

# Syllabus PSYD56

## Creativity, Reasoning & Problem Solving

### Winter-Spring 2010

**Professor:** Kevin Dunbar

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**Class time:** Tuesdays 4pm-6pm MW 264

**Office hours:** Mondays 12-1 and Mondays 3-4, or by appointment

**Course Description.** What is the creative mind? What makes a great problem solver and how do these amazing abilities arise? Are there circumstances that make people more or less creative, or are people born this way? In this course we will explore these issues in a highly interactive, and hopefully creative way.



### Course Structure



The first two weeks will be when the professor outlines the issues, themes, and concepts that will provide a framework for the course. In the following weeks three students will present a summary of one of the three readings for that week - one reading per student. The goal of students presenting the readings is to stimulate thinking and discussion and not just repeat what was in the articles (as we will all have read the readings!). Naturally I will be helping the class propel the course along this path. For all the readings you must present

the readings in an engaging manner. You can have games, quiz shows, be the scientist, be the artist, actor, musician etc be the subject, be the media interpretation (which is often wrong). The goal is to present the papers in an awe-inspiring manner. The last fifteen minutes of the class will be devoted to a class discussion of the themes that unify the readings for that week. Each student who is not presenting for that week will also hand in a one page (maximum length) reaction paper to the three readings for that week (see the section on reaction papers).

## Blackboard



All the readings for the course are posted on Blackboard. There is no textbook as the textbooks all take a very conventional view of creativity and the goal of the course is to be creative about creativity. Blackboard is also a great medium for fostering class discussion outside the class itself and the three presenters for that week should post one key question for their reading the Thursday before class. All students should cogitate on the questions and come to class ready to discuss and provide cogent answers to the questions. Blackboard will also be used to post grades.

## Final essay: A research proposal.



This is a seminar-like course that allows us to probe the deeper nature of what it means to be creative, solve problems, and reason. You must write a research proposal on a topic that is central to the course. It should be on one of the sections taken from “The Encyclopedia of Creativity.” The topic should be approved by me by February 16 2010. To obtain approval you must submit a 1 page summary of your proposal on February 12. The proposal summary will have (1) a clear rationale, (2) hypotheses, (3) proposed method (4) expected results, and (5) three references. The final proposal will have the same sections, but will be longer. There will be no abstract, but you should have an extra page with 10 references that are relevant to the proposal at the end of the proposal. The final research proposal is due in at the beginning

of the last class. The essay should be 5 pages double spaced 1 inch margins in times 12 point font. Use APA style. Late papers will not be accepted unless accompanied by a medical note from a university approved healthcare provider.

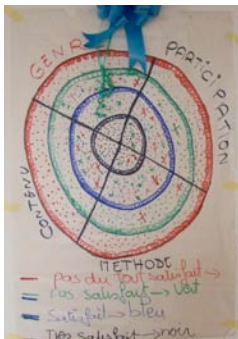
## Reaction papers.



Each week that you are not presenting you should submit a one page (single spaced) reaction paper stating what was novel in the papers, what faults are in the papers and or how the paper stands as a piece of research. You may also suggest alternate readings that do a better job of explaining the issues. The goal here is to get you to think deeply about the readings and not about an extraneous topic. The reaction

paper must be one page long (no references) and you can choose 3 out of the 4 papers. Your reaction paper will be evaluated for clarity, grammar, spelling, and thoughtfulness. The more thorough the paper, the better the grade. The purpose of these papers is to encourage your active engagement with the readings and to provide a foundation for class discussions. These reaction papers are intended as writing exercises. You should become accustomed to expressing ideas in written form. Reaction papers should address a question about the readings that is thought up by you. Here are some examples of questions you might address in a reaction paper: What was the most interesting part of the readings? Explain why. Did something strike you as odd? Try to understand what it was doing there. Are there any parts of the readings that were not understood? Use this writing assignment to try to figure it out. How does it relate to class discussion from a previous week?

