HCNHS Student Research Grant

Grant Application

UG or GR Student Name: Jane Doe   TCU ID: 123456789

Major/Dept/School: Speech Language Pathology/COSD/Davies   TCU email: j.doe@tcu.edu

Faculty Mentor: Dr. Xavier Professor

Mentor Department: COSD

Project Title: Word learning in authentic contexts: books versus television

Other sources of funding for this research (indicate source and amount): N/A

Authorizing Signatures: Grants submitted without all signatures will not be considered.

    Undergraduate Student: _____Jane Doe_____

    Faculty Mentor: ____Xavier Professor, Ph.D._____
    ** Sign here to show you accept the obligation to mentor this student's project**

    Chair of Student's Major: _Andrea Reading, Ph.D._____

    Submission Date: _2 November 2020_____

Project Purpose and/or Specific Aims [Limit to 1 page]:
Clearly and succinctly state the major goals of the project and how they relate to your hypothesis. One to two paragraphs should describe the problem that you are trying to solve, citing the most relevant background literature.

The use of television (TV) among preschool children is a popular and controversial topic (Flynn, Wong, Neuman, & Kaefer, 2019; Huber, Highfield, & Kaufman, 2018; Rosen, Lim, Felt, Carrier, Cheever, Lara-Ruiz et al., 2014). Numerous studies document relations between television and the health, behavior, and education of children (e.g., Anderson & Pempek 2005, Lauricella, Wartella & Rideout, 2015; Rice & Woodsmall, 1988; Rosen et al., 2014). Some studies elucidate the value of educational media (e.g., Linebarger & Walker, 2005; Neuman, Wong, Flynn & Kaefer, 2019) whereas others highlight negative associations between screen time, physical, and cognitive development (Lin, Cherng, Chen, Chen & Yang, 2015; Rosen et al., 2014). In the face of these seemingly conflicting messages, that educational media is helpful and that screen time negatively affects development, parents must navigate the use of television in the lives of their children (e.g., Downing, Hinkley, Slamon, Hnatluk, & Kesketh, 2017; Lauricella, Wartella, & Rideout, 2015). Given the increasing prevalence of screen-based media in the lives of young children (Kabali et al., 2015), it is worthwhile for systematic research studies to consider whether television leads to learning and how parent observations of learning contribute to their opinions on television.

The purpose of this study is to compare word learning outcomes from authentic television shows versus authentic books for preschool children who are typically developing. This study used an experimental task to compare word learning in authentic contexts from television versus books (another, often described as preferable, medium for home-based learning. We hypothesize that children will learn more words from storybook reading than television, even when number of word presentations is controlled (e.g., Anderson & Pempek, 2005). However, we also hypothesize that television will produce better word-learning outcomes for attribute words than storybooks. This study will add to the existing literature on word learning by examining authentic contexts for learning (as compared to experimenter-created books and videos, which is the norm in the extant literature). A long-term goal of this research is to harness learning opportunities from electronic media (e.g., television) to determine if those opportunities can be used with children who have disabilities. This study is a logical first step in this line of inquiry.

Selected References

Anderson, D. R., & Pempek, T. A. (2005). Television and very young children. American Behavioral Scientist, 48(5), 505–522. doi: 10.1177/0002764204271506

Downing, K. L., Hinkley, T., Salmon, J., Hnatiuk, J. A., & Hesketh, K. D. (2017). Do the correlates of screen time and sedentary time differ in preschool children? *BMC Public Health*, *17*(1), 285. https://doi.org/10.1186/s12889-017-4195-x

Flynn, R. M., Wong, K. M., Neuman, S. B., & Kaefer, T. (2019). Children's attention to screen-based pedagogical supports: an eye-tracking study with low-income preschool children in the United States. *Journal of Children and Media*, *13*(2), 180–200. https://doi.org/10.1080/17482798.2019.1575887

