

**TERM PROJECT**  
**PSYC 430: Cognitive Development**  
**Spring 2007**

The term project has been designed to meet several goals:

- To improve your skills in identifying, locating, and evaluating psychological research articles,
- To teach you how to read, understand, and think critically about psychological research reports and their implications for real world issues, and
- To enhance your ability to develop clear, effective and scientifically-sound arguments in both verbal and written forms of expression.

Your assignment is to write an advice column providing practical recommendations for parents (or others who deal with children), in response to one of several hypothetical questions sent in by readers of a magazine about children. In your response, you must review at least three scientific studies that provide support for the advice you give. **A critical component of this assignment is that you support your practical recommendations with scientific evidence.** For each hypothetical question, we have identified one scientific journal article relevant to writing a response. These articles will be posted on Blackboard under Assignments. Your major tasks are (a) to select two more scientific journal articles relevant to the topic and submit those to us for review, (b) to write summaries of all three articles and to discuss these summaries with other students during a class period devoted to this activity, and (c) to write a 4 to 5 page paper answering the reader question, based on the research you have reviewed.

**Instructional Partnership.** We are using an instructional partnership to guide you through the completion of the term project this semester. Specifically, Dr. Greenhoot and Sarah Bunnell will be collaborating with the Psychology specialist from KU Libraries, Erin Ellis, and consultants from the KU Writing Center, to help you complete various components of this project.

**IMPORTANT DATES**

1. **Tuesday, January 30 and Thursday February 1: Literature Search Lab:** On each of these two days during class time, half of the class will attend a lab in 10 Budig instructed by the Psychology librarian, Erin Ellis, and the GTA, Sarah Bunnell (check blackboard for an announcement regarding which day you should attend the Psycinfo lab). The other half of the class should plan to attend class in 100 Smith with Dr. Greenhoot. During the literature search lab, you will learn how to identify trustworthy scientific sources, how to find scientific articles presenting research relevant to particular topics in cognitive development, and how to obtain copies of those articles.
2. **Tuesday, February 13. Article Due.** On this day, your articles and a paragraph explaining how they relate to your topic are due in class. You should submit (a) a page with your name, chosen paper topic, the full references for the article you have selected, and a short paragraph explaining how the articles you have selected is relevant to your paper topic, and (b) a copy of the first page of your article. This assignment is worth 20 points- you will be graded on **completeness** (i.e., whether you submit everything we asked for) and the **appropriateness** of the article you select (whether it comes from an appropriate scientific source and whether it is really relevant to your paper topic).
3. **Tuesday, March 6. Learning to Interpret Research Reports.** During class on March 6, we will be reading a scientific research report on an issue related to the topic covered that day (spatial cognition) and discussing how to read and interpret scientific results. This exercise will not only teach you something about the topic of spatial cognition, but will provide you some guided experience in reading and evaluating research reports in scientific journals, which you will need to do in your paper.

4. **Thursday, March 15. Article summaries due/In class discussion of topics.** Summaries of all three articles (no more than one page each, typed and double-spaced) are due in class on this day. During class, you will work with a group of students who have selected the same topic as you. The goal will be to share your article summaries, and to discuss and challenge each others arguments about the “reader question” you are answering. These summaries and participation in the class discussion are worth 30 points.
5. **Thursday April 12. Optional rough draft of paper due.** Rough drafts will be returned to you in class within one week (by Thursday April 19).
6. **Thursday, April 26. Paper due!** A *hard copy* of your paper is due in class on this day. The final paper is worth 80 points.

