Long-Term Effects of the Kids in Transition to School (KITS) Program for Children with Developmental Disabilities and Behavioral Problems

Pears, Katherine

Efficacy and Replication

R324A150149

3 Years (7/1/2015-6/30/2018)

Purpose: This research examines the long-term effects of the Kids in Transition to School (KITS) Program, an intervention aimed at enhancing the school readiness of young children with co-occurring developmental disabilities and behavioral problems, on children's functioning in elementary school. Children with these co-occurring problems are at particularly high risk for school readiness deficits, which may lead to further negative educational outcomes. In a previously IES-funded study, the PI conducted a randomized controlled trial with preschool children with developmental disabilities and behavior problems and their families to examine the impact of KITS on school readiness through Grade 1. The intervention demonstrated positive effects on early literacy, self-regulation, and parent involvement in school at the end of kindergarten. The current study will follow children and families who participated in the original efficacy trial to determine child outcomes through Grade 5. The research will examine the impact of KITS on children's academic competence, social and self-regulation skills, and teacher-student relationships. Project Activities: This study will continue to collect and analyze data on approximately 203 children who participated in the original randomized trial of KITS, collecting data on children though Grade 5 for each cohort. Using a variety of data analyses techniques, the team will investigate the long-term impact of the intervention on academic competence, social-emotional functioning, and positive teacher-student relationships, as well as examine mediators (school readiness and positive parenting) and moderators (child, family, school, and services characteristics) of the relationships between the intervention and late elementary school outcomes. In addition, the team will conduct a cost-effectiveness analysis of the KITS Program. Products: The products of this project will include evidence of the long-term effects of the KITS Program on children with co-occurring developmental disabilities and behavior problems and cost effectiveness of the intervention. In addition, there will be peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place primarily in elementary schools in a mid-sized metropolitan area in Oregon. Sample: There will be 203 children in Grades 3 – 5, and their families and teachers, participating in this study. This represents 97% of the children who participated in the original efficacy study, who were recruited as preschoolers with developmental disabilities or delays and co-occurring behavior problems. Intervention: The KITS Program is a short-term, high-intensity intervention for children with co-occurring developmental disabilities/delays and behavior problems delivered the summer before children enter kindergarten. The 24 curriculum-based therapeutic playgroups sessions focus on literacy, social skills, and self-regulation. In addition, eight parent workshops focus on parent involvement in early literacy and positive parenting. Research Design and Methods: In the original study, 209 preschool children with developmental disabilities and behavior problems were randomly assigned to the KITS condition or the control condition in four annual cohorts. They were assessed in the spring prior to kindergarten, immediately prior to kindergarten entry, twice in kindergarten, and the in spring of Grade 1. Since that time, data has also been collected on Grade 2 and, for some cohorts, later elementary school grades. In the current study, follow-up child and family outcome data will be collected in Grade 5 for the second cohort, Grades 4 and 5 for the third cohort, and Grades 3 through 5 for the fourth cohort. The research team will examine whether children in the intervention group demonstrate improved academic competence, social-emotional functioning, and positive teacher-student relationships through elementary school compared to the control group. In addition, the team will examine whether the impact of the intervention on student outcomes will be mediated by child school readiness and positive parenting, or moderated by characteristics of the child, family, school, or other services. Finally, the research team will examine the incremental costs of KITS compared to services as usual, hypothesizing that the cost per unit of improvement in child outcomes will be lower for the KITS group than the control group. Control Condition: At the time when the KITS program was implemented for the treatment group (the summer before and during the first 6 weeks of kindergarten), children in the control group received any early childhood special education service they would have typically received. Key Measures: Child outcome measures, taken at various points in time during the longitudinal study, will include a variety of sources and formats. Measures of academic skills and achievement include direct child assessments (state assessment of math and reading performance, curriculum-based measures of literacy from school records, and several subtests of the Woodcock-Johnson III-NU), teacher report on academics, and parent report on school adjustment. Behavioral and emotional regulation, and related skills, will be measured through school records of discipline referrals; parent and teacher reports using the Child Behavior Checklist, Conner's Rating Scales-Revised, and Behavioral Rating Inventory of Executive Function; and direct child assessments including the Seattle Personality Questionnaire and inhibition tasks. Social competence will be measured through parent and teacher reports on the Social Skills Improvement System, Walker-McConnell Scales of Social Competence, and School Adjustment-Elementary Version, and children's self-report on loneliness and social adequacy. Teachers will report on the Student Teacher Relationship Scale and students will report on the Teacher Student Relationship Inventory. Finally, mediators will include outcome assessments from earlier time points in the original study, and moderators will include assessments from the original study, ongoing family questionnaires and interviews, and measures of current teachers' instructional practices and self-efficacy. Data Analytic Strategy: Data on the long-term effects of the randomized controlled trial will be analyzed using a variety of approaches, including analysis of variance, regression, and latent growth modeling. A structural equation modeling framework will be used to examine hypothesized mediators and moderators. Project website: http://www.kidsintransitiontoschool.org/ Related IES Projects: A Randomized Efficacy Trial of the Kids in Transition to School (KITS) Program for Children with Developmental Disabilities and Behavioral Problems (R324A080026); A Randomized Efficacy Trial of the Kids in Transition to School (KITS) Program to Improve the School Readiness of Children in Disadvantaged Communities (R305A120391) Publications Journal article, monograph, or newsletter McDermott, J. M., Pears, K. C., Bruce, J., Kim, H. K., Roos, L., Yoerger, K. L., and Fisher, P. A. (2017). Improving Kindergarten Readiness in Children with Developmental Disabilities: Changes in Neural Correlates of Response Monitoring. Applied Neuropsychology: Child: 1–13. doi:10.1080/21622965.2017.1286239

EMT en Español: Comprehensive Early Intervention to Support School Readiness Skills for Spanish-Speaking Toddlers with Language Delays

Kaiser, Ann

Efficacy

R324A190177

5 years (07/01/2019-06/30/2024)

Co-Principal Investigator: Peredo, Tatiana Purpose: The goal of this study is to examine the efficacy of EMT en Español, a cultural and linguistic adaptation of Enhanced Milieu Teaching (EMT), to improve the language and related school readiness skills of young Spanish-speaking children with receptive and expressive language delays. Early language delays impact children's later communicative, social, behavioral, and academic skills and put children at risk for persistent language impairment. Therefore, early language intervention, particularly intervention utilizing caregivers to provide language development support for their children in the home, is crucial. Yet, there is limited research on such interventions for Spanish-speaking children with language delays and applications of current evidence-based intervention are likely limited due to linguistic and cultural differences. This project aims to provide needed research on early language intervention with this population. EMT is an existing naturalistic communication intervention that has demonstrated efficacy with English-speaking toddlers. Pilot data suggest that the Spanish adaptation, EMT en Español, leads to improvements in caregiver-child communication during interactions, increases linguistic input to facilitate language learning, and improves the diversity and rate of child talk. In the current project, the research team will investigate the efficacy of EMT en Español to improve children's immediate and longer-term expressive and receptive language skills as well as caregivers' use of natuaralistic language teaching strategies. They will also explore the effects of the intervention on children's language and related school readiness skills, examine the long-term effects of the intervention on cross-linguistic (English and Spanish) outcomes, and calculate the cost-effectiveness of the intervention. Project Activities: In this project, the research team will examine the efficacy of EMT en Español using a randomized controlled trial, with child-caregiver dyads randomized into intervention and control groups. Assessments of children and caregivers will be collected before the intervention begins, immediately after the intervention ends, and at 6-month and 12-month follow-up time points. Analyses will examine the impact of the intervention on observed vocabulary during child-caregiver interactions, standardized child expressive and receptive language assessments, parent implementation of intervention strategies with their child in natural contexts, and later school readiness outcomes, including various language skills and executive functioning. Products: The primary product of this project will be evidence of the efficacy of EMT en Español for young Spanish-speaking children with receptive and expressive language delays. The project will also result in a final dataset to be shared, peer-reviewed publications and presentations, and additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: The study will take place in homes and community settings where early intervention programs, funded by Part C of the Individuals with Disabilities Education Act (IDEA), take place in Tennessee. Sample: Participants will include 84 children aged 30-36 months and their Spanish-speaking caregivers. Children will demonstrate expressive and receptive language delays, with no additional disability, and come from low-income families. Intervention: EMT en Español is the Spanish linguistic and cultural adaptation of Enhanced Milieu Teaching (EMT), a naturalistic language intervention that promotes the use of new language forms using environmental arrangement, responsive interaction strategies, language modeling and expansions, and systematic prompting procedures to teach functional spoken language. Therapists work with children and teach caregivers communication, interaction, and language support strategies, as well as specific book-sharing strategies. EMT en Español is provided in Spanish and includes cultural adaptations for Spanish-speaking children and families. The selection of language targets will follow typical Spanish language rules and development (for example, taking into account that Spanish-speaking children acquire verb use and different inflections earlier than English-speaking children). There will be a total of 36 sessions, half consisting of the therapist working directly with the child and half focused on caregiver training. Research Design and Methods: The intervention will be evaluated through a randomized controlled trial in which child-caregiver dyads are randomized into the intervention or control group. Both groups will continue to receive their usual services, but the intervention group will have services supplemented with the EMT en Español. Therapists from the research team will provide participants in the intervention group with 36 sessions of EMT en Español over a period of 6 months. The research team will collect child and caregiver assessment data at baseline, the end of the intervention, 6 months after intervention, and 12 months after intervention. Data on therapists' fidelity of implementation will also be collected during the intervention period. The data collected will address the primary research questions about the effects of the intervention on expressive and receptive vocabulary during interactions and story retell; the effects on caregiver use of intervention strategies, such as use of more rich language targets; and whether caregiver strategy use mediates the impact of the intervention on children's outcomes. They will also be used to investigate longer-term effects on children's language and related school readiness skills, including executive functioning, and on English as well as Spanish language skills. The relative costs and benefits of the intervention will also be investigated. Family enrollment into the study will occur on a rolling basis over the first 4 years of the project, follow-up data will be collected throughout the study, and final data analyses will occur in the final year. Control Condition: Families in the control condition will receive their current business-as-usual early intervention services, if any. These may include the state's Part C program, Early Head Start, or no services. Key Measures: For child language outcomes, the research team will use an adult-child interaction observational measure, standardized English-Spanish bilingual versions of the Receptive One Word Picture Vocabulary Test and Expressive One Word Picture Vocabulary Test, and a narrative retell task in both Spanish and English. In addition, because it's only normed for older ages, the Bilingual English Spanish Assessment will be used at the 12-month follow up to examine phonology, morphosyntax, and semantics in both languages. For executive functioning, the research team will use the Behavior Rating Inventory of Executive Function-Preschool Version Spanish and direct child assessments, including the snack delay and Head-Shoulder-Knees-Toes task. Measures that will be used to screen children for eligibility include the Leiter-R and Preschool Language Scale-5th Edition Spanish. Fidelity of implementation will be measured by coding videotaped intervention sessions to capture therapist use of EMT en Español while interacting with the child, therapist teaching of the intervention strategies to caregivers, and caregiver use of intervention strategies during daily routines, play, and book sharing. A risk index for each child — to be used as a covariate in analyses — will be calculated based on caregiver-reported demographic information such as family composition, caregiver education, and household income, as well as a maternal depression scale. Data Analytic Strategy: Multivariate regression analyses will be used to examine the immediate and longer-term impact of EMT en Español on children's language skills during caregiver-child interactions, children's narrative retell, and caregivers' use of naturalistic language teaching strategies. Researchers will also use regression analyses to explore whether the intevention moderates the relationship between baseline Spanish expressive vocabulary skills and both their Spanish and English expressive vocabulary skills at follow up. To examine whether parent use of intervention strategies mediates the impact of the intervention at follow up, the research team will use mediation analysis with bootstrapping. To explore long-term effects of the intervention on school readiness skills (including standardized language assessments and executive functioning), the research team will use latent growth modeling and multivariate regression. Finally, the ingredients method will be used to analyze implementation costs and cost-effectiveness ratios will be calculated based on implementation costs and the effects of the intervention on primary outcomes. Related Projects: An Efficacy Trial of Milieu Teaching Language Intervention in Preschoolers with Language Disorders (R324A090181); An Efficacy Trial of J-EMT: Enhanced Milieu Teaching Language Intervention plus Joint Attention, Engagement and Regulation Intervention for Toddlers with Autism (R324A150094)

LEAP Sustainability: Exploring Malleable Factors that Predict Teachers' Initial and Long-Term Fidelity

Strain, Phillip

Exploration

R324A170152

4 years (9/1/2017–8/31/2021)

Previous Award Number: R324A170067 Previous Institution: University of Colorado, Denver Purpose: The purpose of this study is to explore factors (e.g., preschool center policies, staff buy-in, family involvement) that are related to teachers' initial and long-term fidelity of implementation of the LEAP Preschool Model (LEAP), an intensive, inclusive intervention for children with autism spectrum disorders (ASD). One of the greatest challenges in the field of early intervention is closing the gap between what is known about effective instructional practices for preschool children and the implementation and sustained use of those practices in preschool and beyond. This project aims to capitalize on the wide-scale adoption of LEAP and the existence of programs that have been implementing LEAP for over 25 years to better understand factors that influence teachers' initial and sustained fidelity of LEAP implementation and how fidelity is related to improvements in children's outcomes. The anticipated findings are expected to inform the development of a systems-level intervention to enhance preschool teachers' initial implementation and sustainability of research-based practices used in the LEAP model and other similar models for preschool children with ASD. Project Activities: The research team will explore relations between a set of malleable factors hypothesized to be related to sustainability (e.g., preschool center policies, staff buy-in, family involvement) and teachers' initial and sustained fidelity of implementation of LEAP and relations between fidelity and outcomes for preschool children with ASD. The study will be conducted in two phases. Phase 1 will involve collecting data on LEAP fidelity and malleable factors hypothesized to predict sustainability and conducting psychometric analyses on the measure of malleable factors. Phase 2 will focus on conducting analyses to determine which malleable factors are associated with teachers' initial and sustained fidelity of implementation of LEAP and whether fidelity of LEAP implementation is associated with child outcomes. Products: The products of this study will include preliminary evidence of an association between a key set of malleable factors and teachers' initial and sustained fidelity of implementation of the LEAP model and an association between fidelity of LEAP implementation and child outcomes. Products will also include peer-reviewed publications and presentations. STRUCTURED ABSTRACT Setting: Data collection will take place in inclusive early childhood special education preschool classrooms in public schools across Florida, Colorado, Pennsylvania, Iowa, Oregon, New Jersey, Utah and, Texas. Sample: This study will include 120 preschool classrooms with lead teachers that have been implementing LEAP for at least 1 year and up to 26 years and 30 additional preschool classrooms and lead teachers that will begin LEAP implementation in the first year of the study (for a total of 150 classrooms and teachers). Approximately 430 3-year-old children with ASD will be randomly selected from participating classrooms for inclusion in the study. Intervention: The research team is examining LEAP, a preschool inclusion model that promotes teachers' use of research-based strategies for children with ASD. The focus is on LEAP as a model because it consists of evidence-based practices that may be present in similar models. Teacher training in LEAP includes 2-week intensive teacher professional development, written presentations, discussions, observations, feedback, evaluation, follow-up training, and on-site support from LEAP staff. LEAP also includes a parent skills training component aimed at teaching parents to use communication skills with their child in naturalistic contexts and decreasing family stress. Research Design and Methods: The research will be conducted in two phases. Phase 1 involves collecting data on LEAP fidelity and malleable factors hypothesized to relate to sustainability among classes that are just beginning LEAP implementation as well as those that have implemented LEAP for at least 1 year. Data will primarily be used to examine the factor structure and establish the reliability of the measure of malleable factors across a large and diverse sample of sites in order to prepare for additional analyses using this measure in Phase 2. This measure assesses contextual and practice factors expected to relate to program sustainability, including (1) functional leadership team, (2) staff readiness and buy-in, (3) family involvement, (4) strategies for promoting program-wide implementation, (5) adoption of core LEAP features, (6) procedures for individualization, (7) staff capacity building, (8) monitoring implementation fidelity, and (9) personnel policies and fiscal support. Since there is no similar existing measure, the Phase 1 activities are necessary in order to address the primary research questions in the next phase. In Phase 2, researchers will use data from Phase 1 and collect additional fidelity data and data on the malleable factors related to sustainability to investigate whether these malleable factors are associated with teachers' initial and sustained fidelity of implementation of LEAP. In addition, approximately 430 children with ASD will be randomly selected from a subset of Phase 1 classrooms to provide data across 2 years. These data will be utilized to explore whether fidelity of LEAP implementation is associated with improvements in child outcomes. Control Condition: Due to the nature of this research, there is no control condition. Key Measures: The LEAP Sustainability Measure (LEAP-SM) will be used to assess malleable factors related to program sustainability. Researchers will interview one administrator and the lead teacher at each site to complete the LEAP-SM. Researchers will use the LEAP Quality Program Indicators (LEAP-QPI) to assess teachers' initial and sustained fidelity of implementing LEAP. Child outcomes will be assessed usingthe Childhood Autism Rating Scale, Social Skills Improvement System and the Preschool Language Scale. Data Analytic Strategy: In Phase 1, confirmatory factor analysis will be used to test the LEAP-SM reliability and stability of the factor structure over time. Correlational analyses will be conducted in Phase 1 to examine relations among years of implementation, fidelity, and malleable factors. In Phase 2, structural equation modeling, regression analyses, and hierarchical linear modeling will be used to explore the relations among malleable factors, years of implementation, teacher fidelity, and child outcomes. Related Projects: LEAP - USA (Using Science-Based Approaches) (R324E060068); LEAP–USA Follow-up Project (R324A110246)

Training Teachers to Teach Vocabulary (T3V): A Professional Development Intervention for Toddler and Preschool Teachers Serving Children at Risk for Communication Difficulties

Hindman, Annemarie

Development and Innovation

R324A180192

4 years (07/01/2018-06/30/2022)

Co-Principal Investigators: Wasik, Barbara A.; Snyder, Patricia Purpose: The purpose of this project is to develop Training Teachers to Teach Vocabulary (T3V), a professional development (PD) intervention to support early childhood classroom teachers in using evidence-based instructional practices to improve vocabulary knowledge among young children at risk for communication difficulties (CD). Vocabulary development is a key predictor of children's success in learning to read and in school more generally. Although research has identified effective teaching practices that educators can use to support vocabulary development for children at risk for CD, many teachers lack the knowledge and skills to implement these teaching practices. To address this research-to-practice gap, the current project will develop an intervention that trains teachers to implement vocabulary instruction within multi-tiered systems of support and is intended to improve the vocabulary development of young children at risk for CD. Project Activities: In Year 1, the research team will develop and revise the initial version of T3V based on feedback from an advisory board, field testing with early childhood classroom teachers, and suggestions from consultants. A series of feasibility studies will be conducted in Years 2 and 3 to determine whether the intervention can be implemented with fidelity and whether teachers and children demonstrate changes in target outcomes. In Year 4, a small randomized controlled trial will be conducted to test the promise of T3V for changing teacher knowledge and practice around vocabulary instruction, as well as the vocabulary skills of children at risk for CD. Products: This project will result in a fully developed professional development intervention to support toddler and preschool teachers in using evidence-based vocabulary instructional practices for young children at risk for CD. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in Early Head Start and Head Start centers in urban areas in Maryland. Sample: In Years 1-3, approximately 24 teachers and 32 children (ages 24-66 months) at risk for CD will participate in the iterative development process. For the Year 4 pilot study, 40 teachers (including both Early Head Start and Head Start teaching teams) and 60 children at risk for CD will participate. Intervention: T3V will combine two effective PD models: Exceptional Coaching for Early Language and Literacy (ExCELL), which is designed to improve teachers' Tier 1 vocabulary instruction, and practice-based coaching, which is designed to improve teaching practices at Tiers 2 and 3 for children with or at risk for disabilities. The PD will be delivered to teachers over the course of the year and will include group workshops that explain vocabulary teaching practices and individualized coaching to help teachers use the practices in their classrooms. T3V will also provide lesson guides that explicitly show how to use the teaching practices in daily classroom activities and an online child progress monitoring tool that allows teachers to assess vocabulary learning among children at risk for CD in order to differentiate instruction. Finally, T3V will include tools for training coaches. Research Design and Methods: Year 1 will involve the initial development and revision of T3V. Specifically, the research team will develop first drafts of the PD components, solicit feedback from the advisory board (comprised of expert teachers and education coordinators), and revise the PD based on feedback. The research team will then conduct two rounds of field testing with teachers and gather data on what works and what could be improved to inform revisions. Expert consultants (researchers with expertise in early language intervention) will review the revised PD and provide feedback on the content, usability, feasibility, and quality of all components. This feedback will guide a final revision of the components before Year 2. In Years 2 and 3, feasibility studies will be conducted to determine whether T3V can be implemented with fidelity and to determine whether participating teachers and children demonstrate changes in target outcomes. In Year 4, a small randomized controlled trial will be conducted to test the promise of T3V for changing teacher knowledge and practice around vocabulary instruction, as well as the vocabulary skills of children at risk for CD. One classroom in each center will be randomly selected and matched with another classroom in the sample (in another center) led by teachers with similar levels of education and experience. One classroom per pair will be randomly assigned to the intervention or control condition. Outcome data will be collected at pre-test and post-test, and fidelity data will be collected throughout the year. Data will be analyzed to determine the promise of T3V for improving teacher and child outcomes and to explore whether intervention effects are equivalent across Early Head Start and Head Start. Control Condition: For the Year 4 pilot study, teachers in the control group will receive their program's typical PD and provide business-as-usual instruction to the children. Key Measures: To screen for eligibility and identify children at risk for CD, the research team will use the Preschool Language Scales-5 to assess children's oral language skills and the Kaufman Assessment Battery for Children-II (with children in Head Start only) to assess cognition. Child outcome measures will include the Peabody Picture Vocabulary Test-IV to measure receptive vocabulary, the Expressive One-Word Picture Vocabulary Test-4 to measure expressive vocabulary, the MacArthur-Bates Communicative Development Inventories to assess parent- and teacher-reported vocabulary, and progress monitoring measures to assess children's knowledge of taught words. Teacher outcomes of knowledge of instructional practices and their readiness for change will be assessed using measures developed for this project. Additionally, teachers' instructional quality will be assessed using the Classroom Assessment Scoring System (CLASS)-PreK Instructional Support domain in Head Start classrooms and the CLASS-Toddler Engaged Support for Learning domain in Early Head Start classrooms. Fidelity of teaching practices and fidelity of coaching will be assessed using researcher-developed measures. Data Analytic Strategy: Data from the initial development activities will be analyzed descriptively to inform revisions to the intervention. Data from the feasibility studies will also be analyzed descriptively to explore whether there are changes in fidelity over time. In addition, the research team will compare pre- and post-test scores on outcome measures using t-tests to determine the significance of any gains. Data from the pilot study will be analyzed using multiple regressions to determine the impacts of T3V on teacher and child outcomes. Differences in outcomes for Early Head Start versus Head Start classrooms will also be explored by including interactions in the regression models.

A Conceptual Efficacy Replication of the TELL Preschool Curriculum with Web-Based Implementation Support and Professional Development Variations

Wilcox, M. Jeanne

Replication Efficacy

R324A190181

5 years (08/01/2019-07/31/2024)

Co-Principal Investigators: Gray, Shelley; Reiser, Mark Purpose: The purpose of this project is to investigate the efficacy of the Teaching Early Literacy and Language (TELL) curriculum when professional development (PD) support is delivered through a web-based platform with variations on the number of specific PD components. TELL and its associated PD was developed by the research team to address the needs of preschool-aged children with developmental speech and/or language impairment. The initial efficacy trial showed improvements in a variety of language and early literacy skills. However, because all teachers participated in all PD activities, it was not possible to determine whether every component is needed. To increase the efficiency and cost-effectiveness of the intervention, this study will transfer some in-person PD components to the web and examine whether there are significant differences in children's language and literacy outcomes based on the number of PD components teachers receive. In addition to investigating the impact on teacher fidelity and classroom and child outcomes, the study will examine whether different types of implementation fidelity (adherence, dose quality) and child- and teacher-level factors affect the impact of the TELL PD on child outcomes, the cost effectiveness of the intervention, and the implementation supports that are needed and preferred by teachers. Project Activities: This study will compare three versions of PD for the TELL curriculum with varying numbers of components. In Year 1, the research team will conduct activities to prepare the intervention for use and recruit and train the first cohort of teachers. In Years 2 through 4, each of the three cohorts will receive the assigned PD activities and implement TELL in their classrooms. Data will be collected from all study participants during those years. In the final year, the researchers will analyze the data and disseminate the results. Products: Products for this project include evidence of the comparative efficacy and cost-effectiveness of three versions of the TELL curriculum for preschool children with developmental speech and/or language impairment. The project will also result in a final dataset to be shared, peer-reviewed publications and presentations, and additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: This research will take place in pre-kindergarten programs operated by school districts in Arizona that include children eligible for education services for speech and language impairment under Part B of the Individuals with Disabilities Act (IDEA). Sample: Participants in this study will include 108 pre-kindergarten teachers who have experience teaching in a classroom with children with disabilities and approximately 540-648 children (5-6 children per class). The children will be in their final year of pre-kindergarten (primarily age 4) receiving IDEA Part B services for developmental speech and/or language impairment as a primary or secondary condition. Intervention: TELL is a class-wide curriculum with evidenced-based oral language and early literacy teaching practices that can be embedded into any preschool activity, such as small or large group instruction and outdoor play. Lesson plans are designed for embedding the practices into different content areas, including science, math, art, music, movement, and social-emotional development. In this study, there will be comparisons among three variations of PD for implementing TELL with fidelity. In addition, some PD activities that had been implemented in-person in previous studies will now occur online. The standard PD group will receive face-to-face training during a workshop approximately 2 months prior of the start of the school year and an additional face-to-face training after the winter break. The ModPD condition will receive the standard training plus monthly participation in professional learning communities through videoconferencing. The MaxPD condition will receive the standard training, participate in the professional learning communities, and receive 12 individual coaching sessions from external coaches. For coaching, teachers will upload videos of their own implementation, the coaches will provide annotated feedback on the videos, and they will meet to discuss the video via videoconferencing. Research Design and Methods: The researchers will use a randomized controlled trial with three different conditions, each with a varying number of PD components for the TELL intervention—standard PD, ModPD, and MaxPD. Random assignment will occur at the school level, with classrooms nested within schools. In Year 1, the research team will prepare to implement the intervention for the RCT, including printing and packaging the curriculum, acquiring all the needed materials, preparing additional support materials, and transferring the PD content that had been delivered face-to-face to the web-based system. In addition, the research team will recruit teachers for the first cohort and conduct the initial workshop. In Year 2, the first cohort will implement the intervention in their classrooms, participate in their respective PD activities, and participate in data collection. In Years 3 and 4, the second and third cohorts, respectively, will participate. In Year 5, the researchers will analyze the data and engage in dissemination activities. The researchers will examine whether there are significant differences in children's language and literacy outcomes based on the number of PD components teachers receive, as well as whether child outcomes are affected by different types of implementation fidelity, teacher and classroom outcomes, and other child characteristics. A cost analysis and cost-effectiveness analysis will also be conducted and compared across each version of the intervention. As part of the implementation study, the research team will collect additional survey and qualitative data to create different classroom implementation profiles, adjust them based on individual teachers, and generate hypotheses about what drives implementation. Control Condition: Although all PD versions will be compared to one another, the primary counterfactual condition is the TELL with standard PD, which includes the initial workshop and follow-up sessions only. Key Measures: Child outcome measures include investigator-developed curriculum-based measures, which assess receptive and expressive vocabulary, letter names, letter sounds, beginning sound awareness, narrative listening comprehension, expository book comprehension, and print knowledge. Standardized assessments will also be used to measure child outcomes, including the Clinical Evaluation of Language Fundamentals Preschool-2nd Edition (CELF-P2), the Preschool Print and Word Awareness Test, and the Preschool Early Literacy Indicators. Parents will complete a family demographic questionnaire as well as the CELF-P2 parent questionnaire to provide information about their child's language and literacy development. Teacher measures include standardized surveys to assess knowledge, beliefs about literacy preschool instruction, and self-efficacy; qualitative data from interviews and portfolios; a demographic survey; and ratings of school district implementation support and usefulness of each of the TELL PD activities. The researcher-developed fidelity measure covers frequency, dose, and quality of language and literacy instruction during TELL-structured learning opportunities, based on observation of classroom videotapes submitted by teachers. Overall classroom quality will be assessed with the Classroom Assessment Scoring System (CLASS) and language and the literacy environment will be assessed with the Early Language and Literacy Classroom Observation-Revised. Finally, costs associated with implementing each PD component, as well as combinations of components, will be calculated. Data Analytic Strategy: For the primary comparisons of outcomes between PD versions, the researchers will use a linear mixed-modeling analysis of covariance (ANCOVA) and growth curve modeling. To examine whether differences in children's outcomes are affected by different aspects of teacher implementation, they will use multi-level models. To examine what child, instructional, or teacher characteristics may moderate or mediate the impact of the intervention on child outcomes, they will use interaction terms within the ANCOVAs. They will examine differences in classroom quality and teacher implementation fidelity using multivariate ANCOVA. Teacher factors—such as self-efficacy and literacy instruction beliefs—will be investigated with multivariate regression models. Implementation supports preferred by and most effective for teachers will be described by integrating qualitative and quantitative data and creating classroom implementation profiles. Cost-effectiveness will be investigated by generating benefit-to-cost ratios for all three conditions. Related Projects: The Development and Efficacy of a Curriculum-Based Language and Early Literacy Intervention for Preschool Children with Developmental Disabilities (R324E060023); Efficacy Trials with a New Early Literacy and Language Curriculum for Preschool Children with Developmental Speech and/or Language Impairment (R324A110048); Efficacy of the TELL Curriculum for Preschool Children who are Economically Disadvantaged (R305A170068); Developing an Extension of the TELL Curriculum for 3-Year-Old Children with Developmental Speech and/or Language Impairment (R324A180093)

A Model of Professional Development that Focuses on the Centrality of Teacher-Child Interactions in the Learning, Behavior, and School Readiness of Preschool Children with Disabilities or At-Risk for Disabilities

Hester, Peggy

Development and Innovation

R324A160277

3 years (7/1/2016-6/30/2019)

Co-Principal Investigators: Ginger Watson and Sabra Gear Purpose: The purpose of this project is to develop a model of professional development that focuses on the teacher-child interactions of preschool teachers and children with or at risk for disabilities in inclusive classrooms. Previous research has demonstrated the critical role that teacher-child interactions play in young children's outcomes. Further, research has demonstrated the importance of coaching with feedback and evaluation for supporting teachers in their transfer of knowledge to classroom skills. This intervention focuses on both content — the affective, behavioral, and cognitive supports for child learning and behavior provided through teacher-child interactions — and the process of professional development to facilitate teacher implementation in the classroom in order to enhance children's social, behavioral, and academic readiness for school. Project Activities: The research team will iteratively develop a model of professional development aimed at improving behavioral and academic outcomes of children with or at risk for disabilities. In the first 2 years, the research team will develop the intervention content (i.e., affective, behavioral, and cognitive (ABC) support strategies) to support child learning and behavior as well as process components (i.e., web-based simulations, coach use of ABC strategies, and the use of real-time cyber coaching and feedback via Skype and Bluetooth technology) to support teacher learning of skills and implementation of strategies in the classroom. The researchers will also collect data on coach, teacher, and child behaviors to evaluate the usability, feasibility, and fidelity of the intervention implemented by preschool teachers as well as to identify factors associated with model implementation and sustainability. These will inform development of the professional development model leading up to the pilot study in Year 3, during which the researchers will use single-case design to evaluate the model's promise for improving behavioral and academic outcomes. Products: The products of this project include a fully developed professional development intervention for preschool teachers of children with or at risk for disabilities focused on teacher-child interactions; evidence of the intervention's feasibility and promise for improving child behavioral and academic outcomes; and peer-reviewed publications and presentations. Structured Abstract Setting: The study will take place in preschool programs in an urban area of Virginia. Sample: In Years 1 and 2, six preschool teachers will participate in the initial development of training simulations and coaching protocols. One supervisory teacher (coach) and nine preschool teachers, three per classroom, will participate in the pilot study in Year 3. Across all years of the study, at least two 3- to 5-year-old children with or at risk for a disability and two typically developing peers will be recruited for each participating teacher. Intervention: The intervention will focus on high-quality teacher-child interactions and supports teachers need to effectively implement intervention strategies aimed at enhancing academic and behavioral outcomes for children with or at risk for disabilities. The intervention has two main components: content and process. The content component is comprised of three types of supports (collectively referred to as ABC supports) for child learning through teacher-child interactions: (1) affective supports (strategies for developing an affirmative/responsive relationship), (2) behavioral supports (reinforcement and modeling strategies to shape behavior), and (3) cognitive supports (strategies that help children develop higher-order thinking skills, such scaffolding). The process component is comprised of the ABC supports that teachers need to implement these strategies in the classroom with fidelity. To obtain these supports, teachers will be trained initially in web-based virtual environments followed by real time cyber-coaching using Skype and Bluetooth technology to support teacher implementation of the strategies in the classroom. Research Design and Methods: In Years 1 and 2, the research team will use an iterative process to develop the intervention components (content and process) and examine feasibility. Across these 2 years, seven simulations through virtual environments will be developed and tested with teachers. After a teacher masters a simulation, that teacher will move to implementation in the classroom with cyber-coaching before moving on to the next simulation. The teachers will begin this process at different times so that feedback from each teacher can be used to revise the simulation and coaching for testing with subsequent teachers. During the development phase, research staff will serve as the coach. Regular feedback from a focus group (comprised of site directors and teaching staff at all levels) will also be used in this iterative process. In Year 3, the intervention will be pilot tested using a single-case multiple baseline design across ABC strategies within each intervention component (i.e., simulations and cyber-coaching) to examine teacher and child outcomes. During the pilot study, a supervisory teacher will serve as the coach. Control Condition: In the pilot study, participants (teachers, students, and coach) will serve as their own control through the use of a baseline phase within a single-case research design. Key Measures: Children will be initially screened for participation using a teacher survey of communication and language, behavior difficulties, developmental level of learning, and parent-child interactions. Those found to have delays in at least one area will continue screening using standardized tests — Developmental Indicators for the Assessment of Learning, Child Behavior Checklist, and Social Skills Improvement System. Focus groups will be videotaped and transcribed. Outcomes will be measured through a large variety of assessments and sources. The Multiple Option Observation System for Experimental Studies (MOOSES) will be used to measure teacher variables (i.e., supports they provide to children), coaching variables (i.e., fidelity, intervention and coaching strategies), and child outcomes (affective, behavioral, and cognitive/language outcomes). Child outcomes will also be measured using a variety of standardized measures, including those used for screening, Denver Development Screening Test, Individual Growth and Development Indicators, Preschool Language Scale–Fourth Edition, and Phonological Awareness Literacy Screening. Teacher outcomes also include questionnaires (e.g., teacher knowledge and skills) and data generated from the computer-based training modules. Teacher-child interactions will be observed using the Individualized Classroom Assessment Scoring System (inCLASS). Data Analytic Strategy: Audiotapes of the focus groups will be transcribed and coded for feedback on the intervention components during the iterative development process using a combination of typical case sampling (identifying the most common support scenarios) and intensity sampling (identifying features of each teacher-child interaction that exemplify successful and unsuccessful interventions). For the pilot study, single-case design studies will be analyzed using visual analysis and calculation of effect sizes.

