

**EDUCATION 15
HISTORY AND THEORY OF HUMAN DEVELOPMENT AND LEARNING
FALL 2016**

General Information

Professor: Michele Tine
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Phone: 603-646-9043
Office: Raven House 211
Office Hours: Tuesday 12:30 p.m. - 2:30 p.m. and by appointment

Class Meeting Times: (10) MWF 10:10-11:15 a.m.
X-hour: TH 12:15-1:05 p.m.
Class Meeting Location: Moore 150

Course Description

In this course we will learn about the foundational theories that have influenced the study of human development and learning throughout recent history. Readings and discussions will provide an in-depth historical lens onto key conceptual approaches to the study of human development and learning including Bronfenbrenner, Freire, Behaviorism, Social Learning, Information Processing, Situated Cognition, Multiple Intelligences, Freud, Erickson, Piaget, Vygotsky, Nativism, and Mind, Brain and Education. This course aims to explain the historical origins of current trends in the study of human development, learning and education. We will explore the nuances of each theory and discuss applications to classroom settings.

Course Goals

Upon completion of this course, you will be able to (a) summarize, (b) compare and contrast, and (c) evaluate the major theories of human development and learning. The student will be able to identify and evaluate ways in which these theories have been/could be used in a classroom setting. Throughout, the student will gain a better understanding of his or her own educational experiences and develop a personal, evidence-based theory of learning and development.

Required Readings

The majority of the readings for this course are scientific articles or excerpts that have been posted on Canvas. To access the readings, go to the course Canvas site and click on the 'Library Readings' page. Other readings are linked directly to the Daily Schedule on the Canvas site.

We will also read various chapters from the following text:

Thomas, R. M. (2005). *Comparing theories of child development* (6th Ed.) Belmont, CA: Wadsworth. ISBN-13: 978-0-534-60717-3

There are a variety of ways to access this book. Google the title. Used versions help save money. Renting is great.

Description of Course Requirements

1. Participation and Attendance

This is a seminar style course. Participation is essential. It is expected that the required readings are completed before you come to class and you are prepared to comment, question, discuss, and/or critique them. Missing class regularly will affect your participation grade, as you cannot participate if you are not present.

2. Discussion Questions

You will each be assigned *one class* during the term to come up with *two* discussion questions related to the readings. You need to email me your discussion questions by 4:00 p.m. the night before your assigned due date. You also need to type bulleted notes about your own thoughts/answers related to the questions you generate (about 1 page of bulleted notes per question). You need to turn in a hard copy of your questions *and* brief bulleted notes in class. During class, you will formally pose your discussion questions to the class and facilitate a brief discussion.

3. Empirical Article Search and Summary

You will each be assigned *one class* during the term when you will need to locate a peer-reviewed empirical article that is in some way related to the theory covered in class that day. (Please do not select a review article.) You will need to bring one copy of the article with you to class. You will need to write a 1-2 page overview of the article that 1) summarizes the hypotheses, methods, findings, and conclusions and 2) explicitly explains how it supports or challenges the theory covered in class that day. In class, you will concisely present your paper (in less than 5 minutes). I recommend practicing before class.

4. Bronfenbrenner Analysis & Map

Create a visual map of your current environments as a Dartmouth student using Bronfenbrenner's model. The theory calls for information at multiple levels: individual (gender, ethnicity, social class and so forth *plus* any developmentally instigative qualities you have), microsystem, mesosystem, exosystem, and macrosystem. Add to this some notion of the chronosystem (that is, the effects of chronological and historical time) on your experience. I will share a map depicting my ecological system in class for you to use as a sample, although I encourage you to create your own visual interpretation of Bronfenbrenner's theory.

Attach this map to a brief (3-4 page) paper in which you analyze your nested environments in terms of Bronfenbrenner's ecology theory. Do not just put into words what is pictured on the map. Instead, analyze and evaluate your map in terms of its primary developmental and anti-developmental qualities. For instance, human ecology theory states that positive developmental ecologies include microsystems with proximal processes that call for increased complexity, optimal environmental niches, and a reinforcing, coherent mesosystem. Anti-developmental ecologies, on the other hand, include exosystem factors that inhibit microsystem involvement, problematic chronosystem effects, or individual instigative qualities that lead to avoiding complexities. These are just examples of the kind of theoretical analysis you might conduct; I urge you to think about other theoretical aspects of your own ecology.