## TOPICS

1. *My best friend Flora and I have sons who are close to the same age. Both her son, Jerry, and my son, Ronny, have summer birthdays. Flora has just told me that she plans to delay Jerry’s entry into kindergarten by one year, even though he will turn 5 before the cutoff established by the school system (The cutoff states that a child must turn 5 years old by a certain day (e.g. September 1<sup>st</sup>) in order to enter kindergarten that year.). She thinks that he will be better able to benefit from school instruction when he is a year older. And I know that sometimes teachers recommend that young or “immature” children should repeat kindergarten, so that they might be more prepared. Should I consider academically “redshirting” my own son? Would the “gift of time” really help him succeed in school later on? -Confused in Carolina*

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Morrison, F.J., Griffith, E.M., & Alberts, D.M. (1997). Nature-nurture in the classroom: Entrance age, school readiness, and learning in children. *Developmental Psychology*, 33, 254-262.

Suggested key words for searches: academic redshirting; delayed school entry; delayed entry and kindergarten; age and school entry; entrance age and kindergarten;

2. *I have heard that scientists no longer believe in the so-called “Mozart Effect”- the idea that just playing classical music for babies and children is going to make them smarter. But what about music instruction? My wife plays the piano and violin, and she really thinks that her music training is responsible for her strong spatial reasoning and math skills. We are considering enrolling our 7-year-old daughter in piano lessons, but we know it would be hard to find the time for lessons and practice between soccer, Brownies, homework, and play dates with her friends. I would be more convinced that piano lessons are worthwhile if I knew it would have some cognitive benefits for our daughter. What do you think? -Active in Austin*

Rauscher, F.H., Shaw, G.L., Levine, L.J., Wright, E.L., Dennis, W.R., & Newcomb, R.L. (1997). Music training causes long-term enhancement of preschool children’s spatial-temporal reasoning. *Neurological Research*, 19, 2-8.

Suggested key words for searches: music instruction, music training, keyboard instruction, music lessons, cognitive development, spatial skill, spatial ability, spatial reasoning, math, IQ

3. *I am CEO of a medium sized company, and seven months pregnant with my first child. My partner and I just finished going to childbirth classes. Several of the other expectant mothers mentioned that they were planning to breastfeed their babies and that breastfed babies are smarter than bottle-fed babies. I was surprised, because my mother always told me that “modern” women don’t breastfeed, and it seems like it will be hard to do once I go back to work. Now I am trying to decide whether I should at least try to breastfeed my baby for a while. Will breastfeeding my baby really give her an intellectual advantage? –**Busy in Boise***

Gomez-Sanchiz, M., Canete, R., Rodero, I., Baeza, J.E., & Avila, O. (2003). Influence of Breast-Feeding on Mental and Psychomotor Development. *Clinical-Pediatrics*, 42, 35-42.

Suggested key words for searches: breastfeeding, nursing, breastmilk, cognitive development, cognitive outcomes, mental development, intelligence, infant development

4. *My husband and I have a 3-year-old daughter. Now that she is starting to learn more about numbers at home and in preschool, I have been thinking about my own hangup with math. I have always been intimidated by math and related subjects, and all through school I was convinced that I just wasn’t good at math. However, now I regret that I didn’t take more math classes in school and that I didn’t learn more in the classes I did take, because it has seriously limited my career choices. What can we do to prevent this from happening to our own daughter and to help her develop into a “mathematically-competent” young woman? –**Regretful in Rochester***

Updegraff, K., McHale, S., & Crouter, A. (1996). Gender roles in marriage: What do they mean for boys’ and girls’ school achievement? *Journal of Youth and Adolescence*, 25, 73-88.

Suggested key words for searches: gender differences; girls; math achievement; math skills; parents; parenting;

5. *My 5-year-old nephew, Andrew, is a very precocious reader. He has been reading for at least a year, and he hasn’t even started kindergarten yet. I have heard that most children are not ready to learn to read before they start elementary school and that it is not a good idea to push very young children. But my brother and sister-in-law say that Andrew “showed signs of being an early reader” and that they just nurtured it. Now that my daughter Ashley is 2.5 years, I am starting to wonder whether she might be similarly precocious. How can I recognize and nurture an early reading ability in my daughter if she has it, and would this mean that she would be an exceptionally bright student as she gets older? –**Precocious in Poughkeepsie***

Thomas, B. (1984). Early toy preferences of four-year-old readers and nonreaders. *Child Development*, 55, 424-430.