A Parent-Directed Multimedia Early Intervention Tool to Improve Outcomes in Underserved Children who are Deaf or Hard of Hearing

Suskind, Dana

Development and Innovation

R324A110122

3/1/2011–2/28/2014

Purpose: Hearing loss is the most common birth abnormality, occurring in approximately 1–2 newborns per 1,000 births. Recent medical advances (e.g., cochlear implants/digital hearing aids) have brought auditory access to children with hearing loss, often at an early age. These advances have been associated with significantly improved academic achievement. However, children of low socio-economic status (SES) have continued to demonstrate significantly poorer outcomes, even with auditory access. Evidence suggests that this SES disparity may be due to a lack of critical rehabilitative services, especially in the early intervention (EI) system, including programs to enhance parental skills in supporting their children's listening and language development. To address this need, the research team for this study is developing a provider-guided, parent-directed multimedia intervention called Project ASPIRE (Achieving Superior Parental Involvement for Rehabilitative Excellence). The goal is to develop a standardized EI curriculum for providers to guide parents of children who are deaf or hard-of-hearing (D/HH) in becoming effective collaborators in their children's rehabilitation. The intervention is intended to improve listening and language, and ultimately the educational success, of students of low SES. Project Activities: The research team will conduct three primary activities: develop the Project ASPIRE curriculum guide and multimedia program; assess the feasibility of implementation with early intervention professionals, parents, and children who are D/HH; and conduct a pilot study of the entire intervention to assess the promise of the intervention in improving parent and child outcomes related to language and literacy. Products: Products will include a fully developed multi-media intervention with a curriculum guide for EI practitioners; data on the feasibility of the use of the intervention with low SES parents and children; and evidence of the potential impact of Project ASPIRE on parents' knowledge and behavior and on children's listening, language, and literacy outcomes. Additionally, products will include reports and presentations on the project. Structured Abstract Setting: The field test of the intervention will be conducted in participants' homes in Illinois. Population: The sample for the iterative intervention development will consist of racially and ethnically diverse parents of low SES and their 12- to 36-month-old children who are deaf or hard of hearing. Early interventionists who work with this population will also be included in the iterative development of the ASPIRE curriculum. Intervention: Project ASPIRE is a 9-week, listening and spoken language curriculum that incorporates formal instructional design strategies. With the aid of a curriculum guide, EI providers will lead parents through the intervention. The multimedia modules will incorporate animation and video of parents to transmit knowledge and skills so that parents may best help their children attain language and literacy. Parents will receive feedback via a language processor worn by the child that collects and analyzes data on the child's language environment, including parent-child interactions, which will help them modulate their language production. Research Design and Methods: Project ASPIRE collaborators have developed a 'best-practices' curriculum that will serve as the basis for this project. In a three-stage process, the curriculum will be translated into modules consisting of a multimedia DVD and accompanying curriculum guide. In Stage 1, the curriculum will be adapted into modules that consist of a provider manual, storyboard, and script for animation and parent video. Principles of learning, instructional design, motivation, and presentation will guide module development. Stage 2 will be devoted to generating the multimedia content (i.e., animation, parent videos) and conducting a preliminary pilot on the first three modules. Stage 3 will be a pilot test in which families will be randomly assigned to Project ASPIRE and control conditions. Control Condition: The control condition for the pilot study is a "business as usual" condition. Families in this group will receive the services that are typically provided through their early intervention programs. Key Measures: During each phase, testing for acceptability, feasibility, changes in parent knowledge and behavior, and EI feedback will be used in the iterative development of the intervention. Pilot testing will include quantitative and qualitative assessments of parent and child behavioral outcomes. Key outcomes will include parent language output, conversational turns, child vocalizations, child speech imitation, and child language ability. Parents' knowledge of concepts covered in the curriculum and fidelity of implementation will also be assessed. Data Analytic Strategy: The analytic approach will involve qualitative and quantitative analysis of feasibility, acceptability, and parent change data to inform iterative development efforts. Data from the full-scale pilot will be analyzed using an interrupted time series design that will allow the research team to model children's growth as a function of time and maturation. The analysis will assess the effects of participation in the Project ASPIRE intervention using outcome measures collected for parents and children at multiple time points in both the control and experimental condition. Separate analyses will be carried out for parents and children. Repeated measures analysis of variance will be carried out on data collected only at pre- and posttest. Publications Book Suskind, D., Suskind, B., and Lewinter-Suskind, L. (2015). Thirty Million Words: Building a Child's Brain. New York: Dutton. Journal article, monograph, or newsletter Leffel, K.R., and Suskind, D.L. (2013). Parent-Directed Approaches to Enrich the Early Language Environments of Children Living in Poverty. doi:10.1055/s-0033–1353443 Suskind D., Leffel, K.R., Hernandez, M.W., Sapolich, S.G., Suskind, E.S., Kirkham, E., and Meehan, P. (2013). An Exploratory Study of ‘Quantitative Linguistic Feedback': Effect of LENA Feedback on Adult Language Production. Communication Disorders Quarterly, 34: 199–209. doi:10.1177/1525740112473146 Suskind, D. L., Graf, E., Leffel, K. R., Hernandez, M. W., Suskind, E., Webber, R.,Tannenbaum, S., and Nevins, M. (2016). Project ASPIRE: Spoken Language Intervention Curriculum for Parents of Low-socioeconomic Status and Their Deaf and Hard-of-Hearing Children. Otology & Neurotology, 37(2): e110–e117. doi:10.1097/MAO.0000000000000931 Suskind, D., Leffel, K., Graf, E., Hernandez, M., Gunderson, E., Sapolich, S., Suskind, E., Leininger, L., Goldin-Meadow, S., Levine, S.C. (2015). A Parent-Directed Language Intervention for Children of Low Socioeconomic Status: A Randomized Controlled Pilot Study. Journal of Child Language, 43(2): 366–406. doi:10.1017/S0305000915000033? Suskind, D.L., Suskind, E., Sapolich, S., Leffel, K., Repplinger, L., Shay, S., Sacks, C., and Singh, N. (2014). Pilot Testing of a Parent-Directed Intervention (Project ASPIRE) for Underserved Children who are Deaf or Hard of Hearing. Child Language Teaching and Therapy, 30(1). doi:10.1177/0265659013494873

A Randomized Controlled Trial of Prevent-Teach-Reinforce for Young Children

Dunlap, Glen

Efficacy and Replication

R324A120097

04/01/2012–03/31/2016

Co-Principal Investigator: Phillip Strain (University of Colorado at Denver) Purpose: Students with serious behavioral challenges may experience a host of negative school and life outcomes if their behavior is not addressed early in life. Of students with any category of disability, students with emotional disturbance are at greatest risk for school failure and have the poorest academic records and highest dropout rates. To help improve outcomes for these students, the research team is evaluating the efficacy of a promising intervention to provide young children in preschool settings with the readiness skills that they need to succeed in elementary school and beyond. The purpose of this project is to determine whether a manualized intervention model called Prevent-Teach-Reinforce for Young Children is more effective than typical practice in reducing preschoolers' challenging behaviors and increasing their social skills and engagement. Project Activities: Approximately 240 preschoolers who have challenging behaviors will participate in this research. The population will include children identified as having disabilities as well as children deemed at risk for disabilities due to the extent of their challenging behaviors. The Prevent-Teach-Reinforce for Young Children model is a fully developed strategy that had been adapted from one previously used with elementary and middle school students. The model includes a school-based team that sets goals for individual students, establishes a strategy for measuring targeted behaviors daily, develops an intervention plan, and monitors student progress. A randomized controlled trial will be used to study the efficacy of Prevent-Teach-Reinforce for Young Children. Teachers will be randomly assigned to the treatment or business-as-usual condition. Students will be assessed at multiple time points—before, during, and immediately after the intervention. Data will be analyzed to estimate the effects of Prevent-Teach-Reinforce for Young Children on measures of children's behavior, social skills, and engagement. Products: The products of this project will be published reports on the efficacy of the Prevent-Teach-Reinforce for Young Children intervention for reducing challenging behaviors and improving the social skills and engagement of children with serious behavior challenges. Structured Abstract Setting: The research project will take place in early childhood classrooms in Nevada and Colorado. Sample: Approximately 240 preschoolers who have challenging behaviors will participate in this research. The population will include children identified as having disabilities as well as children deemed at risk for disabilities due to the extent of their challenging behaviors. Intervention: The intervention model is a fully developed strategy that had been adapted from one previously used with elementary and middle school students. The model includes elements that have shown promise when used in isolation—functional behavioral assessment, antecendent manipulations, educational strategies, and consequence manipulations. A school-based team, which includes the child's family members, will be established and meet regularly to ensure that the model and its components are being implemented with high levels of fidelity. The team will set three personalized goals for individual students to reduce or replace inappropriate behaviors or improve academic outcomes, establish a strategy for measuring targeted behaviors daily, and develop an intervention plan. The team will monitor student progress and revise the intervention plan if students are not responding to the intervention strategies. Students will participate in this intervention model for 2 to 4 months. Research Design and Methods: A randomized controlled trial will be used to study the efficacy of Prevent-Teach-Reinforce for Young Children. Teachers will be randomly assigned to the treatment or business-as-usual condition. Students will be assessed at multiple time points—before, during, and immediately after the intervention. Approximately six cohorts, with 35 to 40 students per cohort, will participate in this project over a 4-year period. Control Condition: Children in the business-as-usual condition will receive instruction typically provided by the schools. Key Measures: Key outcome measures include teacher reports of children's behavior and social skills, observations of engagement, and direct child assessment of language skills. The team will also collect fidelity of implementation data and other observational data measuring teachers' practices in treatment and comparison classrooms. Data Analytic Strategy: A series of data analysis techniques, including multi-level modeling, will be used to estimate the effects of the Prevent-Teach-Reinforce for Young Children on measures of children's behavior, social skills, and engagement. The team will also examine the relationships between children's social skills, language skills, and quality of classroom instruction. Related IES Projects: Evidence-Based Interventions for Severe Behavior Problems: The Prevent-Teach-Reinforce Model (H324P040003) Publications Book Dunlap, G., Wilson, K., Strain, P., and Lee, J.K. (2013). Prevent-Teach-Reinforce for Young Children: The Early Childhood Model of Individualized Positive Behavior Support. Baltimore: Paul H. Brookes. Book chapter Dunlap, G., and Fox, L. (2013). Supportive Interventions for Young Children With Social, Emotional, and Behavioral Delays and Disorders. In H.M. Walker, and F.M. Gresham (Eds.), Handbook of Evidence-Based Practices for Emotional and Behavioral Disorders Applications in Schools (pp. 503–517). New York: Guilford Press. Dunlap, G., Jackson, D., and Greenwald, A. (in press). Positive Behavior (Interventions and) Supports for Students With Intellectual Disability. In M.J. Wehmeyer, and K. Shogren (Eds.), Handbook of Research-Based Practices for Educating Students With Intellectual Disability. New York: Routledge. Journal article, monograph, or newsletter Dunlap, G., Lee, J., Joseph, J.D., and Strain, P. (2015). A Model for Increasing the Fidelity and Effectiveness of Interventions for Challenging Behaviors: Prevent-Teach-Reinforce for Young Children. Infants and Young Children, 28(1): 3–17. doi:10.1097/IYC.0000000000000027 Dunlap, G., Lee, J.K., and Strain, P. (2013). Prevent-Teach-Reinforce for Young Children: A User-Friendly, Tertiary Model for Challenging Behaviors. Addressing Young Children's Challenging Behavior: Young Exceptional Children Monograph No. 15: 45–58. Dunlap, G., Strain, P., Lee, J.K., Joseph, J.D., & Leech, N. (in press). A randomized controlled evaluation of Prevent-Teach-Reinforce for Young Children. Fronapfel, B., Dunlap, G., Flagtvedt, K., Strain, P, & Lee, J. (in press). Prevent-Teach-Reinforce for Young Children: A program description and demonstration of implementation in an early childhood setting. Kincaid, D., Dunlap, G., Kern, L., Lane, K., Brown. F., Bambara, L., and Knoster, T. (2016). Positive Behavior Support: A Proposal for Updating and Refining the Definition. Journal of Positive Behavior Interventions, 18(2): 69–73. doi:10.1177/1098300715604826

A Randomized Efficacy Trial of the Kids in Transition to School (KITS) Program for Children with Developmental Disabilities and Behavioral Problems

Pears, Katherine

Efficacy and Replication

R324A080026

4/1/2008 to 3/31/2012

Purpose: Children with disabilities often experience a gap in services during the summer before kindergarten. During this time, they may lose school readiness skills that would have facilitated their transition to early elementary school. This gap in services is a particular problem for children with co-occurring developmental disabilities and behavior problems. These children are likely to have low levels of school readiness and are at risk for academic failure. In addition, their behavior and social problems are likely to interfere with school adjustment. In this project the researchers will evaluate an intervention designed to fill the gap in services as children transition from preschool to kindergarten and enable children to experience a smoother transition into kindergarten. They will conduct an efficacy evaluation of a short-term intensive intervention, Kids in Transition to School, for improving social-emotional, early literacy, and school readiness skills of young children with developmental disabilities and behavior problems. Project Activities: Kids in Transition to School is a short-term intensive intervention, for improving social-emotional, early literacy, and school readiness skills of young children with co-occurring developmental disabilities and behavior problems. The intervention is designed to fill the gap in services as children transition from preschool to kindergarten. Approximately 200 children transitioning from preschool to kindergarten will participate in this research. They will be randomly assigned to the intervention condition or a services-as-usual comparison group. Children will be assessed at multiple time points during and after receiving the intervention. Several multivariate analytic strategies will be employed to determine the efficacy of the Kids in Transition to School program. In addition, researchers will investigate potential mediators and moderators of intervention effects. Products: The products of this project include evidence of the efficacy of Kids in Transition to School, published reports, and presentations. Setting: The research will occur in Oregon. Population: Approximately 200 children transitioning from preschool to kindergarten will participate. The children will have co-occurring developmental disabilities and behavior problems. They will be referred for participation by a public agency in Oregon. Intervention: The Kids in Transition to School intervention is a short-term intervention delivered in the summer prior to and the first two months of kindergarten. It employs a highly structured curriculum-based playgroup that targets social emotional functioning and early literacy. The playgroup meets for 24 sessions. It meets twice per week during the summer and once per week in kindergarten. The intervention also includes a parent support group designed to increase parent involvement and support positive parenting practices. Parent groups follow a manual-based curriculum and meet once every 2 weeks for 7 sessions. Research Design and Methods: Children will be recruited in four yearly cohorts. There will be 50 children in each cohort. Children will be randomly assigned to the intervention condition or a services-as-usual comparison group. Children will be assessed at multiple time points during and after receiving the intervention. The first three cohorts will be assessed in the spring of first grade. Control Condition: In the control condition, participants will continue to receive Early Childhood Special Education services or other services that they would typically receive. Key Measures: Data will be collected on children's social-emotional and early literacy skills including children's emotional and behavioral regulation, social competence, letter knowledge and naming speed, letter-sound knowledge, language skills, phonological awareness, and knowledge of concepts in print. In addition, data on parent involvement in early literacy, parenting practices, teacher practices, and school and classroom characteristics will be collected. Finally, the researchers will collect data on the fidelity of implementation and intervention dosage. Data-analytic strategies: Several multivariate analytic strategies, including multiple regression, structural equation modeling, and multivariate analysis of variance, will be employed to determine the efficacy of Kids in Transition to School for improving social-emotional, early literacy, and school readiness skills of children with co-occurring developmental disabilities and behavior problems. In addition, researchers will investigate potential mediators and moderators of intervention effects. Project website: http://www.kidsintransitiontoschool.org/ Publications Journal article, monograph, or newsletter Pears, K.C., Kim, H.K., Fisher, P.A., and Yoerger, K. (2016). Increasing Pre-Kindergarten Early Literacy Skills in Children With Developmental Disabilities and Delays. Journal of School Psychology, 57: 15–27. doi:10.1016/j.jsp.2016.05.004 Pears, K.C., Kim, H.K., Healey, C., Yoerger, K., and Fisher, P.A. (2015). Improving Child Self-Regulation and Parenting in Families of Pre-Kindergarten Children With Developmental Disabilities and Behavioral Difficulties. Prevention Science, 16(2): 222–32. doi:10.1007/s11121–014–0482–2

A Randomized Trial of a Tutor-Based Mathematics and Attention Intervention for Low-Performing Pre-Schoolers at Risk for Mathematical Difficulties in School

Barnes, Marcia

Efficacy and Replication

R324A120410

09/01/2011– 08/31/2015

Previous Award Number: R324A110270 Previous Awardee: University of Texas Health Science Center at Houston Purpose: Mathematical knowledge at school entry is an important predictor of later academic achievement. Children who are especially low performing on measures of mathematical knowledge at the beginning of preschool often show less growth in mathematical knowledge over the preschool year, remain well below school readiness benchmarks for mathematics, and continue to struggle in mathematics in later grades despite receiving high-quality classroom instruction. These students require more intensive interventions focused on mathematics instruction at an early age. The purpose of this project is to assess the efficacy of a preschool program, Pre-K Mathematics Tutorial, and the combination of this program with attention training, for improving the mathematical knowledge of preschool children who are especially low performing in mathematics. The Pre-K Mathematics Tutorial is an intensified version of Pre-K Mathematics, a classroom program that has evidence of efficacy when implemented at scale. The researchers will compare the relative efficacy of the Pre-K Mathematics Tutorial with a condition that includes the Pre-K Mathematics Tutorial plus attention training and with a business-as-usual control condition. Project Activities: A randomized control trial will be used to study the efficacy of the Pre-K Mathematics Tutorial and Pre-K Mathematics Tutorial plus attention training interventions. Children in Texas and California who are identified as low performing in mathematics and most at risk for mathematical difficulties in later grades will be randomly assigned to one of three conditions: Pre-K Mathematics Tutorial, Pre-K Mathematics Tutorial plus attention training, or a business-as-usual control condition. Children will be assessed pre-intervention, immediately after intervention, and in kindergarten. A series of data analysis techniques will be used to estimate the effects of both interventions on children's mathematics, attention, working memory, and beginning literacy outcomes at the end of preschool and kindergarten. Products: The products of this project will be published reports on the efficacy of the Pre-K Mathematics Tutorial and the Pre-K Mathematics Tutorial plus attention training for improving the mathematics, attention, working memory, and beginning literacy outcomes of preschoolers most at risk for failure in mathematics. Structured Abstract Setting: The research project will take place in state-funded preschool classrooms in Texas and California. Population: Approximately 528 children from 88 preschool classrooms will participate in this research. The children will be low performing in mathematics and most at risk for mathematical difficulties in later grades. Interventions: Pre-K Mathematics Tutorial. Pre-K Mathematics Tutorial is adapted from a mathematics curriculum, Pre-K Mathematics, which has evidence of efficacy for improving mathematics outcomes of low-performing preschool children. Pre-K Mathematics Tutorial is a year-long program comprised of 21 scripted activities that will be delivered in small, ability-matched groups by a tutor outside of the classroom for 4 days a week (15–20 minutes per session). Children's progress within the small group will be monitored frequently, and difficulty levels of the activities can be adjusted as needed. Once a week, the children will use games also used in the attention training intervention described below. However, the children will not receive explicit training designed to improve their attention skills. Pre-K Mathematics Tutorial plus attention training. Children receiving the Pre-K Mathematics Tutorial plus attention training will participate in Pre-K Mathematics Tutorial 4 days a week. Once a week, the children will also receive attention training which involves computer-based activities designed to reinforce and challenge their ability to sustain attention and resolve conflict. Each attention training session lasts between 15 and 20 minutes, and sessions can be adapted based on a child's individual progress. Research Design and Methods: A randomized control trial will be used to study the efficacy of the Pre-K Mathematics Tutorial and Pre-K Mathematics Tutorial plus attention training interventions. Children who are identified as low performing in mathematics and most at risk for mathematical difficulties in later grades will be randomly assigned to one of three conditions: Pre-K Mathematics Tutorial, Pre-K Mathematics Tutorial plus attention training, or a business-as-usual control condition. Children will be assessed pre-intervention, immediately after intervention, and in kindergarten. Information on the fidelity of intervention implementation will be collected. Control Condition: Children who receive the business-as-usual condition will be provided with instruction typically provided by the schools. Key Measures: Key outcomes include measures of mathematics, attention, working memory, and beginning literacy. Ratings will be completed by the teacher on children's focused attention, inhibition of behaviors, and impulsivity. The researchers will also collect data on teacher practices, including the amount of classroom time devoted to mathematics, fidelity of implementation, and treatment dosage. Data Analytic Strategy: A series of data analysis techniques, including multi-level modeling, will be used to estimate the effects of Pre-K Mathematics Tutorial and Pre-K Mathematics Tutorial plus attention training on children's mathematics, attention, working memory, and beginning literacy outcomes at the end of preschool and kindergarten. Additional analyses will be conducted to determine variables that may influence the strength of the relation between the interventions and child outcomes. Finally, potential profiles will be modeled to determine whether some children respond to the interventions differentially within the domain of mathematics rather than generally across the domain. Publications Journal article, monograph, or newsletter Barnes, M.A., Klein, A., Swank, P., McCandliss, B., Starkey, P., Flynn, K., Zucker, T., Fall, A-M., and Roberts, G. (2016). Effects of Tutorial Interventions in Mathematics and Attention for Low-Performing Preschool Children. Journal of Research on Educational Effectiveness, 9(4): 577–606. doi:10.1080/19345747.2016.1191575 Peng, P., Namkung, J., Barnes, M., and Sun, C. Y. (2016). A Meta-Analysis of Mathematics and Working Memory: Moderating Effects of Working Memory Domain, Type of Mathematics Skill, and Sample Characteristics. Journal of Educational Psychology, 108(94): 455–473. doi:10.1037/edu0000079

A Randomized Trial of Preschool Instructional Strategies to Improve School Performance and Reduce Use of Special Education

Lonigan, Christopher

Efficacy and Replication

R324E060086

6/1/2006 to 5/31/2010

Purpose: The purpose of this project is to compare the value added impact of an intervention focusing explicitly on language, literacy, and cognitive skills, with an intervention explicitly focused on these skills plus self-regulation. Recent research supports the promise of targeted and research-based intervention for preschool age children in language, early literacy, and cognitive skills as a preventive tool to reduce the number of children in need of costly special education services in kindergarten and beyond. Research also suggests the potential need for an additional focus on developing cognitive and behavioral self-regulatory skills in preschool children. This research project is designed to further examine this relationship. Project Activities: The researchers are examining the efficacy of two interventions using three treatment groups; (a) Literacy Express, a language and literacy focused comprehensive preschool curriculum; (b) Tools of the Mind, a literacy and self-regulation focused preschool curriculum; or (c) a newly created curriculum that includes modular components from both curriculums. The study involves a cluster randomization of preschool classrooms serving a significant number of children identified with or at-risk for learning disabilities and special education qualification to one of four curriculum conditions- the three treatment groups listed above or a business as usual control group. Independent observers and mentors will conduct fidelity of implementation observations in all classrooms. Children from 100 preschool classrooms in New Mexico and Massachusetts would be phased into the blocked randomization across three years, and children would be followed through kindergarten, first, or second grade. Hierarchical linear modeling taking the nested structure of the design into account will be used to evaluate the academic and self-regulatory impact of each condition as compared to one another and the control group. Measures of special education service provision and grade retention will be used to evaluate the cost-benefit value of each preschool intervention condition. Products: The expected outcomes from this study include: A potential intervention package that combines Literacy Express plus the Self-regulation tasks from Tools of the Mind to be used with at-risk preschoolers, Published reports on the results of comparisons between the relative treatment group effects of Tools of the Mind, Literacy Express, and Literacy Express plus Self-regulation tasks from Tools of the Mind, and Presentations on the cost analyses related to these intervention options. Setting: The preschool classrooms are located in New Mexico and eastern Massachusetts. Population: Approximately 100 preschool classrooms and 2400 children with disabilities or at-risk for specific learning disabilities because of limited knowledge of English, poverty, or home environments with limited language stimulation or literacy exposure will participate in this research. Intervention: Three interventions are being evaluated: (a) Literacy Express, (b) Tools of the Mind and (c) Literacy Express + self-regulation activities from Tools of the Mind. Literacy Express is a research-based literacy curriculum that addresses the key components of early literacy instruction through large- and small-group activities. The curriculum is organized around ten thematic units, which are covered in three to four weeks each. Embedded within each unit are goals and activities designed to promote children's skills in oral language, phonological sensitivity, and print awareness. Tools of the Mind (TOM) is a research-based program that focuses on practices that enhance both the teaching of literacy and the development of self-regulation in children. TOM activities can be divided into two types of practices: those aimed at developing children's literacy skills and those aimed at developing their cognitive self-regulation skills.Literacy Express plus self regulation activities from Tools of the Mind is the third approach being evaluated. This curriculum is being created to test the effects of self-regulation independently. This condition will contain all of the components of the Literacy Express curriculum plus the cognitive self-regulation practices from Tools of the Mind. Research Design and Methods: An experimental study implementing random assignment of classroom to intervention conditions will be implemented to determine the efficacy of the three interventions (Literacy Express, Tools of the Mind and Literacy Express + self regulation activities from Tools of the Mind) as compared to each other and a business as usual control group. Classrooms serving a significant number of children identified with or at-risk for learning disabilities and special education qualification will be blocked to create equivalent groups. Blocking variables include district, proportion of children whose home language is not English, and proportion of children with identified special needs. Quartets of classrooms will be formed so that each of the four classrooms within that block are as similar as possible. Each classroom from these quartets will be randomly assigned to one of the four conditions. This sample will be recruited in two cohorts over two years, and children will be followed through kindergarten, first, or second grade. Control Condition: The control classrooms will be "business as usual" controls. However, the curricula will vary across classrooms and districts, with a variety of curricula and differential levels of implementation. Control classrooms will be provided with one year of curriculum support, and classrooms will be allowed to choose either Literacy Express or Tools of the Mind in the year following their participation in the study. Key Measures: Measures of phonological awareness, oral language, print knowledge, and cognitive development as well as behavioral measures of self-regulation will be administered at the beginning and end of preschool. Reading and self-regulation measures will be administered in the spring of each follow up year. In addition, data will be collected to assess the overall quality of classroom practices and environments and fidelity of intervention implementation. Finally, data regarding special education service provision and grade retention will be used to evaluate the cost-benefit value of each preschool intervention condition. Data Analytic Strategy: Hierarchical linear modeling (HLM) will be used to evaluate the academic and self-regulatory impact of each intervention as compared to one another and to the control group. Publications Journal article, monograph, or newsletter Spiegel, J. A., Lonigan, C. J., and Phillips, B. M. (in press). Factor Structure and Utility of the Behavior Rating Inventory of Executive Function-Preschool Version . Psychological Assessment, 29(2): 172–185. doi:10.1037/pas0000324

Adapting an Evidence-Based Practice for Children At-Risk for Autism for Diverse Early Intervention Service Systems

Rogers, Sally

Development and Innovation

R324A150211

3 years (7/1/2015-8/31/2018)

Co-Principal Investigator: Aubyn Stahmer Purpose: The goal of this project is to improve developmental outcomes and school readiness of infants and toddlers at risk for autism spectrum disorders (ASD) and their families by adapting an existing empirically supported practice—the Early Start Denver Model (ESDM)—for use in Part C of the Individuals with Disabilities Education Act (IDEA) intervention systems in low-income, ethnically diverse community settings. The Program for Infants and Toddlers with Disabilities, commonly known as Part C, is a federal grant program to assist states in the provision of early intervention services to these children (birth to age 3). As rates of ASD continue to increase, more infants and toddlers with ASD are entering the Part C system. Improved access to effective care will reduce long-term costs and service intensity for these children at risk for ASD in later years and improve child outcomes over time. Project Activities: This project's activities will be conducted in four phases. In the exploration phase, the researchers will obtain a comprehensive understanding of community needs and barriers to serving children with ASD in early intervention. In the following phase, the team will work collaboratively with Part C administrators, providers, and families to adapt the ESDM for use in Part C services. Next, the revised model, Community Adapted Early Start Denver Model (C-ESDM), will be implemented in diverse Part C agencies using individualized implementation plans. Finally, the pilot study will examine the C-ESDM on implementation and the promise of efficacy for child and family outcomes. Products: The products of this project will include a manual that contains the modified and adapted assessment instrument and implementation procedures for the C-ESDM; a training package for Part C providers and families that will increase the effectiveness of intervention services for infants and toddlers at risk for ASD; and peer-reviewed publications and presentations. Structured Abstract Setting: Qualitative data collection and collaboration in adapting the ESDM for diverse, low-resource communities will take place in care settings—including agencies, centers, and homes—in six different states: Alabama, California, Colorado, Montana, New Mexico, and Pennsylvania. The pilot study will take place in low-resource, low-income, highly culturally diverse parts of Alabama, California, and Colorado. Sample: Part C administrators, providers, and the families they serve will participate in the first phases of the project to adapt and field test the intervention. In Phase 1, study participants include (a) 5 state Part C coordinators; (b) 10 local Part C agency administrators; (c) 20 early intervention providers; and, (d) 20 parents or caregivers of children at risk for ASD who have participated in Part C services. In Phase 2, participants include 5 early intervention experts, 10 providers, and 5 administrators from participating states. In the final two phases, implementation and pilot study, three to four providers per agency will participate, with two to three children ages 12–30 months and their families per provider. Overall, approximately 25 providers and 50 children will comprise the final pilot sample. Intervention: The intervention to be developed is the Community Adapted Early Start Denver Model (C-ESDM). Although the ESDM has demonstrated efficacy, adaptations are needed to make it more applicable for Part C community providers. Based on the National Professional Development Center for Autism Spectrum Disorder model, C-ESDM will include implementation teams and coaching for local agencies. The intervention will provide a comprehensive, individualized intervention to enhance the development of young children with ASD through supports for families to incorporate needed learning experiences into everyday routines. Research Design and Methods: In Phase 1, surveys and structured interviews will be used to obtain an understanding of needed adaptations to ESDM from Part C coordinators, administrators, providers, and families. An iterative process will be used to adapt the intervention and training materials in Phases 1 and 2. Phase 3 involves implementation and further adaptations based on the results from prior phases. Fidelity will be assessed and then fidelity measures finalized in this phase. Phase 4 involves pilot testing using a cluster randomized trial to compare the treatment group (C- ESDM) to the control group (Part C services as usual). The intervention and control groups will be matched for treatment intensity, and random assignment to the treatment or control group will occur within levels of treatment intensity. Control Condition: The control group will receive services as usual in Part C programs. Key Measures: Outcome measures focus on family functioning, child communication, and social and cognitive development. These measures include the following: Autism Program Environment Rating Scale-Infant Toddler; Bayley Scales of Infant Development-2nd Edition; MacArthur-Bates Child Development Inventory; Vineland Adaptive Behavior Scale; Pervasive Developmental Disorders Behavior Inventory; Infant Toddler Checklist; and Parenting Sense of Competence Scale. Additional measures will collect evidence of usability, feasibility, and family and provider satisfaction (via structured interviews and in-depth surveys) as well as fidelity of implementation (via observation data and implementation surveys). Data Analytic Strategy: Phases 1 and 2 survey and interview data will be analyzed using mixed methods and a rapid assessment approach to inform adaptations and implementation in Phase 3. In Phase 4, the pilot study, a univariate three-level longitudinal mixed-effect (LME) growth curve analyses will be conducted to assess the outcome measures and to compare feasibility and the promise of efficacy of the C-ESDM to the control condition. Related IES Projects: Adapting an Evidence-Based Program for Infants and Toddlers at High Risk for Autism (R324A140004)

