Psychology Lab 2: Exploring Cognitive Development
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Psychology

**Purpose**: The purpose of this lab activity is to investigate the stages of cognitive, social, and moral development in young children, and to find evidence for either stage theory or continuous development theory.

**Points**: 50 (Labs, Projects, and Essays category)

**Due Date**: October 17th (A Days) October 18th (B Days)
 **Task**: Working in groups of 4 or 5, you will research one (or more) of the theories of stage development we discussed in class (Piaget, Kohlberg, or Erikson). It is up to you to decide which stage theory best fits the experiment you have chosen. Then, you will conduct one of the experiments described on the attached page. Each group member should try to conduct the experiment with at least 3 to 5 subjects. Your subjects, or participants, should be between the ages of 3 and 14 years old, so that as a group you have a significant group of participants from a variety of age groups. Coordinate with your group members so that you get an even number of male and female participants. You will write up a lab report following APA format that does the following:

1. Summarizes your research on developmental stage theory
2. Details the method you used in the experiment
3. Presents your data in graphic form (chart, graph, or table)
4. Draws conclusions based on your research

 **Research Question:** All good research begins with a strong research question. This question drives your research, and gives focus to your method and conclusion sections. For this lab, the general research question is:

***Does cognitive/moral/social development occur continuously, or in stages?***

Choose just one of the three domains to focus on. Also, you may rephrase the question, or make it more specific to fit you research—as long as it still connects to the overall theme of stage vs. continuous development.
 **Ethical Concerns:** Whenever you conduct research with human subjects, it is important to respect the dignity and privacy of participants. This is achieved in part through obtaining what is called “informed consent” from participants. This includes letting participants know ahead of time what they will be asked to do, the purpose of the experiment (in general terms—no specifics that would compromise the experiment results), any potential risks of participation, and how experiment results will be used or published. When the participant is under 18, the consent must come from the participant’s parent or legal guardian. Be sure to get verbal or written permission from a parent or guardian from each participant, and do not include the child’s name in your lab results. Also, be sure to thank each participant and let them know they did a good job; there are no “wrong” answers in any of these experiments, and subjects should not feel as if you are testing or evaluating them.

 **Report Format:** Your lab report is the responsibility of your entire group. You may choose to divide the work however you like, but each person is equally responsible for the entire lab report. The report should be in APA Format (use the PowerPoint on the class website, or the resources at Purdue University’s Online Writing Lab for format help), with the following components:

1. *Title Page*- includes title of report, date, names of group members, and school name
2. *Abstract*- A brief summary (less than 100 words) of your research, experiment, and conclusions
3. *Introduction/Background*-A short report of your research on stages and cognitive development. You should have information from at least THREE academic sources.
4. *Method*- A detailed description of how you conducted your research, including your research question and hypothesis, how you chose participants, and exactly how data was gathered.
5. *Data*- Work together to find the best way to visually present your data in a way that illustrates any trends or patterns you noticed
6. *Conclusion*- A brief essay interpreting your data, explaining what inferences you can draw from it, what further research might build on this experiment, and acknowledging the limitations of your research
7. *References*- Citations for all sources you used in your research

**Presentation:** In addition to the lab report, your group will prepare a SHORT PowerPoint or Google Slides presentation (3-5 slides) to report on your method, results, and conclusions. On the day the lab is due you and your group members will present the lab results to the class. Your presentation should include:

* A summary of your background research
* Your data, presented visually in a way that makes sense
* Your conclusions

**Grading and Criteria for Success:** While you will receive a group grade on this project, I will adjust individual grades based on a self-evaluation and an evaluation by your group members of your personal contribution to the final product. The final report and presentation will be graded based on the following criteria:

* Does it include all of the required components?
* Is it in proper APA format?
* Are the research question and hypothesis adapted to your specific experiment?
* Is the background research accurate, thorough, and relevant to your experiment?
* Did you keep a detailed record of your procedure?
* Is your data presented in a way that makes sense, and shows any patterns you might have found?
* Does your conclusion draw a clear, valid connection between your background research and your data?

**Experiment Option 1: The Law of Conservation**

**Materials**: Three clear glass or plastic containers. Two should be the same size and shape, the third should be taller and narrower than the others. You will also need paper and pencil for recording results.

**Procedure**: Record the subject’s age, and any other important information your group chooses to collect. Fill the two small containers with exactly the same amount of water or another liquid. Ask the subject if one container has more, or if they have the same amount. If the subject says there is a difference, adjust the amounts until he/she says they are the same. Then, while the child is watching, pour the liquid from one of the containers into the tall skinny container. Repeat the original question: Does one container have more, or do they have the same amount? Take note of the subject’s answer, and if the subject says one container has more, take note of which container he/she chooses.

**Experiment Option 2: Development of Moral Judgement**

**Materials**: Written copy of Kohlberg’s “Moral Judgment Interview,” and something to take notes on.

**Procedure**: Write down the participant’s age and gender. Read the following scenario to the participant. For those who can read, give them a copy to read along. You may explain the meaning of difficult words to younger participants, but be careful not to give any of your own interpretation.

*A woman was near death from cancer. There was one drug the doctors thought might save her. A druggist in the same town had discovered the drug, but he was charging ten times what the drug cost him to make. The sick woman’s husband, Heinz, went to everyone he knew to borrow the money, but he could only get together half of what it cost. The druggist refused to sell it cheaper or let Heinz pay later. So Heinz got desperate and broke into the man’s store to steal the drug for his wife. Should Heinz have done that? Why or why not? (Kohlberg, Paraphrased from Colby et al, 1983)*

Make a note of how the participant answers the question at the end, and pay special attention to the reasons the participant gives. Don’t be concerned with whether the participant says Heinz was right or wrong; focus on WHY the participant says Heinz is right or wrong. Finally, try to match the participants reasoning with one of Kohlberg’s three stages of moral development.

**Experiment Option 3: Cognitive Development and Schema Theory**

**Materials**: Blank paper and crayons, colored pencils, or markers

**Procedure**: Record the child’s age. Give the participant a piece of paper and coloring utensils. Ask them to draw a boy, a girl, a dog, and a cat. Be sure to let them know you’ll be keeping the picture (for younger participants, you may need to have them draw a second picture to keep for themselves). Have the participant explain the picture to you, and identify the boy, girl, and two animals. Make a note of how the child distinguishes between the boy and the girl, and between the dog and the cat, and the amount of detail the participant includes in the picture. This will give insight into the participant’s development of schemas for gender and for animals. Based on the picture, make an inference about the participant’s level of cognitive development.