## Evaluation



- In class presentations (30%)
- In-class participation (10%)
- Reaction papers (30%)
- Final essay (25%)
- Attendance (5%)

## Topics and dates

- Week 1 - January 5<sup>th</sup>: Course Overview, handouts etc
- Week 2 - January 12<sup>th</sup>: What is creativity and how to study it.
- Week 3 - January 19<sup>th</sup>: Insanity and Creativity
- Week 4 - January 26<sup>th</sup>: Brain and Creativity
- Week 5 - February 2<sup>nd</sup>: Genetics of Creativity
- Week 6 - February 9<sup>th</sup>: Development of Creativity
- Week 7 - February 16<sup>th</sup> ----- No Class READING WEEK-----
- Week 8 - February 23<sup>rd</sup> Essay Presentations
- Week 9 - March 2<sup>nd</sup>: Creativity in Organizations
- Week 10 - March 9<sup>th</sup>: Lying, Terrorism and Malevolent Creativity.
- Week 11 - March 16<sup>th</sup>: Culture, Ethnicity and Creativity,
- Week 12 - March 23<sup>rd</sup>: Creativity in the Arts
- Week 13 - March 30<sup>th</sup>: Where are we now?

## Readings



### Week 1 - January 5<sup>th</sup>: Course Overview, handouts etc

Flora, C. (2009, December). Everyday Creativity. *Psychology Today*. Pp. 62-73

Andreasen, N. C. (2005). *In Search of Xanadu, Understanding the Creative Person and the Creative Process*. Chapter 2 in Andreasen, N. C. (Ed.), *The Creative Brain* (pp. 18-48). London, England: Penguin Books Ltd.

### Week 2 - January 12<sup>th</sup>: What is Creativity and how to study it.

Runco, M. A. (2007). *Cognition and Creativity*. Chapter 1 in Runco, M. A. (Ed), *Creativity Theories and Themes: Research Development, and Practice* (pp.1-38). San Diego, California: Elsevier Academic Press.

Weisberg, R. W. (2006). *Two Case Studies in Creativity*. Chapter 1 in Weisberg, R. W. (Ed.), *Creativity: Understanding Innovation in Problem Solving, Science, Invention and the Arts* (pp. 1-58). Hoboken, New Jersey: John Wiley & Sons Inc.

Weisberg, R. W. (2006). *The Study of Creativity*. Chapter 2 in Weisberg, R. W. (Ed.), *Creativity: Understanding Innovation in Problem Solving, Science, Invention and the Arts* (pp. 59-103). Hoboken, New Jersey: John Wiley & Sons Inc.



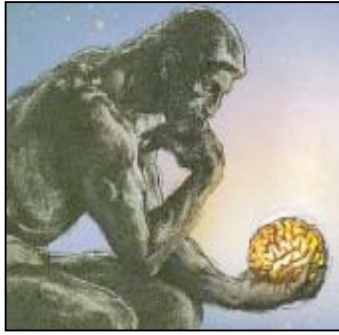
### Week 3 - January 19<sup>th</sup> – Insanity and Creativity

Runco, M. A. (2007). *Health and Clinical Perspectives*. Chapter 4 in Runco, M. A. (Ed), *Creativity Theories and Themes: Research Development, and Practice* (pp. 115-152). San Diego, California: Elsevier Academic Press.

Andreasen, N. C. (2005). *Genius and Insanity: Creativity and Brain Disease*. Chapter 4 in Andreasen, N. C. (Ed.), *The Creative Brain* (pp. 79-107). London, England: Penguin Books Ltd.

Joy, S. P. (2008). Personality and Creativity in Art and Writing: Innovation, Motivation, Psychoticism, and (Mal)Adjustment. *Creativity Research Journal*, 20(3), 262-277.

Aklnola, M., & Mendes, W.B. (2008). The dark side of creativity: Biological vulnerability and negative emotions lead to greater artistic creativity. *Personality and Social Psychology Bulletin*, 34, 1677-1686.



