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# Graduate Student Research Projects: A Path for Productive Research

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# Agenda

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- Introduction
- Description of Research Path Components
- Student Perspectives on Project Participation
- Presentation of Outcomes
- Challenges & Solutions
- Questions

# Student Research: A Project-based Learning Approach

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- Master's level students in SLP are required to complete a faculty-mentored research project in a first semester Research Methods course
- Student Objectives:
  - Develop an evidence-based approach to professional practice
  - Discover the connection between EBP and ethical responsibilities
  - Critically appraise and apply research
  - Design and conduct research to answer a research question
  - Demonstrate knowledge of the use of statistics in their own research projects and to analyze the research of others
  - Develop oral and written communication skills for sharing research information with clients and other professionals

# Path 1: Prelinguistic Communication

- Project 1: Concurrent Validity of the PICS and the CSBS-DP (Brown et al., 2006)
- Project 2: Prelinguistic Communication Act Rates at Transition to First Words (Fitzpatrick et al., 2007)
- Project 3: Parents' Responsiveness and Toddlers' Early Vocabulary Acquisition (Bacon, et al., 2010)
- Project 4: Child Temperament, Child Communicative Intent, and Parental Responsivity (2011)

# Path 2: Temperament and Communication Disorders

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- Project 1: Temperament and Early Communication in Premature Children (King, 2007)
- Project 2: Temperamental Profiles of Children with Communication Impairment (Lau, 2011)
- Project 3: Temperamental Profiles of Children with Communication Impairment (Proctor-Williams & Lau, Ongoing)

# Path 3: Preschool Narratives

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- Project 1. Optional Infinitive Theory and Surface Account in Children's Narratives (Balint et al., 2003).
- Project 2: Verb Phrase Analysis of Preschooler Narratives: A Pilot Study (Burke et al., 2006).
- Project 3: The Impact of Grammatical Complexity on Sentence Disruptions Production (Render, et al. 2008).



# Benefits of Research Project-Based Learning for Students

- Active engagement provides students with a greater sense of responsibility over their learning process
- A sense of authenticity through the connection to real-world experience
- A sense of ownership for what they have designed, developed, and learned
- An opportunity to develop personal connections and practice collaborative skills with one another, faculty and participants
- Promoting a sense of audience by encouraging students to think beyond the classroom and consider how others will react and use the information that they have discovered

(Williams & Fagelson, 2003)

# Benefits of Research Project-Based Learning for Students

- Developing a research training environment positively affects students':
  - Interest in research
  - Research self-sufficiency
  - Research outcome expectations
  - Scholarly productivity (Scott et al., 2003)
- Creating a community of research practice fosters the development of students who:
  - Ask questions and challenge assumptions
  - Search for ways to challenge themselves
  - Do not accept boundaries
  - Identify mentors (Comas et al., 2009)

# Benefits of Research Project-Based Learning for Students

- Collaborative skills
  - Mentorship with faculty member
  - Partnering with peers
  - Other professionals/departments
- Understanding of research in the field
  - Components of a research article
  - Analysis of research design and execution
  - Interpreting results
- Relationship between research and practice
  - Evidence-based practice
  - Critically evaluate literature and its applications to academic and clinical experiences

# Challenges for Students

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- Limited time
- Statistical analyses
  - Limited experience with statistical analysis
- Critically analyzing literature
  - Protocol for analyzing literature
  - Integrating research from other fields of study
- Applying research concepts
  - Generalization

# Take-Away

- Professional development
  - Journal Club
  - Appalachian Research Forum
  - ASHA Poster Session
- Provides a foundation that could be further explored in post-graduate studies
- Evidence-Based Practice
  - Integrating research into practice
  - Evaluate efficiency, effectiveness, efficacy of studies in literature



# Benefits of Research Project-Based Learning for Faculty

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- Through the creation of a sequence of doable student research projects, faculty can:
  - Establish databases
  - Conduct pilot studies
  - Present and publish outcomes
  - Develop fundable grant proposals
  - Enhance collaborations with colleagues
- Contribute to a productive path of research in the absence of external funding.

# Benefits of Research Project-Based Learning for Faculty

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- Scholarly Benefits:
  - Establish and maintain a current literature base for an area of interest.
  - Discussions with students challenge beliefs, hone arguments and promote exploration of alternative theories and explanations.
  - Contribute to a strong rationale for grant funding
  - Keep research momentum going



# Benefits of Research Project-Based Learning for Faculty

- Grant Development Benefits
  - Pilot projects
    - Offer opportunities for internal grant funding
    - Demonstrate legitimacy of lines of inquiry and viability of methodology for external grant funding
  - Provides empirical, methodological, and administrative evidence for external grant application
  - Evidence of research productivity through presentation and publication
  - Establishes a track-record of ability to conduct research

# Benefits of Research Project-Based Learning for Faculty

- Administrative Benefits
  - Offers a coherent plan for student research mentoring
  - Establishes a track-record of including students, which is often a grant requirement
  - Develops community networks that facilitate participant recruitment
  - Develops a broader community of scholarship
    - Junior – senior faculty
    - Intradepartmental
    - Interdepartmental

# Challenges & Solutions

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- Timely coordination with the IRB
- Completion of a project within the one semester time-frame
- Consult with your IRB Administrators to establish protocol / timelines
- Write ICDs in a way that allows data to be analyzed for a variety of different analysis projects
- Use modifications whenever possible
- Collaborate with students on the timeline
- Gain student commitment for completion / presentation
- Use established databases
- Modify the project expectations

# Challenges & Solutions

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- Research design limitations
  - Statistical transparency to students
  - Number of experimental sessions
  - Number of participants
- Develop a sequence of focused straightforward questions that can be answered with basic statistical analysis approaches
- Set data collection time limits
  - 2 session max protocol for group design
  - 10 session max protocol for individual design
  - 6 week max data collection and what you get is what you get

# Challenges & Solutions

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- Limitations of funding to support administration of student projects, conference dues, travel
- Become familiar with internal research and student research funding sources
- Develop departmental budget commitment to support student research
- Work with local NSSHLA group for fund-raising
- Enter student research contests
- Write in funds for student research support in any external grants

# Challenges & Solutions

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- Time to create posters
- Time to write up projects for publication
- Time to write up grants
- The minimum outcome for any student project should be a poster for local, state and/or national conference
- Open to suggestions

# Some Final Suggestions

- Develop broad enough databases to support a sequence of projects and find ways to continue adding to it
  - Repeat and tweak
- Collaborate with colleagues who have similar interests within and outside the department
  - Create agreements to share databases, projects, presentation, and publication opportunities
  - Talk with anyone, anytime about research interests
- Become familiar with areas of emphasis of external funding agencies
- Use projects to work out methodological issues and establish pilot data that support external grant proposals

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