and others more specific; the readings for today provide a small sample.
This article can be found at http://www.jstor.org/stable/3558141

Wednesday, 04 February – Atypical Mood: Depression
An introduction to the definition and behavioral characteristics of depression. NB: The Solomon chapter is lengthy, but written for a popular audience.

*Thursday, 05 February – Atypical Social Interaction: Autism revisited
PAPER 2 DUE TODAY
Monday, 09 February – Atypical Mood: Depression

POST A SUMMARY OF YOUR PAPER 2 TOPIC/FINDINGS/CONCLUSIONS

What might be happening in the brain of a child with depression? Depression is often a contributing factor to suicide.


Wednesday, 11 February – Atypical Mood: Emotional and Behavioral Disorders (EBD)

Expanding beyond depression as an example within the IDEA “Emotional Disturbance” category, a look at the broader label of “EBD” often used in education. We will have small group discussions based on the articles assigned for today, so be sure to come to class prepared.


*Thursday, 12 February – Atypical Environment: Stress & Abuse

X-period. An introduction to the effects of stress and abuse on the human brain. Anyone who works with children is required by law to report suspected cases of child abuse or neglect – what are the signs? NB: Focus on the recognizing and reporting sections of the NH report, highlighting the responsibilities of anyone who works with children in the State; focus on the main ideas in the Hart and Rubia review.


Friday, 13 February – Atypical Mathematics: Dyscalculia or Mathematics Disability
An introduction to the definition and behavioral characteristics of the learning disability dyscalculia with an emphasis on the foundational concept of number sense. What role might teachers play?


Week Seven_________________________________________________________________________________________

Monday, 16 February – Atypical Mathematics: Dyscalculia or Mathematics Disability
A continuation of our discussion about children who struggle with mathematics. What happens in the brain as mathematical information is processed? What might happen in the brains of children with mathematical difficulties? We will review some of the evidence.


Wednesday, 18 February – Atypical Language: Specific Language Impairment (SLI) or Language Disorder (LD)
An introduction to the definition and behavioral characteristics of the learning disability and/or communication disorder SLI; as you will discover, the definition is not always clear.


*Thursday, 19 February – Atypical Mathematics: Dyscalculia or Mathematics Disability revisited*

X-period. We will be viewing the program *Developing minds: thinking with numbers* today in class (52 min.). WGBH (Producer). (2002). *Developing minds: thinking with numbers* [Motion picture]. United States: WGBH. (Available from Shop.WGBH.org, P.O. Box 2284, South Burlington, VT, 05407).

Friday, 20 February – Atypical Language: Specific Language Impairment (SLI) or Language Disorder (LD)

**PAPER 3 DUE TODAY**

There are numerous approaches to helping children with SLI develop typical language skills, ranging from traditional sessions with an SLP, to classroom accommodations, to “science-based” computer programs.


This article is available at http://www.jstor.org/stable/2890378


Watch two short clips from RALLI (Raising Awareness of Language Learning Impairments):
http://www.youtube.com/watch?v=2yPR1UUtjec&feature=c4-overview&list=UU5J2oZIiKiF4VG0Zq_xabUA (2:53)
http://www.youtube.com/watch?v=MnF-VHzCIPE&list=UU5J2oZIiKiF4VG0Zq_xabUA (3:24)

Week Eight

Monday, 23 February – Atypical Language: Specific Language Impairment (SLI) or Language Disorder (LD)

**POST A SUMMARY OF YOUR PAPER 3 TOPIC/FINDINGS/CONCLUSIONS**

What might be happening in the brain of a child with SLI? There is little evidence, some of which we will review. NB: The Gauger et al. article is dense; read for the main idea.


**Wednesday, 25 February – Atypical Reading: Dyslexia**

An introduction to the definition and behavioral characteristics of the learning disability dyslexia.

Friday, 27 February – Atypical Reading: Dyslexia

There are multiple theories about the underlying cause of dyslexia; you will read about a phonological deficit (Lyon, Shaywitz), a magnocellular deficit (Stein), and a naming speed deficit (Deeney et al.) in dyslexia.


Monday, 02 March – Atypical Reading: Dyslexia

Dyslexia is perhaps the most researched of the disabilities that we will discuss, both behaviorally and neuroscientifically. Indeed, some interventions for dyslexia claim to be based on brain data. The first two readings are brief review articles; the next two discuss specific research programs and findings; and the final, optional reading addresses the discrepancy principle through neuroscience.


Wednesday, 04 March – Atypical Reading: Dyslexia

We will be viewing the film *A dyslexic family diary* today in class (53 min.).

Friday, 06 March – Atypical Writing: Dysgraphia

There is relatively little research concerning the learning disability dysgraphia. We will review the definition and behavioral characteristics of dysgraphia and some data on writing and the brain.

- National Center for Learning Disabilities. (2009, 6 March) *Dysgraphia*. This fact sheet can be found at http://www.ncld.org/types-learning-disabilities/dysgraphia/what-is-dysgraphia

Add Finish up, wrap up, and review.


§Like the brain, subject to change.