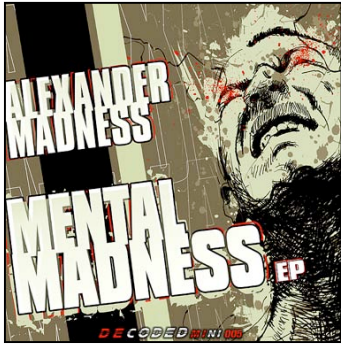
#### **Week 4 - January 26<sup>th</sup> – Brain and Creativity**

Howard-Jones, P. A., Blakemore, S., Samuel, E. A., Summers, I. A., & Claxton, G. (2005). Semantic divergence and creative story generation: An fMRI investigation. *Cognitive Brain Research*, 25, 240-250.

Andreasen, N. C. (2005). *Reaching Xanadu: How does the Brain Create?* Chapter 3 in Andreasen, N. C. (Ed.), *The Creative Brain* (pp. 49-78). London, England: Penguin Books Ltd.

Andreasen, N. C. (2005). *What Creates the Creative Brain?* Chapter 5 in Andreasen, N. C. (Ed.), *The Creative Brain* (pp. 108-142). London, England: Penguin Books Ltd.

Jung-Beeman, M., Bowden, E. M., Haberman, J., Frymiare, J. L., Liu-Arambel, S., Greenblatt, R., Reber, P. J., & Kounios, J. (2004). Neural Activity when people solve verbal problems with insight. *PLoS Biology*, 2(4), 0500 – 0510.



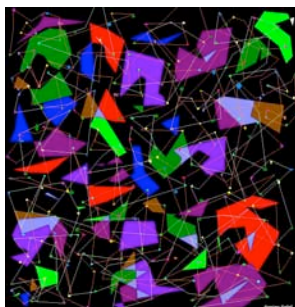
#### **Week 5 - February 2<sup>nd</sup> - Genetics of Creativity**

Ukkola, L. T., Onkamo, P., Raijas, P., Karma, K., & Jarvela, I. (2009). Musical Aptitude is Associated with AVPR1A-Haplotypes. *PLoS ONE* 4(5): e5534. Doi:10.1371/journal.pone.00005534

Ham, B., Lee, Y., Kim, M., Lee, J., Ahn, D., Choi, M., Lyoo, I.K., Choi, I., & Lee, M. (2005). Personality, Dopamine Receptor D4 Exon III Polymorphisms, and Academic Achievement in Medical Students. *Neuropsychology*, 53, 203-209.

Reuter, M., Roth, S., Holve, K., & Hennig, J. (2006). Identification of first candidate genes for creativity: A pilot study. *Brain Research*, 1069, 190-197.

Keri, S. (2009). Genes for Psychosis and Creativity. *Association for Psychological Science*, 20(9), 1070-1073



#### **Week 6 - February 9<sup>th</sup> - Development of Creativity**

Simonton, D.K. (2008). Childhood Giftedness and Adulthood Genius: A Historiometric Analysis of 291 Eminent African Americans. *Child Quarterly*, 52, 243-255.

Gopnik, A. (2009). *Imaginary Companions: How does fiction tell the truth?* Chapter 2 in Gopnik, A. (Ed.), *The Philosophical Baby: What children's mind tell us about truth, love, and the meaning of life* (pp. 47-73). New York: Farrar, Straus and Giroux.

Runco, M. A. (2007). *Developmental Trends and Influences on Creativity*. Chapter 2 in Runco, M. A. (Ed), *Creativity Theories and Themes: Research Development, and Practice* (pp.39-70). San Diego, California: Elsevier Academic Press.

Gute, G., Gute, D. S., Nakamura, J., & Csikszentmihalyi, M. (2008). The Early lives of Highly Creative persons: The influence of the Complex Family. *Creative Research Journal*, 20(4), 343-357.

**Week 7 - February 16<sup>th</sup> ----- No Class READING WEEK-----**



**Week 8 - February 23<sup>rd</sup>**  
Essay Presentations

**Week 9 - March 2<sup>nd</sup> – Creativity in Organizations**

Amabile, T.M., Hadley, C., & Kramer, S.J. (2002). Creativity Under the Gun. *Harvard Business Review*, 80, pp. 52-61, 14,

Dugosh, K.L. & Paulus, P.B., (2005). Cognitive and social comparison processes in brainstorming. *Journal of Experimental Social Psychology*, 41, 313-320.

