Early Childhood Special Education Teachers Use of Embedded Learning Opportunities within Classroom Routines and Activities

Rationale for the Project

Naturalistic instruction is a teaching method in early childhood special education (ECSE) that embeds practice on young children's goals and objectives within natural activities and settings (Rule, Losardo, Dinnebeil, Kaiser, & Rowland, 1998). One critical component of naturalistic instruction is the provision of embedded learning opportunities (ELOs) (Horn, Lieber, Li, Sandall, & Schwartz, 2000; Pretti-Frontczak & Bricker, 2004). For example, if a preschool child's Individualized Education Program (IEP) contains an objective stating that the child will learn to make requests using two-word phrases (e.g., "more juice"), the teacher would embed opportunities for the child to practice making requests in a variety of classroom routines and activities (e.g., meals, play time, art activities) to foster language development. Naturalistic instruction, including providing ELOs, is an evidence-based practice in early childhood special education (Wolery & Hemmeter, 2011) supported by a large body of research (Grisham-Brown, Hemmeter, Schuster, Collins, 2000; Horn et al., 2000; Pretti-Frontczak, Barr, Macy, & Carter, 2003).

Experts generally agree that ECSE teachers' intentional use of ELOs is critical for young children's acquisition of new skills (Dinnebeil, Pretti-Frontczak, & McInerny, 2009; Horn & Banerjee, 2009). There continues to be a research-to-practice gap, however, in this area (Wolery & Hemmeter, 2011). While we know this to be an important practice, existing evidence suggests that teachers do not use ELOs as frequently as is necessary to support skill development for young children with special needs (Pretti-Frontczak & Bricker, 2001). Providing ELOs for children to meet IEP goals and objectives is complex and, "the challenges of being able to create varied and multiple ELOs are only now beginning to be understood." (Dinnebeil et al., 2009, p. 440).

Closing this gap between research and practice requires a better understanding of the nature of instruction currently used in classrooms so we can better prepare future teachers and provide supports to teachers already in the field (Wolery & Hemmeter, 2011). There is little research that describes the extent and nature of ELOs provided to young children with special needs in inclusive preschool classrooms (Dinnebeil, Pretti-Frontczak, & McInerny, 2009; Pretti-Frontczak & Bricker, 2001).

Thus, this project seeks to close this research to practice gap by examining the nature of teachers use of ELOs, including teachers perceptions of the barriers and supports needed to fully implement this practice (see Figure 1 below). This project will result in dissemination of findings and will inform a proposal for federal funding. While not directly studied in this proposed project, the long-term intended outcomes of this research are to increase ECSE teachers to use of ELOs, which may in turn ultimately improve outcomes for children with special needs. Future research proposals will be designed to examine these outcomes.
Project Objectives, Actions, and Deliverables

Objectives

The overall goal of the project is to examine practices of ECSE teachers in West Virginia who serve young children with identified disabilities in inclusive preschool classroom settings. This project will be carried out in collaboration with Dr. Christian Coogle (Department of Special Education). Specifically, our objectives are to: (1) describe the frequency and nature of ELOs provided for children with disabilities to practice skills on their IEPs, (2) examine teachers’ rationale for when and how they provide ELOs, (3) understand what is (or is not) taking place related to child IEP goals, and (4) better understand challenges to implementation and necessary supports. **Data from this study will be used to inform future research and ECSE teacher training at WVU to increase teachers’ use of one evidence-based practice, ELOs, to teach young children with special needs.**

Actions

A mixed method study will be used to address the following research questions:

1. What is the frequency of ECSE teachers use of ELOs?
2. What are the contexts within which ELOs are most often used (e.g., during what types of activities; to address which kinds of IEP goals/objectives)?
3. What is the rationale for when and how teachers implement ELOs?
4. What barriers or challenges do teachers perceive in the use of ELOs?
5. What supports do teachers need to implement ELOs more frequently?
Pending IRB approval and approval from County Boards of Education, we will recruit 8 teachers with certification in ECSE who teach in inclusive preschool classrooms in two counties in West Virginia (Target date: October 2014). Informed consent will be obtained from teachers as well as from all children with special needs in the teacher's classrooms (typically 4 children). We currently have an ongoing partnership with Monongalia County and are seeking to broaden our partnerships to include one other County in West Virginia (to be determined).