5. Case Study Report

I will post a set of diverse and realistic case studies on Canvas, each with a set of questions. You will choose *one* of these case studies. You will need to answer the corresponding questions in a 2-page response. Your answers should contain a logical, well-reasoned analysis with correct use of terms and principles. Remember that sometimes there is more than one effective analysis of a situation. Clarifying your reasons for reaching your conclusions is as important as reaching the conclusions. Specific instructions will be provided in class.

6. 'This I Believe' Essay

'This I Believe' was a daily radio show hosted by Edward R. Murrow from 1951-1955 that reached 39 million listeners. Americans- both well known and unknown- read brief essays about their personal philosophy on life. They shared insights about individual values that shaped their daily actions.

During this course, it is my hope that you will begin to develop your own theory of learning, education, and human development. You will write a 350-500 word 'This I Believe' essay that highlights at least one aspect of the personal theory you begin to develop. Your essay should reflect your personal theory and must be- in some way- directly related to the content of this course. 'This I Believe' has writing guidelines posted at <http://thisibelieve.org/guidelines/> that you must follow. To summarize these guidelines, you must tell a story, be brief, name your belief, be positive, and be personal. I urge you to listen to numerous 'This I Believe' essays before attempting to write your own (Downloaded for free at <http://thisibelieve.org/podcasts/>). Specific details will be provided in class.

7. Exams

There will be two exams. The first exam will take place on **Fri Oct 14th** and cover material from the first half of the class. The final exam will take place on **Fri Nov 18th at 8:00 a.m.** and will be cumulative. The exams will include a variety of assessment formats and will be based on the required readings and in-class discussions.

Course Requirements and Grading

Participation: 8%
Bronfenbrenner Analysis and Map: 12.5%
This I Believe Essay: 12.5%
Discussion Questions: 5%
Empirical Article: 5%
Case Study: 10%
Exam 1: 22%
Exam 2: 25%

Late Policy

A hard copy of all assignments must be handed in at the beginning of class on the date indicated on the syllabus. Assignments handed in after class will be counted as one day late. **Ten percent** will be deducted from the grade of any assignment turned in one day late and an **additional five percent** will be deducted for each additional day that passes. (Please note the use of the word 'day', not 'class'.)

You are responsible for turning in assignments even if you cannot be in class on the day they are due. If you cannot be in class, you are responsible for getting me a **hard copy** by the beginning of class. In most cases, email versions will not be accepted.

RWIT: The Student Center for Research, Writing, and Information Technology

RWIT is a free service dedicated to helping students develop more effective strategies for generating and organizing ideas, finding and evaluating research sources, and revising compositions. At RWIT, you can meet one-on-one with a tutor to discuss a paper, research project, or assignment. Whether you are brainstorming, drafting, or polishing, the tutors can provide feedback that will help improve your work. This is a wonderful service that you are lucky to have as a Dartmouth student. Take advantage of it. To make an appointment, please see <http://www.dartmouth.edu/~rwit/students/appointment.html>

Students with Disabilities

Students with disabilities enrolled in this course and who may need disability-related classroom accommodations are encouraged to see me privately as early as possible in the term. Students requiring disability-related accommodations must register with the Student Accessibility Service office. Once SAS has authorized accommodations, students must show the originally signed SAS Accommodations/Consent Form and/or a letter on SAS letterhead to me. As a first step, if students have questions about whether they qualify to receive accommodations, they should contact the SAS office. All inquiries and discussions about accommodations will remain confidential. If you have any questions, please do not hesitate to ask.

Religious Observations

Some students may wish to take part in religious observances that occur during this academic term. If you have a religious observance that conflicts with your participation in the course, please meet with me before the end of the second week of the term to discuss appropriate accommodations.

Academic Honor Principle

You are expected to familiarize yourself with and uphold all aspects of the Academic Honor Principle. See the ORC Bulletin or <http://www.dartmouth.edu/~uja/honor> for the official statement. You may not receive or provide assistance on any exam. All work must be your own and submitted only for this class. Plagiarism is the submission or presentation of work, in any form, that is not your own, without acknowledgment of the source. You must cite all sources according to the formal APA guidelines. I take the Academic Honor Principle seriously and expect you to do the same.

Detailed Class Schedule of Topics and Readings

Note: Readings are to be *completed* by the indicated date. The schedule is subject to change. (LR) indicates that the reading is posted to the electronic Library Reserves section of Canvas. (DS) indicates that the reading is posted directly to the Daily Schedule in Canvas.