Huber, B., Highfield, K., & Kaufman, J. (2018). Detailing the digital experience: Parent reports of children's media use in the home learning environment. *British Journal of Educational Technology*, *49*(5), 821–833. https://doi.org/10.1111/bjet.12667

Lauricella, A. R., Wartella, E., & Rideout, V. J. (2015). Young children's screen time: The complex role of parent and child factors. *Journal of Applied Developmental Psychology*, *36*, 11–17. https://doi.org/10.1016/j.appdev.2014.12.001

Methodology [Limit 2 pages]:
Describe what you plan to do to accomplish your aims. This description should include any study participants, measures you will use, and procedures in the study.

COVID-19 Procedures: **This study will take place virtually via Zoom for Healthcare (designed to be HIPPA compliant). All study procedures have been approved by the TCU IRB.**

Study Participants. Up to 40 participants between 3;0 and 5;0 years will be in this study. The children will all be monolingual English speakers who are typically developing and have no known diagnosis that affects speech or language development (e.g., Autism spectrum disorder, Down syndrome) per parent report. Other exclusion criteria include hearing and/or visual impairments not corrected by hearing aids or glasses. Additionally, children will be excluded from the study if their parents report that their children watch the TV show *Blaze and the Monster Machines* more than one time per week.

Measures and Procedures. Each participant will participate in one study visit, performed via Zoom, which will last approximately one hour and thirty minutes. Participants will first be tested for knowledge of twenty words (that will be taught during the experimental tasks). In this initial assessment, the researcher will show the child a picture (e.g., of a cartoon shark) and ask an elicitation question like "What would you call this?".

To gain descriptive information about participants, the Expressive One Word Picture Vocabulary Test and the Primary Test of Nonverbal Intelligence will be administered. These measures are standardized and norm-referenced, and are consistent with other activities often administered to this age group. Administration of these measures virtually has been validated by the testing company and in Dr. Professor's lab. Following administration, half of the participants will watch a TV show and half of participants will read a book. Then, children will switch order of activities (e.g., half of participants will watch the show first and half will read the book first).

For the television viewing activity: Children will watch one pre-selected episode of the television show *Blaze and the Monster Machines*. The episode is approximately 20 minutes long. During the show, ten words likely to be unknown to the child (e.g., dorsal fin) will be presented. The researcher will monitor the child during the television episode.

For the book reading activity: Children will listen to the examiner read a *Blaze and the Monster Machine* book (published by Nickelodeon) that also presents 10 new vocabulary words (all presented via shared screen on Zoom). The researcher will read the book with the child but not purposefully ask dialogic questions. The book will be read according to a script and with enthusiasm to encourage child participation.

Following each book or television activity, children will participate in an assessment of their new word knowledge (10 words). As with the initial assessment, children will be shown a picture representation of each word and asked a prompt question. Then, each child will take a break to play an online game of their choosing, and after five additional minutes, be tested on the new words a second time.

The participants will randomly be assigned to a group for order of task presentation. The groups will determine what book/TV episode the participant watches and in which order. Two different books and two different TV episodes will be used. Book 1 and TV Episode 1 will be the same story, as will Book and Episode 2. This counterbalancing will be used to ensure words taught are not of variable difficulty and that story structure is not the reason for different amounts of word learning within participants.

Itemized Budget:
Please include the exact price of the proposed items and how many you plan to buy. (E.g. 1 Lab kit=24.99, 4 x 24.99=99.96). Additionally, include a short (1-2 sentence) justification for the items in your budget.

Blaze and the Monster Machines Books: 10 books at $4.99 per book at Barnes and Noble
Total: $**49.90**
    Justification: Ten books will be selected and purchased for in-depth review for stimuli. Two to four books will be used in the study.

Blaze and the Monster Machines Episodes: 10 episodes at $1.99 episode on Amazon.com (to be purchased on Dr. Professor's lab Amazon account). Total: $**19.90**
    Justification: Ten episodes will be selected and transcribed/ reviewed in-depth for stimuli. Two to four episodes will be used.