Suggested key words for searches: precocious reading; early reading; preschool; kindergarten; early readers; precocious readers

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## GUIDELINES FOR PAPER ASSIGNMENT

### I. Choosing journal articles:

In addition to the one article I have reserved for you, you need to choose 1 article from **scholarly journals**. Some examples of acceptable scholarly journals are *Child Development*, *Developmental Psychology*, *Journal of Experimental Child Psychology*, *Infant Behavior and Development*, *Journal of Research in Education*. The article should be an “empirical paper” and must describe the method and results of research that is relevant to your paper topic. The following types of articles are NOT acceptable:

- Articles from popular publications like *Time* magazine, *Psychology Today* or a newspaper.
- Articles in publications written for teachers, child care workers, or parents that provide practical information for dealing with children (e.g., *Young Children*).
- Chapters in books that provide practical information for dealing with children.
- Articles from the internet (except scholarly journals that you find through Psycinfo that you can access through science direct or some other on-line source)
- You can find acceptable articles using Psycinfo, a database of all psychological articles that you have access to at the KU Libraries or from the KU Libraries Website.

## II. Preparing to write:

Before you write anything for your paper, read each article and briefly summarize it. You need to know the following about each study:

- A. From the Introduction: What were the researchers interested in? What were their research questions or hypotheses?
- B. From the Method: What did they do to test these hypotheses? What was the basic study design, who were their subjects, and what was their procedure?
- C. From the Results: What did they find? Did it support their hypotheses? You are interested in differences of results that they report as *statistically significant* (with  $p < .05$ ).
- D. From the Discussion: What conclusions can you make about the paper topic based on this study? Are there any flaws or unaddressed questions from this study? How are the findings related to the other 2 studies you have read?

\*\*\*\*Attached to this handout is a worksheet that you may use to analyze each of your research articles (this is optional).

## III. Writing the paper.

Once you understand what was done in each study, what was found in each study, and how the results of the studies differ from each other or overlap, you are ready to write. Your goal is to answer the question for a particular topic *using the 3 studies to support your points*.

### A. Suggested Paper Structure:

1. **Introduction:** Begin the paper by introducing the issue at hand. Begin by discussing the question posed by the reader, highlighting the real-world importance of the issues you are going to be talking about.
2. **Body:** The bulk of the paper should consist of your describing what the studies have found with regard to the issue. Your summary of the studies should generally follow the guidelines mentioned above. That is, you need to be sure to state what the researchers were interested in, what they did to test their hypotheses, what they found, and what their conclusions were. In addition, you can link your discussion of one study to the next by pointing out similarities (e.g., the findings of White (1998) are similar to those of Brown (1999)... then go on to discuss the White study), or discrepancies (e.g., although Brown (1999) found that most cows

in New Jersey are black and white, White (1998) has shown that most cows in Kansas are brown and white...then go on to discuss the White study).

3. Summary or Synthesis: After having discussed the studies, compare, contrast, and summarize the findings across all of the studies. If there are discrepancies, offer suggestions as to why this difference exists. For example, is there some difference between the samples (subjects) used in the studies that may have influenced their outcomes? Or are there procedural differences? Interpretational differences?
4. Conclusions, Implications, Recommendations: Based on the evidence provided to you in the articles, what are your conclusions and generalizations about the issues at hand? What are the implications of these results for what the reader should do? That is, based on the results of the research you have just reviewed, what recommendations would you give parents (or teachers or schools etc...) about this particular issue, and WHY?
5. References: You need to have your two references listed at the end of your paper, using the format I have used on page 1 (APA style). An additional articles or books cited in the paper should also be in your reference list. See a TA if you have questions about how to format these.