Introduction

M Sept 12 WELCOME, OVERVIEW, AND INTRODUCTION

W Sept 14 THEORIES AND THE RESEARCH-PRACTICE GAP

Thomas, Chapter 1: *Good Theory/Bad Theory*, 16-26.

Thomas, Chapter 2: *The Contents of Child Development Theories*, 27-49.

Learning and Development: Context

F Sept 16 BIO-ECOLOGICAL MODEL OF HUMAN DEVELOPMENT (Theory)

Thomas, Chapter 11: *Ecological Psychology*, 346-363.

Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Eds.), *International encyclopedia of education* (2nd Ed., Vol. 3, pp. 1643-1647). Oxford, England: Pergamon Press. (DS)

M Sept 19 OPPRESSION (Theory and Application)

Blackburn, J. (2000). Understanding Paulo Freire: Reflections on the origins, concepts, and possible pitfalls of his educational approach. *Community Development Journal*, 35(1), 3-15. (DS)

Freire, P. (1972). *Pedagogy of the oppressed* (pp. 71-87). London, UK: Penguin Books. (DS)

Learning and Development: Behavior

W Sept 21 BEHAVIORISM (Theory)

Thomas, Chapter 5: *Skinner's Operant Conditioning*, 122-147.

Skinner, B.F. (1984). The shame of American education. *American Psychologist*, 39(9), 947-954. (DS)

F Sept 23 BEHAVIORISM (Application)

Wolfgang, C. (2001). Another view on reinforcement in developmentally appropriate early education classrooms. *Childhood Education*, 77(2), 64-67. (LR)

Kohn, A. (2002). Lures for learning: Why behaviorism doesn't work in the classroom. In *Punished by rewards* (pp. 142-159). New York, NY: Houghton Mifflin. (DS)

DUE: BRONFENBRENNER ANALYSIS & MAP

M Sept 26 SOCIAL LEARNING THEORY (Theory and Application)

Thomas, Chapter 6: *Social Cognition Theory and Contextualism*, 148-173.

Walters, R., Thomas, E., & Acker, W. (1963). Enhancement of punitive behavior by audio-visual displays. *Science*, 136(3519), 872-873. (DS)

Kazdin, A. & Benjet, C. (2003). Spanking children: Evidence and issues. *Current Directions in Psychological Science*, 12(3), 99-103. (DS)

Learning and Development: Cognition and Intelligence

W Sept 28

INFORMATION PROCESSING (Theory)

Thomas, Chapter 9: *Information Processing Theories*, 275-292.

**TH Sept 29
X-HOUR**

INFORMATION PROCESSING (Application)

Alloway, T., Gathercole, S., Kirkwood, & Elliot, J. (2009). The cognitive and behavioral characteristics of children with low working memory. *Child Development*, 80(2), 606-621. (DL)

Slate, J. & Charlesworth, J. (1988). Information processing theory: Classroom applications. *Educational Resources Information Center*, 1-17. (DS)

F Sept 30

SITUATED COGNITION (Theory and Application)

Ormond, Chapter 13, A Contextual Perspective: Situated Cognition, 397-398. (DL)

Brown, J., Collins, A., & Duguid, P. (1989). Situation cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42. (DS)

Saxe, G. B. (1988). Candy selling and math learning. *Educational Researcher*, 17(6), 14-21. (DS)

M Oct 3

FREUD (Theory and Application)

Thomas, Chapter 3: *Sigmund Freud's Psychoanalysis*, 53-85.

Cohen, P. (November 25, 2007). Freud is widely taught at universities, except in the psychology department, *New York Times*, 1-3. (DS)

W Oct 5

ERIKSON (Theory and Application)

Thomas, Chapter 4: *Erikson's Variation on Freud's Theme*, 86-104.