Adapting an Evidence-Based Program for Infants and Toddlers at High Risk for Autism

Stahmer, Aubyn

Development and Innovation

R324A140004

7/1/13–6/30/16

Previous Award Number: R324A130350 Previous Awardee: University of California Previous Award Number: R324A130145 Previous Awardee: Rady Children’s Hospital, San Diego Purpose: Infants and toddlers who have difficulties in communication, behavior regulation, and developing early relationships are at risk for Autism Spectrum Disorders (ASD) and represent a significant public health challenge. Service providers hesitate to serve very young children with social and communicative difficulties in the hopes that the infants will "grow out" of these delays. Yet these issues persist over time in 75 percent of young children presenting with multiple problems and, if untreated, these children are likely to need intervention when they reach school age. Early intervention agencies are also struggling to implement appropriate, effective programs for this population, and families have limited access to services. Evidence-based practices for young children with ASD were not designed for community contexts and very few communities are providing them. The purpose of this project is to adapt an evidence-based practice for infants and toddlers (aged 12–24 months) at risk for ASD and their families. The proposed study builds directly on the promising results of a pilot study in which a parent-implemented program originally targeted for preschoolers called Teaching Social Communication to Children with Autism (TSC) was selected in collaboration with community stakeholders to address the needs of infants and toddlers at risk for ASD. This study will focus on specific adaptations identified during the pilot that will be needed to meet the needs of early intervention agencies, as well as infants and toddlers and their families (e.g., enhancing provider coaching and support, revising the manual to be more developmentally appropriate). Project Activities: The researchers will use an existing community collaborative structure to adapt TSC for use in early intervention agencies serving young children at risk for ASD. There will be three phases of the proposed research. In Phase 1, a qualitative focus group approach will be used to obtain a comprehensive understanding of how different providers and parents use, modify, and apply TSC with infants and toddlers and their families and to examine additional support that might be needed for ongoing implementation. During Phase 2, information from Phase 1 will be used to adapt TSC supports to enhance sustainability. A toddler TSC manual and accompanying supports will be developed using an iterative process of community testing and feedback. Finally, in Phase 3 of the project, the research team will conduct a community-based pilot study of the training plan and the adapted TSC program in terms of fidelity, feasibility, and promise for change in child outcomes. Products: The expected products of this project include a fully developed TSC program that can be implemented in early intervention settings with infants and toddlers, data on the feasibility and promise of the program, and peer-reviewed publications and presentations. Structured Abstract Setting: This research will take place in early intervention settings in California. Sample: Phase 1 will include 20 early intervention providers and 20 parents of children 12–24 months of age at risk for ASD; Phase 2 will include 5 providers and 5 infants and toddlers in the field testing; and Phase 3 will include 12 providers and 24 infants and toddlers in the pilot testing of TSC implementation. Intervention: TSC is a manualized parent-implemented program with a 12-week curriculum in which providers teach parents to facilitate their child's development during daily activities. TSC uses developmental strategies (e.g., joint attention) as the basis of parent-child interactions to increase children's engagement and initiation skills, and intersperses behavioral techniques to teach specific communication, play, and cognitive skills. Materials include a manual for providers describing the strategies and methods for teaching parents in group or individual settings, a parent manual that describes each strategy, weekly homework, and handouts that highlight important points. The provider actively collaborates with the parent(s) to identify goals and develop a treatment plan. In addition, web-based training materials will be available to supplement parent education and provide distance learning opportunities. Research Design and Methods: The research team will use an iterative process that includes focus groups with early intervention providers and parents, and input from expert consultants on ways that TSC can be adapted for use with this age group. This will be followed by the development, field testing, and revision of the TSC and supporting materials with the help of practitioner feedback throughout this process. For the pilot study, a multiple baseline design across providers will be used to examine the adapted training program and provider fidelity of implementation over time. A quasi-experimental design, with matched pairs of families assigned to either the intervention or comparison condition, will be used to examine changes in parent and child behavior related to the intervention. Families will be matched based on marital status, race-ethnicity, the language of intervention delivery, child age at intake, and funding source (IDEA Part C, insurer, fee for service). Control Condition: Participants in the comparison condition will receive the regularly scheduled therapy they are provided in their community. Data will be gathered on the services received by the comparison children and families. Key Measures: Provider questionnaires and surveys will be used to assess acceptability, feasibility, and satisfaction with the TSC intervention, and video observations will be used to code fidelity of implementation. Child measures will include the use of standardized assessments of ASD symptoms (Autism Diagnostic Observations Scale–Toddler), developmental functioning (Mullen Scales of Early Learning: AGS Edition), parent-child interaction and social behaviors (Mahoney Maternal and Child Behavior Rating Scales), communicative development (MacArthur-Bates Child Development Inventory), and adaptive behavior (The Adaptive Behavior Assessment System). Parent satisfaction will be measured using a questionnaire. Data Analytic Strategy: Qualitative methods will be used to analyze data from focus groups. Descriptive analyses will be conducted on the survey and questionnaire ratings from providers and parents. Visual and time series analyses will be conducted on the data from the multiple baseline study of providers. Repeated-measures analysis of variance will be used to analyze changes in child outcomes. Project website: http://bridgecollaborative.com/ Publications Book chapter Rieth, S.R., Stahmer, A.C., and Brookman-Frazee, L.I. (in press). A Community Collaborative Approach to Scaling-Up Evidence-Based Practices: Moving Parent- Implemented Interventions From Research to Practice. In M. Siller, and L. Morgan (Eds.), Handbook of Family-Centered Practice for Very Young Children With Autism. New York: Springer. Journal article, monograph, or newsletter Stahmer, A.C., Brookman-Frazee, L., Rieth, S.R., Stoner, J.T., Feder, J.D., Searcy, K., and Wang, T. (in press). Parent Perceptions of an Adapted Evidence-Based Practice for Toddlers With Autism in a Community Setting. Autism: International Journal of Research and Practice. doi:10.1177/1362361316637580 Full text

Advancing Social-Communication and Play (ASAP): An Intervention Program for Preschoolers with Autism

Boyd, Brian

Efficacy and Replication

R324A110256

7/1/2011–6/30/2015

Co-Principal Investigator: Linda Watson Purpose: Core diagnostic features of autism include deficits in social-communicative functioning. Two pivotal skills for young children with autism include joint attention and pretend play, which constitute early foundations upon which later social-communicative skills are built. Joint attention (characterized by behaviors such as pointing, showing, and coordinated looking to share attention toward objects or events with another person) and symbolic play (characterized by the ability to pretend), play important roles in language development and social engagement with peers. Children with autism show deficits in these skills. Advancing Social-Communication and Play (ASAP) is an intervention that has recently been developed to help preschool children with autism learn and practice these important skills. The purpose of this research is to conduct a cluster randomized trial to evaluate the efficacy of ASAP. The major goals of the project include investigating whether children experiencing the intervention, when compared to those who do not, demonstrate greater gains in the proximal child outcomes of social-communication and play skills as well as the more distal outcomes of language development and engagement with classroom objects and peers. The study will also examine whether child-level (i.e., developmental level, problem behaviors) and teacher-level (i.e., teacher burnout, general classroom quality) characteristics moderate the impact of the intervention, and whether the level of implementation fidelity mediates its impact on child outcomes. Project Activities: For each cohort, classrooms are randomly assigned to the ASAP or control group. Baseline (pre-test) data will be collected on all child and teacher/classroom measures. For the treatment group, coaches (trained by ASAP staff) at each of the four study sites will train and provide ongoing support for the local educational teams implementing the intervention. For the duration of the school year, the treatment group will experience the ASAP intervention, which includes group activities and one-to-one teaching sessions on social-communication and play skills, and the control group will experience business-as-usual conditions. At three additional points in time, including during the post-test at the end of the year, the investigators will collect data on the social-communication and play skills of all children. At the end of each school year, the investigators will also collect post-treatment data on child language and engagement skills. Intervention fidelity will be measured in all classrooms several times each year. Products: Products from this project will include published reports and presentations on the efficacy of the ASAP intervention. Structured Abstract Setting: The research will take place in public preschool classrooms serving at least one child with autism in North Carolina, Florida, Minnesota, and Oregon. Population: Children participating in this study will be preschool children, below the age of 5 years, with an autism spectrum disorder. There will be 80 classrooms randomly assigned to intervention and control conditions, with an average of three children with autism per classroom. Intervention: The recently developed and piloted ASAP intervention is based on two core content components, social-communication and play skills. More specifically, the program works on three key areas of social-communication skills—joint attention, social interaction, and requesting behaviors—and four primary levels of play skills—exploratory, relational, functional, and symbolic. ASAP is implemented directly by the children’s educational team, comprised of the children’s classroom teacher, teaching assistant, and at least one related service provider if children in the classroom are receiving such services. The intervention takes place in two core contexts. The one-to-one context is believed to promote more efficient skill acquisition, and the children will receive 40 minutes of this type of intervention distributed across each week. The group context is believed to foster better generalization and maintenance of skills, and will consist of at least three group activities per day in which there are embedded opportunities to learn and practice the skills targeted in the one-to-one sessions. Overall, the intervention will continue throughout one school year. Research Design and Methods: This research is a cluster randomized trial, with children nested within classrooms. Classrooms will be randomly assigned to the ASAP intervention or the control (business-as-usual) condition. Baseline (pre-test) data will be collected on all child and teacher/classroom measures. At three additional points in time, including during the post-test at the end of the year, the investigators will collect data on the social-communication and play skills of the children. At the end of each school year, the investigators will also collect post-treatment data on child language and engagement skills. Intervention fidelity will be measured in all classrooms three times per year. Control Condition: The control group will be comprised of children with autism in business-as-usual classrooms (no special intervention is introduced beyond the typical services). Key Measures: The Autism Diagnostic Observation Schedule (ADOS) will be administered to each child at the beginning of the study to confirm the diagnosis of autism. Proximal child outcome measures include the ADOS (for social-communication skills) and Structured Play Assessment (for symbolic play). Distal outcomes will be measured with the Individual Child Engagement Record-Revised and the Preschool Language Scale, 5th Edition. Child-level moderators include the Child Behavior Checklist (for behavior problems) and Mullen Scales of Early Learning (for developmental level). In addition, there will be rating scales and checklists to assess teacher burnout, quality of classrooms serving children with autism, and instructional strategies used to educate children with autism. Fidelity of intervention (knowledge of social-communication and play goals, instructional delivery, dosage, team planning, and progress monitoring) will be measured with audiotape interviews, videotape coding, and document review. Data Analytic Strategy: Data on proximal outcomes, and potential moderators, will be analyzed using multilevel or mixed growth models to account for repeated outcome measures as well as clustering of individuals within classrooms. For the distal outcomes measured at pre-test and post-test, multiple level analysis of covariance will be utilized to examine intervention impact and potential moderators. Fidelity of implementation as a mediator will be examined through a parallel-process growth model. Project Website: https://www.med.unc.edu/ahs/asap/ Related IES Projects: Social Communication and Symbolic Play Intervention for Preschoolers With Autism (R324B070056) Publications Journal article, monograph, or newsletter Dykstra, J., Watson, L.R., Boyd, B.A., Crais, E.R., Wilson, K., Baranek, G.T., Flippin, M., and Flagler, S. (in press). The Iterative Development of a School-Based Intervention: A Researcher-Rractitioner Partnership. Journal of Early Intervention, 37: 23–43.

An Efficacy Trial of J-EMT: Enhanced Milieu Teaching Language Intervention plus Joint Attention, Engagement and Regulation Intervention for Toddlers with Autism

Kaiser, Ann

Efficacy and Replication

R324A150094

4 years (7/1/2015-6/30/2019)

Co-Principal Investigator: Megan Roberts (Northwestern University) Purpose: This project will evaluate the efficacy of an early social communication and language intervention, the J-EMT, on toddlers with autism spectrum disorders (ASD). Social communication skills are particularly important for this population, as a deficit in this area constitutes a core characteristic of ASD. The intervention is aimed at toddlers because the majority of children with ASD can be identified accurately by 24 months and acquisition of communication skills by 36 months is a significant predictor of long-term language outcomes. This study will investigate the impact of J-EMT on the social communication skills, receptive and expressive language, symbolic play, and symbol-infused joint engagement on toddlers with ASD and on parental use of language support strategies. The use of symbols (communicative gestures, words, or signs) during engagement with a partner is a critical transition into fluent social spoken language. In addition to examining outcomes immediately after the intervention and 6 months later, the study will explore which children may benefit most from J-EMT and whether fidelity of implementation moderates the relationship between the intervention and child outcomes. Project Activities: A randomized controlled trial will be used to determine the efficacy of J-EMT. Approximately 120 children, age 24–36 months, with ASD and their parents will participate in this research project. Children will be randomly assigned to the treatment or business-as-usual control condition, and they will participate in their services (intervention or typical community services) for 6 months. Primary data-collection points include before, immediately after, and 6 months after the intervention period. Data will be analyzed to examine the impact of J-EMT on measures of children's social communication, language, and related skills, as well as potential moderators of the impact. Products: The products of this project include understanding the efficacy of J-EMT on the social communication outcomes for toddlers with ASD and their parents, as well as peer-reviewed publications and presentations. Structured Abstract Setting: The study will take place in the homes of toddlers with ASD in metropolitan areas of Tennessee and Illinois. Sample: Approximately 120 toddlers, age 24–36 months, diagnosed with ASD and their parents will participate in this study, as well as the therapists delivering the intervention. Intervention: The J-EMT blends two evidence-based interventions, Enhanced Milieu Teaching (EMT) and Joint Attention, Symbolic Play and Regulation (JASPER). EMT is a naturalistic language intervention designed to teach spoken language in the context of every day interactions with parents and teachers. JASPER is designed to teach the social foundations of communication in the context of social play. The combined J-EMT intervention is implemented by both parents and therapists as an integrated intervention package for children with ASD. The intervention will be implemented as 48 1-hour sessions with toddlers over a 6-month period and includes teaching parents to implement J-EMT in daily activities at home. Research Design and Methods: Using a randomized controlled trial, children will be assigned to the treatment or business-as-usual control condition. Approximately 40 toddlers with ASD and their parents will participate in the study annually for each of the 3 years of data collection. Children in both groups will receive services (J-EMT or their usual community services) for 6 months. Data on services received and parent use of intervention strategies will be assessed for both groups. There will be three primary assessment points for most of the child outcome data—pre-intervention, post-intervention, and 6 months after the intervention ends. Social communication and expressive language will be assessed monthly. Data will be analyzed to examine the immediate and longer-term efficacy of J-EMT on children's language, communication, symbolic play, symbol-infused joint attention, parents' use of language support strategies, and growth in children's language skills over time. The researchers will also explore whether child characteristics and fidelity of parental strategy use moderates child outcomes. Control Condition: The control condition consists of toddlers with ASD receiving typical community and early intervention services. Use of services will be documented. Parents will also receive reports of their children's communication progress and assistance in advocating for community services. Key Measures: Children will be screened for participating using the Autism Diagnostic Observation Schedule — Second Edition (ADOS-2) and Autism Diagnostic Interview-Revised (ADI-R). Communication and language outcome measures include the following: children's social communication in observed language samples; expressive language using language samples, parent report, Preschool Language Scale-Fifth Edition (PLS-5), and MacArther-Bates Communicative Development Inventories; home communication using Language Environment Analysis (LENA); and receptive language using the PLS-5. Additional outcome measures include the Structured Play Assessment (symbolic play), Early Social Communication Scales (joint attention), and coding of observational parent-child interactions for joint engagement. The team will also collect data on moderators, including parent use of language support strategies, services received, family characteristics, and additional child skills (mental age, imitation skills, and expressive vocabulary). Data Analytic Strategy: To examine the impact of the intervention on most of the outcomes, the research team will use linear ordinary least squares regression. To examine growth in social communication and expressive language over time, as well as the impact of moderators, multi-level growth modeling will be used. Related IES Projects: An Efficacy Trial of Milieu Teaching Language Intervention in Preschoolers with Language Disorders (R324A090181) Publications Book chapter Kaiser, A. P., Hampton, L. and Roberts, M. Y. (2016). Parents as Partners in Effective Communication Intervention. Communication Interventions for Children with Severe Disabilities. Brookes Publishing Co. Retrieved from http://products.brookespublishing.com/Communication-Interventions-for-Individuals-with-Severe-Disabilities-P948.aspx. Book chapter, edition specified Kaiser, A. P. and Hampton, L. H. (2016). Enhanced Milieu Teaching. Journal article, monograph, or newsletter Hampton, L. H., and Kaiser, A. P. (2016). Intervention Effects on Spoken-Language Outcomes for Children with Autism: A Systematic Review and Meta-Analysis. Journal of Intellectual Disability Research, 60(5): 444–463. doi:10.1111/jir.12283 Full text

An Efficacy Trial of Milieu Teaching Language Intervention in Preschoolers with Language Disorders

Kaiser, Ann

Efficacy and Replication

R324A090181

7/1/2009 to 6/30/2013

Purpose: Children who experience early language delays include children with production delays only, children with both production and comprehension delays, and children who have global cognitive and other disabilities that affect their language development. Considerable research has focused on young children with only delays in productive language and on children older than 4 years with specific language impairment. Relatively less is known about children with co-occurring production and comprehension language delays under age 4 who do not have cognitive disabilities. These children are at relatively greater risk for persistent delays than young children with expressive delays only. This efficacy trial is designed to examine the effects of therapist-plus parent implemented Enhanced Milieu Teaching (EMT) on young children 24–36 months of age with significant delays in expressive and receptive language. EMT is a conversation-based model of early language intervention that uses child interest and initiation as opportunities to model and prompt language use in everyday contexts. EMT is a well-established intervention for facilitating language and communication skills in young children with cognitive impairment; however, the effects of EMT on language-delayed children who do not have significant global cognitive impairments have not been examined in an efficacy trial. The study will test whether EMT can be effective in remediating language delays and preventing the development of secondary impairments. Project Activities: This efficacy trial will compare EMT implemented by parents and therapists at home to a community "business as usual" comparison condition. Sixty children will be recruited and randomly assigned to each of two experimental conditions (EMT and Comparison) and will be followed longitudinally over 18 months. All children will be pretested, and results will be used to set language-learning targets. Children in the treatment group and their parents will work with therapists in 24 one-hour sessions. Children will be assessed at four time points (before and after the intervention, at 6 months and 12 months post-intervention), leading to a description and comparison of individual language growth trajectories over a period of 18 months. Products: Researchers will provide evidence on whether: parent-plus-therapist implemented EMT improves language development, as well as children's behavior and social skills, over time; certain child characteristics measured at pre-treatment moderate language development for children; a relationship exists between parent support for language development and subsequent children's language development; there are corollary effects of participation in parent-plus-therapist-implemented EMT on parents and, if so, what the nature of the effects are; and, if fidelity standards developed in previous studies can be achieved for parent and therapist implementation of EMT in this study. Researchers will also provide a review of the costs of EMT when compared to business as usual in the community. Structured Abstract Setting: The study will take place in Tennessee. Population: One hundred twenty children ages 24 –36 months who exhibit significant co-occurring delays in productive and receptive language skills (below 10th percentile for age group) will be included in the study. Intervention: Experimental applications of EMT typically have included four sequential steps: (a) arranging the environment to increase the likelihood that the child will initiate interaction with the adult; (b) selecting specific language targets appropriate to the child's skill level (e.g., using –s with plural nouns); (c) responding to the child's initiations with prompts for elaborated language consistent with the child's targeted skills; and (d) functionally reinforcing the child's communicative attempts by providing access to requested objects, continued adult interaction, and feedback in the form of expansions and confirmations of the child's utterances. Parents are taught to use EMT at home during 24 individual training sessions led by an experienced therapist. Standardized written and verbal information, modeling through therapist demonstration, role playing, video examples, viewing video of previous sessions, therapist feedback and support, and evaluation of child progress are used to teach parents the EMT procedures. Research Design and Methods: The design involves random assignment to either EMT or a control "business as usual" condition. The key question in this efficacy study is whether the intervention works when implemented as designed. Thus, researchers will take steps to ensure and measure the fidelity of the EMT implementation and amount of language intervention treatments received by participants in both the experimental and control conditions. Children will be assessed four times over an 18-month period. Control Condition: The control group will receive the community "business as usual" condition. This will include children who receive language intervention and those that do not, children enrolled in childcare and children cared for by their parents. These conditions represent the natural variability in treatment for this population and researchers will carefully document this variation. Key Measures: Six types of measures will be used: (a) screening measures to determine participant inclusion; (b) baseline status measures of child and family; (c) standardized tests and other assessments of children's language assessed over time; (d) measures of child behavior and social skills over time reported by parents and teachers; (e) observational measures of parent-child interactions, including, direct measures of parent's implementation of EMT and measures of the child's language learning environment at home; and (f) measures of parent stress, competence related to parenting, and support for language. Data Analytic Strategy: Researchers will test the efficacy of the intervention over time using individual growth curve models. These models will be used to test intervention effects by detecting differences between treatment and control groups in linear slopes (rates of change) over the four waves of measurement from pretest to the 18-month follow-up. Researchers will also examine how parent and child characteristics moderate the efficacy of the EMT language intervention, which may be important for understanding the conditions (presence of key child and parent characteristics) for which the EMT intervention protocol improves language and social and behavioral outcomes. Publications Book chapter Kaiser, A.P. (2014). Using Single Case Designs in Comprehensive Programs of Research. In T. Kratochwill, and J. Levin (Eds.), Single–Case Intervention Research: Methodological and Statistical Advances (pp. 309–323). Washington, DC: American Psychological Association. Journal article, monograph, or newsletter Kaiser, A.P., and Roberts, M.Y. (2013). Parents as Communication Partners: An Evidence Based Strategy for Improving Parent Support for Language and Communication in Everyday Settings. Perspectives on Language Learning and Education, 20(3): 96–111. doi:10.1044/lle20.3.96 R?oberts, M.R., Kaiser, A.P. Wolfe, C., Bryant, J., and Spidalieri, A. (2014). Effects of the Teach-Model-Coach-Review Instructional Approach on Caregiver use of Language Support Strategies and Children's Expressive Language Skills. Journal of Speech, Language, and Hearing Research, 57(5): 1851–1869. doi:10.1044/2014\_JSLHR-L-13–011 Roberts, M., and Kaiser, A. (2012). Assessing the Effects of a Parent-Implemented Language Intervention for Children With Language Impairments Using Empirical Benchmarks: A Pilot Study. Journal of Speech, Language, and Hearing Research, 55: 1655–1670 . doi:10.1044/1092–4388(2012/11–0236) Roberts, M.Y., and Kaiser, A.P. (2011). The Effectiveness of Parent-implemented Language Interventions: A Meta-analysis. American Journal of Speech-Language Pathology, 20(3): 180–199. doi:10.1044/1058–0360(2011/10–0055

An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model

Ferrell, Kay

Development and Innovation

R324A160139

3 years (7/1/2016-6/30/2019)

Co-Principal Investigator: Jamie Erskine Purpose: The purpose of this project is to develop an intervention that trains providers to work with families on positive mealtime routines for infants and toddlers with severe visual impairment. Mealtime routines encourage children to develop behaviors that foster independence, a critical skill for success in classroom settings. However, most infants and toddlers with visual impairment require assistance at mealtime due to their inability to observe and imitate mealtime skills and engage in positive social interactions through eye contact. To address this need, this study will develop a family-centered intervention, the Mealtime Routines for Visual Impairment (MRVI) Intervention, to support infants and toddlers with visual impairment in gaining independent mealtime skills. Project Activities: The intervention will be developed and pilot tested iteratively through a series of studies. In Study 1, the research team will survey Early Interventionists and Teachers of Students with Visual Impairment — Early Intervention (TSVI-EI) providers to learn their current knowledge about independent mealtime skill development for infants with visual impairment. Across Studies 2–4, the team will develop the intervention, including a professional development training for TSVI-EI providers, and collect provider and family data to inform intervention refinement. Study 5, the pilot study, will use a small randomized controlled trial to investigate the promise of the MRVI Intervention for increasing family confidence and positive mealtime interactions and promoting a variety of child outcomes related to mealtime independence (e.g., age-appropriate mealtime behaviors and food selectivity). Products: The product of this project will be a fully developed intervention to support positive mealtime skills in infants and toddlers with visual impairment, peer-reviewed publications, and presentations. Structured Abstract Setting: This research will take place in family homes and other natural environments of infants and toddlers with visual impairments across seven states — Illinois, Kentucky, Maryland, Missouri, New Mexico, Utah, and Washington. Sample: There will be approximately 400–500 TSVI-EI providers and other Early Interventionists working with children with visual impairment across the country participating in the initial survey. For the next series of three studies, 12 TSVI-EI providers with 12 infants/toddlers and their families will participate. For the pilot study, a new group of 14 TSVI-EI provider/family pairs will participate. Participating infants must be diagnosed by a pediatric ophthalmologist as having a severe visual impairment. Intervention: For the MRVI Intervention, TSVI-EI providers will use a family-centered approach for helping families with children with severe visual impairment during mealtime routines to develop the child's independent eating and other mealtime skills. The provider training will include face-to-face professional development, online learning resources, and possible distance coaching. Providers will use guided decision-making tools in partnership with parents (or other caregivers) to develop individualized family mealtime routines (e.g., making tactile adaptations, encouraging the use of utensils) that address measurable family and child outcomes. Research Design and Methods: The intervention will be developed in a series of iterative steps. In Study 1, TSVI-EI providers and other Early Interventionists working with children with visual impairment will complete an online survey about their current knowledge of independent mealtime developmental skills. Data from this survey will be used to help develop the intervention. Studies 2 — 4 will be conducted with a sample of 12 TSVI-EI provider/family pairs across the three studies. Study 2 will include only the providers, focused on developing provider training using evidence-based professional development practices. They will be trained on the initial version of the intervention, and feedback during this phase will be used to make improvements. Study 3 will examine whether there is a substantial benefit of adding distance coaching after training, with half the providers assigned to receive online coaching and the other half assigned to receive no coaching as they work with their participating family. Feedback from this stage will guide revisions to the intervention as well as establish implementation fidelity guidelines for the pilot study. Study 4, conducted simultaneously with Study 3, will examine the preliminary outcomes for families receiving the MRVI Intervention from the 12 participating providers. Families will identify individualized goals and strategies, and change in family and child outcomes will be measured. For Study 5, the pilot study, researchers will conduct a small randomized controlled trial with a new sample of 14 TSVI-EI provider/family pairs to examine whether there is evidence of promise for family outcomes (i.e., parent-child interaction, parent confidence in working with child on mealtime skills) and child acquisition of independent mealtime skills (i.e., age-appropriate mealtime developmental skills, food selectivity, and behavioral responsiveness to family members during mealtime). Control Condition: During the pilot study, the families in the control condition will receive their usual early intervention services for their visually impaired child. Key Measures: Family and child outcome measures include the Nursing Child Assessments Feeding and Teaching scales, the Behavioral Pediatric Feeding Assessment, anthropometric measures to assess growth (e.g., length, weight), the Early Intervention Development Profile, the Ehrhardt Developmental Prehension Assessment (i.e., fine motor development), scales of parent confidence and efficacy, checklist of foods the child eats, samples of observed mealtime parent-child communications, and parent surveys. Usability for the provider will be measured through a researcher-developed survey, online mastery quizzes, and journals of their impressions. Feasibility and fidelity of implementation will be measured through monthly video recordings of provider sessions with families and of coaching sessions with providers. Data Analytic Strategy: Survey and feasibility rating data will be examined through descriptive statistics and correlation matrices. Qualitative data (e.g., impression journals) will be analyzed for thematic content. Video recorded sessions for fidelity will be coded for practitioner behavior in the home and the parent's ability to implement the intervention in a routine setting, with chi-square analyses of expected and observed criteria. To analyze the child and family outcomes in the pilot study (parent report measures and observational scoring), the research team will use repeated measures analysis of variance.