B. Some writing style and grammatical suggestions:

1. Be sure that your paper is written in a clear, well organized way. If you cannot express your ideas to us in a coherent fashion, we may not be able to understand what you are saying. We will be grading these papers not only on informational content but on clarity and organization as well (So don't just throw the information down on paper, expecting us to pick out the important parts!).
2. Try not to use "I", even when writing about your conclusions. You can say things like, "Based on the evidence provided by each of these investigations, it seems that..." or "This pattern of results suggests that...." etc....Even use "the present author" above "I". It is just not good practice to write a paper in the first person in psychology.
3. Write in the past tense when discussing the studies. So "The subjects **were** all three-year-olds" or "The children **were** tested using the Visual Cliff."
4. Never say prove. You can never **prove** a hypothesis; you can only **support** it.
5. If you are discussing the procedures or results of a study. Don't use the word article in the following way: "In this article, 60 children were tested using the Visual Cliff." It is really in the **study**. The study is discussed in the article.

## WORKSHEET FOR JOURNAL ARTICLES

- 1) What were the researchers interested in (what was their research question). What was their hypothesis? (Introduction)
  
- 2) What did they do to test her hypothesis? (Method)
  
- 3) What did they find? (Results)
  
- 4) What were their conclusions about their research question/hypothesis? (Discussion)
  
- 5) Do **you** feel that their results provide adequate support for the conclusions they made? Why or why not? Can you think of an alternative explanation for the findings?
  
- 6) Compare this study to the other study you are reading for the paper. Are the findings similar? If not, why might that be? Were the samples of subjects different? Were the methods different? Were they simply addressing different research questions?

### Paper Grading Rubric

	<b>Exemplary</b>	<b>Good</b>	<b>Limited</b>	<b>Unsatisfactory</b>
<b>Points:</b>	<b>10</b>	<b>7</b>	<b>4</b>	<b>2</b>
<b>Introduction</b>	Thesis is clearly defined and focused	Thesis is clear; provides some direction for paper	Thesis is inappropriate, unclear, or incomplete	Ineffective or missing introduction
<b>Study 1 Description</b>	Accurate, appropriate level of detail	Sufficient and accurate	Partly inaccurate, incomplete, or unclear	Missing, inappropriate study
<b>Study 2 Description</b>	Accurate, appropriate level of detail	Sufficient and accurate	Partly inaccurate, incomplete, or unclear	Missing, inappropriate study
<b>Study 3 Description</b>	Accurate, appropriate level of detail	Sufficient and accurate	Partly inaccurate, incomplete, or unclear	Missing, inappropriate study
<b>Synthesis</b>	Interesting, sophisticated, insightful integration of findings of 3 studies (note that this may be integrated into the body of the paper);	Sufficient and accurate integration/comparison of 3 studies	Inaccurate, incomplete, or unclear synthesis/comparison; summarizes previously stated information	Missing comparison/synthesis of 3 studies
<b>Conclusion/ Recommendations</b>	Extends and connects ideas; insightful comments	Satisfactory: Purposeful; appropriate comments	Unclear, incomplete, or inappropriate; Summarizes previously stated information	Missing
<b>Total Points Earned</b>				
<b>Points:</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Paragraph Order</b>	Contributes to effective arguments; reinforces content	Demonstrates a plan	Ineffective or inconsistent	Random
<b>Transitions</b>	Effective and varied	Clear and functional	Mechanical	Absent
<b>Sentence Structure</b>	Complete and varied/interesting	Complete and correct	Some errors are evident	Repetitious; fragments and run-ons are frequent
<b>Word Choice</b>	Engaging, powerful choice of words	Appropriate to task	Uneven	Inappropriate or incorrect words are frequent
<b>References</b>	Complete list of references; studies are clearly referred to in text	Complete list of references; studies not always clearly referred to in text	Reference list is incomplete	Reference list is absent
<b>Total Points Earned</b>				

**Overall Points Earned:** \_\_\_\_\_ (out of 80)

**Letter Grade:** \_\_\_\_\_