Tyler, L. (1986). Meaning and schooling. *Theory into Practice*, 25(1), 53-57. (DS)

Learning and Development: Stage Theories

F Oct 7

NO CLASS, PROF TINE AT RESEARCH CONFERENCE

M Oct 10

NO CLASS, PROF TINE AT RESEARCH CONFERENCE

W Oct 12

MULTIPLE INTELLIGENCES (Theory and Application)

Smith, M. K. (2008). 'Howard Gardner and multiple intelligences', the encyclopedia of informal education. Retrieved from <http://www.infed.org/thinkers/gardner.htm> (DS)

Moran, S. , Kornhaber, M. & Gardner, H. (2006). Orchestrating multiple

intelligences. *Educational Leadership*, 64(1), 22-27. (DS)

Gardner, H., & Hatch, T. (1989). Multiple intelligences go to school: Educational implications of the theory of multiple intelligences. *Educational Researcher*, 18(8), 4-9. (DS)

Vialle, W. (1997). In Australia: Multiple intelligences in multiple settings. *Educational Leadership*, 55(1), 65-69. (LR)

**TH Oct 13
X-HOUR**

MULTIPLE INTELLIGENCES (Critiques and Limitations)

Klein, P. (1997). Multiplying the problems of intelligence by eight: A critique of Gardner's theory. *Canadian Journal of Education*, 22(4), 377-394. (DS)

Waterhouse, L. (2006). Multiple intelligences, the Mozart effect, and emotional intelligence: A critical review. *Educational Psychologist*, 41(4), 207-225. (LR)

Gardner, H. & Moran, S. (2006). The science of multiple intelligences theory: A response to Lynn Waterhouse. *Educational Psychologist*, 41(4), 227-232. (LR)

F Oct 14

IN CLASS MIDTERM

M Oct 17

PIAGET (Theory)

Thomas, Chapter 7: *Piaget's Cognitive Developmental Theory*, 187-221.

W Oct 19

PIAGET (Application and Limitations)

Thomas, Chapter 7: *Piaget's Theory: An Assessment*, 221-227.

Zimmerman, B. (1982). Piaget's theory and instruction: How compatible are they? *Contemporary Educational Psychology*, 7, 204-216. (DS)

F Oct 21

NEO-PIAGETIAN (Theory and Application)

Thomas, Perspective C: *Case's Four-Stage Scheme*, 259-265.

Case, R. (1993). Theories of learning and theories of development. *Educational Psychologist*, 28(3), 219-233. (DS)

M Oct 24

VYGOTSKY (Theory)

Thomas, Chapter 8: *Vygotsky and the Soviet Tradition*, 229-255.

Berk, L.E. & Spuhl, S.T. (1995). Maternal interaction, private speech, and task performance in preschool children. *Early Childhood Research Quarterly*, 10, 145-169. (DS)

W Oct 26

VYGOTSKY (Application)

Lederer, J.M (2000). Reciprocal teaching of social studies in inclusive elementary classrooms. *Journal of Learning Disabilities*, 33, 91-106. (LR)

Fleming, V.M., & Alexander, J.M. (2001). The benefits of peer collaboration: a replication with a delayed post-test. *Contemporary Educational Psychology*, 26, 588-601. (LR)

F Oct 28

CLASS VISIT TO DARTMOUTH COLLEGE CHILD CARE CENTER

- M Oct 31** **NEUROCONSTRUCTIVISM (Theory and Application)**
Westermann, G., Mareschal, D., Johnson, M., Sirois, S., Spratling, M., & Thomas, M. (2007). Neuroconstructivism. *Developmental Science*, 10(1), 75-83. (LR)
- Ramus, F. (2004). Should neuroconstructivism guide developmental research? *Trends in Cognitive Sciences*, 8(3), 100-101. (LR)
- Karmiloff-Smith, A. (2006). The tortuous route from genes to behavior: a neuroconstructivist approach. *Cognitive, Affective, & Behavioral Neuroscience*, 6(1), 9-17. (LR)
- W Nov 2** **NATIVISM (Theory)**
Berk, L. (2006). The nativist perspective. In *Child Development* (pp. 355-360). Boston, MA: Allyn and Bacon. (DS)
- Reddy, S. (2013). Wise Beyond their years: What Babies Really Know, *Wall Street Journal*, February 11, 1-4. (DS)
- Singleton, J.L. & Newport, E.L. (2004). When learners surpass their models: the acquisition of American Sign Language from inconsistent input. *Cognitive Psychology*, 49, 370-407. (LR)
- F Nov 4** **NATIVISM (Application)**
Transcript of Secret of the Wild Child accessed at:
<http://www.pbs.org/wgbh/nova/transcripts/2112gchild.html>
- View the two Secret of a Wild Child video clips posted on Canvas (under 'Documents and Links').
- M Nov 7** **IN CLASS CASE STUDY ANALYSIS**
- W Nov 9** **MIND, BRAIN, & EDUCATION (Theory and Application)**
Goswami, U. (2006). Neuroscience and education: From research to practice? *Nature Reviews Neuroscience*, 7(5), 406-411. (LR)
- Ansari, D. & Coch, D. (2006). Bridges over troubled waters: Education and cognitive neuroscience. *TRENDS in Cognitive Sciences*, 10(4), 146-151. (LR)
- DUE: CASE STUDY**
- F Nov 11** **MIND, BRAIN, & EDUCATION (Theory and Application)**
[Note: The following readings were published in *Cortex* as a 'Forum on Mind, Brain, and Education'. Although the number of articles may appear overwhelming at first, you will be relieved to know that they total a mere 20 pages.]
- Willingham, D. (2009). Three problems in the marriage of neuroscience and education. *Cortex*, 45(4), 544-545. (DS)
- Coch, D. & Ansari, D. (2009). Thinking about mechanisms is crucial to connecting neuroscience and education. *Cortex*, 45(4), 546-547. (LR)