**Demographic survey.** Teachers will be asked to complete a brief demographic survey to provide information on their skills and experience including certification and years of teaching experience (Target date: October 2014).

**Video recordings.** After obtaining consent, we will ask teachers to video record themselves during three teaching activities (circle time, a meal, and free play) on three separate days during a two week period for nine total video segments per teacher (Target date: December 2014). A Swivl and iPad will be provided for video recording. The Swivl (http://www.swivl.com), which holds the iPad, tracks an individual's movements during video recording. Thus, teachers will not encounter challenges related to moving the camera during video sessions and will be free to engage in typical teaching activities. Teachers will be compensated with a $50 stipend for each day of video footage submitted ($150 total for 3 days of video footage).

Following video recording, observational data on teachers' use of the embedding strategy will be coded from videotaped recordings. Use of the embedding strategy will be coded for up to three IEP goals for each child. If a child has more than three goals, we will ask teachers to identify three goals of highest priority for the child's successful participation in classroom activities. Video footage from the first 10 minutes of each activity (720 minutes total) will be analyzed using the PROBE and System of Classroom Observations for Program Evaluation (SCOPE), two observational measures used in a prior study of ELOs (Pretti-Frontczak & Bricker, 2000). The PROBE is a 15-sec interval sampling observation system (Pretti-Frontczak, Capt, Leve, & Waddell, 1995). The SCOPE is an ecobehavioral observation tool that can be used to record environmental variables, along with adult behaviors (e.g., teaching behaviors), and child response (Pretti-Frontczak & Waddell, 1997). The researchers and a half-time graduate assistant (10 hours per week; already funded) will code video data (Target date: March 2015) using both the PROBE and SCOPE. An undergraduate student in Special Education will be recruited to code 25% of videos for interrater reliability as part of a 1-credit Independent Study course led by Dr. Rahn. Participation in coding data for the study will provide an opportunity for both students to be exposed to research in hopes of encouraging students to consider a career in special education research. Coded data will be summarized using descriptive statistics.

Additionally, the research team will transcribe observations related to the research questions using qualitative methodology (pattern coding; Miles & Huberman, 1994). Patton (2002) describes observations as a purposeful data collection method. Observational data allow the researcher to describe the setting, the activities that take place, the people who are participating, and the meaning of what was observed from the perspectives of those observed.
**Teacher interview.** Teachers will also participate in a structured interview where a member from the research team will ask teachers approximately 10 questions (Target Date: January 2014). Teachers will receive a $20 gift card upon completion of the interview. Probes will be used to gather rich information (Patton, 2002). These questions will be related to teacher perceptions of ELOs and how the teachers identify themselves utilizing ELOs. Because researchers are unable to observe everything, interviews allow a researcher to enter into the other person’s perspective. Interviews are the most common form of collecting qualitative data (DiCicco-Bloom & Crabtree, 2006). The purpose of individual, semi-structured interviews is to obtain detailed narratives and stories of the participants (DiCicco-Bloom & Crabtree, 2006).

**Document analysis.** Researchers will analyze lesson plans as a third measure to determine where ELOs might be taking (or not taking) place. Document analyses are considered a high quality indicator of qualitative research assuming they are meaningful and are meaningfully described (Brantlinger, et al., 2005). This type of analysis is frequently used as a third measure in qualitative research to perform triangulation among data sources (Patton, 2002). Credibility of the data, as discussed by Brantlinger, Jimenez, Klingner, Pugach, and Richardson (2005), will be established.