Assessing the Comprehension of Language in 2-Year-Olds Using Touch-Screen Technology

Golinkoff, Roberta

Measurement

R324A160241

3 years (8/1/2016-7/31/2019)

Co-Principal Investigators: Kathy Hirsh-Pasek (Temple University), Jill de Villiers (Smith College), and Aquiles Iglesias (University of Delaware) Purpose: The purpose of this project is to develop a reliable and valid computer-based language assessment for children ages 24–36 months. Past research has demonstrated that early language skills are predictive of later language and academic skills. Therefore, early identification of children with language delays can lead to improvement of later outcomes. This project will be extending down in age a developed assessment, the Quick Interactive Language Screener or QUILS, from preschool children (3–5 years) to toddlers. The assessment will yield individual and group profiles in three areas of language — vocabulary, grammar, and process (strategies children use to learn language). Although the assessment will measure language development in all children, an important aim of the assessment will be to identify children with language delays who may be at risk for developing language impairment so that appropriate intervention can begin early. Project Activities: In Year 1, item development will begin by generating twice the number of items needed on the final version, and pilot data will be collected through laboratory and field testing to help reduce the list of items. In Year 2, the item tryout phase will continue to field test the items with the goal of further reducing the length of the assessment to the desired number (40) for the final version. A sample of children will also be chosen this year to participate in a predictive validity study. In Year 3, the assessment will continue to be field tested, followed by additional analyses to finalize the items. In addition, test-retest reliability and convergent and predictive validity will be examined. The project will use Rasch and DIF analyses each year for item analyses. Products: The products of this project include a fully developed, reliable, and valid assessment of language development for 24- to 36-month-old children, with the ability to help identify children with delays who are at risk for language impairment. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in laboratories and natural education settings (i.e., child care centers and homes, Early Head Start) in Delaware, Pennsylvania, and Massachusetts. Sample: At least 880 children ages 24–36 months will participate in this research. Children with a large range of language abilities will be recruited, including those who are likely to be at risk for language impairment. Assessment: The language assessment is based on the QUILS, which was developed with previous IES funding for preschool children. This project will extend the assessment to target children ages 24–36 months. This computer-based language assessment will use touch-screen technology to yield both individual and group profiles in three areas of language development. Two modules will measure language products (what the child knows) in the areas of vocabulary and grammar, and the third module will measure process (strategies children use to learn language, including both vocabulary and grammar learning). The assessment is designed for ease of use by the children (i.e., low response demands) and ease of administration by teachers, paraprofessionals, and other service providers. The final assessment is expected to have 40 items and take approximately 20 minutes to administer to a child. Research Design and Methods: In Year 1, the research team will generate at least 80 items, more than double the expected final number, based on both the original QUILS and the creation of new items. These items will be pilot tested in a laboratory setting for content validity, with each child receiving only portions of the assessment in order to focus in depth on the items. Items from all three modules will then be tested in the field and analyzed with Rasch and DIF models, with the goal of reducing the number of items to 60. In Year 2, the researcher team will implement the item tryout phase in the field, with similar item analyses, to reduce the number of items to the best 40 items. In addition, the research team will identify the lowest performing children and a random selection of typically scoring children to participate in the predictive validity study. In Year 3, the research team will test the final assessment in the field. Different subsamples of children will take an additional assessment to determine test-retest reliability and convergent validity. Finally, the predictive validity study will determine whether a combination of the new QUILS and an existing language measure better predict later QUILS scores than either measure alone. Control Condition: Due to the nature of the research design, there is no control condition. Key Measures: The Peabody Picture Vocabulary Test (PPVT) and the MacArthur-Bates Communication Development Inventory (MCDI) will be used to examine the assessment's concurrent convergent validity, and the MDCI will also be used to examine predictive validity. Data Analytic Strategy: For item analyses each year, the researchers will use Rasch analysis for each of the three modules and DIF analyses for gender and SES to assess item bias. Test-retest reliability and convergent validity will be examined using correlational analyses and predictive validity will be examined using regression analysis. Related IES Project: Using Developmental Science to Create a Computerized Preschool Language Assessment (R305A110284)

Assessment of Natural Play for Instructional Planning

Lifter, Karin

Measurement

R324A100100

5/1/2010 to 4/30/2014

Purpose: Play is a natural activity that young children use to explore and learn about their world, and how to function in it. Young children with delays in cognition, language, and social interaction show delays and limitations in their play activities that correspond to their other delays and therefore do not benefit in the same way as children without disabilities. The central premise of the Developmental Play Assessment (DPA) instrument is that instructional goals for infants, toddlers, and young children with disabilities, or at risk for disabilities, should include attention to developments in play as well as to developments in other domains. The DPA was designed as a tool to generate a profile of a child’s skills in play for the purposes of guiding instructional planning. The proposed project seeks to (a) adapt the research version of the Developmental Play Assessment- Research (DPA-R) into a user-friendly version for practitioners (Development Play Assessment-Practitioners); and (b) evaluate the psychometric properties and practical feasibility of the Developmental Play Assessment-Practitioners (DPA-P). Project Activities: Researchers will select and recruit 820 children, with and without disabilities, ranging in age from 8 to 60 months, and conduct longitudinal follow-up of about 217 of these children. Children’s play behaviors observed during study sessions will be recorded and coded into play categories that are organized into a developmental sequence. This sequence will be validated, and the reliability and validity of the checklist for practitioners developed from this work will be assessed. Products: The main product will be a fully developed and validated assessment for practitioners to use to assess children’s play skills for instructional purposes. Supporting documentation, evidence on the validity and reliability of the DPA-P, and an on-line package for training practitioners to use the instrument will also be available. Structured Abstract Setting: The research will be conducted in natural settings (e.g., homes, day care, early intervention programs, and schools) in Massachusetts. Population: Children aged 8 to 60 months, with and without disabilities, will be included in this study. Assessment: The DPA-R was developed for use in research settings for assessment and educational intervention. Its primary purpose is to determine a child’s progress in natural play activities (i.e., provide a profile of skills in play) to guide instructional goals in play. It currently is based on a 30-minute, video recorded sample of a child playing with four groups of toys, with a familiar adult present. These play behaviors are then classified into qualitatively different play categories that are organized in a developmental sequence. Progress through the sequence is based on quantitative analyses to determine which categories the child has attained (i.e., mastered categories), which categories the child is in the process of learning (i.e., emerging categories), and which categories appear to be too difficult at that time (i.e., absent categories). Instructional planning can be targeted around the categories evaluated at the emerging levels of play. For the DPA-P, practitioners will use checklists for direct observation, and use a simple scheme to identify category membership. Research Design and Methods: A total of 820 children, with and without disabilities, spanning the age range of 8 months to 5 years of age will be recruited for calibrating and scaling the DPA-P. A subset of these children (n = 217) will be followed every 6 months, until 60 months to verify the longitudinal sequence of the play categories and predict readiness for school. Researchers will use Item Response Theory procedures to determine if the DPA reflects increasing play ability with increasing age. Content validity will be assessed through expert panel reviews. Predictive validity will be assessed in the longitudinal study by comparing results on the DPA to performance on a standardized measure and parent reports of school readiness. Concurrent validity will be assessed through comparisons of the DPA with the other assessments measuring similar constructs. Reliability will be assessed to make sure raters consistently identify target behaviors, target behaviors are consistently classified into the appropriate play categories, and that ratings are consistent over time and across raters. Researchers will also assess the internal consistency of the items included in the DPA. Control Condition: In order to determine play profiles to be used for instructional purposes for children with disabilities or at risk for disabilities, data from children developing without identified disabilities will also be gathered. These data will serve to evaluate the ability of the DPA-P to distinguish between and among these groups of children. Key Measures: In addition to the DPA, standardized measures of child development and adaptive behavior will be used. A measure of school readiness will also be used to assess predictive validity of the DPA. Two parent and teacher report measures will also be used to assess children’s school readiness and their play with toys. Data Analytic Strategy: Confirmatory factor analysis will be used to verify the hypothesized structure within the DPA. Multilevel growth curve modeling will be used to investigate the longitudinal sequence of the developmental tasks. Item Response Theory will be used to develop a single scale that is meaningful to a practitioner as an index of level of developmental play. Correlational analyses will be used to assess reliability and validity. Publications Book chapter Lifter, K. (2015). Forward. Family-Centered Early Intervention: Supporting Infants and Toddlers in Natural Environments (pp. ix-x). Baltimore, MD: Paul H. Brookes Publishing Co. Journal article, monograph, or newsletter Lifter, K., Mason, E.J., and Barton, E.E. (2011). Children's Play: Where we Have Been and Where we Could go. 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Building Foundations for Self-Determination in Young Children with Disabilities: Developing a Curriculum for Families

Summers, Jean Ann

Development and Innovation

R324A090267

7/1/2009 through 6/30/2012

Purpose: Self-determination is defined as a set of abilities and skills that allow one to define personal and interpersonal goals in life and to take initiative in reaching those goals. A self-determined young person has the ability to identify goals, problem-solve effectively, and appropriately express and advocate for him or herself. Self-determination has been associated with positive academic and post-transition outcomes in adolescents and young adults with disabilities. In the current early childhood special education literature, there are interventions targeted at specific foundation skills for developing future self-determination, such as engagement, self-control, or executive function. However, there is no evidence-based intervention that provides a coordinated and comprehensive approach to encouraging the development of appropriate precursors of self-determination in young children with disabilities. The purpose of this study is to develop tools to enable families and practitioners to encourage the development of skills for self-determination in children ages 3–5 with disabilities. Project Activities: The Phase I design work will include an expanded literature review, family and practitioner surveys, and in-depth interviews with a sample of survey respondents. This input will be used to create a draft intervention, related materials, and observational measures. The Phase II development work will begin with a case study of the draft intervention with one family-practitioner dyad in each of the three participating states. Developers will then revise the intervention and repeat this process twice more. The Phase III pilot will involve testing the intervention with family-practitioner dyads in three additional sites in each state. Products: Study products will include a fully-developed Foundations intervention, an assessment of the feasibility and usability of the intervention, an effective fidelity measure to assess implementation, and evidence on the effects of the intervention on child outcomes identified as precursors of self-determination (i.e., choice making, engagement and self-regulation). Structured Abstract Setting: The Foundations Project will be conducted in Kansas, Iowa, and New Jersey. Population: The population in Phase I (Design) will include approximately 200 family members and 150 preschool practitioners across the three states, who will participate in surveys to identify attitudes, preferences, and strategies about self-determination. In Phase II (Development), the population will include a total of 9 dyads (3 in each state), or 18 total family and practitioner partners. In Phase III 3 (Pilot), 48 dyads or 96 total family and practitioner partners, will participate in a pilot test of the intervention. Phases II and III will involve children with disabilities ages 3 to 5. Recruitment will target diversity in race/ethnicity, SES, and, for practitioners, training and experience. Intervention: The basic premise of the Foundations intervention is to embed strategies and environmental accommodations to enhance choice-making, engagement, and self-regulation into relevant home, community, and classroom routines. The steps in the intervention will include: (a) Overview and training of families and practitioners; (b) Identification of the child’s needs; (c) Review of the home/classroom environment; (d) Implementation of the Foundations Intervention; (e) Review of the results and replication in another set of routines; and (f) Re-assessment of goals with establishment of new goals as needed. Research Design and Methods: The Foundations intervention will be designed, refined iteratively through a series of case studies, and pilot tested. The project will use a Participatory Action Research (PAR) approach to assure continuous feedback and enhance the ultimate utility and feasibility of the intervention. Eight members in each state will be recruited to form a PAR group, which will hold videoconferences in each phase of the project to inform development and revision of the intervention. Development will involve an embedded case studies design. One family-practitioner dyad in each state will constitute Dyad Group I, and will implement the intervention for two months. Feedback will be gathered, results of the implementation trials will be analyzed, and revisions will be completed in the following month. This procedure will be repeated over the next two months with Dyad Group II, followed by a second month-long period for analysis and revision. Finally, the process will be repeated with Dyad Group III. Measures from Dyad Groups I and II will continue to be collected throughout the process. The pilot test of the revised intervention will involve a purposive sample of 48 dyads that represent diverse groups among preschool programs (rural, urban, suburban, home-based, inclusive where possible), practitioners (ECSE teachers, therapists, and home visiting special educators), and families (different ethnic and socioeconomic groups). Control Condition: There is no control condition. Key Measures: Study measures include two semi-structured, open-ended family and practitioner surveys to gather input for the intervention development; implementation fidelity measure checklists and rating scales; and outcome measures focused on child choice-making, engagement, self-regulation, and learning capacity. Data Analytic Strategy: The open-ended surveys in the design phase will be analyzed using content analysis procedures to sort responses by emergent themes. Researchers will use t-tests in the analysis of the pilot results to assess whether the Foundations intervention is associated with changes in the behavior of the family/practitioner behavior and the home/school environment. T-tests will also be used to assess whether or not changes in child outcomes measuring self-determination skills are associated with participation in the Foundations intervention. Publications Book chapter Palmer, S., Wehmeyer, M., & Shogren, K. (in press). The development of self-determination. In M. L. Wehmeyer, K. A. Shogren, T. Little, & S. Lopez (Eds.),Handbook on the development of self-determination. New York: Springer. Journal article, monograph, or newsletter Erwin, E.J., Maude, S.P., Palmer, S.B., Summers, J.A., Brotherson, M.J., Haines, S.J., Stroup-Rentier, V., Zheng, Y., and Peck, N.F. (2015). 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Building Math Readiness in Young Deaf/Hard-of-Hearing Children: Parents as Partners

Kritzer, Karen

Development and Innovation

R324A090145

7/1/2009 through 6/30/2012

Purpose: Despite a national focus on school readiness and mathematics achievement, deaf and hard-of-hearing (D/HH) students continue to demonstrate low-levels of achievement in various areas of mathematics involving both computation and problem solving. Although there is limited research documenting precisely when these low achievement levels begin, recent studies indicate that D/HH children may begin formal schooling already performing at levels below their hearing peers. There is a national need to intervene early with young D/HH children in order to close the gap in mathematics achievement that exists between this population and their hearing peers. The purpose of this project is to develop and document the feasibility of an online program that will help parents of pre-school D/HH children increase their child’s readiness for school mathematics. The rationale for using an online program is the low-incidence and vast geographical distribution of the deaf population. The intervention will be based on natural, daily activities and increasing parents’ awareness of their role in mediating their child’s learning. The project will investigate whether involvement in the program influences parent behavior in their interactions with their children to stimulate early mathematics learning in the home, the degree to which this impacts D/HH children’s understanding of fundamental mathematics concepts, and the extent to which the presentation of that intervention (in-person vs. online) is related to that change. Project Activities: In the first year, the research team will recruit Phase I (in-person training) participants, collect and code baseline data on the children, develop and implement five in-person, full-day workshops, collect and analyze implementation and post-intervention data on children, and revise the intervention based on the Phase I results. The project team will also begin to recruit for the next phase and develop the on-line version of the Parents as Partners intervention. For Phase 2 conducted in the second year, the team will gather and analyze baseline data, complete and implement the online version of the intervention, and collect and analyze implementation and post-intervention student data. In the third year, the team will complete the analysis for in-person and online interventions, and revise and refine the intervention, materials, and procedures, and prepare an online prototype of the intervention. Measures developed for this study will also be refined. Products: This project will result in an online program that is intended to help parents of pre-school D/HH children increase their child’s readiness for school mathematics. Data on the feasibility and promise of the online approach for improving preschool D/HH children’s math readiness as compared with an in-person intervention will also be available. Structured Abstract Setting: In-person workshops will be conducted in Kansas. The subsequently developed on-line parent program will be offered to families in Connecticut, Rhode Island, and Massachusetts. Population: Ten families with D/HH children between the ages of 3-5 years will be recruited for Phase 1 (in-person) and approximately 20 families for Phase 2 (online). Intervention: A series of five workshops or online modules will each focus on a theme: math in cooking and mealtimes; math in daily routines (bedtime, morning rituals, etc.); math out in the world (while shopping, traveling in the car, etc.); math in cultural events (holiday celebrations, religious events); and math in games and activities. Parents will learn to visually communicate mathematics language related to the themes (e.g., measurement and quantity vocabulary related to cooking). Parents will learn to recognize indications of their children’s awareness of number concepts, geometry/spatial sense, measurement, categorization, and problem solving. The program will include authentic (live and videotaped) examples to model targeted concepts and skills including questioning, eye contact, and proper signing. The workshops will also focus on the following mediation and interaction techniques: (1) Intentionality and reciprocity—communicating with a purpose, obtaining visual attention, responding to communication attempts, and focusing on stimuli that are engaging to the child; (2) Transcendence and meaning—asking questions that encourage critical thinking or comparison with previous experience; and (3) Mediating feelings of competence and regulating behavior—encouraging children to slow down and think rather than respond impulsively, encouraging planning and persistence, and using specific praise that is focused on the child’s attempts at learning. Research indicates that a valuable feature of effective programs is the opportunity for parent collaboration with peers and experts, so the workshops/modules will be supplemented by regular discussions and “chats” via personal video conferencing and Wikispace technology. Research Design and Methods: The Parents as Partners online intervention will be developed iteratively in two phases. In Phase 1, five in-person workshops will be developed and implemented with parents of deaf or hard of hearing preschoolers. The workshop content and materials will be revised based on parent feedback during and after the workshops. In Phase 2, the workshops will be transferred to an electronic format and posted on an established website for parents to access. As in Phase I, the online workshop modules will be revised based on parent feedback during and after parents have completed the modules. For both the in-person and online implementation of the intervention, data will be collected on the feasibility and usability of the Parents as Partners intervention, as well as on the promise of the intervention to stimulate early mathematics learning and improve parent-child interactions. Control Condition: There is no control condition. Key Measures: Parent measures include videotapes of parent-child interactions during specified activities in the home (e.g., bathing routines), electronic daily logs and journals documenting children’s awareness of early math concepts, exchanges during wikispace collaboration/coaching sessions, and parent surveys. Child measures include a standardized measure of developing mathematics ability and a set of mathematically-oriented performance-based tasks focused on number/counting, geometry/spatial sense, measurement, categorization, and problem solving. Data Analytic Strategy: Data will be analyzed using both quantitative and qualitative methods. For children, pre- and post-intervention comparisons will be made across both the standardized test and performance assessment data, looking for promise that children’s knowledge and their use of mathematical language and problem-solving strategies have changed over the course of the intervention. Parent data will be analyzed to evaluate the promise of the success of the intervention in training strategies for developing mathematics skills and use of mathematics concepts in the home; and to continue development of the intervention. Parents’ evaluation of the strengths and weaknesses of the workshops/modules and the research team’s analysis of trained strategies that are not being used in the home observations are examples of ways that the data will inform intervention revisions and refinements. Findings from each phase will also be compared to assess differences between in-person and online intervention implementation. Publications Journal article, monograph, or newsletter Kritzer, K. 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Building Social Competence for School Success through a Continuum of Positive Behavior Supports (CPBS)

Snell, Martha

Development and Innovation

R324A080016

6/1/2008 to 5/31/2011

Purpose: A delay in social skills may interfere with all areas of learning and academic achievement. Problem behaviors not resolved in preschool often continue into elementary school and adolescence. Young children who manifest problem behavior are more likely to drop out of school when they become older, become delinquents in adolescence, abuse drugs and alcohol, join gangs, exhibit violent and abusive behavior in adulthood, and be incarcerated as adults. Therefore, it is important to design interventions that prevent the development of problem behaviors in young at-risk children. This research team is addressing this need by developing a comprehensive intervention, Continuum of Positive Behavior Support, designed to build preschool children's social skills and reduce problem behaviors. The purpose of this study is to develop and test the feasibility of using Continuum of Positive Behavior Support in Head Start classrooms. Project Activities: The Continuum of Positive Behavior Support intervention will include universal strategies to be used with all children in the classroom and individualized interventions for children who exhibit problem behaviors that persist despite treatment with universal strategies. A three phase development process is planned. During the first year, an initial version of the intervention package and teacher training materials will be developed. During years two and three, an iterative process will be used to further refine the intervention and to test the feasibility of its use in Head Start classrooms. Pretest-postest comparisons will be made for each classroom to determine whether there are changes in classroom quality, classroom behavior management practices, use of Continuum of Positive Behavior Support strategies, and children's behavior. Products: The products of this project include a fully developed intervention intended to build preschool children's social skills and reduce problem behaviors, published reports, and presentations. Setting: The research will occur in Virginia. Population: Approximately 140 staff from five collaborating Head Start programs will participate in this study. These programs represent diversity in geographical areas in Virginia. A minimum of 10% of the enrolled children have disabilities but the five participating programs often exceed this requirement. Intervention: The Continuum of Positive Behavior Support includes two levels of intervention: universal interventions that are used with all children in the classroom and intensive individualized interventions necessary for children whose problem behavior persists despite the use of universal strategies. Each level of intervention will include strategies for preventing and responding to problem behavior and teaching social competence. The universal level will involve strategies for designing classroom environments and activities; teaching self-regulation skills; and promoting positive child-teacher relationships, peer interaction, friendships, and the use of appropriate behavior in problem situations. The universal level will also involve the use of the Social Pragmatic Storybook Intervention. The Social Pragmatic Storybook Intervention includes a series of lessons using storybooks, thematic play materials, and an organized play session to teach children social pragmatic skills. To address the needs of children whose problem behavior is not responsive to the universal practices, an individualized Positive Behavior Support will be created for each child. Educators will be given instructions for how to use a team-based process to develop a Positive Behavior Support plan and how to evaluate whether it is improving children's behavior outcomes. Research Design and Methods: A three phase development process is planned. During the first year, an initial version of the intervention package and teacher training materials will be developed. During years two and three, an iterative process will be used to further refine the intervention and to test the feasibility of its use in Head Start classrooms. In the second year, each component of the intervention will be implemented in five classrooms and refined. In the third year, the entire intervention will be implemented in ten classrooms and tested for its feasibility. In addition, data will be collected in the third year to document use of the intervention and children's behavioral changes using a multiple probe single subject design. Control Condition: Observations of baseline performance in each of the classrooms will be conducted. Key Measures: Data on teachers' current practices, classroom management, social competence instruction and beliefs about discipline will be collected. In addition, the researchers will collect data on the early childhood classroom quality and fidelity of implementation for components of the Continuum of Positive Behavior Support and the entire Continuum of Positive Behavior Support intervention. Finally, teacher-child relationships and measures of child behavior (e.g., daily discipline records, observation of intervals of problem behavior) will be collected. Data Analytic Strategy: Pretest-postest comparisons will be made for each classroom to determine whether there are changes in classroom quality, classroom behavior management practices, use of Continuum of Positive Behavior Support strategies, and children's behavior. Publications Journal article, monograph, or newsletter Snell, M.E., Berlin, R.A., Voorhees, M.D., Stanton-Chapman, T.L., and Hadden, S. (2012). A Survey of Preschool Staff Concerning Problem Behavior and Its Prevention in Head Start Classrooms. 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CHildren in Action: Motor Program for PreschoolerS (CHAMPPS)

Favazza, Patricia

Development and Innovation

R324A150074

3 years (7/1/2015-6/30/2018)

Co-Principal Investigator: Michaelene Ostrosky (University of Illinois at Urbana-Champaign) and Gary Siperstein (University of Massachusetts, Boston) Purpose: The purpose of this project is to fully develop a class-wide motor skills intervention, CHildren in Action: Motor Program for PreschoolerS (CHAMPPS), for preschool children with developmental disabilities. Many of these children have delays in motor development, yet do not engage in structured motor play and physical activities to improve these skills. Enhancing motor development is an important goal itself, but fundamental motor skills are also linked to the development of cognitive processes and social skills. This study will focus on the development of an intervention that supports motor development in the context of motor play, including universal design for learning (UDL) lessons and physical activities, with the aim of improving children's motor, social and cognitive development. Project Activities: The research team will refine and complete development of a motor skills intervention, CHAMPPS, aimed at improving outcomes for preschool children with developmental disabilities or delays while implemented class-wide in inclusive settings. In the first 2 years, the curriculum will be iteratively developed and field tested in eight classrooms per year. In the final year, the CHAMPPS will be pilot tested by randomly assigning 16 classrooms to the intervention or business-as-usual control condition to evaluate the promise of the intervention for improving children's motor skills as well as cognitive and social development. Products: The products of this project include a fully developed intervention that provides support in motor development for children with developmental disabilities or delays, peer-reviewed publications, and conference presentations. Structured Abstract Setting: This study will take place in inclusive preschool classrooms with children with disabilities or delays in Massachusetts and Illinois. Sample: A total of approximately 480 preschool children (ages 3–5 years) and their teaching staff from 32 classrooms will participate in this study across each of the three phases. Although all children in each classroom will participate in the class-wide intervention, target children will include four children from each class with identified developmental disabilities or delays, including children with autism spectrum disorder (ASD) and other diagnoses. Eight classrooms (32 children with disabilities) will participate in each of the first two phases, and 16 classrooms (64 children with disabilities) will participate in the pilot study. Intervention: CHAMPPS will incorporate principles of universal design for inclusive classrooms with children with disabilities to improve motor development. Implemented over a 14-week period, classes will spend 2 weeks (3 days per week, 30 minutes per day) on one of seven distinct motor skill units – foundational skills (visual tracking, motor imitation), walking and running, balance and jumping, trapping and catching, throwing, striking, and kicking. Each skill will be associated with specific physical activities that provide opportunities to practice those skills, and related vocabulary and social skills that are linked to school readiness will be incorporated into the lessons. Research Design and Methods: In Phase 1, the first phase of the iterative development process, the research leadership team will review professional guidelines so that the components of the intervention correspond with the National Association for Physical Education's quality indicators for preschool motor programs and physical activity. The team will also obtain expert feedback from teachers, begin to manualize the intervention, develop feasibility and fidelity measurement tools, and conduct initial field tests with children and teaching staff in eight classrooms. In Phase 2, CHAMPPS will be field tested in eight new classrooms to assess the intervention's content validity, usability, feasibility, and fidelity of implementation. In Phase 3, the research team will pilot test the intervention in 16 classrooms in two states through a randomized trial in which classrooms will be assigned to the CHAMPPS or a control group to examine the impact of the intervention on child motor, social, and cognitive development. The pilot test will also examine fidelity of implementation, impact on level of physical activity, and teacher outcomes. Control Condition: In the pilot study, children in the business-as-usual control condition will experience the same motor movement activities that they are already receiving in the classroom. Key Measures: Key measures throughout the project will include researcher-developed measures of fidelity and feasibility, the Abilities Index to assess severity of disability, and accelerometer data (device designed to capture physical activity level). Additional key outcomes during the pilot study will include motor skills measured through the Peabody Developmental Motor Scale and Test of Gross Motor Development – Second Edition, social skills measured through the Social Skills Improvement System – Rating Scales, and cognitive skills measured through the Boehm Test of Basic Concepts – 3 Preschool. Data Analytic Strategy: Data from the initial field tests will be analyzed though frequency counts of responses to researcher-developed measures of feasibility and content validity, as well as by examining descriptive statistics from the fidelity of implementation measure. For the pilot test, data will be analyzed using hierarchical linear models on child outcome data, accounting for the nesting of students within classrooms and classrooms within treatment group.

Children's School Success Curriculum - Plus (CSS+): Supporting All Children's Progress in the General Curriculum

Horn, Eva

Development and Innovation

R324A100239

7/1/2010 through 6/30/2013

Purpose: Curricula that incorporate universal design for learning (UDL) features provide educators with instructional goals, methods, and materials to accommodate multiple learner differences and may improve the participation and progress of children with or most at risk for disabilities. These features provide diverse groups of learners with a variety of formats that may improve their use of resources and materials and may increase their opportunities to engage in classroom activities, express ideas, and demonstrate knowledge. Despite the general theoretical support for UDL, few commercially available preschool curricula incorporate its principles and features. The purpose of this project is to modify an existing preschool curriculum, Children's School Success, incorporating the principles of UDL. Children's School Success is a comprehensive curriculum that integrates activities targeting social, literacy, science, and math skills. The researchers will refine the Children's School Success curriculum and test its potential for improving preschoolers' education outcomes. Project Activities: Researchers will implement several iterative cycles to design, field test, and revise Children's School Success. Curriculum modifications will incorporate the principles of UDL and provide specific strategies for individualizing instruction, linking the curriculum to early learning standards, and conducting progress monitoring. Pilot studies will be conducted to evaluate the feasibility of implementing the enhanced curriculum in authentic early education settings and assess the potential for improving child outcomes. Products: The products of this project will be a fully operational curriculum called Children's School Success Plus as well as published reports describing its promise for improving outcomes. Structured Abstract Setting: The research will take place in Kansas, Maryland, and West Virginia. Population: Approximately 48 preschoolers and 12 teachers will participate in this study. These children will have an Individualized Education Program (IEP) or be most at risk for disabilities based on their ABILITIES index rating and teacher nomination. Intervention: Children's School Success is a comprehensive preschool curriculum that addresses literacy, math, science, and social competence. The curriculum is a year-long program that includes large and small group instruction and combines academic and social skills activities from other evidenced-based curricula. Three key principles of UDL will be infused into each activity or lesson in the Children's School Success curriculum: multiple means of representation, multiple means of engagement, and multiple means of expression. These principles will ensure that the curriculum will be provided in multiple formats to address a range of ability levels, needs, and interests, and to allow children to demonstrate what they know. Supporting materials will be added to the teacher manual and training materials to define UDL and describe the importance of UDL features and how they can be implemented within each activity. The Buildings Blocks for Teaching Preschoolers with Special Needs approach will also be incorporated into each lesson of the Children's School Success curriculum. This approach provides strategies that promote individualization of instruction and inclusion through curriculum modifications, embedded learning opportunities, and child-focused instructional strategies. Research Design and Methods: An iterative development process will be used to develop, refine, and field test the intervention. During year 1, the intervention and accompanying professional development materials will be developed based on feedback from practitioners and other experts. In year 2, researchers will conduct a feasibility study to evaluate program implementation and acceptability. During year 3, a pretest-posttest pilot study will be conducted in twelve classrooms to determine the promise of the program for improving children's academic and social skills. Control Condition: There is no comparison condition. Key Measures: Information about program implementation and acceptability will be collected through focus groups, teacher logs, interviews, surveys, and observations of teachers. In addition, the researchers will collect data on student literacy, math, and social skills through the Peabody Picture Vocabulary Test-III; Woodcock-Johnston Tests of Achievement-III Applied Problems, Letter-Word Identification, Quantitative Concepts, and Letter naming subtests; and the Wally Test of Social Problem Solving. Data Analytic Strategy: Qualitative data (logs and observations) will be coded and analyzed to evaluate fidelity of implementation. Multilevel analyses will be used to determine whether students with or most at risk for disabilities make significant gains in social and academic skills after exposure to Children's School Success Plus. Publications Book chapter Butera, G., Horn, E., Palmer, S., and Lieber, J. (2016). Understanding Science, Technology, Engineering, Arts, and Mathematics (STEAM): in Early Childhood Special Education. Handbook of Early Childhood Special Education (pp. 143–161). Springer. doi:10.1007/978–3–319–28492–7\_9 Horn, E., Kang, J., Classen, A., Butera, G., Palmer, S., Lieber, J., Friesen, A., and Mihai, A. (2016). Role of Universal Design for Learning and Differentiation in Inclusive Preschools. DEC Recommended Practices: Environment Practices (pp. 51–66). DEC Recommended Practices Monograph Series No. 2. Retrieved from https://www.researchgate.net/publication/306034553\_ Role\_of\_universal\_design\_for\_learning\_and\_differentiation\_in\_inclusive\_preschools. 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Coach Facilitated Mobile Parent-Training Program for Women With Cognitive Delays Who Are Mothers of Infants

Feil, Edward

Development and Innovation

R324A200153

3 Years (07/01/2020 - 06/30/2023)

Co-Principal Investigator: Davis, Betsy; Landry, Susan Purpose: This project aims to develop an adaptation of the existing online Play and Learning Strategies (ePALS) parenting program for mothers with infants when the mothers have significant cognitive delays. Infants of mothers with cognitive delays are at significantly elevated risk for a host of detrimental outcomes, including neglect and abuse of children and school readiness problems. Research indicates that early interventions to improve parenting practices are effective in ameliorating these outcomes. Yet, there is a dearth of these interventions for mothers with cognitive delays. In this project, the research team will modify ePALS for postnatal mothers with cognitive delays; evaluate its feasibility, usability, and acceptability; and test its promise for improving maternal responsiveness and infant social-emotional and communication outcomes. Project Activities: This project will use an iterative process to adapt the ePALS intervention for postnatal mothers with cognitive delays, conduct a single-case design study to ascertain the optimum mode of distal and in-person coach contacts, and run a small randomized pilot study to determine its impact on maternal responsiveness and infant social-emotional development. Products: The products of this project will include a fully developed intervention for infants of mothers with significant cognitive delays and evidence of its promise for improving outcomes for mothers and their infants. The project will also result in peer-reviewed publications and presentations as well as additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: The project will take place in home settings in Oregon. Sample:The sample will include 10 mother-infant dyads participating in focus groups, 8 dyads in the single-case study, and 40 dyads in the randomized pilot study. Participating mothers, recruited through community agencies, will have an infant 3 to 10 months of age, be identified by the agency as a mother with a cognitive delay who may potentially benefit from the ePALS program, and will self-report having a cognitive delay or learning difficulty. Intervention: ePALS is a computerized adaptation of the PALS parenting program. PALS is an in-home, empirically supported, cognitive-behavioral skills intervention for mothers of infants that targets improvement in sensitive and responsive parenting behaviors and minimizing insensitive, harsh, and intrusive behaviors to promote infants' social engagement and language. The web/app version of the intervention includes 11 sessions that take place over 2 to 3 months. Each session in ePALS includes (a) presentation of concepts, behaviors, and examples; (b) parent check-in questions for review by coach; (c) the creation and automatic upload of a 5-minute video of mother-infant interactions for later review; (d) a summary of topics; (e) daily activities (homework); (f) feedback about the program recorded to the database; and (g) weekly coach contact to review mother-infant interaction video as well as session topics and skills. For mothers with cognitive delays, the following adaptations to ePALS will be made: (a) adding exemplar videos of parents with cognitive delays and their infants, (b) modifying existing online content and check-in questions to be instructionally sound for this population, (c) creating a behavioral performance criterion of parenting skills, and (d) creating interactive and gamification features to promote engagement. For this adaptation, there will also be exploration of the combination of in-home and distal coach contact (phone or video) to support parenting skills learning. Research Design and Methods:This project will begin with an iterative process of development using interviews, focus groups, and beta testers for the app. To evaluate the prototype ePALS program in the second year, eight mother-infant dyads will be randomized in a multiple-baseline single-case design, comparing coaching methods of delivery (all in-home or combination of home and distal). This study will examine the optimal dosage and delivery mode preferences to test in the pilot study. In the final year, the research team will test the promise of the intervention using a randomized controlled design with 40 mother-infant dyads assigned to experimental or wait-list control conditions. In order to determine the potential impact on maternal responsiveness and infant social-emotional development and communication, data will be collected at three timepoints: (a) baseline, (b) post-test for the treatment group and second baseline for wait-list control, and (c) follow-up for treatment group and post-test for the wait-list control. Cost analyses will use the ingredients method. Control Condition: In the single-case design, participants serve as their own control. The waitlist control group in the pilot study will receive their usual-care services during the waiting period and will then receive ePALS. Key Measures:Feedback from the advisory committee, focus groups, and beta-testing will guide development. For the single-case and randomized design studies, parent-child interaction videos will be coded using the Landry Parent-Child Interaction Scales to assess naturalistic parent-child interactions. The positive interactions will focus on maternal responsiveness (maternal positive affect, warmth, flexibility, and positive verbal content) and negative interactions will examine ratings of maternal physical intrusiveness as well as verbal and affective negativity. Additional outcomes will be assessed through questionnaires, including infant social-emotional and communication functioning (Ages and Stages Questionnaire-Social Emotional), parents' attitudes and knowledge (PALS Knowledge Questionnaire, Concepts of Development Questionnaire, and Parenting Sense of Competence), and consumer satisfaction. Post-intervention parent interviews will identify further adaptations to the implementation, additional module content, barriers to implementation and treatment fidelity, and strengths and facilitators of the program. Moderating variables will include demographics and adaptive behavior as an indication of disability severity (Vineland Adaptive Behavior Scales). Implementation fidelity and usability, including coaching fidelity, will be collected through session notes. Electronically captured user data will measure coaching dosage, participant app-use, and intervention dosage. Costs for the cost analysis will include start-up costs, including tablet purchase and app software installation; coach training costs, including trainer time and materials costs; technological implementation costs; and coach/supervisor implementation time costs. Data Analytic Strategy:For the initial development phase, the research team will use content analysis techniques to analyze the focus group transcript text. The common themes derived from content analysis will then be applied to the prototype for alpha- and beta-testing. Interviews and app-collected user data from beta-testers will delineate factors for further revision. In the single-case design study, visual analysis will be used to analyze graphed data along with a case-specific approach to estimation of effect size. In the pilot study, the research team will use polynomial contrast function with MANOVA and ANOVA between-group analyses as well as multiple nonparametric procedures. Cohen's d and Hedges's g effect sizes will also be calculated. For the cost analysis, the team will estimate the total and per family costs of implementing ePALS and estimate the marginal cost (the cost of adding one family within an agency after staff are trained and the program has become operational) for the ePALS program.