Mason, L. (2009). Bridging neuroscience and education: A two-way path is possible. *Cortex*, 45(4), 548-549. (LR)

Katzir, T. (2009). How research in the cognitive neuroscience sheds lights on subtypes of children with dyslexia: Implications for teachers. *Cortex*, 45(4), 558-559. (LR)

Howard-Jones, P. (2009). Skepticism is not enough. *Cortex*, 45(4), 550-551.

Greenwood, R. (2009). Where are the educators? What is our role in the debate? *Cortex*, 45(4), 552-554. (LR)

Christodoulou, J. & Gaab, N. (2009). Using and misusing neuroscience education-related research. *Cortex*, 45(4), 555-559. (LR)

Anderson, M. & Reid, M. (2009). Don't forget about levels of explanation. *Cortex*, 45(4), 560-561. (LR)

Cubelli, R. (2009). Theories of mind, not on brain are relevant for education. *Cortex*, 45(4), 562-564. (LR)

M Nov 14

CONCLUSIONS, REFLECTIONS, & REVIEW

Miller, P. (2002). The future of developmental theories. In *Theories of developmental psychology* (pp. 434-437). NY, NY: Worth Publishers. (DS)

DUE: THIS I BELIEVE ESSAY

F Nov 18

FINAL EXAM, 8:00 a.m.

References

- Alloway, T., Gathercole, S., Kirkwood, & Elliot, J. (2009). The cognitive and behavioral characteristics of children with low working memory. *Child Development, 80*(2), 606-621.
- Ansari, D. & Coch, D. (2006). Bridges over troubled waters: Education and cognitive neuroscience. *TRENDS in Cognitive Sciences, 10*(4), 146-151.
- Anderson, M. & Reid, M. (2009). Don't forget about levels of explanation. *Cortex, 45*(4), 560-561.
- Berk, L.E. & Spuhl, S.T. (1995). Maternal interaction, private speech, and task performance in preschool children. *Early Childhood Research Quarterly, 10*, 145-169.
- Berk, L. (2006). The nativist perspective. In *Child Development* (pp 355-360). Boston, MA: Allyn and Bacon.
- Blackburn, J. (2000). Understanding Paulo Freire: Reflections on the origins, concepts, and possible pitfalls of his educational approach. *Community Development Journal, 35*(1), 3-15.
- Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Eds.), *International encyclopedia of education* (2nd Ed., Vol. 3, pp. 1643-1647). Oxford, England: Pergamon Press.
- Brown, J., Collins, A., & Duguid, P. (1989). Situation cognition and the culture of learning. *Educational Researcher, 18*(1), 32-42.
- Case, R. (1993). Theories of learning and theories of development. *Educational Psychologist, 28*(3), 219-233.
- Christodoulou, J. & Gaab, N. (2009). Using and misusing neuroscience education-related research. *Cortex, 45*(4), 555-559.
- Coch, D. & Ansari, D. (2009). Thinking about mechanisms is crucial to connecting neuroscience and education. *Cortex, 45*(4), 546-547.
- Cohen, P. (November 25, 2007). Freud is widely taught at universities, except in the psychology department, *New York Times*, 1-3.
- Cubelli, R. (2009). Theories of mind, not on brain are relevant for education. *Cortex, 45*(4), 562-564.
- Fleming, V.M., & Alexander, J.M. (2001). The benefits of peer collaboration: a replication with a delayed post-test. *Contemporary Educational Psychology, 26*, 588-601.
- Freier, P. (1972). *Pedagogy of the oppressed* (pp. 71-87). London, UK: Penguin Books.
- Gardner, H., & Hatch, T. (1989). Multiple intelligences go to school: educational implications of the theory of multiple intelligences. *Educational Researcher, 18*(8), 4-9.
- Gardner, H., & Moran, S. (2006). The science of multiple intelligences theory: A response to Lynn Waterhouse. *Educational Psychologist, 41*(4), 227-32.
- Greenwood, R. (2009). Where are the educators? What is our role in the debate? *Cortex, 45*(4), 552-554.
- Goswami, U. (2006). Neuroscience and education: From research to practice? *Nature Reviews Neuroscience, 7*(5), 406-411.
- Howard-Jones, P. (2009). Skepticism is not enough. *Cortex, 45*(4), 550-551.
- Karmiloff-Smith, A. (2006). The tortuous route from genes to behavior: a neuroconstructivist approach. *Cognitive, Affective, & Behavioral Neuroscience, 6*(1), 9-17.
- Katzir, T. (2009). How research in the cognitive neuroscience sheds lights on subtypes of children with dyslexia: Implications for teachers. *Cortex, 45*(4), 558-559.
- Kazdin, A. & Benjet, C. (2003). Spanking children: Evidence and issues. *Current Directions in Psychological Science, 12*(3), 99-103.
- Klein, P. (1997). Multiplying the problems of intelligence by eight: a critique of Gardner's theory. *Canadian Journal of Education, 22*(4), 377-394.
- Kohn, A. (2002). Lures for learning: Why behaviorism doesn't work in the classroom. In *Punished by Rewards* (pp. 142-159). New York, NY: Houghton Mifflin.
- Mason, L. (2009). Bridging neuroscience and education: A two-way path is possible. *Cortex, 45*(4), 548-549.
- Moran, S., Kornhaber, M. & Gardner, H. (2006). Orchestrating multiple intelligences. *Educational Leadership, 64*(1), 22-27.