**Deliverables**

This study will result in three specific deliverables:

1. We will submit a manuscript describing the study method and results to a peer-reviewed journal in special education (Target date: May 2015).
2. We will propose to present results at two national or international conferences (e.g., Council for Exceptional Children [CEC] in April 2015 or Division for Early Childhood [DEC] in October 2015).
3. We will use results from this study as seed data for a proposal to a federal funding agency (e.g., Institute of Education Sciences [IES]).

**Connections to Professional Interests**

My three areas of interest are language and literacy interventions, naturalistic interventions, and teacher preparation. This study will help further my research agenda which to date has focused primarily on naturalistic interventions within the context of children's language and early literacy development. This study will extend my research by including teachers use of naturalistic interventions (i.e., ELOs) in other domains of learning (e.g., motor skills, social skills). It will also extend my existing research agenda on teacher preparation which to date focused on naturalistic language interventions. In addition, this will help expand my knowledge of research methodologies. My expertise is in quantitative methodology, particularly single-subject design. I look forward to using my knowledge of quantitative methods within a descriptive design, and to learning from Dr. Coogle, whose area of expertise is qualitative methodology.

This study will result in deliverables that will contribute to my development as a scholar. Perhaps most importantly, results from this study will be used to inform my future research, including a larger scale proposal which will be submitted to a federal agency (e.g., IES).
Connections to WVU's Strategic Plan

This study aligns with goals 1, 2, and 5 of WVU’s Strategic Plan for 2020.

**Goal 1: To engage undergraduate, graduate, and professional students in a challenging academic environment.** This project will provide opportunities for one undergraduate and one graduate student to participate in the research process. As an undergraduate student I had opportunities to code data for doctoral students and assist with data analyses for a professor in Educational Psychology at the University of Wisconsin-Madison. As a graduate student at the University of Oregon I was recruited to coordinate a research study examining child development through parent-completed questionnaires. I didn't realize it at the time, but both experiences were instrumental in forming my interest in research. I hope to provide these same kinds of opportunities for students here at WVU to spark their interest in educational research.

**Goal 2: Excel in research, creativity, and innovation in all disciplines.** This study will help to form a foundation for my future line of research examining naturalistic interventions and teacher professional development. Through this project, we will improve our understanding of when and how teachers provide ELOs, including the barriers and supports needed to increase ECSE teachers use of this evidence-based practice. This information will allow us to identify new directions for research to ultimately improve outcomes for young children with disabilities.

**Goal 3: Enhance the well-being and quality of life of the people of West Virginia.** This project seeks to examine teaching practices that directly impact preschool children with special needs in West Virginia. Over 5,000 preschool children with disabilities are currently receiving special education services in the state (West Virginia Department of Education, 2012). The results of this study will be used to inform future research and teaching efforts aimed at ultimately improving outcomes for children with special needs in West Virginia.

Connections to PERC's Mission

This study supports PERC's mission to engage in research that benefits the people of West Virginia by examining teacher practices which may improve outcomes for children with special needs in the state. Results from this study will likely have national impact as well through dissemination through a peer-reviewed journal and national conferences, thus supporting PERC's goal of regional and national impact.

The study also supports PERC's goal to increase research productivity in the College of Education and Human Services. Results will inform the design of at least one external federal grant proposal which supports PERC's goal of increasing external funding in the College. Finally, this study will lead to a publication in a peer-reviewed journal which supports PERC's goal to increase College faculty publications.

Budget

Attached are the budget worksheet and narrative detailing the proposed budget.
References


Rahn PERC Proposal BUDGET JUSTIFICATION

A. Senior Personnel—Total Cost $0

Funding in the amount of $ is being requested to defray the costs of Dr./Mr./Ms. , who will serve as the Principal Investigator. will be responsible for general oversight of the project, including research activities related to the project. He/she will dedicate % of his/her total effort ( months) each year to this project.

Funding in the amount of $ is being requested to defray the costs of Dr./Mr./Ms. , who will serve as a Co-Investigator. will be responsible for assisting the Principal Investigator with the project coordination and the research activities related to the project. He/she will dedicate % of his/her total effort ( months) each year to this project.