Developing an Expository Book Reading Intervention for Preschool Children with Language Impairment

Breit-Smith, Allison

Development and Innovation

R324A130205

7/1/13–6/30/17

Co-Principal Investigators: Ying Guo, Jo-Anne Prendeville, and Christopher Swoboda Purpose: Language Impairment (LI) is a common disorder among the school-age population, affecting approximately 7.4 percent of children. Approximately half of the children identified with LI at a young age will go on to be later identified with a reading disability. Young children with impaired language are six times more likely to be identified with a reading disability at school age than non-impaired children. One intervention demonstrating significant and positive effects on preschool children's early language and literacy skills is interactive book reading, in which adults (e.g., parents, teachers) actively involve children in the book reading process. However, few language and literacy interventions have focused on using expository (nonfiction) texts that provide information such as facts, explanations, and reasons for true-life phenomenon in preschool-aged children. Instead, these interventions have largely included fictional narratives, with little attention to expository text and language comprehension skills. Yet, knowledge of the structures and language of expository texts appears to be critical to later reading achievement. The purpose of this project is to develop a supplemental book reading intervention that uses expository books to teach language and expository text skills (i.e., topic knowledge, text structures, signal words, academic vocabulary, inferential language) to preschool-age children with language impairment. Project Activities: This 4-year study will use an iterative process that includes three phases: Phase I will include development, implementation, and revision of two of the four intervention modules; Phase II will include development, implementation, and revision of the remaining two intervention modules; and Phase III will include a feasibility/pilot study to (a) assess the promise of the intervention for improving the language and expository text skills of children identified with language impairment and (b) assess the effects of the intervention on practitioners' expository text knowledge, self-efficacy, and quality of book reading interactions. In addition, the research team will develop and test an intervention-based assessment as a proximal outcome measure for the intervention. Products: The expected products of this project include a fully developed, expository book reading intervention that can be implemented within the typical school day, an intervention-based assessment measure, data on the feasibility and promise of the intervention, and peer-reviewed publications and presentations. Structured Abstract Setting: This research will take place in early childhood special education classrooms in Ohio. Sample: A sample of 96 children who are 3 to 5 years of age with language impairment (LI) will be recruited from 32 classrooms for this study. Four classrooms and 12 children with LI (3 per classroom) will be recruited for Phases I and II to field test the intervention components (total: 8 classrooms and 24 children). Twenty-four classrooms and 72 children with LI will be recruited to test the full intervention in Phase III. Intervention: The expository book reading intervention will be implemented during small-group book reading sessions with three children with language impairment in early childhood special education classrooms. Expository books will be read three times each week. Interactive discussions and informational retellings provide the mechanisms for addressing children's expository text skills. The intervention components will be embedded within four 7-week modules that will focus on four text structures and four science topics (Module 1: Sequence, Plants; Module 2: Compare-Contrast, Animals; Module 3: Cause-Effect, Seasons; Module 4: Problem-Solution, Environment). Practitioners implementing the intervention (i.e., teachers and speech-language pathologists) will participate in professional development consisting of a full-day face-to-face pre-intervention workshop, four face-to-face half-day pre-module workshops, one in-class modeling session per module, and mid- and post-module feedback sessions. Research Design and Methods: The research team will use an iterative process that includes the development, implementation, and revision of each of the four intervention modules, using expert consultants and practitioners to review and provide feedback throughout this process. For pilot testing the feasibility and promise of the intervention, the team will use a small-scale randomized controlled trial, with classrooms randomly assigned to the expository book reading or control condition (12 intervention, 12 control). Children and teachers will be assessed prior to and at the conclusion of each intervention module. Control Condition: Practitioners in the control condition will conduct business as usual. The control classrooms will be observed and the practitioners asked to list the titles of books read in the classroom in weekly logs. Key Measures: To measure child outcomes, the research team will use previously developed, research-based, direct assessments of language and expository skills; language samples; observations of child engagement; and the intervention-based measure developed in this study. Practitioner outcomes will include assessments of expository text knowledge and practitioner self-efficacy, and observations of practitioner-student interactions. Data Analytic Strategy: Qualitative methods will be used to analyze data from focus groups, field notes, and structured interviews used for developing and revising the various aspects of the intervention. Given the nested nature of child data, hierarchical linear modeling will be used to assess the promise of the intervention to improve child outcomes. Practitioner outcomes will be analyzed using multivariate analyses of co-variance. Publications Journal article, monograph, or newsletter Breit-Smith, A., Busch, J. D., Dinnesen, M. S., Guo, Y. (2017). Interactive book reading with expository science texts in preschool special education classrooms. Breit-Smith, A., Busch, J., and Guo, Y. (2015). Sharing Expository Texts With Preschool Children in Special Education. Perspectives on Language Learning and Education, 22(3): 93–102. doi:10.1044/lle22.3.93 Full text Breit-Smith, A., Olszewski, A., Swoboda, C., Guo, Y., Prendeville, J. (2017). Sequence text structure intervention during interactive book reading of expository picture books with preschool children with language impairment.

Developing an Extension of the TELL Curriculum for 3-Year-Old Children with Developmental Speech and/or Language Impairment

Gray, Shelley

Development and Innovation

R324A180093

4 years (07/01/2018-06/30/6022)

Co-Principal Investigators: Wilcox, M. Jeanne; Zheng, Yi Purpose: The purpose of this project is develop and pilot test an expanded version of Teaching Early Literacy and Language across the Curriculum (TELL), a preschool curriculum designed to promote differentiated instruction for children with developmental speech and/or language impairments to improve oral language and early literacy skills. The expanded version of TELL, originally designed for 4-year-old children, will extend the curriculum down to age 3. Many children with mild to moderate delays or disabilities are not receiving high-quality preschool special education with evidence-based literacy instruction and environments that promote language development. The need for a curriculum that could be feasibly implemented with fidelity by preschool teachers led to the development of the original TELL for 4-year-old children. The results of an IES-supported efficacy trial indicated that children with developmental speech and/or language impairment who received TELL demonstrated significantly more growth in a number of early language and literacy skills (e.g., receptive and expressive vocabulary, print knowledge, phonological awareness) than children in the control group. However, preschool frequently begins at age 3, and these children may experience 2 years of preschool or be in mixed-aged classrooms with 4-year-old children. Thus, the goal of the current project is to adapt the TELL curriculum, curriculum-based measures (CBMs), and professional development training to cover a wider developmental range that includes 3-year-old children. Project Activities: The research team will develop the intervention in three phases. They will adapt the existing curriculum based on feedback from practitioners and a review of professional early learning standards, run iterative trials of the revised intervention, and conduct a feasibility study. For the pilot study, the team will conduct a small randomized controlled trial of the revised TELL intervention to test its promise for improving the oral language and early literacy skills of 3-year-old children with developmental speech and/or language impairments. Products: The products of this project will include the fully developed TELL curriculum for 3-year-old children with developmental speech and/or language impairment, peer-reviewed publications, and presentations. Structured Abstract Setting: The research will take place in preschool classrooms (i.e., special education classrooms and inclusive classrooms) in Arizona. Sample: Participants for the development phases include practitioners on the Advisory Team (4 preschool teachers, 2 administrators, and 1 speech-language pathologist), 13 additional preschool teachers, 21 speech language pathologists, and 51 children with developmental speech and/or language impairment. For the pilot study, 24 preschool teachers and their teaching assistants and 140 3-year-old children with developmental speech and/or language impairment will participate. Intervention: Teaching Early Literacy and Language (TELL) is a curriculum for preschool children with developmental speech and/or language impairment that uses evidence-based strategies to support oral language and early literacy skill development across many classroom activities (e.g., shared book reading, math, science, art). In addition to language, the curriculum focuses on explicit, systematic instruction in code-related skills, including conventions of print, beginning writing, grapheme knowledge, grapheme-phoneme correspondence, and phonological awareness. As part of TELL, teachers use curriculum-based measures (CBMs) to monitor children's oral language and early literacy skill development and to design instructional activities that meet individual children's needs. Teachers and teaching assistants receive professional development through formal training and in-class coaching. Research Design and Methods: Development of the intervention will occur in three phases. In the first phase (Year 1), the team will survey the Advisory Team and additional preschool teachers to determine how well the current TELL curriculum meets the needs of 3-year-old children with speech and/or language impairments and how to improve the curriculum for this age group. In addition, the research team will review and revise the curriculum based on how well it meets early learning standards, builds precursor skills targeted by the Common Core State Standards, and meets professional early childhood organization standards. In the second phase (Year 2), the team will conduct field trials of the revised intervention with the Advisory Team teachers and the speech language pathologist to evaluate their experiences with the curriculum components, CBMs, and professional development training. In the third phase (Year 3), the team will conduct a feasibility study of the revised intervention with the Advisory Team and additional preschool teachers to obtain feedback on implementation and satisfaction with TELL. For the pilot study (Year 4), the research team will implement a small randomized controlled trial of the revised TELL, comparing children in classrooms with teachers implementing TELL to children receiving business-as-usual classroom lessons. This pilot test will evaluate the promise of TELL for improving the oral language and early literacy skills of 3-year-old children with developmental speech and/or language impairments. Control Condition: For the Year 4 pilot study, children in the control condition will receive business-as-usual classroom instruction. Key Measures: The following child outcomes will be assessed using both researcher-developed CBMs and standardized assessments (listed in parentheses): phonological awareness (Preschool Early Literacy Indicators; PELI), alphabet knowledge (PELI), print concepts (Phonological Awareness Literacy Screening; PALS-PreK), writing (PELI), vocabulary (PELI), and sentence length complexity (Clinical Evaluation of Language Fundamentals-Preschool 2; CELF-Preschool-2). Teacher outcome measures include observational measures of their use of specific language and literacy teaching strategies, a researcher-developed fidelity checklist, and the Early Language and Literacy Classroom Observation measure (ELLCO Pre-K). Possible child-level moderators of intervention effects include nonverbal cognitive skills (Kaufman Assessment Battery for Children-II), school attendance (school records), home literacy environment (Home Literacy Environment Checklist), and family characteristics (demographic questionnaire). Teacher-level moderator measures include logs of professional development group session attendance, a demographics questionnaire, the Preschool Teacher Literacy Beliefs Questionnaire, and an observational measure of quality of instructional support (Classroom Assessment Scoring System, CLASS pre-K). Teachers will also complete surveys to provide feedback on usability and satisfaction with the curriculum (Stages of Concern Questionnaire) and social validity (researcher-developed survey). Coaches will use the Procedural Fidelity Checklist to measure TELL teachers' adherence to the curriculum. Fidelity of professional development training and coaching will be assessed by measures to be developed by the research team. Data Analytic Strategy: For the pilot study, the research team will use multilevel modeling to assess the intervention's promise for improving child language and early literacy outcomes. Latent growth curve modeling will be used to examine children's growth in the oral language and early literacy skills measured by the CBMs. The team will also conduct exploratory moderator analyses to examine relationships between observed child outcomes, child and family characteristics, and teacher characteristics using multiple linear regressions. Researchers will use descriptive and qualitative analyses (i.e., identification and summary of themes in the feedback data) to evaluate treatment fidelity, usability, and feasibility using data collected from the satisfaction questionnaire, teachers' informal feedback during professional development training activities, and coaches' classroom observations. Related IES Projects: Efficacy of the TELL Curriculum for Preschool Children who are Economically Disadvantaged (R305A170068)

Developing and Testing a Blended Behavior and Language Intervention for Toddlers at High Risk for Persistent Developmental Language Disorders

Kaiser, Ann

Development and Innovation

R324A200193

4 Years (09/01/2020 - 08/31/2024)

Co-Principal Investigators: Hemmeter, Mary Louise; Meeker, Kathleen; Cunningham, Jennifer Purpose: This project aims to develop and evaluate the promise of Toddler Talk, a model that blends two evidence-based practices – Teaching Pyramid for Supporting the Social Emotional Development of Young Children (Pyramid Model) and Enhanced Milieu Teaching (EMT) – to improve language development in toddlers at high risk for persistent developmental language disorders and poor social and academic outcomes. There are no current early interventions that address this population of young children and the risks associated with the co-occurrence of language and social emotional skills. To achieve this goal, the research team will combine evidence-based professional development strategies (PD) from the Pyramid Model with specific training in EMT strategies and test the effects of the model and the associated PD protocol on teacher implementation of the model and child outcomes. Project Activities: The research team will use an iterative process to develop Toddler Talk using focus groups, interviews, surveys, single-case design, and field testing. A randomized controlled trial will be used to pilot test the promise of the model and its associated PD on teacher implementation and child language and behavior for toddlers at risk for poor outcomes in these areas. Products: The primary products of this project include a fully developed model and its PD protocol for supporting early childhood teachers in improving language and behavioral outcomes in at-risk toddlers. The project will also result in peer-reviewed publications and presentations as well as additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Settings: This research will take place in community child care and Early Head Start classrooms serving toddlers from low resource urban and suburban communities in Tennessee, Oregon, and Washington. Sample: The primary population includes 54 early childhood teachers and 116 toddlers ages 24-36 months within their classrooms (approximately 4 children per classroom). The children will evidence expressive and receptive language delays that put them at high risk for persistent developmental language disorders and social-emotional skill deficits. Intervention: Toddler Talk will be a Tier 1 intervention blending the Pyramid Model and EMT procedures to teach language and social-emotional skills across the day and in small group activities. The Pyramid Model is a framework of evidence-based practices for promoting social-emotional competence and preventing and addressing challenging behavior. EMT is an evidence-based naturalistic communication intervention that uses responsive interactions, language modeling, and prompting to support communication in ongoing teacher-child interactions. The PD will combine the evidence-based training strategies (Practice-Based Coaching, Teach-Model-Coach-Review) associated with the two models to enhance implementation fidelity. Research Design and Methods: A rapid cycle iterative design process will be used to examine the conditions under which the Toddler Talk model has an impact and the PD approach that best supports teachers' learning and implementation of the model. The research team will conduct: a) a developmental case study (Year 1), b) a single-case design study (Year 2), c) a field test with repeated measures and randomized comparison group (Year 3), and d) a pilot randomized controlled trial (Year 4). Development of the intervention and PD protocol, establishing the reliability and validity of fidelity measures, and establishing the social validity of the intervention and PD protocol will be embedded within and across these studies as a part of the iterative design process. The team will pilot cost data collection during the field test in Year 3 and conduct the full cost analysis during the pilot test in Year 4. Control Condition: During the field test and pilot study, teachers in the control group will engage in business-as-usual teaching. They will also receive an 8-hour workshop and Toddler Talk training materials after post-testing. Key Measures: Qualitative (interviews, focus groups) and quantitative (surveys) responses from practitioners and experts will be used to assess the feasibility, effectiveness, acceptability, and overall satisfaction with the Toddler Talk model and the associated PD protocol. Implementation fidelity measures include the TPITOS EMT for class-wide implementation of the intervention, EMT Global Rating System for use of EMT strategies in small groups, and LABOR observation code for teacher linguistic input. Child language outcomes be measured with the Preschool Language Scales – 5 and the Individual Growth and Development Indicators – Early Communication Indicator. Child social-emotional outcomes will be measured with the Devereux Early Childhood Assessment – Toddler. Finally, costs will be analyzed with the CostOut cost analysis toolkit. Data Analytic Strategy: To develop the intervention model, the research team will use a mixed methods design utilizing quantitative (descriptive statistics based on surveys) and qualitative (inductive methods based on transcripts and field notes of focus groups) analyses. For the single-case design study, they will use visual analysis with analyses of effect sizes to examine the effects of an initial application of the model. The field test and pilot study will use multi-level modeling to examine primary teacher and secondary child effects of the intervention, as well as additional quantitative and qualitative analyses from survey ratings and interviews to assess the social validity of the model. Related Projects: Examining the Potential Efficacy of a Classroom Wide Model for Promoting Social Emotional Development and Addressing Challenging Behavior in Preschool Children With and Without Disabilities (R324A070212);An Efficacy Trial of Milieu Teaching Language Intervention in Preschoolers with Language Disorders (R324A090181);Examining the Efficacy of a Classroom-Wide Model for Promoting Social Emotional Development and Addressing Challenging Behavior in Preschool Children with or at-risk for Disabilities (R324A120178)

Developing and Testing an Empirically-based Preschool Language and Literacy Curriculum for Children At-Risk for Reading Disabilities Using a Components Analysis

Gunn, Barbara

Development and Innovation

R324A070136

3/1/2007 to 2/28/2010

Purpose: Language and early literacy skills acquired in early childhood predict reading ability in elementary school. Many children, particularly those with disabilities or who are at risk for reading and learning disabilities, arrive at preschool with limited language and early literacy experience, which in turn affects their transition to and future success in elementary school. To provide a foundation for early reading development, preschool literacy programs that provide intensive, targeted instruction and intervention for children with disabilities and who are at risk for reading and learning disabilities are needed. To address this need, researchers are developing and field testing an instructional program for improving language and early literacy skills for preschool children with or at risk for reading and learning disabilities. The program will include whole-class and small-group instruction and independent activities designed to develop children's skills in phonological awareness, alphabetic understanding, vocabulary and comprehension, and oral language. The purpose of this study is to develop, refine, and pilot test the intervention components that target these four important skills and to determine the contribution of each component to language and literacy outcomes. Project Activities: During the first two years of the project, four instructional components will be developed and field tested separately. In the first year, the phonological awareness and alphabetic understanding components will be developed and field tested. The oral language and vocabulary and comprehension components will be developed and field tested in the second year. In the third year, the full program will be pilot tested with eight classrooms, comparing gains across the school year with a nested pre-post design. In addition, changes in child outcomes will be compared with outcomes on norm-referenced measures of language and literacy. Data will be analyzed to determine literacy and language outcome differences among children in each component condition, and the correlation between the full program and language and early literacy gains across the year. Products: Expected products include a fully developed early language and literacy preschool curriculum that targets children's phonological awareness, alphabetic understanding, vocabulary and comprehension, and oral language skills; professional development materials designed to increase the likelihood that the program will be used in preschool classrooms; and reports on the initial evaluation of the program. Structured Abstract Purpose: Language and early literacy skills acquired in early childhood predict reading ability in elementary school. Many children, particularly those with disabilities or who are at risk for reading and learning disabilities, arrive at preschool with limited language and early literacy experience, which in turn affects their transition to and future success in elementary school. To provide a foundation for early reading development, preschool literacy programs that provide intensive, targeted instruction and intervention for children with disabilities and who are at risk for reading and learning disabilities are needed. To address this need, researchers are developing and field testing an instructional program for improving language and early literacy skills for preschool children with or at risk for reading and learning disabilities. The program will include whole-class and small-group instruction and independent activities designed to develop children's skills in phonological awareness, alphabetic understanding, vocabulary and comprehension, and oral language. The purpose of this study is to develop, refine, and pilot test the intervention components that target these four important skills and determine the contribution of each component to language and literacy outcomes. Setting: The preschools are located in rural and suburban districts in Oregon and urban districts in Washington. Population: Eight classrooms and approximately 72 children in urban and rural preschool sites will participate each year. All children for whom parental consent has been obtained, including children with developmental delays or disabilities and children who are English-language learners, will be included in the research in order to investigate how the developed instruction and intervention meets the language and literacy needs of a range of learners. Intervention: The proposed program is designed to improve phonological awareness, alphabetic understanding, vocabulary and comprehension, and oral language skills of preschool children at risk for reading or learning disability. The program will include daily whole-class activities targeting all children in a preschool classroom and small-group and independent center activities for children with or at risk for reading or learning disability. The final program will consist of 26 five-day units of instruction. Each daily lesson will have four 10-15 minute teacher-led segments. The first segment is whole-class alphabet routines, and the second is whole-class storybook reading. The third and fourth segments are small group and independent center activities that provide more exposure to and practice of skills and concepts introduced during whole-class instruction. Research Design and Methods: During the first two years of the project, two instructional components will be field tested. Children in each classroom will be randomly assigned to one of three groups: one of two instructional component groups or a no-treatment group. Field testing will occur over 10 weeks in small-group instruction and independent work. The field test will then be repeated in a second 10-week period, rotating groups. In the first year, the phonological awareness and alphabetic understanding components will be developed and field tested. The oral language and vocabulary and comprehension components will be developed and field tested in the second year. In the third year, the full program will be pilot tested with eight classrooms, comparing gains across the school year with a nested pre-post design. In addition, changes in child outcomes will be compared with outcomes on norm-referenced measures of language and literacy. Control Condition: During the third project year, child outcomes will be compared to national outcomes on norm-referenced measures of language and literacy. Key Measures: Three sets of assessments will be administered. The first set is given at baseline and after the intervention and includes measures of phonological awareness, expressive vocabulary, alphabetic understanding, oral language, listening comprehension, receptive vocabulary, and cognitive skills. The second set is curriculum-based probes that will be given to children during field testing of program components. The third set is process data measures to identify conditions that support or hinder implementation of the program. Data Analytic Strategy: Analysis of covariance and random coefficients analysis will be used to test literacy and language outcome differences among components conditions and to show gains across the school year in the third year of the project. In addition, child growth during the third year will be compared against published norms to appraise the instructional value of student gains. Publications Journal article, monograph, or newsletter Gunn, B., Vadasy, P., and Smolkowski, K. (2011). Instruction to Help Young Children Develop Language and Literacy Skills: The Roles of Program Design and Instructional Guidance. NHSA Dialog, 14(3): 157–173. doi:10.1080/15240754.2011.586611

Development and Testing of the Family Behavior Support App

Barton, Erin

Development and Innovation

R324A160086

3 years (9/1/2016-8/31/2019)

Co-Principal Investigator: Hedda Meadan (University of Illinois) and Angel Fettig (University of Massachusetts Boston) Purpose: The purpose of this project is to develop and pilot test the Family Behavior Support App (FBSApp), an intervention aimed at supporting parents in implementing interventions with their young children with disabilities and challenging behaviors in home settings. Persistent challenging behavior observed at a young age is associated with poor social and academic outcomes, and the rates of challenging behavior are higher for children with developmental disabilities. Challenging behavior places stressful demands on families. Mobile technology provides an opportunity to increase the accessibility and efficiency of support for parents of these children. In this project, the investigators will create a mobile application to support parents in implementing functional assessment (FA)-based interventions, which work by determining the purpose (function) that a particular behavior serves for a child and using this information to develop a plan for reducing and preventing the behavior. Project Activities: In the first year of this project, the intervention will be developed and refined through expert review, cognitive interviews, and focus groups. Field tests with parents will be conducted in the second year using single-case design studies. In the final year of the project, a randomized controlled trial will be conducted to evaluate the promise of the intervention for parents of children with disabilities and challenging behavior, including the promise of a supplementary feature for use by the early childhood professionals who support these families. Products: The products of this project will include a fully developed intervention, FSBApp, for parents of children with disabilities and challenging behavior, as well as peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in the homes of families in Tennessee, Illinois, and Massachusetts. Sample: Young children (ages 2–5 years) with identified disabilities and challenging behavior and their parents will participate in this study. In addition, the early childhood professionals who work with families of children with challenging behavior will participate. Approximately 4–5 professionals and 4–5 families will participate in the cognitive interviews, with an additional 10–12 parents and 10–12 professionals in the focus groups. Four families will participate in the field test. Finally, the pilot study will be conducted with 66 families, 33 in the intervention group and 33 in the control group. For approximately half of the families in the intervention group, their child's early childhood professionals will also participate to test the supplemental professional login component. Intervention: The FSBApp will be a free software application for mobile devices (phones and tablets) that will help parents track and monitor the behavior of their young children with disabilities and challenging behavior using functional assessment. The major components of the intervention include an interactive video user guide; personalization through entry of family and child information, including specific challenging behaviors and their contexts; comprehensive functional behavior assessment through identification of the antecedents and consequences of the behavior; hypothesis generation to help determine the function the behavior serves; creation of a behavior support plan for parents to address challenging behavior and teach new skills; support for parent implementation of the plan; and a recording system for ongoing progress monitoring. The app will also feature two optional supplementary components—a login for professional interventionists who are working with the families and links to resources for the families to access. Research Design and Methods: During the first 2 years of the project, the research team will conduct an iterative process of developing and refining the intervention. In the first year, they will develop the technology and content for the intervention, followed by a series of expert reviews, feasibility and usability testing using cognitive interviews with parents and professionals, and focus groups with parents and professionals. In the second year, field tests will be conducted with parents using multiple-probe single-case design. In the third year, a pilot study will be conducted to evaluate the intervention's promise for efficacy using a randomized controlled trial design in which parents in both the intervention and control groups will have access to webinars but only the intervention group will have access to the FSBApp. Control Condition: For the pilot study, families in the control group will have access to webinars that cover FA-based interventions, but will not have access to the FSBApp. Key Measures: Child outcome measures in this study include direct observation of challenging behavior and social-emotional skills, the Child Behavior Checklist, and Ages and Stages Questionnaire: Social Emotional. Back-end user data from the FSBApp will also be collected. These user data and coded video clips of family routines will be used to assess fidelity of implementation. Parent and professional provider outcomes will also be measured through surveys of satisfaction, semi-structured interviews, and the Parent Stress Index–Short Form. Data Analytic Strategy: Qualitative analyses of the focus group data and cognitive interviews will be summarized and used with the expert reviews to guide the formative development process. The single-case design data from the field test will be examined with visual analysis and estimated effect sizes. To compare groups in the pilot study, the investigators will use a repeated measures analysis of variance model. Project Website: https://vkc.mc.vanderbilt.edu/fbs/

Development of a Computerized Assessment of Executive Function for Preschool-Aged Children

Kuhn, Laura

Measurement

R324A120033

3/1/2012–2/28/2016

Co-Principal Investigator: Michael Willoughby Purpose: Executive function (EF) is an umbrella term that refers to a wide range of cognitive abilities that together serve as a supervisory system important for planning, reasoning ability, and the integration of thought and action. EF plays a central role in children's development of self-regulation and social and cognitive competence. Evidence suggests that EF deficits may act as a "final common pathway" through which diverse disorders and risk factors affecting young children lead to learning difficulties and early school failure. As such, it is essential that psychometrically-sound longitudinal measures of EF be developed to identify EF deficits in diverse groups of children and to determine the efficacy of various attempts at remediating these deficits and promoting school achievement. The aim of this study is to further develop and evaluate a computerized assessment of EF for use with preschool-aged children. Project Activities: The investigators will complete the development of tasks and computerization of the EF assessment; evaluate the test-retest reliability of the new EF computerized assessment; evaluate the psychometric properties of individual EF tasks and the battery overall; and test the validity of the computerized EF battery by relating task performance to other measures of EF, processing speed and intelligence, academic achievement, and teacher-rated behaviors. Products: The main product will be a fully developed and validated computerized assessment to identify EF deficits in preschoolers and determine the efficacy of interventions aimed at remediating EF deficits. Data on the reliability, validity, and feasibility of the computer assessment will also be available. Structured Abstract Setting: The project will take place in preschools in urban, suburban, and rural settings in North Carolina and New York. Sample: The sample will include approximately equal numbers of male and female 3- to 5-year-old children reflecting a broad range of skill, stratified by racial and ethnic categories, and proportional to their national representation in the United States Census. Assessment: The assessment is conducted with a laptop (or netbook) and a standalone touch screen monitor that is connected to the laptop. The computer program displays text on the laptop screen that is read verbatim by interviewers to children describing the nature of the task/item. Simultaneously, the computer program displays test stimuli to children on the touch screen monitor that sits directly in front of them. Children respond to each item by touching the screen. Their response is "captured" using a capacitive touch screen monitor and stored in a comma delimited file on the laptop for later scoring and analysis. Research Design and Methods: The proposed work will occur in three stages. In the first two stages (pilot testing of task modifications and computerization in Stage 1; evaluating the test-retest reliability in Stage 2), children will complete the newly developed computerized assessment of executive functioning (EF). In the third stage of work, children will complete the newly developed EF computerized assessment at the first visit and will complete one of three possible subsets of validation tasks (EF, intelligence/processing speed, or academic achievement) at the second visit using a planned missing design. This design facilitates a broader set of validation activities while minimizing testing burden for individual children. Control Condition: Due to the nature of the research design, there is no control condition. Key Measures: The Stage 3 validation tasks will include direct assessments of children's executive function, intelligence, processing speed, and academic achievement using existing standardized measures of these skills. Similarly, teachers will complete one of three possible sets of rating scales for each skill. Data Analytic Strategy: A combination of item response theory and structural equation modeling will be used to evaluate the psychometric properties of the computerized battery and evaluate the construct and criterion validity of the battery. Publications Journal article, monograph, or newsletter Willoughby, M.T. (2014). Formative Versus Reflective Measurement of Executive Function Tasks: Response to Commentaries and Another Perspective. Measurement: Interdisciplinary Research and Perspectives, 12(4): 173–178. doi:10.1080/15366367.2014.981074 Full text Willoughby, M.T. and Blair, C.B. (2015). Measuring Executive Function in Early Childhood: A Case for Formative Measurement. Psychological Assessment, 28(3): 319–330. doi:10.1037/pas0000152 Full text Willoughby, M.T., Holochwost, S., Blanton, Z., and Blair, C.B. (2014). Executive Functions: Formative versus Reflective Measurement. Measurement: Interdisciplinary Research and Perspectives, 12(3): 69–95. doi:10.1080/15366367.2014.929453

Development of a Data-Based Decision Making System to Support Educators' Promotion of Infants and Toddlers' Cognitive Problem-Solving Skills

Buzhardt, Jay

Development and Innovation

R324A170141

4 years (07/01/2017 - 06/30/2021)

Co-Principal Investigators: Dale Walker; Dwight Irvin Purpose: In this project, the research team will develop and test a web-based tool that supports infant-toddler service providers' use of child data to individualize services for children at risk for delay in cognition, gross motor skills, communication, or social skills. Despite evidence that using child data to inform services and curriculum decisions improves child outcomes, infant-toddler educators often lack the training and resources needed to monitor children's progress on key outcomes and individualize their services based on those outcomes. This research team developed a web application called Making Online Decisions (MOD) that guides early childhood educators through a decision-making process to individualize language intervention services. Research demonstrated that children served by home visitors using the MOD show significantly stronger language growth than children whose home visitors did not use the MOD. However, the MODis specifically designed for use in home visiting contexts and intervention recommendations only target language delays. The goal of the current project is to develop the web-based MOD Management System (MMS) for designing, developing, and deploying custom MODs to infant-toddler agencies that can target delays in cognition, gross motor skills, communication, or social skills. To increase adoption and feasibility of the MODs, they will also be customized to each agency's service-delivery model (such as home visiting or center-based) and capable of embedding evidence-based intervention/curriculum materials currently used by the agency. The MODs will use child outcomes from the existing Infant-Toddler Individual Growth and Development Indicators (IGDIs) to identify children who may be in need of more intensive intervention and to drive the data-based recommendations. Project Activities: Through ongoing collaboration with local infant-toddler programs such as Part C and Early Head Start, the MMS will be developed and tested across four phases. In Phases 1–3, the team will develop, test, and refine the system based on feedback from service providers and their families through usability and feasibility testing. In Phase 4, they will pilot test custom MODs deployed to infant-toddler agencies using a small-scale randomized controlled trial to evaluate the effects of the system on service providers' data-based decision-making practices and infant-toddler growth in cognitive problem-solving skills. Products: This project will result in a fully developed version of web-based MMS to rapidly develop and deploy MODs customized to an agency, district, or state's program based on the curriculum or services currently being used by a program. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in center- and home-based infant-toddler programs that serve children with identified disabilities (Part C programs) or are mandated to serve a proportion of children with disabilities (Early Head Start) in Kansas. Sample: The target population will be center-based staff in Early Head Start or Part C programs and the infants and toddlers in their classrooms with or at risk for a disability. For usability testing, there will be an estimated 9 administrators, 16 service providers, and 6 parents. For feasibility testing, there will be an estimated 12 administrators, 18 service providers, and 18 child-parent dyads. For pilot testing, there will be an estimated 22 classrooms participating with 3 eligible children per classroom, leading to a total of 44 service providers and 66 child-parent dyads. Intervention: The MMS will be a web-based system to develop custom MODs informed by child outcome data from the Infant-Toddler IGDIs (Early Problem Solving Indicator, Early Movement Indicator, Early Communication Indicator, or Early Social Indicator) to make recommendations for intervention/curriculum decisions for individual children. These IGDIs are 6-minute play-based assessments normed for children aged 6-42 months. The recommendations provided by MODs developed through the MMS will be driven by each child's assessment scores across the sub-domains of each IGDI. For example, the EPSI sub-domains include Looking, Exploring, Functions, and Solutions. The MMS will have the ability to be customized to each agency's service-delivery model and curriculum. Research Design and Methods: During the first 3 years of the project, the research team will use design-based research methods to develop and test iterations of the MMS using feedback and usability data from center-based infant-toddler staff, interventionists, administrators, and parents. During the fourth year, the team will conduct a randomized controlled trial pilot study, assigning classrooms within center-based programs to the treatment or control condition. The pilot study will focus on one domain of development – problem solving – to assess the impact of the MODs deployed through the MMS on educators' knowledge and self-efficacy in using data to make curriculum decisions, their data-based decision-making practices, and children's growth in cognitive problem solving. Control Condition: Classrooms assigned to the comparison condition will assess children's problem-solving skills quarterly with the EPSI and use their existing curriculum, similar to the experimental group; however, the control group will not have data-based decision-making support from the MOD. Key Measures: During iterative development, the research team will measure usability, feasibility, and fidelity of the system using researcher-developed surveys and direct observation protocols, including think-aloud procedures. Early educator progress monitoring and decision-making practices will be measured using the Examining Data Informing Teaching measure. Knowledge and self-efficacy of data-based decision-making practices will be measured with researcher-developed surveys. Child growth in problem solving will be measured using the EPSI. Moderators include classroom quality (measured by the Classroom Assessment Scoring System) and child demographics. Data Analytic Strategy: Usability and feasibility data will be analyzed descriptively. The research team will address limitations on the system based on the severity, frequency, and consistency of problems encountered by users. For the randomized controlled trial, multivariate analyses and growth curve modeling will be used to examine educator outcomes and children's problem-solving skills. Cohen's d will be used to estimate the effect sizes of statistically significant differences between the experimental and comparison groups. Project Website: http://www.igdi.ku.edu Related Projects: R324A120365

