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## Proposal for Senior Honors Thesis

HONS 497 Senior Honors Thesis Credits: 2

Directions: Please return signed proposal to the Honors Office at least one week prior to your scheduled meeting with the Honors Council. This proposal must be accepted by Honors Council the semester before presentation.

## 2023

- 1. Provide goals and brief description of your project or research.
  - a. Research questions
    - i. Is there a relationship between the use of technology in children ages 4-10 and their visual and auditory memory skills?
    - ii. How does a child's visual memory compare to their auditory memory at ages 4-10?
  - b. Hypothesis
    - i. If the child spends more time on technology devices than on non-technology tasks, then the child will have increased visual memory skills as well as decreased auditory memory skills.
  - c. Research goals
    - i. Collect a measurable level of visual memory in children.
    - ii. Collect a measurable level of auditory memory in children.
    - iii. Collect a measurable amount of time children spend doing various activities, including those that involve technology, through an examiner-given questionnaire.
    - iv. Compare data to see if there is a relationship between time spent on technology and visual and auditory memory skills.
    - v. Analyze data to see how visual and auditory memory skills compare at ages 4-10.
  - d. Key terms defined
    - i. "Visual memory is the ability to remember or recall information such as activities, pictures or words that have been viewed in the past" (Gonzalez, Visual Memory: Definition & Skills).
    - ii. "Auditory memory involves being able to take in information that is presented orally, to process that information, store it in one's mind and then recall what one has heard" (Edublox, Auditory Memory: Definition, Importance, Test, Overcoming Deficits).
    - iii. A simple analysis of variance (or ANOVA) is used when you have more than two levels of the same variable and want to compare these groups together (Salkind, Statistics for People who (Think They) Hate Statistics).
  - e. Research assistants
    - i. My project will include two assistants: Megan Napod and Emily Dabney.
    - ii. It was recommended by the IRB Office that I include another individual during data collection to ensure the safety of the students.

- 1. This visual memory test will include a binder with pages of incrementally increasing pictures. The child will be asked to look at a page with one picture. Then, they will be shown a new page with the same picture and a new picture. The child will then be asked to point to the picture that they previously saw. Accordingly, the child will then view two pictures that they have to remember by pointing to them out of a field of four pictures. Likewise, the test will continue until the child is not able to answer 50% or more correctly or they reach the end of the test, which will be 10 images out of a field of 20.
- 2. The practice trials will be provided with this document
- iii. Description of the auditory memory test.
  - 1. The auditory memory test will be conducted in the same incrementally increasing manner as the visual test. The child will be asked to repeat one word back to the researcher. Then, they will be asked to repeat two words back to the researcher and so on. The test will continue until the child cannot answer 50% or more correctly or they reach the end of the test, which will be 10 words that must be repeated back to the researcher.
  - 2. The list of words that will be used will be provided with this document
- II. Outline your methodology. Please be specific. How does this achieve your goals and how reliable is it?
  - a. Institutional consent forms will be collected from schools that have agreed to work with me.
  - b. Parent consent forms will be collected and only children who have permission will be included in the study.
  - c. Participants will be asked a series of questions concerning what activities they do outside of school. These responses will be quantified for statistical purposes.
  - d. The child will be asked to complete two tests—an auditory memory test and a visual memory test. In these tests, participants will be asked to do tasks that are adapted from and expanded upon from the subtests that are part of the Preschool Language Scales Fifth Edition (PLS-5). This standardized test is designed to examine preschooler's auditory comprehension ability and is used for identifying children who may need additional testing in their speech and language abilities. (Zimmerman, 2011). Through evidence-based investigation, the PLS-5 has been proven to be both reliable and valid. From this test, I used the concept of a flipbook, an incrementally increasing number of pictures facing the client, and pointing to the desired picture to be recorded as a response in my project.
  - e. The visual memory test is validated through the work of Lauren Cole who created an identical test to the one I am using (Cole, 2017). She is an accomplished researcher and the company that the game was published through is a part of the University College London Institute of Education EDUCATE Program. The data collected from this test will be correlated with the auditory memory game scores and the amount of time spent on technology separately.
  - f. The auditory memory test is validated by the efforts of Casalini et al. (2007) whot I 4cm BT 0m4 0 0 0st

- a relationship between the categorical variables and to determine if there is a difference between participants based on age.
- k. A Pearson Product Moment Correlation Coefficient will be run to determine if there is a relationship between the categorical variables and an ANOVA will be conducted to determine if there is a difference between participants based on age.
- I. Each test and the questionnaire will be completed only once with each student.
- III. Explain in what sense your project is original, unique, or beyond normal senior expectations. How does it relate to current knowledge in the discipline?
  - a. This project is a continuation of a pilot study that was conducted by another student. The procedures for this project have remained the same. However, a new visual game and a new auditory game have been created. The visual game is now on pages in a binder compared to a deck of cards that were previously used. The cards had two pitfalls: they were difficult to sort and they had the object's name on them. It was especially important to have unlabeled pictures since we increased the age range to include older children. -3 (r)-2 (e) -2 (n) -4 (. -3T @ 0.2450n) -4 (@ 0.24 (

## Department Chair Approval

- This student's performance in his/her major field is acceptable.
- He/she has completed the requisite research methods coursework for the research to be pursued.
- I understand that he/she plans to graduate with Honors.

Department Chair (signature)	
Research Advisor Approval	
I have read and support this proposal:	Primary Advisor (signature)

If human subjects or if live vertebrate animals are involved, evidence of approval