B. Other Personnel—Total Cost $0

Funding in the amount of $ is being requested to defray the cost of Mr./Ms. . Mr./Ms. will support the project as a and will dedicate % of his/her total effort ( months) each year to this project. He/she will be responsible for the following research activities:

Funding in the amount of $ is requested to support graduate students participating in this project. The graduate students will:

Funding in the amount of $ is requested to support undergraduate students participating in this project. The undergraduate students will:

C. Fringe Benefits—Total Cost $0

The amount of Fringe benefits, based on the salaries of the personnel listed above, equals $ and was calculated at a rate of 25% for benefits-eligible personnel ($ ), 8.4% for non-benefits-eligible personnel ($ ), 8.7% for graduate students ($ ), and 1.6% for undergraduate students ($ ).

D. Equipment—Total Cost $1356

Funding is being requested to purchase the following equipment: $299 for 1 iPad Mini, $897 for 3 Swivls, $40 for one iPad Mini cover, and $120 for 3 Swivl cases. These necessary startup purchases will be
bought in Year 1 of the project. Equipment already owned by the Department of Special Education will also be used for this project (i.e., 1 Swivl, 3 iPads).

E. Travel—Total Cost $0

Project Investigators and other project staff will be traveling to for the . For this trip, the PI is requesting support for the airfare ($) and per diem costs ($) for days in , totaling $ per year.

F: Participant Costs—Total Cost $1360

Funding in the amount of $1200 is being requested to provide each teacher $150 in stipends for video recordings (8 teachers x 3 videos per teacher at $50/video = $1200) and $160 for gift cards to thank teachers for completing the interview (8 teachers x $20/interview = $160).

G. Other Direct Costs—Total Cost $0

- **Materials and Supplies**: Funding in the amount of $ is being requested for office supplies, including basic supplies, , , and for each year.

- **Publication/Documentation/Dissemination**: Funding in the amount of $ is being requested for of the proposed research to the .

- **Consultant**: Funding in the amount of $ is being requested for Mr./Ms. , who will assist the PI and Co-Investigator with the following activities: , , , and . Mr./Ms. was selected for his/her expertise in , which is critical to the proposed research.

- **Computer Services**: $ in funding is being requested per year for necessary computer services. These services include , , , and .

- **Tuition Waiver(s)**: Tuition totaling $ is requested for semesters at the resident rate of $ and the non-resident rate of $ at West Virginia University for graduate students. In addition, tuition totaling $ is requested for semesters at the resident rate of $ and the non-resident rate of $ for undergraduate students.

- **Other**: Funding in the amount of $ is requested for the development of a/an .
• **Subaward(s):** Funding in the amount of $ is requested for a subcontract with for the , the , the and the . will receive $ in Year One, $ in Year Two, and $ in Year Three of the proposed project. The authorized representative for has reviewed and endorsed their organization's participation in proposed research.

H. **F&A Costs—Total Cost $0**

At West Virginia University, Facilities and Administration (F&A) costs are calculated using a Modified Total Direct Costs (MTDC) base. This base consists of all salaries and wages, fringe benefits, materials, supplies, travel, and subgrants and subcontracts up to the first $25,000 of each subgrant or subcontract (regardless of the period of performance covered by the subgrant or subcontract). The MTDC base excludes equipment (single unit purchase price of $5,000 or greater), capital expenditures, charges for patient care, tuition remission, rental costs of off-site facilities, scholarships and fellowships, as well as the portion of each subgrant and subcontract in excess of $25,000.

Per West Virginia University’s current federally negotiated rate agreement (dated 09/13/2013), F&A costs totaling $ are associated with the proposed research project at the rate of % of MTDC. The cognizant agency for West Virginia University and the West Virginia University Research Corporation is the U.S. Department of Health and Human Services. The cognizant agency point of contact is Arif Karim, (214) 767-3261.