Development of a Three-tiered Model in Early Intervention to Address Language and Literacy Needs of Children at Risk

Sheridan, Susan

Development and Innovation

R324A090075

6/1/2009 - 5/31/2012

Purpose: Language proficiency and early literacy competence are strong predictors of school success. Children who begin school without essential, prerequisite skills are significantly more likely to require remedial and special education services than are their peers who begin school with a solid grasp of essential language skills. Effective, responsive early intervention is critical to minimize the gap between struggling and achieving children upon school entry. Three-tiered models featuring universal, targeted, and individualized instruction (e.g., Response to Intervention or RtI) are increasingly common in elementary school programs due to evidence of their positive impact on students' literacy skills. However, little published research has investigated the use of three-tiered models in early education settings. The purpose of this project is to develop and assess the feasibility and utility of a three-tier prevention model to support language and early literacy skills of preschool children at risk for developing learning disabilities or reading difficulties. Project Activities: Key components of existing 3-tiered models designed for early elementary grades will be translated for preschool settings. These components include: (1) universal delivery of evidence-based intervention to all students; (2) progress monitoring; (3) data-based decision-making; (4) differentiated grouping and instruction; and (5) family involvement. Based on input about feasibility from experts and consumers, these components will be revised and pilot tested in 6 preschool settings. Products: The anticipated result of this study is a practical, functional, and educationally-relevant 3-tier model for preschool settings for preventing language and literacy delays in children who are at-risk for disabilities, and evidence demonstrating the feasibility of its implementation in preschools. Other products include prototypes of materials for implementing all components of the model, professional development procedures, and fidelity measures. Structured Abstract Setting: The setting will include public preschool or Head Start programs in Nebraska and Kansas. Population: Children between the ages of three and five who are determined to be at risk for reading difficulties, and their teachers and parents, will participate. All classrooms included in the study will serve children from low-income families. Intervention: In three-tier models, services are provided early, monitored systematically, and adjusted intentionally to support individual children's needs. The Preschool 3 Tier (Pre-3T) approach to be developed in this study targets oral language, phonological awareness, letter/sound knowledge, and print awareness, which have been identified as the most critical pre-literacy skills. The five individual components that comprise the Pre-3T model have been researched independently and are well-established. It is the integration of components as a comprehensive approach for preventing language and literacy delays in preschool that will be developed in this study. The five components of Pre-3T are: (1) an evidence-based curriculum and intervention strategies delivered universally to all students; (2) progress monitoring for frequent and regular assessments of performance; (3) decision-making that is driven by progress monitoring data and supported by decision rules and guidelines that help determine for each student the appropriate intervention tier and timing of changes; (4) progress monitoring and data-based decision-making resulting in differentiated grouping and instruction to meet the needs of all children; and (5) meaningful, effective family involvement integrated into each level. Teachers will participate in structured, in-service training sessions, as well as summer training workshops over the course of the study to train the Pre-3T components. Project consultants will provide support for teachers, including individualized feedback following observation sessions, prompts, and modeling. Research Design and Methods: In the first two years, key components of existing three-tiered models designed for early elementary grades will be translated for preschool settings through focus group meetings with three advisory boards that include experts in early literacy and language, preschool teachers and administrators, and parents. Individual model components will be pilot tested with relevant and formative process data collected and analyzed to refine the model. A multiple baseline design will be used to evaluate the effects of the differentiated features of the model (i.e., Tier 2 and 3 interventions) on individual students. In the third and final year of the project, the entire model will be implemented with a new set of 6 preschool classes in Nebraska and Kansas. Control Condition: There is no control group. However, in assessing the effects of the more targeted Tier 2 and 3 interventions, the introduction of the interventions will be staggered to impose a type of experimental control that allows for comparison of performance patterns between students. Key Measures: The fidelity with which global aspects of Pre-3T model components are implemented will be measured with a comprehensive, multi-source, multi-method tool that will be modeled after a measure used to assess fidelity of three-tier reading models in elementary programs. Teachers will complete social validity measures to assess acceptability and satisfaction with the Pre-3T intervention. Measures used to monitor child progress and gauge child responsiveness to interventions in the Pre-3T model will include Individualized Growth Developmental Indicators (IGDIs) for oral language and phonological awareness, as well as other early language and literacy measures. Additional measures will assess the language and early literacy qualities of classroom, the classroom emotional and instructional climate, and the degree to which family members engage in activities to support their child's learning. Data Analytic Strategy: The first stage of data analysis will follow traditional qualitative case-study procedures for analyzing input received from experts and consumers on the intervention. These will include analyzing emergent themes, and making assertions and interpretations that will result in a refined model to be field tested in year three. Fidelity data will be analyzed to determine features of the intervention that are systematically implemented or fail to be implemented across the sample, providing useful information for full model specification and future efficacy tests. Data from the multiple baseline design will be used to evaluate the effects of the differentiated features of the model (i.e., Tier 2 and 3 interventions) on individual students. Graphical displays and descriptive statistics will be used to portray individual child outcomes. Visual analyses of level, trend, and variation will be used to detect baseline versus treatment change effects. Publications Book Pianta, R. C., Justice, L. M., Barnett, W. S., & Sheridan, S. M. (2012). The Handbook of Early Education. New York: Guilford. Book chapter Abbott, M., Greenwood, C.R., Buzhardt, J., Wills, H.P., and Terry, B. (2011). Peer-Assisted Strategies. In R. O'Connor, and P. Vadasy (Eds.), Handbook of Reading Intervention (pp. 279–299). New York: Guilford Press. Carta, J., and Driscoll, C. (2013). Early Literacy Interventions for Young Children With Special Needs. In T. Shanahan, and C. 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Development of a Tiered Coaching Model to Support the Professional Development of Inclusive Early Childhood Educators

Fettig, Angel

Development and Innovation

R324A170149

3 years (09/01/2017 - 08/31/2020)

Previous Award Number: R324A170019 Previous Institution: University of Massachusetts, Boston Co-Principal Investigator: Kathleen Meeker (University of Washington) Purpose: The purpose of this project is to develop a tiered coaching model with a decision-making framework to guide coaches in determining the level of support teachers need. This decision-making framework will enable instructional coaches to match their feedback to the type and amount of support that preschool teachers need during different activities, with different children, and across different points in their careers. While professional development and coaching have become a common approach in increasing teachers' fidelity in implementing evidence-based practices, there is clear evidence of differential effects based on teachers' engagement with and participation in coaching. The process of making coaching decisions (e.g., delivery, dosage) has yet to be investigated systematically in the field of early childhood special education. There is a critical need for coaching interventions that incorporate teachers' needs, experiences, satisfaction, and professional commitment into professional development decisions. The research team will develop and pilot test a tiered coaching model that allows coaches to work with teachers in identifying a matched coaching approach to support teachers as they implement evidence-based practices. Project Activities: In the first year of this project, a data-driven decision-making framework will be developed to guide coaches in selecting and implementing professional development and coaching that is matched to teacher profiles with profiles based on such factors as teacher need, experience, job satisfaction, and professional commitment. Development and field testing of the tiered coaching model will be conducted in the second year using a mixed methods design. In the final year of the project, a quasi-experimental design study will be conducted to evaluate the feasibility, usability, and promise of efficacy of the tiered coaching model for supporting teachers in including children with disabilities in their classrooms. Products: The products of this project will include a fully developed tiered coaching model for supporting teachers in including children with disabilities in their classrooms, as well as peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in inclusive preschool classrooms in Washington State. Sample: Teachers in inclusive preschool classrooms and preschool children (ages 3–5 years) with identified disabilities will participate in this study. In Year 1, 100 inclusive preschool teachers will provide data to inform the development of the decision-making model related to professional development to create teacher coaching profiles. In Year 2, 18 teachers will participate in the field tests to support the iterative development and refinement of the tiered coaching model. In Year 3, 40 inclusive preschool classroom teachers will participate in the pilot study. Within each classroom, there will be one target child with an IEP participating, resulting in a total of 40 children. Intervention: All participating teachers will receive a 1-day universal professional development workshop on the evidence-based practices targeted for this study through use of the Pyramid Model (a well-researched model that specifies evidence-based teaching strategies to support preschool children's social and emotional development at the universal, targeted, and individual levels). The intervention will be the data-driven decision-making tiered coaching model (TCM), which consists of three tiers: Email newsletter and check-in for all teachers (Tier 1), small group coaching communities for a subset of teachers (Tier 2), and individualized intensive coaching support for those who need intensive one-on-one coaching (Tier 3). The TCM will include the data-driven decision-making process that guides coaches in determining who participates in the different tiers of coaching. Research Design and Methods: During the first 2 years of the project, the investigators will engage in iterative development and refinement of the intervention. In Year 1, a data-driven decision-making framework related to professional development and teacher coaching profiles will be created using field observations in early childhood education classrooms and teacher surveys. In Year 2, development and field testing of the tiered coaching model will be conducted using a mixed methods design including classroom observations to measure implementation of the Pyramid Model, brief teacher interviews, and a teacher focus group. In Year 3, a quasi-experimental design study will be conducted to assess the feasibility and promise of the tiered coaching model for supporting teachers in including children with disabilities in their classrooms, with the goal of increasing teacher fidelity of the evidence-based practices in the Pyramid Model and improving socio-emotional skills of students. In this phase, pairwise matching will be used to create equivalent intervention and control groups. Control Condition: For the pilot study, teachers in the control group will continue to implement business-as-usual instructional practices utilized in the school district. In addition, the teachers in the control group will attend a 1-day universal professional development workshop on the evidence-based practices targeted in this study (i.e., Pyramid Model), but they will not participate in coaching. Key Measures: Teacher/classroom outcome measures in this study include the Teaching Pyramid Observation Tool (TPOT) to measure Pyramid Model implementation and the Classroom Assessment Scoring System to measure more global classroom quality. The researcher-developed teacher coaching profile assessment, used to guide selection of professional development and coaching, is comprised of three teacher-reported measures—a teacher survey of professional background and experiences, a rating scale on professional development preferences and job attitude, and a rating scale of school or program characteristics (e.g., conditions and resources that promote change)—as well as the TPOT observations. Child outcome measures in this study include the Social Skills Improvement System Performance Screening Guide, Child Behavior Checklist-Preschool, direct observation of social skills and problem behavior, and child and family demographic information. Data Analytic Strategy: Latent profile analysis will be conducted to identify the coaching profiles. In the second phase, the investigators will analyze the teacher profile and TPOT scores longitudinally for overall trend. Qualitative analyses of the focus group data as well as interviews with teachers and coaches will be summarized and used to guide the formative development process. To compare groups on outcome measures in the pilot study, the investigators will estimate unbiased treatment effect sizes, both pre-post treatment and between groups.

Development of a Web-Based Integrated Behavior Support and Teacher Coaching System for Early Childhood Settings

Spaulding, Scott

Development and Innovation

R324A180061

4 years (9/1/2018-8/31/2022)

Co-Principal Investigator: Meeker, Kathleen Purpose: The purpose of this project is to develop and test a collaborative, web-based tool to improve early childhood teachers' implementation of interventions for children with or at risk for emotional or behavioral disorders (EBD). Despite the development of multi-tiered systems of supports and evidence for the efficacy of positive behavior supports and function-based interventions (aimed at preventing and reducing challenging behavior), many early childhood programs lack the capacity to implement intensive interventions (tier 3) with fidelity. Further, many behavior support programs fail to consider the role of families in the individualized behavior support process. In this project, the research team will modify and expand the existing technology, as well as extend its application from its original design for K-8 classrooms to be appropriate for early childhood settings. This new intervention, the Integrated Behavior Support and Teacher Coaching System for Early Childhood Settings (ibestt-EC), will combine professional development with behavioral coaching and family collaboration to increase early childhood teachers' ability to improve behavioral outcomes for children with or at risk for EBD. Project Activities: The project will iteratively develop and test ibestt-EC across 4 years. In the first year, the research team will solicit feedback from early childhood practitioners and families through focus groups and workshops and use their feedback to revise the existing technology. The revised intervention will be field tested to evaluate teacher fidelity of implementation in early childhood classrooms in the second year. In the third year, the team will create professional development materials to support teachers in intervention implementation. In the fourth year, the research team will assess the promise of the intervention through a series of single-case design studies. Products: This project will produce a fully developed, web-based intervention, ibestt-EC,toimprove teacher implementation of intensive behavioral interventions in early childhood settings. Products will also include peer reviewed publications and presentations. Structured Abstract Setting: The study will take place in early childhood centers in urban and suburban areas of Washington state. Sample: In Years 1-3, feedback on the intervention will be gathered from approximately 15 to 20 early childhood educators, 10 content experts in behavior support and early learning, and 10 parents or caregivers of young children who have received behavior supports. Participants in the Year 4 pilot study will include 6 teacher-coach dyads, 12 children (ages 3 to 6) with or at risk for behavior disorders, and their parents. Intervention: The intervention, ibestt-EC, will be developed based on an existing web-based technology designed for K-8 school settings. Modifications will include adding a family component, improving the coaching structure, and tailoring practices for early childhood classrooms. The intervention is designed to promote the use of effective behavior supports by helping teams plan and document interventions, use data to make decisions, and coordinate communication among staff and families. The intervention coordinates each of the following steps in the behavior support process: (1) teachers and families agree to submit a request for assistance with child behavior and a coach (i.e., a teacher or behavior specialist within the school or district) is assigned to meet with the teacher and/or family member; (2) the coach, teacher, and family member collaboratively review the need and implement classroom-level strategies to address the behavior; (3) if classroom-level strategies are insufficient, a functional assessment is conducted; (4) teachers, coaches, and family members develop support plans based on the findings from the functional assessment; (5) the support plan is implemented and coaches provide feedback on implementation fidelity using the coaching protocol provided in ibestt -EC; (6) the child's response to the intervention is documented in ibestt -EC, progress is reviewed by coaches and ongoing support is provided, and interventions are revised to meet the child's needs. In addition, the intervention will also include text- and video-based professional development resources on how to use the technology and design and implement behavior intervention plans. Research Design and Methods: The project will use an iterative, mixed-methods approach to develop and test ibestt-EC over the course of 4 years. In Year 1, the team will gather perspectives from stakeholders regarding key issues in individual student behavior support through workshops with early childhood practitioners and focus groups with families. In addition, the research team will modify the existing software to fit the early childhood context. In Year 2, the modified tool will be implemented by teachers to examine the usability and feasibility of the technology. Researchers will observe classrooms and schools to check fidelity of teacher implementation of practices and school-wide implementation of tier 3 (intensive) intervention. Qualitative feedback will also be obtained through surveys of teachers and content experts. Year 3 will focus on the development of professional development materials with content experts working with production experts to create the online content. In Year 4, the pilot study will use a multiple-baseline single-case design with six coach-teacher dyads in order to evaluate the effects of ibestt-EC on coach practice, teacher practice, and child outcomes. Control Condition: In the single-case design studies, each participant will serve as his or her own control. Key Measures: Qualitative data from focus groups and open-ended survey items will be used to inform intervention revisions. To assess teacher outcomes, the research team will use the Teaching Pyramid Observation Tool to assess classroom quality and teacher implementation of practices, and the Schoolwide PBIS Tiered Fidelity Inventory to measure school-wide tier 3 implementation. Child outcome measures will include the Behavior Assessment System for Children–Second Edition and the Social Skills Improvement System (SSIS) Rating Scales. Researcher-developed measures will be used to assess fidelity of coaching and teachers' intervention implementation. To evaluate intervention acceptability, the Intervention Rating Profile — 15, the Student Assistance Team Attitude Scale, and parent interviews will be used. Data Analytic Strategy: Qualitative data from focus groups and workshops will be transcribed and analyzed to identify key themes and elements of the behavior support process. Ratings and assessments from the field test will be summarized descriptively. For the single-case design studies, visual and statistical (effect size) analysis will be used to determine whether ibestt-EC demonstrates promise for improving teacher and child outcomes.

Development of an Empirically Based Intervention for Childcare Teachers to Promote Language Skills in At-Risk Toddlers

Guttentag, Cathy

Development and Innovation

R324A110104

6/1/11–5/31/14

Purpose: Strong oral language skills can lay the foundation for later school achievement. Children who have delayed oral language skills by age three are less able than their typically developing peers to take advantage of preschool readiness curricula and are at risk for later learning difficulties in reading and math. Typical language interactions between teachers and students in early learning environments may not be of adequate quality for reducing language or academic difficulties. The purpose of this project is to develop and document the feasibility and promise of a professional development intervention, called Toddler Language in the Classroom, designed to improve language skills of toddlers who exhibit or are at risk for language delays. The program is intended to increase the quality of language and literacy experiences in the childcare setting by training teachers to respond to children's communicative signals, expose children to rich language, and encourage children to talk. Project Activities: The researchers will develop a professional development intervention that will include two group teacher training sessions, 8 to 10 individual onsite didactic sessions, and 8 to 10 weekly in-class mentoring sessions. A multi-stage, iterative process will be used to develop, test, refine, and pilot test the professional development intervention sessions. During the final year, a pilot test of the program will be conducted in 20 classrooms to determine the promise of the intervention for improving teachers' use of the strategies and children's language outcomes. Products: This project will result in published papers and reports on a fully developed professional development program designed to improve the language skills of toddlers who exhibit or are at risk for language delays. Structured Abstract Setting: The project will take place in community childcare centers in Texas. Population: Approximately 30 childcare teachers and their students will participate in this research. Targeted students will be between 18 and 36 months of age and have low language skills as measured by the Early Communication Indicator. Intervention: The researchers will develop a professional development intervention called Toddler Language in the Classroom. The program will include two group teacher training sessions, 8 to 10 individual onsite didactic sessions, and 8 to 10 weekly in-class mentoring sessions. The group sessions will bring together all participating teachers for presentations of intervention concepts and strategies (e.g., responding to children's communicative signals, exposing children to rich language, and encouraging children to talk) and discussion among participating teachers. During each onsite didactic session, a mentor will meet with individual teachers for about an hour and a half each week to review feedback, present additional concepts and strategies, and review video segments for self-critique. During each in-class mentoring session, the mentor will spend approximately 2 hours with each teacher, model interactions with children and use of target strategies, and provide additional coaching. The mentoring sessions will be videotaped, and following each session, the mentor will choose two examples of the teachers' successful use of the target strategies and two examples of less successful attempts at the target strategies. These examples will be reviewed with the teachers during the next didactic session. A monitoring tool will also be created to systematically record and live-code teachers and their use of the targeted strategies. Research Design and Methods: The researchers will use a multi-stage, iterative process to develop, test, refine, and pilot test the professional development intervention sessions. During the third year, a pilot test comparing the feasibility and promise of the Toddler Language in the Classroom program will be conducted in 20 classrooms. Classrooms will be randomly assigned to the Toddler Language in the Classroom program or to a business-as-usual condition. Control Condition: The comparison classrooms will be provided with age-appropriate children's books and toys that are also being provided to Toddler Language in the Classroom classrooms. Teachers in the comparison group, however, will not receive additional professional development. Key Measures: Outcomes include measures of teachers' use of the Toddler Language in the Classroom strategies as well as improvements in teacher knowledge and practice promoting their students' language skills. Students' receptive and expressive language skills, social emotional skills, and nonverbal cognitive skills will also be measured. Data Analytic Strategy: Analysis of covariance will be used to determine whether teachers' knowledge and use of the strategies improve after exposure to Toddler Language in the Classroom. Multilevel analyses will be used to determine whether the language, social emotional, and nonverbal cognitive skills of children in the intervention classrooms improve compared to their peers in the control condition.

Development of an IFSP Form and Process to Maximize Learning Opportunities for Young Children with Disabilities

Wilcox, M. Jeanne

Development and Innovation

R324B070033

7/1/2007 to 6/30/2011

Purpose: Adaptations such as adjusting task materials or using assistive technology expose children with disabilities to a wider range of daily living and educational activities and improve developmental and academic outcomes. Although adaptations are frequently used with older children with disabilities, they are not described on Individualized Family Service Plans (IFSPs) or widely used with infants and toddlers. Early interventionists, service providers, and IFSP development teams need support systems for documenting and increasing the use of adaptations for infants and toddlers with disabilities. The researchers are addressing this need by developing an IFSP form and accompanying web-based performance support system to help service providers develop and increase use of adaptations for infants and toddlers with disabilities. The purpose of this study is to design, launch, and conduct an initial evaluation of the adaptation-based IFSP and support system. Project Activities: A four-phase development process is planned. During the first phase, existing datasets will be reviewed to inform the development of the adaptation-based IFSP form, process, and professional development materials. In the second phase, the developed form and process will be tested and refined based on its use with families and their children who have just entered the Part C early intervention system. The third phase involves the development and launch of web-based performance support tools for creating adaptation-based IFSPs. The final phase includes the initial evaluation of the adaptation-based IFSP form, process, and support tools using random assignment of six states to experimental or control conditions. In this initial evaluation, the researchers will obtain evidence of the potential effects of the form, process, and materials on outcomes for families, their young children with disabilities, and providers. Products: Expected products include an adaptation-based IFSP form, a web-based performance support system, and professional development materials. Additional products include reports on the potential efficacy of the form and process on family, child, and provider outcomes and characteristics that may influence these outcomes. Structured Abstract The researchers are addressing this need by developing an IFSP form and accompanying web-based performance support system to help service providers develop and increase use of adaptations for infants and toddlers with disabilities. The purpose of this study is to design, launch, and conduct an initial evaluation of the adaptation-based IFSP form and support system. Setting: The research will occur in Arizona, Pennsylvania, and six other states to be determined. Population: Approximately 200 families and their children who have just begun receiving early intervention services through Part C of the Individuals with Disabilities Education Improvement Act (IDEA) as well as their associated providers will participate in this research. Children who participate in the research must be under 24 months of age at the start of the study. While participating families will be racially and ethnically diverse, all will be required to use English as their primary language in the home. Intervention: The IFSP form and accompanying web-based performance support system will be based upon several data sources including states' IFSP forms, interventionists' practices—particularly their use of adaptations with infants toddlers with disabilities—and family routines and activities. Instructions for conducting interviews with families and a process for using data sources to develop IFSPs and monitor child progress will also be developed. Project staff will provide 12 hours of formal training on the IFSP form, process, and accompanying web-based performance support system to all participating providers. Staff will also provide ongoing support and mentoring to supervisors who will in turn provide support and mentoring to providers. Research Design and Methods: A four-phase development process is planned. During the first phase, existing datasets will be reviewed to inform the development of the adaptation-based IFSP form, process, and professional development materials. In the second phase, a single-group, pre-test/post-test design will be implemented to test the form for its feasibility. The third phase involves the development and launch of web-based performance support tools for creating adaptation-based IFSPs. The final phase includes the initial evaluation of the adaptation-based IFSP form, process, and support tools using random assignment of six states to experimental or control conditions. In this initial evaluation, the researchers will obtain evidence of the potential effects of the form, process, and materials on outcomes for families, their young children with disabilities, and providers. Control Condition: The contrast group will receive an intervention that focuses on conducting family interviews as part of the IFSP development process and goal-attainment scaling for measuring developmental progress and IFSP objectives. Key Measures: Data on the development, practicality, and feasibility of the IFSP form and on implementation fidelity will be collected. In addition, child functional and adaptive behavior skills and family care-giving practices will be assessed. Data Analytic Strategy: Quantitative data analysis techniques and approaches including multivariate analysis of variance, hierarchical linear modeling, and moderator analyses will be utilized to determine preliminary effects of the form on families, their young children with disabilities, and providers. Also, data will be analyzed to determine family, child, and provider characteristics that may influence observed outcomes; the type and intensity of professional development necessary to use the IFSP form and process, and the perceived value and feasibility of the IFSP form and materials from the perspective of participating early intervention providers and families. Publications Book chapter Campbell, P.H., and Wilcox, M.J. (2012). Using Assistive Technology to Promote Inclusion in Early Childhood Settings. In L. Muccio (Ed.), Spotlight on Young Children and Technology (pp. 36–43). Washington, DC: National Association for the Education of Young Children. Journal article, monograph, or newsletter Campbell, P., Milbourne, S., and Wilcox, M. (2008). Adaptation Interventions to Promote Participation in Natural Settings. Infants and Young Children, 21(2): 94–106. Cardon, T., Wilcox, M.J., and Campbell, P.H. (2011). 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Capturing the Complexity of Parent-Provider Relationships in Early Intervention: The Association With Maternal Responsivity and Children's Social-Emotional Development. Infants and Young Children, 25(3): 213–231. doi:10.1097/IYC.0b013e318258c63a Wilcox, M.J., and Woods, J. (2011). Participation as a Basis for Developing Early Intervention Outcomes. Language, Speech, and Hearing Services in the Schools, 42(3): 365–378. doi:10.1044/0161–1461(2011/10–0014) Wilcox, M.J., Campbell, P.H., Fortuno, L., and Hoffman, J. (2013). A First Look at Early Intervention and Early Childhood Providers' Reports of Assistive Technology Reuse. Journal of Special Education Technology, 28(3): 47–58.

Development of an Intervention for Center-Based Early Childhood Care and Education Providers to Support Evidence-Based Instruction of Children with Developmental Disabilities

Landa, Rebecca

Development and Innovation

R324A180085

4 years (07/01/2018-6/30/2022)

Purpose: The purpose of this project is to develop a professional development (PD) intervention to help early child care and education (ECCE) providers improve their knowledge, skills, and self-efficacy in implementing evidence-based instructional practices for children with language, cognitive, and/or social delays (i.e., developmental disabilities). ECCE providers play a vital role in the development and well-being of children, many of whom have or are at risk for developmental disabilities. However, training to work with children with developmental disabilities is limited; ECCE providers often have inadequate knowledge and skills around implementing evidence-based practices; and there are few research-based treatment packages that include evidence-based instructional practices, are usable in early childhood settings, and have a PD component to equip educators to deliver evidence-based instruction. Early Achievements, an intervention for young children with autism spectrum disorders (ASD) is one such treatment package that has demonstrated efficacy for improving child outcomes. The current project will extend this line of research by developing a PD program to train ECCE providers in feasibly implementing the practices used in Early Achievements with high fidelity for a wider population of children, those with developmental disabilities, to improve their language, social, and cognitive outcomes. Project Activities: The research will occur in three phases. In Phase 1, the research team will engage in initial development activities including focus groups, consumer reviews of the initial intervention, and development and validation of researcher-developed measures. In Phase 2, iterative development will occur in two cycles as the PD intervention will be implemented and initially evaluated with two consecutive cohorts of ECCE providers and children. In Phase 3, the team will conduct a randomized controlled trial to evaluate the promise of the PD intervention for improving provider and child outcomes. Sustainability of practices after the PD intervention ends will also be examined. Products: The products of this project will include a fully developed PD program for ECCE providers working with children with developmental disabilities to improve their language, social, and cognitive outcomes. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in licensed child care centers in an urban area in Maryland. Sample: Over the course of the project, 56 ECCE providers, 12 child care center directors, and 64 children (ages 24-42 months) with developmental disabilities and their families will participate in the research. Intervention: As part of the PD, ECCE providers will participate in three workshops over the course of 6 weeks and will receive 16 individualized, practice-based coaching sessions over the course of the 4-month period of PD. The PD focuses on improving providers’ understanding of, and skill in, implementing the following three sets of evidence-based instructional practices: (1) targeting children’s language/gesture, social, and cognitive development; (2) using meaning enhancement strategies (e.g., using themes throughout the classroom activities, hands-on learning experiences, narrating events as they unfold); (3) and implementing naturalistic developmental behavioral strategies (e.g., providing developmentally appropriate signals to elicit child behavior, scaffolding and prompting, using natural reinforcers, responding contingently). Research Design and Methods: The research will take place in three phases. In Phase1, the research team will hold focus groups with providers and parents and conduct classroom observations of existing teaching practices to inform initial development of the PD. The research team will implement an initial abbreviated version of the PD intervention (all three workshops and 8 weeks of coaching) with providers and children. Data will be used to inform revisions to the PD and to refine and conduct psychometric analyses of the researcher-developed measures to be used in the remainder of the study. In Phase 2, the team will implement the revised PD program with two consecutive cohorts of ECCE providers and children, iteratively revising the intervention based on data from each cohort. In Phase 3, the team will conduct a pilot study using a randomized controlled trial to evaluate the promise of the PD intervention in improving provider and child outcomes. They will also examine whether providers sustain the evidence-based practices 3 months post-intervention. Control Condition: ECCE providers in the control condition will deliver business-as-usual instruction to the children in their classrooms. Key Measures: Children will be assessed for eligibility with the Ages and Stages Questionnaire and either the Vineland Adaptive Behavior Scales-3 or parent documentation of diagnosis and/or receipt of services under the Individuals with Disabilities Act (IDEA). Child outcome measures include the Mullen Scales of Early Learning Visual Reception scale, the Receptive One-Word Picture Expressive and Vocabulary Tests, and additional researcher-developed measures of social-communication development. ECCE provider outcomes will include researcher-developed assessments of knowledge, skills, self-efficacy, and perceived barriers, as well as a researcher-developed measure of providers’ fidelity of implementing evidence-based practices. Fidelity of, and satisfaction with, workshops and coaching will be evaluated with researcher-developed scales and checklists. Data Analytic Strategy: In Phase 1, qualitative data will be will be transcribed and coded for themes related to perceived needs, attitudes, beliefs, knowledge, and experiences regarding PD and compared descriptively to observed practices. Psychometric analyses of researcher-developed instruments will include determining inter-rater reliability and internal consistency, conducting descriptive analyses of item-level data, visually inspecting data over time, and coding for consistency with existing measures (construct validity). In Phases 2 and 3, the research team will use multilevel modeling to examine whether there is preliminary evidence that the intervention is working as intended, the intervention leads to provider use of targeted practices, the use of practices leads to improved child outcomes, and there is evidence of sustainability of practices over time. Related IES Projects: Development of a Social and Communication Intervention for Preschoolers with Autism (R324A120330); An Efficacy Trial of the Early Achievements Comprehensive Intervention for Preschoolers with Autism (R324A160228)

Early Intervention for Young Children At Risk for ADHD: Evaluating Efficacy and Delivery Format for Behavioral Parent Education

DuPaul, George

Efficacy

R324A200010

5 years (09/01/2020 - 08/31/2025)