- Lederer, J.M (2000). Reciprocal teaching of social studies in inclusive elementary classrooms. *Journal of Learning Disabilities*, 33, 91-106.
- Ramus, F. (2004). Should neuroconstructivism guide developmental research? *Trends in Cognitive Sciences*, 8(3), 100-101.
- Reddy, S. (2013). Wise Beyond their years: What Babies Really Know, *Wall Street Journal*, February 11, 1-4.
- Saxe, G. B. (1988). Candy selling and math learning, *Educational Researcher*, 17(6), 14-21.
- Singleton, J.L. & Newport, E.L. (2004). When learners surpass their models: The acquisition of American Sign Language from inconsistent input. *Cognitive Psychology*, 49, 370-407.
- Skinner, B.F. (1984). The shame of American education. *American Psychologist*, 39(9), 947-954.
- Slate, J. & Charlesworth, J. (1988). Information Processing theory: classroom applications. *Educational Resources Information Center*, 1-17.
- Smith, M. K. (2008). 'Howard Gardner and multiple intelligences', the encyclopedia of informal Education. Retrieved from <http://www.infed.org/thinkers/gardner.htm>
- Thomas, R. M. (2005). Comparing theories of child development (6th Ed.) Belmont, CA: Wadsworth.
- Tyler, L. (1986). Meaning and schooling. *Theory into Practice*, 25(1), 53-57.
- Vialle, W. (1997). In Australia: Multiple intelligences in multiple settings. *Educational Leadership*, 55(1), 65-69.
- Walters, R., Thomas, E., & Acker, W. (1963). Enhancement of punitive behavior by audio-visual displays. *Science*, 136(3519), 872-873.
- Waterhouse L. (2006). Multiple Intelligences, the Mozart effect, and emotional intelligence: A critical review. *Educational Psychologist*, 41(4), 207-25.
- Westermann, G., Mareschal, D., Johnson, M., Sirois, S., Spratling, M., & Thomas, M. (2007). Neuroconstructivism. *Developmental Science*, 10(1), 75-83.
- Willingham, D. (2009). Three problems in the marriage of neuroscience and education. *Cortex*, 45(4), 544-545.
- Wolfgang, C. (2001). Another view on reinforcement in developmentally appropriate early education classrooms. *Childhood Education*, 77(2), 64-67.
- Zimmerman, B. (1982). Piaget's theory and instruction: How compatible are they? *Contemporary Educational Psychology*, 7, 204-216.