Kelley, T., & Littman, J. (2001). *The Perfect Brainstorm*. Chapter 4 in Kelley, T., & Littman, J. (Eds), *The Art of Innovation* (pp. 23-52). New York, NY: Published by Doubleday, a division of Random House, Inc.



Kelley, T., & Littman, J. (2001). *A Cool Company needs Hot Groups*. Chapter 5 in Kelley, T., & Littman, J. (Eds), *The Art of Innovation* (pp. 23-52). New York, NY: Published by Doubleday, a division of Random House, Inc.



**Week 10 Mar 9<sup>th</sup>: Lying, Terrorism, and Malevolent Creativity**

Liang, L. (July 20, 2009) Piracy, Creativity and Infrastructure: Rethinking Access to Culture. Available at SSRN: <http://ssrn.com/abstract=1436229>.

Cropley, D. H., Kaufman, J. C., & Cropley, A. J. (2008). Malevolent Creativity: A functional model of Creativity in Terrorism and Crime. *Creativity Research Journal*, 20(2), 105-115.

Walczyk, J. J., Runco, M. A., Tripp, S. M., & Smith, C. E. (2008). The Creativity of Lying: Divergent Thinking and Ideational Correlates of the Resolution of Social Dilemmas. *Creative Research Journal*,

Lavizzari, C. S. (2002). Encouraging Creativity through Copyright Protection: The 5<sup>th</sup> IPA Copyright Conference Accra, Ghana. *Public Research Quarterly*, pp. 41-49.



**Week 11 Mar 16<sup>th</sup>: Culture, Ethnicity and Creativity**

Florida, R. (2002). The Economic Geography of Talent. *Annals of the Association of American Geographers*, 92(4), 743-755.

Paletz, S. B. F., & Peng, K. (2009). Problem Finding and Contradiction: Examining the Relationship between Naïve Dialectical Thinking, Ethnicity, and Creativity. *Creativity Research Journal*, 21(2-3), 139-151.

Leung, A.K., Maddux, W.W., Galinsky, A.D., & Chiu, C (2008). Multicultural experience enhances creativity: The when and how. *American Psychologist*, 63, 69-181

Munday, J. (2009). The Creative Voice of the Translator of Latin American Literature. *Romance Studies*, 27(4), 246-258.



**Week 12 Mar 23<sup>rd</sup>: Creativity in the Arts**

Keinanen, M., Hetlabd, L., & Winner, E. (2000) Teaching cognitive skill through dance: Evidence for Near but not Far Transfer. *Journal of Aesthetic Education*, 34, 295-306.

Coulson, S., & Oakley, T. (2000). Blending basics. *Cognitive Linguistics*, 11, 175-196.

Kozbelt, A. (2008). One-Hit Wonders in Classical Music: Evidence and (Partial) Explanations for an Early Career Peak. *Creativity Research Journal*, 20(2), 179-195

Thomson, P., Keehn, E. B., & Gumpel, T. P. (2009). Generators and Interpretors in a Performing Arts Population: Dissociation, Trauma, Fantasy Proneness, and Affective States. *Creative Research Journal*, 21(1), 72-91.



**Week 13 March 30<sup>th</sup>: Where are we now?**

Mumford, M. D. (2003). Where have we been, where are we going? Taking stock in Creativity Research. *Creative Research Journal*, 15(2-3), 107-120.

Tufte, E. R. (2000). *Visual and Statistical Thinking: Displays of Evidence for making Decisions*. Chapter 2 in Tufte, E. R. (Ed.), *Visual Explanations: Images and quantities, evidence and narrative*

(pp. 27-54). Cheshire, Connecticut: Graphics Press.

Kelley, T., & Littman, J. (2001). *Innovation begins with an Eye*. Chapter 3 in Kelley, T., & Littman, J. (Eds), *The Art of Innovation* (pp. 23-52). New York, NY: Published by Doubleday, a division of Random House, Inc.

Veale, T., & Hao, Y. (2009). Support Structures for Linguistic Creativity: A computational Analysis of Creative Irony in Similes. *Cognitive Science*.