Co-Principal Investigator: Kern, Lee Purpose: The primary aim of the initial efficacy study is to examine the effects of face-to-face and online behavioral parent education (BPE), using the intervention Promoting Engagement for ADHD Pre-Kindergartners (PEAK), on parent knowledge of and fidelity with intervention strategies, parent treatment acceptability, child and parent behavior, and child early academic skills for families of young children at risk for attention-deficit/hyperactivity disorder (ADHD). Young children with ADHD exhibit behavioral self-regulation difficulties and impairment in development of early academic skills that compromise success throughout their school years, thus necessitating early intervention beginning in the home setting. A second aim of this project is to evaluate the degree to which obtained post-treatment effects are maintained for up to 24 months and whether maintenance differs between face-to-face and online BPE. A third aim is to identify possible moderators (such as parent ADHD symptoms) and mediators (such as parent treatment fidelity) of the effects of BPE and whether moderators/mediators differ between face-to-face and online treatment. A final aim is to conduct cost and cost-effectiveness analyses on the intervention. Project Activities: This project will use a randomized controlled trial to examine the comparative efficacy and cost-effectiveness of two versions (face-to-face and online) of the PEAK PBE program on parent and child outcomes, their long-term maintenance and impacts, and potential mediators/moderators of these impacts. Products: Products for this project include evidence of efficacy for each of the two versions (face-to-face and online) of the PEAK parent education program, their long-term maintenance and impacts, potential mediators/moderators, and relative cost-effectiveness. The project will also result in a final dataset to be shared, peer-reviewed publications and presentations, and additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: The research will take place in community settings, such as preschools, and family homes in Pennsylvania. Population/Sample: Approximately 180 3- to 5-year-old children identified with significant symptoms of ADHD and associated impairment, along with their parents, will participate in this study. Intervention: The PEAK BPE program includes10 sessions delivered in face-to-face or online format. Parents receive BPE over 10 weeks with identical content and assigned intervention strategies for each mode of delivery. The PEAK BPE program was designed specifically for parents of young children with ADHD and covers an introduction to ADHD; general behavior management strategies; implementation of preventive, instructive, and response strategies in a problem-solving context; extension of strategies across community settings; strategies to promote early reading and math skills; and transition to kindergarten and communication with school personnel. Research Design and Methods: Children will be randomly assigned (stratified by gender and medication status) to one of three groups: face-to-face BPE, online BPE, and wait-list control. Data will be collected at seven points in time, including pre-treatment baseline, mid-treatment, post-treatment, and at follow up 6, 12, 18, and 24 months after program completion. Eight cohorts of participants will be recruited across the 5 years of the project to obtain a sample of 180 children with ADHD and their parents. Multiple outcome domains will be assessed for parents (demographic characteristics, knowledge of ADHD and interventions, intervention fidelity, interactions with children, ADHD symptoms, stress, engagement with intervention, and treatment acceptability) and children (behavior, pre-academic skills, and use of other treatment services). Potential moderators will be examined, include parent session completion, family income, parent education, marital status, and parent ADHD symptoms. Possible mediators that will be examined include parent knowledge of intervention, parent treatment fidelity, and parenting stress. In addition, the study will evaluate costs and cost-effectiveness of the PEAK program and compare cost and cost-effectiveness and their ratios for the two program platforms. Control Condition: A wait-list control condition will be included with control participants having access to online PEAK after completing the12-month follow-up assessment. Key Measures: Outcome measures will include in-home observations of parent and child behavior (Dyadic Parent-Child Interactive Coding System-Revised; Parenting Interactions with Children: Checklist of Observations Linked to Outcomes), parent behavior ratings (Conners Early Childhood Rating Scale; Parenting Young Children), researcher-developed test of parent knowledge of interventions, parent treatment acceptability (Intervention Rating Profile-15), and direct assessment of child early literacy and numeracy skills (Individual Growth and Development Indicators of Early Learning). Potential moderators include parent session completion, family income, parent education, marital status, and parent ADHD symptoms (Adult Investigator Symptom Rating Scale). Possible mediators include parent knowledge of intervention, parent treatment fidelity, and parenting stress (Parenting Stress Index). Data Analytic Strategy: The immediate effect of intervention (Aim 1) will be tested using multivariate and univariate analyses of covariance (ANCOVA), with pre-treatment variables as covariates. Whether post-treatment gains are maintained across follow-up phases and whether the latter will differ across groups (Aim 2) will be assessed using growth curve modeling analyses. ANCOVAs and growth curve modeling analyses will be used to assess possible moderation effects and whether those effects differ across groups (Aim 3). Possible mediation effects and whether those effects differ between groups (Aim 3) will be examined using structural equation modeling. Cost and cost-effectiveness analyses (Aim 4) will compare cost against effectiveness using Incremental Cost-Effectiveness Ratio for each PEAK BPE delivery platform at each follow-up assessment phase and for the control condition. Related Projects: Early Intervention for Young Children with ADHD: Developing Strategies to Enhance Parent Engagement (R324A120284)

Early Intervention for Young Children with ADHD: Developing Strategies to Enhance Parent Engagement

DuPaul, George

Development and Innovation

R324A120284

9/1/12-8/31/15

Co-Principal Investigator: Lee Kern Purpose: Attention-deficit/hyperactivity disorder (ADHD) in young children is associated with significant impairment in behavioral, social, and pre-academic functioning, with affected children approximately two standard deviations below their non-ADHD counterparts in all three areas. Additionally, ADHD tends to be chronic, with research suggesting that at least 70 to 80 percent of preschool-aged children with this disorder will continue to exhibit significant ADHD symptoms during elementary school. One promising approach to intervention in the early years is to train parents to help address the issues of young children exhibiting early behavioral symptoms of ADHD. However, two major issues seem to limit the effectiveness of parent education programs: (1) the duration of many of the programs (e.g., 20 sessions) appears to severely limit parent completion; and (2) none of the parent education interventions have specifically targeted the multiple challenges that children with ADHD experience, such as poor parent-child interactions, difficulty with pre-academic skills, and a high injury rate. The primary purpose of this project is to further develop and refine a parent education program to increase parent engagement with early intervention for young children with ADHD. A secondary purpose is to develop an alternative format (web-based) of parent education to increase parent accessibility to and engagement with the intervention. The end goal is for more consistent implementation of effective behavioral strategies for preschoolers. Project Activities: Research activities will be conducted across three Phases. During Phase 1, an existing parent education program will be modified and streamlined, with the goal of increasing and maintaining parent engagement. During Phase 2, a web-based format of the parent education program will be developed and refined, which also aims to increase and maintain parent engagement. Phase 3 will compare parent engagement, implementation fidelity, and child outcomes between in-person and web-based delivery of parent education. Parent and child characteristics associated with differential parent preference for delivery model will also be examined. Products: The expected products of this project include a fully developed, streamlined, and targeted parent education program in two formats (face-to-face and web-based) that will be suited for parents of young children with significant symptoms of ADHD; data on the feasibility and promise of the intervention; and peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in Pennsylvania, with parent education sessions conducted in community settings (e.g., school, health care office). Data will be collected in parent education sessions and in family homes. Sample: Children identified with significant symptoms of ADHD between the ages of 3 and 6 will participate. A total of approximately 60 children and their parents will participate across all phases of the study (Phase 1 – 20, Phase 2 – 10, and Phase 3 – 30). Intervention: The parent education program to be developed targets areas that are specifically problematic for young children with symptoms of ADHD: poor parent-child interactions, difficulty with pre-academic skills, and a high injury rate. The intervention will be implemented across 10 weeks, with each weekly session lasting about 2 hours. Session format includes didactic presentation of core content facilitated by PowerPoint slides and video-clip illustrations, with parent discussion, modeling, and role play interspersed throughout the session to facilitate understanding and practice strategies. In Phase 2, the intervention will be converted to a web-based format in a manner that maintains essential elements of the face-to-face program, enhances parent engagement through the use of multimedia approaches and interactive activities, and provides opportunities for parents to submit questions. Research Design and Methods: In Phase I, the research team will gather input from a community development team consisting of relevant stakeholders (parents, preschool teachers, early interventionists, developmental pediatricians, and social workers) regarding the content of the existing parent education program. The input will be used to develop and refine the intervention into a condensed but targeted 10-week intervention with an accompanying manual. This draft intervention will be field tested, revised based on results of the field test (child outcomes, parent feedback, observations of parent implementation of the intervention), tested again with a different cohort of families, and then refined based on the results of this second field test. In Phase 2, the intervention will be converted into the web-based format, and the web version will then be tested and revised based on user input. In Phase 3, participating parents will participate in either the face-to-face or web-based version of the parent education program, and outcomes will be compared. Control Condition: Due to the nature of the research design, there is no control condition. However, in Phase 3, comparisons will be made between the face-to-face and web versions of the intervention. Key Measures: Measures will include community development team and parent ratings of intervention components; frequency of attendance/completion of parent education sessions; observation of parent adherence with prescribed intervention components; parent ratings of effectiveness, feasibility, and acceptability of the intervention; parent ratings and observations of child behavior; standardized measures of child reading and math achievement; and parent preferences for face-to-face or web-based parent education. Data Analytic Strategy: Analyses will be primarily descriptive and oriented towards assessing parent education process variables that are related to parent engagement with the intervention. T-tests will be used in the pilot study to assess whether the face-to-face and web groups differ on parent and child outcome measures. Project Website:: http://ed.lehigh.edu/peak

Early Intervention Graduates at Kindergarten: Analyses of Outcomes from the National Early Intervention Longitudinal Study (NEILS)

Hebbeler, Kathleen

Exploration

R324A070064

3/1/2007 to 2/28/2009

Purpose: The number of infants and toddlers receiving early intervention services under Part C of the Individuals with Disabilities Education Act (IDEA) has more than doubled in the last 15 years. Relatively little is known about the relation between participation in early intervention services and subsequent child outcomes. The purpose of this project is to take advantage of data from the National Early Intervention Longitudinal Study (NEILS) to investigate whether participation in and characteristics of early intervention services predict child outcomes in kindergarten. The NEILS was established in 1996 by the U.S. Department of Education to collect information on a nationally representative sample of children who receive Part C services. The dataset includes information on children who received early intervention services, which services they received, and their status and outcomes on multiple measures at entry to early intervention, 36 months of age, and kindergarten. Project Activities: Researchers will conduct secondary analyses of extant data from the NEILS. The relationships between characteristics of early intervention services (e.g., type, amount, focus, and quality), disability or risk (e.g., low birth weight, diagnosed condition), and child outcomes in kindergarten (e.g., receipt of special education, social skills, literacy skills, mathematics skills, and school readiness) will be examined. Products: Expected products include reports on which kinds of early intervention services are associated with better outcomes in kindergarten for children with disabilities and children at risk. Structured Abstract Purpose: The number of infants and toddlers receiving early intervention services under Part C of the Individuals with Disabilities Education Act (IDEA) has more than doubled in the last 15 years. Relatively little is known about the relation between participation in early intervention services and subsequent child outcomes. The purpose of this project is to take advantage of data from the National Early Intervention Longitudinal Study (NEILS) to investigate whether participation in and characteristics of early intervention services predict child outcomes in kindergarten. The NEILS was established in 1996 by the U.S. Department of Education to collect information on a nationally representative sample of children who receive Part C services. The dataset includes information on children who received early intervention services, which services they received, and their status and outcomes on multiple measures at entry to early intervention, 36 months of age, and kindergarten. Setting: A sample of 20 states was selected for the NEILS to recruit a nationally representative sample of 3,338 children and families. Nine of these states served the largest number of children receiving early intervention services in Part C. For the remaining 11 states, the country was divided into three regions, and states were randomly selected from each region. The 20 states are diverse with regard to population, region of the country, early intervention lead agency, whether children at risk were served, and the percentage of the population from birth to age 3 served. Population: The population of interest is children who received early intervention services. All children entered the study at birth to 31 months of age and were participants in early intervention services for the first time. Intervention: This study does not involve a predetermined intervention. Instead, it will suggest possible characteristics of early intervention as it is currently practiced across the country that are found to correlate with child outcomes in kindergarten. Research Design and Methods: The project is examining an extant database for relations between predictor and outcome variables while controlling for the effects of possible moderating or mediating variables. The overarching question being addressed is, "Do characteristics of early intervention services relate to child outcomes at kindergarten?" The relationships between characteristics of early intervention services (e.g., type, amount, focus, and quality) and child outcomes (e.g., receipt of special education, social skills, literacy skills, mathematics skills, and school readiness) will be examined for children without diagnosed conditions, children with low birth weight, children with only a speech or language problem, and children with a diagnosed condition. Control Condition: There is no control condition in this design. Key Measures: Measures are limited to data available in the NEILS database. Child outcome variables are measured by a set of primary caregiver and teacher survey items on topics such as developmental accomplishments; functioning; communication, social, and academic skills; engagement; independence; need for special services; overall health; participation in the general education classroom; and receipt of special education and related services. Other variables of interest include child characteristics such as disability-related characteristics, gender, and ethnicity and family characteristics such as family structure, income, and parental education. Data Analytic Strategy: The data analysis strategy includes the use of multivariate regression models and propensity score matching to address whether characteristics of early intervention services relate to child outcomes in kindergarten. In addition, analyses will address direct and indirect child and family influences in relation to early intervention service characteristics.

Efficacy of a Parent-Mediated Intervention for One-Year-Olds at Risk for Autism

Watson, Linda

Efficacy and Replication

R324A100305

7/1/2010 through 6/30/2014

Purpose: Early intervention with children with autism may promote better long-term outcomes and preempt more serious consequences associated with this disorder. There is little research about the efficacy of interventions with infants and toddlers who, at this point, have not yet demonstrated all of their autism diagnostic symptoms. The purpose of this project is to assess the efficacy of an early intervention program called Adaptive Responsive Teaching with one year olds most at risk for autism spectrum disorder. The intervention is intended to improve developmental outcomes and ameliorate symptom severity. Project Activities: A randomized control trial design will be used to study the efficacy of Adaptive Responsive Teaching intervention for improving social communication, regulatory functioning, and general development and ameliorating the presence or severity of autism symptoms. Families will be randomly assigned to receive the Adaptive Responsive Teaching or a business as usual control group. Both groups will be assessed pre-intervention and post-intervention. Products: The products of this project will be published reports on the efficacy of Adapted Responsive Teaching and mediators or moderators of intervention effects. STRUCTURED ABSTRACT Setting: The research will take place in North Carolina. Population: Over one hundred infants and their families will participate in this research. The infants will weigh more than 2,500 grams at birth and have been determined to be at risk for autism based on parent ratings using the First Year Inventory screening tool. Intervention: The researchers will evaluate a parent-mediated, home-based intervention called Adapted Responsive Teaching. Adapted Responsive Teaching targets behaviors linked to the later development of more complex functions (pivotal behaviors) in domains of social-communication and sensory-regulatory functions. An interventionist meets with families for approximately 30 1-hour home visits over a period of 6-8 months to provide them with information, demonstration, and coaching on use of responsive teaching strategies to promote targeted pivotal behaviors for their child. Responsive teaching strategies emphasize reciprocity, contingency; shared control, positive affect, and matching the child’s developmental level and behavioral style. Family action plans are formulated at the end of each session to promote the use of Adapted Responsive Teaching by parents during daily, routine interactions with their child. Research Design and Methods: Families will be randomly assigned to receive the Adapted Responsive Teaching treatment or a business as usual control group. Both groups will be assessed pre-intervention and post-intervention. An Intervention Coordinator will monitor Adapted Responsive Teaching implementation and services received by children in the control group. Control Condition: Adapted Responsive Teaching will be compared to a business-as-usual condition in which families of eligible children are referred to community services for early intervention. Key Measures: Researchers will measure children’s social communication, regulatory function, general development, and presence or severity of autism symptoms. In addition, data will be collected on fidelity of treatment implementation, parent and child demographics and parental responsiveness and use of other community services. Data Analytic Strategy: An intent-to-treat strategy will be used for data analyses. Analysis of Covariance will be used to evaluate the effects of Adapted Responsive Teaching on infant outcomes and identify potential mediators or moderators of intervention effects. Publications Journal article, monograph, or newsletter Gordon, R.G., and Watson, L.R. (2015). Brief Report: Gestures in Children at Risk for Autism Spectrum Disorders. Journal of Autism and Developmental Disorders, 45(7): 2267–2273. doi:10.1007/s10803–015–2390–0

Efficacy of Story Friends Vocabulary Curriculum Targeting Preschoolers At Risk for Language and Literacy Disabilities

Goldstein, Howard

Efficacy

R324A200179

5 years (07/01/2020 - 06/30/2025)

Co-Principal Investigator: Kelley Spencer, Elizabeth Purpose: This project aims to evaluate the efficacy of Story Friends, a supplemental vocabulary curriculum targeting preschoolers who demonstrate oral language deficits that put them at risk for language and reading disabilities. Expanding a child's range of sophisticated academic vocabulary has the potential to contribute to the prevention of later reading problems. Story Friends can be implemented with high fidelity in preschool classrooms within a Multi-Tiered System of Supports framework. Whole-class instruction (Tier 1) is supplemented by small-group intervention for children with oral language delays (Tier 2). Results from pilot studies revealed substantial gains for both children with typical language who received Tier 1 instruction and children with limited oral language who received both Tier 1 and Tier 2 instruction. The current study will determine whether Story Friends has an impact on children receiving Tier 1 and children receiving Tier 1 plus Tier 2 instruction on vocabulary, expressive and receptive language, and listening comprehension outcomes. A cost-effectiveness analysis will examine the relative value of Story Friends compared to storybook listening. Project Description: This cluster randomized controlled trial will evaluate the efficacy of the Story Friends vocabulary curriculum on improving vocabulary and language outcomes for preschool children who are and are not at risk for language and reading disabilities as well as the cost-effectiveness of the intervention. Products: The primary product of this project will be evidence for the efficacy of Story Friends on vocabulary and language outcomes for preschoolers at risk and not at risk for language and reading disabilities. The project also will result in a final dataset to be shared, peer-reviewed publications and presentations, and additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: The research will take place in public preschools in Florida. Sample: A total of 96 classrooms will participate, with teachers and paraeducators administering the intervention. Within each of the 96 participating classrooms, there will be 8 participating children, with 4 at-risk children who demonstrate language deficits and 4 children with average or above language skills, for a total of 768 preschoolers. Intervention: Over the course of a school year, Story Friends provides explicit and systematic instruction of academic vocabulary words and meanings. Tier 1 instruction is delivered to the whole class through a weekly storybook read aloud and extension materials that provide teachers and parents with prompts, examples, and suggested activities for practice and review. Tier 2 is small-group instruction provided as a storybook listening center activity three times per week, where children identified as having oral language delays receive explicit vocabulary instruction embedded into pre-recorded audio narration. Children learn four new academic words per week. In addition to the primary curricular components, materials are sent home each week to encourage parents to practice at home with their children. Each classroom component has been designed for ease of use by paraprofessionals and teachers. Research Design: Using a cluster randomized design, four cohorts of 24 classrooms per year will participate in this efficacy trial. Classrooms will be randomly assigned to the treatment or control conditions. Learning of target words will be assessed after each unit of instruction and at 4 months post intervention to evaluate maintenance effects. Long-term effects of Story Friends will be evaluated by collecting kindergarten language and literacy assessments and results from school district assessments for participating children. An ingredients approach will be used to calculate costs and a cost-effectiveness analysis will examine the relative value of Story Friends (compared to storybook listening) by computing the incremental cost per unit improvement in primary student outcomes. Control Condition: Children in classrooms randomly assigned to the control condition also will listen to the Story Friends books during whole-class read alouds and small-group centers, but without embedded vocabulary instruction. Daily sessions will be delivered in the same format as in the experimental condition and teachers will be given general information about how to facilitate language development during book reading. Key Measures: A range of measures will be used to address the research questions. At-risk students will be identified using the Clinical Evaluation of Language Fundamentals- Preschool. Student learning trajectories will rely on curriculum-based measures of vocabulary learning (Vocabulary Unit Tests). Summative tests of language (Peabody Picture Vocabulary Test, Expressive Vocabulary Test, Assessment of Story Comprehension, Listening subtest of the Narrative Language Measures) and iReady, adistrict-adopted computer-based literacy and math assessment will provide an estimate of potential distal effects in kindergarten. Teacher and family surveys will be used to describe the demographics of the sample and classroom observations and satisfaction surveys will be used to judge fidelity, feasibility, and social validity. To estimate costs, information will be gathered using teacher logs, in-person observations, and facilitator logs. Data Analysis: Multilevel modeling, using pretest scores as the primary covariates, will be used to analyze the data from this efficacy trial to account for the nesting of individuals in classrooms. Cost-effectiveness analysis will use hierarchical linear modeling to compare the ratio of outcomes to estimated costs across experimental conditions using pretest scores as the primary covariates. Related Projects: Explicit Vocabulary Instruction in Automated Listening Centers for Young Children with Language Delays (R324A150132); Center for Response to Intervention in Early Childhood (R324C080011)

Efficacy of the Early Social Interaction (ESI) Model for Toddlers with Early Signs of Autism Spectrum Disorder in Community Early Intervention Programs

Wetherby, Amy

Efficacy and Replication

R324A180193

5 years (07/01/2018-06/30/2023)

Co-Principal Investigators: Woods, Juliann; Stapel-Wax, Jennifer Purpose: The purpose of this study is to test the efficacy of a technology-supported version of the Early Social Interaction (ESI) model, an intervention designed to coach families to use evidence-based interventions for toddlers with early signs of autism spectrum disorder (ASD). Early ASD diagnosis and intervention can have a significant impact on children's later outcomes, making it critical to identify evidence-based interventions that are feasible to deliver in community- and home-based settings. The ESI model is a comprehensive intervention that teaches parents of toddlers with ASD to incorporate evidence-based intervention strategies to support social communication, language, play, and adaptive behaviors within everyday activities. In a prior efficacy trial, this research team found that the ESI model led to improvements in children's social communication, developmental functioning, and adaptive behavior. The current study will replicate the prior study using a more efficient and sustainable mode of delivery. Specifically, the research team will evaluate the efficacy of a technology-supported version of the ESI model that involves early intervention providers (EIPs) as coaches. The research team will investigate whether this version of the ESI model shows efficacy for improving children's active engagement, social communication, developmental level, adaptive behavior, and early signs of ASD. They will also investigate whether children's active engagement and the level of support parents provide to their children mediate the impact of ESI on child outcomes and whether family and child characteristics, as well as intensity of the intervention, moderate its impact. Project Activities: The research team will evaluate the efficacy of the technology-supported ESI model using a randomized controlled trial design. In Years 1 and 2, providers will be recruited, enrolled, and randomly assigned to the intervention or control group. Each provider will recruit three children and their families, one at a time, to participate in the 9-month intervention or business-as usual services. Researchers will collect data at baseline, after the intervention, and 9 months following the completion of the intervention period to determine the effects of the intervention. Products: The products of this project will include evidence of the efficacy of the technology-supported version of the ESI model with EIPs as coaches on child outcomes, peer-reviewed publications, and presentations. Structured Abstract Setting: The research will take place in homes and community settings in urban, suburban, and rural communities in Florida and Georgia. Sample: Approximately 40 EIPs, 120 toddlers ages 18-24 months (approximately 3 per provider) who show signs of ASD and meet eligibility criteria for Part C intervention services, and the children's families will participate in the study. Intervention: As part of the technology-supported ESI model, EIPs will be trained to coach parents on the ESI model, an intervention in which parents of young children with ASD learn to embed evidence-based strategies to support social communication, language, play, and adaptive behaviors within every day activities. ESI training for the providers is comprised of a 30-hour online course and associated resources (e.g., video illustrations, print documents, learning assessments, interactive webinars) addressing early detection, family collaboration, developmental perspectives, evidence-based intervention strategies, and strategies to address challenging behaviors. ESI for families consists of individual and group weekly sessions over 9 months. The 30 individual sessions include coaching and specific feedback for parents on the use of evidence-based strategies. Coaching sessions will begin in the home and eventually move to community settings. The parents in the ESIgroup access both an online course and 24 weekly group meetings by video conferencing to discuss the topics covered in the online course, including social communication, emotion regulation, play development, and behavioral challenges. Research Design and Methods: This study will use a cluster randomized controlled trial with families nested within providers. In Years 1 and 2 of the study, the team will recruit providers and randomly assign them to the ESI or control group. Each provider will recruit three families sequentially. Prior to beginning coaching with families, providers will receive the online training. Each provider will then work with one family at a time to provide 9 months of intervention. When they complete intervention with one family, they will begin intervention with the next so that they work with the 3 families over a span of 27 months. Child outcomes will be assessed at baseline, post-test, and at 9-month follow up. Mediator variables (i.e., child active engagement and parents' level of support to their child) will be assessed at baseline and monthly until the end of the intervention. Control Condition: Toddlers and their families in the control group will receive business-as-usual early intervention services. Key Measures: The research team will use the Smart Early Screening for Autism and Communication Disorders to screen children for ASD. Additional screening measures include the Communication and Symbolic Behavior Scales(CSBS) Behavior Sample to assess social communication and the Systematic Observation of Red Flags of Autism Spectrum Disorder (SORF) checklist to assess early signs of ASD. Child outcomes will be measured using the CSBS Behavior Sample (social communication), the SORF checklist (early signs of ASD), the Mullen Scales of Early Learning (developmental level) and the Vineland Adaptive Behavior Scales (adaptive behavior). The mediators of child engagement and parent support will be assessed from video-recorded observations of parent-child interactions using the Measure of Active Engagement and Transactional Supports(MAETS). The following moderator variables will also be assessed: parents' buy-in to treatment (parent-reported Caregiver Diaryand provider-reported Caregiver Involvement Scale),demographic information, hours spent on ESI and other interventions (parent log of hours, provider count of sessions), and family functioning (parent-reported Family Impact Questionnaire, Family Resource Scale, Parenting Daily Hassles, Parenting Sense of Competence, and Parenting Stress Index, as well as aform to document how many activities the parent participates in and how their child with ASD impacts their participation). Fidelity of the providers' delivery will be measured through observational ratings by master coaches. Fidelity of intervention delivery will be assessed using the Caregiver Diary and Caregiver Involvement Scaleand hours spent on ESI and on other interventions. Fidelity of parents' implementation will be measured from the monthly home observation using the MAETS. Parent satisfaction will also be measured using a family evaluation survey. Data Analytic Strategy: Growth curve modeling will be used to determine the difference in effects between the intervention group and the control group on active engagement, social communication, developmental level, adaptive behavior, and early signs of autism. Models will take into account the nested structure of the data (families nested within providers). Effect size estimates will also be calculated. Moderation will be explored through interactions, and mediation will be tested within the multilevel growth curve models.

Efficacy of the Getting Ready Intervention at Supporting Parental Engagement and Positive Outcomes for Preschool Children at Educational Risk

Sheridan, Susan

Efficacy and Replication

R324A120153

7/1/2012–6/30/2016

Co-Principal Investigators: Lisa Knoche and Carolyn Edwards Purpose: Despite the efforts of early intervention programs to bolster school readiness, some children arrive in kindergarten demonstrating early cognitive, language, or socio-emotional delays that hinder their progress in school. In addition, despite overwhelming evidence of the benefits of planned coordination between home and school, this coordination occurs all too rarely for individual children. This reality, coupled with the unequivocal finding that early relationships matter in a child's developmental trajectory, point to the importance of intervening with at-risk children and families in ways that support learning. The intervention to be tested in this study, Getting Ready, is designed to improve learning experiences and opportunities for cognitively, linguistically, or socio-emotionally delayed preschool children by strengthening relationships, creating partnerships, and promoting continuity in educational experiences across home and school. Project Activities: Researchers will conduct a randomized controlled trial, with random assignment of 75 preschool classrooms to the Getting Ready intervention or control condition. Three hundred children from these classrooms will be included in the study. Implementation of the Getting Ready intervention will involve two components aimed at (1) building, reinforcing, and maintaining cognitive, language, and socio-emotional skills in children at educational risk; and (2) creating continuities and strengthening relationships within (parent-child; teacher-child) and between (family-school) settings. Outcome data to assess child cognitive, language, and socio-emotional skills; parent engagement; and parent-teacher relationships will be collected at the beginning and end of preschool, and at the beginning and end of kindergarten. Products: This study will result in evidence on the following: (1) the efficacy of the Getting Ready intervention to enhance cognitive, language, and socio-emotional functioning for children identified early as demonstrating risk; (2) the impact of the intervention on parent engagement and parent-teacher relationships; (3) whether changes in parent engagement and parent-teacher relationships mediate the effects of the intervention on child outcomes; and (4) whether there are long-term effects of the intervention for children demonstrating early risk as they transition to kindergarten. The results will be reported in conference presentations and published articles. Structured Abstract Setting: The research will be conducted in preschool classrooms in rural and suburban Nebraska. Sample: Three hundred preschool-aged children screened for delays in cognitive, linguistic, and socio-emotional domains will be included in this study. Intervention: The Getting Ready intervention has two components: (1) triadic collaborative planning, which uses strategies aimed to mutually support parent-child and family-school relationships (e.g., home visit sessions where teachers and parents brainstorm collaboratively around problems or issues related to children's social, motor, cognitive, or communicative development and learning); and (2) conjoint behavioral consultation, which involves trained consultants assisting teachers and parents to engage in structured problem solving and intervention planning for all students in the treatment group. The primary mechanism for the delivery of triadic collaborative planning strategies will be in the context of five home visits per year that are part of the typical preschool programs in each of the study sites. Conjoint behavioral consultation will be implemented in the context of programs' regularly scheduled parent-teacher conferences, held twice per year (Fall and Spring), and extend and support the work taking place during home visits. The classroom teacher will be the primary link with families, but early childhood special education service providers will be included in collaborative planning processes to ensure consistency and coordination with children's Individualized Education Program or Individualized Family Service Plan. Research Design and Methods: Researchers will conduct a randomized controlled trial, with random assignment of two cohorts of preschool classrooms to the Getting Ready intervention or business-as-usual control group. A total of 75 classrooms and 300 children will participate in the study. All participating children and families will be assessed at the beginning and end of each year of preschool and at the beginning and end of kindergarten. The efficacy of the intervention, relative to the control condition, will be evaluated first in the Spring of each child's second year of preschool by estimating a growth curve using the four assessment periods from baseline through the Spring of preschool. The lasting impact of the intervention will be evaluated at the end of kindergarten for all students via growth curve modeling considering all six (Fall and Spring during each of 2 preschool years; Fall and Spring of kindergarten) assessment points. Control Condition: Classroom teachers in the comparison condition will implement all programmatic elements, but not receive any training or support in implementing the Getting Ready strategies involved in triadic collaborative planning or conjoint behavioral consultation. Families in the comparison group will receive the same number of contacts from teachers as those in the experimental condition. Similarly, the number of parent-teacher conferences and informal exchanges will be consistent across treatment and comparison groups. Key Measures: Key measures will include direct child assessments of cognitive and language skills; measures of social-emotional skills (parent and teacher reports, observation); measures of parent engagement (parent report, observation); parent and teacher reports of the parent-teacher relationships; and teacher reports of the student-teacher relationships. Fidelity will be measured to determine the degree to which all elements of the Getting Ready intervention are delivered. Data Analytic Strategy: A longitudinal multilevel model with repeated measures and multilevel data structure will be used to address aims associated with intervention outcomes for children and parents. To test whether changes in parent engagement and parent-teacher relationships mediate the effects of the intervention on child outcomes, the researchers will use multilevel structural equation modeling that provides multiple simultaneous direct and indirect paths while modeling growth. Project Website: https://gettingready.unl.edu/site/ Project Video: Publications Book chapter Knoche, L. L., & Sheridan, S. M. (in press). How do we engage families in multi-tiered systems of support? Multi-tiered systems of support (MTSS) for young children: A guide to RtI in early childhood. Knoche, L.L. (2013). 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Efficacy of the START-Play Program for Infants with Neuromotor Disorders

Harbourne, Regina

Efficacy and Replication

R324A150103

4 years (7/1/2015-6/30/2019)