Target Gift Cards: 40 gift cards at $5.00 per gift card Total: $**200.00**
    Justification: Gift cards will be offered as incentive for participant involvement. The faculty mentor (Dr. Professor) has used gift cards very effectively and demonstrates that use of gift card incentives substantially reduces the time that we will have to spend recruiting participants (i.e., participants are more willing to come if they receive a gift card).

Standardized Test Forms:
        2 packs of 25 PTONI forms at $56.00 each Total: **$112.00**
        2 packs of 25 EOWPVT forms at $40.00 each Total: **$ 80.00**
    Justification: Test forms are needed for each participant. The actual tests and additional 2 forms needed for each task will come from Dr. Professor's lab.

Total amount requested: **$461.80**

Study Timeline [Limit 1 page]:
Describe your study timeline, including your plans for purchases listed in your budget.
(Please provide information on when you plan to use funds to purchase research needs)

We are in the process of evaluating episodes and books for use in this study. To date, we do not have funding to explore episodes and books freely, so are recording episodes on DVR to explore their utility. With grant funding, we will expedite the process of choosing stimuli for the study and have study stimuli chosen by the start of the Spring 2021 semester. Therefore, all items

except for the gift cards listed in the budget will be purchased once funding is awarded and prior to recruitment of participants [In March of 2021].

We will begin to recruit participants for this study by March 15 (contingent on receiving grant funds).

Study visits will begin as soon as participants sign up following the opening of recruiting. Study visits will take place for the rest of Spring 2021 semester and last until 40 participants have been recruited and taken part in the study (study visits will continue into Summer 2021 and are estimated to be completed by June 30, 2020). All gift cards will be purchased by June 30, 2020.

Analysis of data and final write up (contingent on finishing all study visits by June 2021), will be completed by the end of the Fall 2021 semester.

Research Product:
Include information describing when and where you plan to present your research results. This can include but is not limited to a manuscript, presentation, poster, etc.

Product 1: *Poster presentation at American Speech-Language-Hearing Association National Convention, Fall of 2021.* I will apply to present a poster of my research findings at the ASHA National Convention in Fall 2021 (applications submitted in early April, 2021).

Product 2: *Peer-reviewed journal article* submission to Journal of Children and Media. My mentor and I plan to write and submit a peer-reviewed journal article. After the collection and analysis of data from my research project, Dr. Professor and I will work together to dedicate time to writing and submitting a research article with the intentions of submitting it to ***Journal of Children and Media in Fall of 2021.***

Mentorship plan:
Indicate 1-2 mentored research objectives for your project and at least one activity related to each mentoring objective.

Primary Mentored Research Objectives: Learn to present research findings
Activity 1: Mentor meetings to develop poster presentation skills. I will meet with Dr. Professor weekly during data collection to discuss the process of research data acquisition. During this time, I will watch Dr. Professor present other research data and we will discuss how she chose how to present her data. After our data is collected, Dr. Professor will work with me to construct a poster, and in August of 2021, I will present this poster to Dr. Professor's class to practice my research presentation skills.

Activity 2: Poster presentation at ASHA National Convention, Fall of 2021. I will apply to present a poster of my research findings at the ASHA National Convention in Fall 2021. This will allow me to talk with other professionals and experts in our field. After the presentation, Dr. Professor and I will meet to talk about what went well and what did not go well.

*Applications are due by February 1st, 2021. A decision about your application and funds will be available by mid-February.

**You MUST submit a progress report to the Associate Dean of Research quarterly, explaining which funds have been spent, what progress has been made on the timeline, and if any changes need to be made to the timeline.

***New for 2020/2021: Please provide details on how your study will adhere to COVID-19 guidelines and regulations for conducting human subjects research.
See https://research.tcu.edu/research-compliance/ for more details