Co-Principal Investigator: James C. (Cole) Galloway (University of Delaware) Long-Term Follow-Up Award: 3 Years (FY 2020—FY 2022), $929,509 Purpose: The purpose of this project is to evaluate the efficacy of Sitting Together And Reaching To Play (START-Play), an intervention designed to target sitting, reaching, and motor-based problem solving to improve development and readiness to learn in infants with motor delays or dysfunction. There is limited research examining the efficacy of early physical intervention on infants with neuromotor dysfunction. In addition, most early motor interventions have not been directly linked to learning, despite the research demonstrating an association between motor activity and cognitive skills. START-Play specifically targets motor skills that lead to greater physical exploration, which has been associated with improved problem solving and global development. A randomized controlled trial of START-Play was conducted across four states to investigate the impact of the intervention on changes over time in sitting and reaching, subsequent changes in global cognitive development, and the mediating influences of motor skill changes and problem solving. Project Activities: The research team conducted a randomized controlled trial to evaluate the impact of START-Play on motor development, motor problem solving, global development including cognitive problem solving of infants with neuromotor delay and dysfunction. Infants experienced either the intervention or services as usual for 3 months, with initial follow-up assessments at three time points up until 9 months post intervention. They are using linear mixed modeling to examine group differences in outcomes, as well potential moderators. Further, growth modeling will be used to examine the hypothesis that the longer-term impacts of the intervention will occur through mediated pathways. More specifically, the researchers will determine whether the intervention leads to improved sitting and reaching, which leads to improved motor-based problem solving, which leads to improved global development and problem solving. To examine longer-term impacts of START-Play, the research team received $929,509 in additional funding to collect follow-up data 24 and 36 months after the baseline assessment. Products: The products of this project will include evidence of the efficacy of START-Play on motor skill development and global cognitive development, peer-reviewed publications, and presentations. Structured Abstract Setting: The research is taking place in the homes of infants and their families in Pennsylvania, Delaware, Washington, and Virginia. Sample: There were 134 infants (age 7 to 16 months) with neuromotor disorders, as well as their families and interventionists, randomized into treatment and control groups at the start of this study. Infants had gross motor delays but were able to sit propped up for at least 3 seconds when they were recruited for participation. Intervention: Sitting Together And Reaching To Play (START-Play) is an intervention for infants with motor dysfunction or delay in which physical therapists visit the child's home to target work on siting, reaching, and problem solving. The therapist visits the home twice weekly for 3 months. During these visits, therapists and families work together to provide intensive, individualized, daily activities to advance reaching and sitting through small increments of challenge and support for these skills, which then become the building blocks for motor-based problem solving. More specifically, the intervention focuses on self-initiated, goal-directed movements to build orientation and attention to objects, while learning basic relationships of cause and effect. Infants and families in the intervention group received this intervention in addition to their usual early intervention services. Research Design and Methods: This study used a randomized controlled trial in which infants and their families were randomly assigned to the intervention group (START-Play in addition to usual services) or control group (usual early intervention services), stratified by severity of neuromotor disorder. There were six measurement sessions during the 12-week intervention period, followed by assessments during 1-, 3-, and 9-month follow-up visits. The study aims to determine the efficacy of the intervention on sitting and reaching (proximal outcomes) and motor-based problem-solving skills (longer-term proximal outcome), which are hypothesized to serve as mediators to the more distal outcomes of global cognitive development and readiness to learn. The investigators are also exploring fidelity of implementation to identify conditions that support fidelity and outcomes, as well as identifying other moderating factors related to the child (severity of disorder, health, age, cognitive skill at entry), family (socioeconomic status, home environment), or services (fidelity of implementation, other services provided to child) to explore change over time. With additional funding, the research team will examine longer-term impacts of START-Play by collecting follow-up data at 24 and 36 months post baseline. Control Condition: Infants and their families in the control condition continued to receive their regular Part C early intervention services. Key Measures: Primary outcome measures in the study include the Gross Motor Function Measure and an observational measure of toy contacts for sitting and reaching, and an adapted version of the Individual and Growth Development Indicators (Early Problem Solving Indicator) and Bayley Scales of Infant and Toddler Development —Third Edition for problem solving and global development. Secondary measures include additional measures of postural control and reaching, child and family characteristics, and fidelity of implementation (logs and checklist). At the longer-term follow up, additional outcomes will be measured with the Dimensions of Mastery Questionnaire (caregiver report of characteristics associated with future academic success such as persistence), Minnesota Executive Function Scale, and Gross Motor Function Measure. Data Analytic Strategy: The investigators are using linear mixed modeling (LMM) to determine the efficacy of the intervention on child outcomes. Parallel process growth modeling within a structural equation modeling framework will be used to examine whether improvements in sitting and reaching are mediators leading to improvements in problem solving, which is then a mediator leading to long-term global cognitive development. LMM will also be used to examine moderating variables, as well as secondary motor outcomes. For the longer-term outcomes, additional analyses will include analysis of covariance. Project website: http://start-play.unl.edu/ Project Video: Publications Journal article, monograph, or newsletter Ryalls, B. O., Harbourne, R., Kelly-Vance, L., Wickstrom, J., Stergiou, N., and Kyvelidou, A. (2016). A Perceptual Motor Intervention Improves Play Behavior in Children with Moderate to Severe Cerebral Palsy. Frontiers in Psychology, 7. doi:10.3389/fpsyg.2016.00643 Full text

Efficacy Trial of Carescapes: Promoting Social Development in Home-based Child Care

Rusby, Julie

Efficacy and Replication

R324A090044

3/1/2009 - 2/28/2013

Purpose: Social competence is critical to the development and adjustment of preschool-age children and is linked to later school success. Child care provides an opportunity for young children to develop relationships with other young children, and has the potential to facilitate the development of children's social competence. The quality of the child care environment may have lasting impacts on children's social development, yet many child care facilities fall short of providing an optimal environment. This is particularly the case for family child care settings, in which care is provided by a nonrelative in a caregivers' home. Compared to center-based care, the quality of care in child care homes varies greatly. Evidence supports positive relations between the quality in center-based child care and social outcomes, but much less is known about the relation between quality of care in home-based child care settings and young children's social competence. This research team will test the efficacy of the Carescapes program "Promoting Children's Social Competence." This video-based training program was developed to improve home-based child care providers' practices and the quality of the child care environment and, in turn, to facilitate children's social development and prevent the escalation of behavioral difficulties that interfere with learning. This research will be the first randomized efficacy trial to investigate the extent to which training promotes positive caregiver practices in family child care and can enhance children's subsequent social outcomes. Project Activities: Approximately 120 child care homes will be randomly assigned to immediate intervention or waitlist control conditions. Approximately 360 preschool-age children within these child care homes will also be recruited. Assessments of the child care environment, caregiver practices, and child behavior will occur at baseline, immediately after the intervention, and 24 months after the intervention. Individual children who are at risk for developing conduct problems will be followed up into kindergarten. Products: This efficacy trial will result in evidence about: (1) intervention effects on caregiver practices and the child care environment; (2) intervention effects on child outcomes; and (3) child care and child variables that moderate immediate outcomes and maintenance of intervention effects. The results will be presented in published articles. Structured Abstract Setting: This efficacy trial will take place in four counties in Oregon, and will include rural, suburban, and urban communities. Participating child care homes will be located in low-income neighborhoods. Population: Participants will be home-based child care providers and preschool-age children (ages 2 ½ to 6) who attend the child care. Children will include those who present challenging behaviors and are at risk for developing behavioral disorders. Intervention: Carescapes is a video-based training program designed for caregivers who provide child care in their homes. It is comprised of a set of three modules: (a) setting up the child care environment to promote social development, (b) proactive practices for managing children's behavior, and (c) understanding and dealing with challenging behavior. The training will be delivered in a set of three interactive workshops delivered a month apart. Each workshop will last three hours and will include training videos developed with previous IES grants. The program includes a manual that illustrates the main ideas from the video-based training, examples of activities that facilitate social skill development, handouts for parents about fostering social skills, and instructions for developing a behavior support plan for children who present challenging behaviors. On-site consultation visits and a "booster" workshop session will also be provided. Research Design and Methods: The study is a group randomized trial involving a longitudinal nested design in which approximately 360 preschool-age children are nested within 120 child care homes, and individual children will be followed up into kindergarten. The child care environment and caregiver practices, and overall behavior and social skills of attending children, will be assessed via direct observation. The behavior, social skills, and temperament of at-risk target children will be assessed by caregiver, parent, and teacher reports at baseline, post intervention, and at later follow-up. Control Condition: Participating child care homes will be randomized to either receive the training and consultation immediately (immediate intervention condition) or to wait and receive the training later (waitlist control condition). Caregivers in the waitlist control condition will receive the set of three workshops and will get a copy of the Carescapes manual after the follow-up assessments have been completed. Key Measures: Measures of caregiver practices (e.g., positive attention, effective behavior management, and responsivity) will be collected via caregiver self-report and observer ratings. Observation measures and child care provider surveys will be used to assess the child care environment (e.g., in terms of enrichment and organization). Measures of child behavior (e.g., aggression, social skills, and temperament) will be collected via direct observation, and caregiver, parent, and teacher reports. School readiness measures assessing school adjustment and social competence will be collected from kindergarten teachers. Data Analytic Strategy: A mixed-model analysis of covariance will be used to test condition differences of pre-test and post-test outcomes, and multilevel random coefficients analysis will test repeated measures across time. The research team will model trajectories across time within individuals and, for child measures, nest those individual trajectories within sites. They will test whether improved caregiver practices and environments, as a result of the Carescapes program, mediate the effects of condition on child outcomes. Specific moderation hypotheses will also be tested. Publications Journal article, monograph, or newsletter Rusby, J.C., Jones, L.B., Crowley, R., and Smolkowski, K. (2013). Associations of Caregiver Stress With Working Conditions, Caregiving Practices, and Child Behavior in Home-Based Child Care. Early Child Development and Care, 183(11): 1589–1604. doi:10.1080/03004430.2012.742992 Rusby, J.C., Jones, L.B., Crowley, R., and Smolkowski, K. (2013). The Child Care Ecology Inventory: A Domain-Specific Measure of Home-Based Child Care Quality to Promote Social Competence for School Readiness. Early Childhood Research Quarterly, 28(4): 947–959. doi:10.1016/j.ecresq.2013.02.003 Rusby, J.C., Jones, L.B., Crowley, R., Smolkowski, K., and Arthun, C. (2013). Predictors of Home-Based Child Care Providers' Participation in Professional Development Workshops and Coaching. Child and Youth Care Forum, 42: 439–455. doi:10.1007/s10566–013–9209–y

Efficacy Trials with a New Early Literacy and Language Curriculum for Preschool Children with Developmental Speech and/or Language Impairment

Wilcox, M. Jeanne

Efficacy and Replication

R324A110048

3/1/2011–2/28/2015

Purpose: Eighty-two percent of children receiving special education services demonstrate a developmental speech and/or language impairment (DSLI) either as a primary diagnosis (i.e., DSLI is the sole impairment) or as a condition secondary to another primary diagnosis (e.g., developmental delay, mental retardation). Regardless of the underlying diagnosis, children with DSLI often fail to develop crucial pre-literacy skills, such as oral language skills, which can lead to later literacy difficulties and reading failure. The purpose of this study is to assess the efficacy of a recently developed preschool oral language and early literacy curriculum package, Teaching Early Literacy and Language Across the Curriculum (TELL), for children with DSLI either as a primary or secondary impairment. TELL targets skills that have been shown to be important in reading decoding and comprehension: phonological awareness, alphabet knowledge, print concepts, writing, vocabulary, and sentence length/complexity. Project Activities: Researchers will conduct a randomized controlled trial in which 72 preschool classrooms will be randomly assigned to either the TELL or "business as usual" comparison condition. Data will be collected in three cohorts (corresponding to project years 1, 2, and 3) and all children will be followed into the first quarter of kindergarten to gather information about early kindergarten success and readiness. In addition to child outcomes, researchers will examine the effectiveness of the TELL professional development sessions and the perceived value and feasibility of the curriculum. Products: Products include evidence about the efficacy of the TELL curriculum package for improving the oral language and emergent literacy skills of children with DSLI; the variables that may serve as predictors, moderators, or mediators of observed outcomes; and the perceived value and feasibility of TELL from the perspective of preschool teachers. The results will be reported in conference presentations and published articles. Structured Abstract Setting: This study will be conducted in preschool classrooms in Arizona. Population: The study will target 4-year-old children with DSLI receiving services through Part B of the Individuals with Disabilities Education Act (IDEA). Intervention: TELL is designed so that language and early literacy goals and explicit teaching practices are integrated and implemented within the context of social emotional, math, science, art, and fine and gross motor activities. The TELL curriculum package includes a scope and sequence of instruction, scripted teaching activities, materials for implementation of oral language and early literacy activities, and professional development for teachers. TELL professional development includes 25 hours of formal training and weekly coaching for teachers and teaching assistants to implement the curriculum in experimental classrooms across the project period. Research Design and Methods: The research design for this study is a randomized controlled trial in which 72 preschool classrooms will be randomly assigned to either the TELL or "business as usual" comparison condition. Data on child outcomes and teacher's instructional practices will be collected in three cohorts (corresponding to project years 1, 2, and 3), and all children will be followed into the first quarter of kindergarten. Focus groups, individual structured interviews, and surveys will be used to gather data from teachers on the perceived value and feasibility of TELL. Control Condition: Classes assigned to this condition will represent standard practice (i.e., "business as usual") in their districts. During the study, the research team will gather information about the teaching content and use of practices by these classroom teachers to inform the comparisons that will be made to TELL classrooms. Key Measures: Selected measures include those designed to (a) evaluate the impact of the TELL curriculum on children's school readiness in early literacy and oral language skills; (b) evaluate teachers' use of oral language and early literacy instructional practices; (c) evaluate the quality of the classroom language and literacy environments; and (d) determine the extent to which the TELL curriculum impacts children's readiness for kindergarten success. Data Analytic Strategy: The primary analysis of quantitative outcome variables will be a mixed-model analysis of covariance, or hierarchical linear model. Growth curve models will be used to compare differences in growth trends between TELL and comparison students. Structural equation models will be used to test whether certain variables serve as mediators of the intervention effect on outcomes. Qualitative interview and focus group data will be audio-recorded and sent to a transcription service to create word documents. These documents will serve as the data source to be imported into qualitative results Related IES Projects: The Development and Efficacy of a Curriculum-Based Language and Early Literacy Intervention for Preschool Children with Developmental Disabilities (R324E060023) Publications Wilcox, M. J., Gray, S., Guimond, A., Lafferty, A. (2011). Efficacy of the TELL language and literacy curriculum for preschoolers with developmental speech and/or language impairment. Early Childhood Research Quarterly, 26, 278–294. doi:10.1016/j.ecresq.2010.12.

Embedded Practices and Intervention with Caregivers (EPIC)

Woods, Juliann

Development and Innovation

R324A130121

06/01/13-5/31/16

Purpose: For children enrolled in Part C of the Individuals with Disabilities Education Act (early intervention services for children under 3), the role of the early intervention provider is to enhance a family's capacity to meet the developmental needs of the infant/toddler. A substantial gap exists, however, between recommended and actual practice in Part C service delivery, particularly related to interventions that facilitate the caregivers' ability to support their children's learning. Researchers consistently identify the child as the focus of home visits with the early intervention provider implementing "hands on" instruction directly to the child, rather than supporting and enhancing interactions between the parent and child. There is little research on evidence-based practices with caregivers (parents) as implementers of their children's interventions, and even less that is focused on the unique learning needs of infants and toddlers with significant disabilities. The purpose of this project is to develop and pilot test a caregiver-implemented intervention approach called Embedded Practices and Intervention with Caregivers (EPIC). This intervention aims to increase the consistency and effectiveness with which caregivers embed learning opportunities in everyday routines so that their infants/toddlers with significant disabilities acquire and maintain critical functional skills. Once developed, the promise of the EPIC approach will be evaluated to examine whether it leads to increased caregiver use of embedded intervention and improved child outcomes. Project Activities: The research will take place in three phases: (a) development, refinement, and feasibility testing of the intervention; (b) validation of the intervention components; and (c) pilot testing of the intervention. Data collected through focus groups of stakeholders (e.g., caregivers and early intervention professionals) will inform the manual and protocol development. In addition, four caregiver-child dyads will try out the intervention and provide the researchers with information regarding the initial acceptability, feasibility, utility, and fidelity of implementation. Next, a series of three single-subject studies will be conducted to examine contextual variation in the implementation of the intervention. Finally, the pilot study will examine the promise of the intervention on caregiver use of embedded instruction and child learning outcomes. Products: Products include a fully developed version of the intervention, data on the feasibility of the use of the intervention with caregivers of infants and toddlers with disabilities, and evidence of the potential impact of the intervention on caregiver use of embedded instruction and child learning outcomes. Additional products include published reports and presentations on the project. Structured Abstract Setting: The research project will be conducted in homes in Illinois and Florida. Population: Participants will include 20 multidisciplinary Part C early intervention providers and 50 infants/toddlers with significant disabilities and their primary caregivers. Intervention: The EPIC intervention involves two components: (a) an early intervention provider protocol that will guide their instructional support (coaching) of caregivers; and (b) an intervention protocol for caregivers that includes a systematic five question (5-Q) process and visual model. The 5-Q process provides caregivers a script for increasing the use of embedded instruction through the use of five questions (Why, What, Where/When, How, and How do we know it is working). The provider-coaching protocol is grounded in adult learning research and practice. Providers will begin with 2-hour sessions, three times per week, to build caregiver knowledge and skill with embedded instruction and the 5-Q process. As caregivers demonstrate competence with the 5-Q intervention process, the frequency and duration of provider support will be faded. Caregivers will initially use the 5-Q process in one high-priority routine that serves as the context for teaching a caregiver identified motor or communication skill. As fidelity increases, the 5-Q process will expand to multiple routines and additional goals throughout the day. Research Design and Methods: An iterative, mixed-methods research design will be used to develop the intervention. The iterative design process consists of focus groups and trial implementations followed by revisions. Data from focus groups will be used to identify issues regarding the intervention's feasibility, usability, and acceptability. This development process includes implementing the intervention, determining the potential impact of each component of the intervention, and refining the intervention based on feedback from stakeholders. In Year 1, four caregiver-child dyads and early intervention providers will try out the components of the intervention to examine the implementation protocol. A series of single-subject studies will be undertaken in Year 2 to further understand feasibility and potential impact of the intervention. For the pilot study, a small randomized trial with children/caregivers randomly assigned to the EPIC intervention or a business-as-usual condition will be used to evaluate potential impacts of the intervention on caregiver and child outcomes. Throughout all phases, social validity data will be collected through provider and caregiver study participants and a stakeholder panel. Control Condition: Participants in this condition will receive Individuals with Disabilities Education Act Part C intervention services as stipulated on their individualized family service plan. Key Measures: To confirm child eligibility for the study, the ABILITIES Index, a rating of child functional abilities and limitations, will be used. Key outcomes include provider measures of coaching strategies and social validity, as well as caregiver measures of parenting self-efficacy, social validity, ability to identify opportunities for the child to learn, and use of embedded instruction. Child measures include observational measures of communication and motor initiations and responses. Additional measures of child communication and motor skills include the Individual Growth and Development Indicators for Infants and Toddlers—Early Communication and Early Movement Indicators. The Mullen Scales of Early Learning will be used for child language, motor, and visual reception skills, and the Pediatric Evaluation of Disability Inventory will measure child functional skills in social functioning, mobility, and self-care. Data Analytic Strategy: To determine feasibility, acceptability, and utility, data analysis techniques will include pre-post descriptive analysis on caregiver surveys, interval coding of videotapes using a structured protocol, thematic analysis of textual data, within- and across-site analysis of caregiver ratings on surveys, and visual inspection of single-subject data. For the pilot study, a mixed-model analysis of covariance will be used to examine interactions and main effects. Proportional change index analysis of child change on assessment data will be used to examine the impact of the intervention on child outcomes. Publications Journal article, monograph, or newsletter Salisbury, C., Woods, J., Snyder, P., Moddlemog, K., Mawdsley, H.P., Romano, M., & Windsor, K. (2017). Caregiver and Provider Experiences With Coaching and Embedded Intervention . Topics in Early Childhood Education. doi:10.1177/0271121417708036 Full text

Enhancing Early Learning for Infants with Disabilities: A Responsive Parenting Intervention

Taylor, Heather

Efficacy and Replication

R324A120363

9/1/12-8/31/16

Purpose: Children with physical disabilities associated with spina bifida and cerebral palsy face multiple challenges due to early physical and cognitive difficulties that impact their learning and later academic performance and independence. Parents of these children have the greatest potential for influencing their development due to the number of opportunities they have to interact with their children. However, the field of early intervention often fails to engage parents as active and primary mediators of the developmental services their children receive. Parenting interventions have included teaching responsiveness strategies resulting in improved child development/learning outcomes, or motor support strategies resulting in improved motor learning and development, but rarely are the two types of interventions combined. This study will investigate whether an integrated parent responsiveness and motor support intervention that targets the specific motor, attention, and organization deficits among infants with physical disabilities results in greater improvements in core skills (attention, motor learning, contingency learning, and goal directed play) and outcomes (cognition, language, social and emotional competence, and motor performance) compared to an intervention that focuses on responsiveness only and a control group receiving developmental information. Project Activities: The researchers will conduct a randomized controlled trial that compares three conditions: (1) an intervention that integrates a responsiveness program with research-based motor support behaviors, called Playing and Learning Strategies to Enable Children with Motor Difficulties (PALS-Enable); (2) a responsiveness intervention, Playing and Learning Strategies (PALS) only; and (3) an attention control condition that provides developmental information only. The research team will recruit 180 infants, 12 to 18 months of age, with physical disabilities related to spina bifida and cerebral palsy. Four assessments (pre-intervention, midpoint, post-intervention, and follow-up) of parent responsiveness behaviors and child core skills and developmental outcomes will be examined to determine intervention effectiveness. Products: The products of this project include evidence of the efficacy of the PALS-Enable and PALS interventions targeted towards children with disabilities due to spina bifida and cerebral palsy, and published reports and presentations. Structured Abstract Setting: This study will be conducted in participants' homes in Texas. Sample: The sample will include 180 infants between the ages of 12 to 18 months with a physical delay related to a diagnosis of spina bifida or cerebral palsy. Intervention: Both PALS and PALS-Enable use coaches to provide guidance to parents in four specific areas that have been linked to promoting school readiness in at-risk children: (1) maintaining vs. redirecting children's focus and interests; (2) contingent responsiveness (child sends a signal, the caregiver responds, thus providing the child a positive outcome); (3) providing rich language input; and (4) behaving in a warm and sensitive response style. In addition, PALS-Enable provides support for a child's motor limitations (e.g., adapting the environment and using strategies to encourage movement and ease exploration). In this study, the intervention will be delivered once a week for 14 weeks. In each session, the coach describes the targeted behavior, shows videos of parents demonstrating the behavior, has the parent practice using videos and self-critique, and helps parents plan to integrate the target behavior into activities for the coming week. Parents report on their experiences working with the target behaviors in the subsequent sessions and receive feedback. Research Design and Methods: The research team will conduct a randomized controlled trial with random assignment of infants to one of three conditions: PALS-Enable, PALS, or developmental information only. There will be a total of 180 caregiver-child pairs involved in this study in 10 waves (18 pairs recruited for each wave). Infants will be stratified by diagnosis and randomly assigned to one of the three conditions, totaling 60 in each group. Assessments of parent behavior and child skills and developmental outcomes will be conducted at four time points: pre-intervention, midpoint (i.e., at the end of the seventh session), post-intervention, and at 3-months post-intervention. Control Condition: The control condition in this study will serve as an attention control to ensure that intervention effects are not due to increased attention to the parents, or provision of general information about infant development. Specifically, in this condition researchers will conduct simple developmental screening activities with the non-intervention control children to give caregivers information about developmental expectations, tailored for parents of infants with spina bifida and cerebral palsy. Parents will receive developmental information in the mail along with a phone call contact once a week for 14 weeks. Key Measures: Multiple measures, including observations and standardized tests, will be used to assess child outcomes and core skills. Parent observations and assessments will address changes in parent behavior, emotional well-being, and social support. Fidelity of implementation of coaching sessions will be assessed through checklists completed by independent observers. Fidelity of parents' implementation of the intervention will be assessed using multiple methods, including rating scales completed by the coach, parent demonstration of competencies learned through the intervention, and parent responses to questions at the end of each session. Data Analytic Strategy: Child and parent outcomes will be analyzed using growth curve analyses.

Establishing the Efficacy of the "Special Friends" Project

Ostrosky, Michaelene

Efficacy and Replication

R324A080071

6/16/2008 to 6/15/2012

Co-Principal Investigator: Patricia Favazza Purpose: Successful peer interactions lead to positive social and emotional development. Children with disabilities engage in social interaction with peers less frequently than typically developing children do. Children with disabilities who fail to develop positive social relationships with peers are at elevated risk for social maladjustment and academic failure. In addition, they are at great risk of being rejected by their peers. Therefore, effective interventions that can be used in education settings to engage children with disabilities in social interactions with peers, improve social outcomes of children with disabilities, and support acceptance are needed. Researchers are evaluating the efficacy of a class-wide kindergarten program called Special Friends. Special Friends is designed to improve social outcomes of children with disabilities. The purpose of this study is to test the efficacy of Special Friends as a class-wide approach for promoting social acceptance and friendships among kindergarteners with and without disabilities. Project Activities: A randomized controlled cluster design will be used to examine the short- and long-term effects of the program. During the first three years, kindergarten classrooms will be randomly assigned to receive Special Friends intervention or a control intervention focusing on science. Data will be analyzed to examine the efficacy of Special Friends for improving (a) peer acceptance of children with disabilities and (b) social skills of children with and without disabilities. Data will also be analyzed to determine whether children maintain improved social skills and peer acceptance a year after receiving the intervention. In addition, data will be analyzed to determine if intervention effects are moderated by teacher attitudes about inclusion and teacher perceptions of school administrative support for inclusion. Products: The products of this project include evidence of the efficacy of an intervention designed to improve social outcomes of children with disabilities, published reports, and presentations. Setting: The research will occur in Rhode Island and Illinois. Population: Approximately 128 kindergarteners with disabilities will participate in this study. Disabilities represented will include children with mild, moderate, or severe-multiple disabilities. Study participants must have consistent school attendance. In addition, the study will include approximately 640 typically developing kindergarteners. Intervention: Special Friends is a six-week long multi-component program designed to promote acceptance of children with disabilities. In the first component, teachers read a story about a child with a disability to their classes followed by a brief guided discussion. Story time will occur 3 times a week for 6 weeks. The second component involves a cooperative learning activity designed to support socialization among children with and without disabilities. Each cooperative activity lasts for fifteen minutes and occurs three times per week. The third component of Special Friends is conducted at home. Each week, children will take home one of the previously read stories and repeat story reading and discussion with a family member. Research Design and Methods: A randomized cluster design will be used to examine the short- and long-term effects of the Special Friends program. During the first three years, kindergarten classrooms from each state will be randomly assigned to receive the Special Friends or a control intervention, Science Start. In addition, follow up data will be collected six months, one year, and two years after the intervention determine the long-term effects of Special Friends. Control Condition: Children in the control condition will participate in a three component science and literacy unit, Science Start, from the Children's School Success (CSS) Curriculum. These science activities are designed to support language and literacy outcomes in the context of language rich science lessons. The control condition will share similar features with Special Friends. It consists of a large group activity in which a science concept is introduced followed by a book reading and guided discussion. Children will also participate in a related cooperative learning activity. Finally, children will repeat the first component at home with a family member. Key Measures: Researchers will assess children's acceptance and understanding of individuals with disabilities as well as the establishment of social networks. In addition, data on children's behavior and social skills will be collected. Researchers will also collect data on school barriers to inclusion, teachers' perceptions of administrative support for inclusion, and teachers' experience with children with disabilities. Finally, fidelity of implementation data will be collected. Data Analytic Strategy: Hierarchical Linear Modeling (HLM) will be used to examine the efficacy of Special Friends for improving (a) peer acceptance of children with disabilities and (b) social skills of children with and without disabilities. In addition, data will be analyzed to determine whether intervention effects are moderated by teacher attitudes about inclusion and teacher perceptions of school administrative support for inclusion. Publications Book Favazza, P.C., Ostrosky, M.M., and Mouzourou, C. (2016). The Making Friends Program: Supporting Acceptance in Your K-2 Classroom. Baltimore, MD: Paul H. Brookes Publishing Co. 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Evaluation of a Comprehensive Community-based Intervention for Toddlers with ASD

McBride, Bonnie

Efficacy and Replication

R324A110353

7/1/2011–6/30/2015

Purpose: Prevalence rates for autism spectrum disorders (ASD) have risen dramatically in recent years and children are being identified earlier (i.e., under the age of 3). This has placed pressure on state early intervention systems to serve young children with ASD. However there are few treatment models available that are both feasible across different types of community settings and have demonstrated effectiveness. The overarching purpose of the current project is to conduct a randomized trial to evaluate the efficacy of a previously developed and pilot-tested model for very young children with ASD called Project DATA (Developmentally Appropriate Treatment for Autism)–Toddler. The major goals will be to examine whether children receiving this intervention show greater gains in cognitive functioning, language, social relatedness, and adaptive behavior; whether parents of these children demonstrate gains in recommended parenting strategies and decreased stress; and whether the intervention is acceptable in terms of general satisfaction and ability to work effectively within the context of different cultures. The ultimate aim of the research is to enable feasible and beneficial community-based services for toddlers with ASD. Project Activities: In this study, each child and their caregiver(s) will be randomly assigned to either the experimental condition (DATA–Toddler) or a comparison condition (standard care). After an intensive week-long training for the interventionist, follow up monitoring (fidelity checks) is scheduled weekly for the first four weeks to ensure appropriate implementation. Child assessments and parent reports will be administered pre-intervention and quarterly thereafter, including measures of symptoms, cognitive functioning, language, problem behavior, social behavior, engagement, and parent and family stress. Measures of adaptive behavior, family routines, and received child services will be collected at baseline and post-treatment. Products: Products from this project will include published reports and presentations on the efficacy of DATA–Toddler. Structured Abstract Setting: The research will take place in a community-based child care setting in Oklahoma City and a clinical intervention development setting in Seattle. These sites, which are state-funded early intervention programs, represent diversity in setting, staffing, and recruitment characteristics. Population: The population will consist of 80 toddlers, aged 18 to 30 months, diagnosed with ASD and meeting standardized symptom criteria. Intervention: The Project DATA–Toddler model is designed to be feasible for community and early intervention education settings and blends practices from the fields of applied behavior analysis, early childhood education, and early childhood special education. It includes home-based, center-based, and early education setting services delivered by paraprofessional interventionists with supervision from certified professional staff. Each child receives 17 hours of focused intervention each week, as well as an additional 5 hours of parent-delivered intervention at home, for two years. The model has five major components, including an integrated early childhood experience (integrated play group with supports to facilitate interactions), intensive one-to-one instruction, technical and social support for families, collaboration and coordination across services, and support for planning and transition. Research Design and Methods: The study will follow a simple two-arm randomized controlled trial. Each child and their linked caregiver(s) will be randomly assigned, stratified by site, to either the experimental condition (DATA–Toddler) or a comparison condition (standard care). The project will use procedural monitoring to maintain treatment fidelity, balancing of key baseline group differences, blinded data collection with inter-rater reliability checks, and multiple core symptom assessments. Data on child outcomes and parent reports will be collected pre-intervention and quarterly thereafter. Control Condition: The children in the control group will receive standard (business-as-usual) care, including services offered through their state early intervention system. Key Measures: The intervention will be evaluated using both standardized and non-standardized measures administered to the child, direct observation, and parent report. Measures used include diagnostic assessments such as the Autism Diagnostic Observation Schedule (ADOS); Mullen Scales of Early Learning; MacArthur-Bates Communicative Development Inventory (CDI); Vineland Adaptive Behavior Scale-Survey Edition; Aberrant Behavior Checklist; Brief Infant Toddler Social Emotional Assessment (BITSEA); and measures of engagement and play, parent and family stress, and consumer satisfaction. Data Analytic Strategy: The study will model change over time with a mean and covariance structural analysis, using latent growth curve modeling when appropriate. For measures capturing categorical change (developmental stages captured by measures of early learning and communication), ordinal-ranked stages will be analyzed using generalized linear mixed modeling. Mediation and moderation analyses will be incorporated into the models to examine potential explanations for variation in size of individual change and to generate hypotheses worth investigating in larger trials. Publications Book Schwartz, I. S., Ashmun, J., McBride, B., & Sandall, S. (2017). The Project DATA Model for Teaching Preschoolers with Autism. Baltimore: Brookes. . Book chapter, edition specified Schwartz, I. S., & McBride, B. (2014). Getting a Good Start: Effective Practices in Early Intervention. In ,K. D. Burton and P. Wolfberg, (Eds.), Educating Learners on the Autism Spectrum: Preparing Highly Qualified Educators and Related Practitioners (2nd Edition). (pp. 82–105). Kansas City, KS: Autism Asperger Publishing Company. Journal article, monograph, or newsletter Gauvreau, A. N. and Schwartz, I. S. (2013). Using Visual Supports to Promote Appropriate Behavior in Young Children with Autism and Related Disabilities. Young Exceptional Children , 15. 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Examining the Efficacy of a Classroom-Wide Model for Promoting Social Emotional Development and Addressing Challenging Behavior in Preschool Children with or at-risk for Disabilities

Hemmeter, Mary Louise

Efficacy and Replication

R324A120178

03/01/2012–02/29/2016

Co-Principal Investigators: Lise Fox (University of South Florida), Patricia Snyder (University of Florida), and James Algina (University of Florida) Purpose: Researchers have noted that children are entering elementary school without the behavior skills that are necessary for success. Social and behavior challenges that are not resolved during the early childhood years may lead to problems with socialization, school adjustment, and educational success in later grades. Intervention in preschool may help ameliorate the social, emotional, and behavioral challenges that preschoolers can display which may lead to negative outcomes in the future. The research team is conducting a randomized controlled trial designed to address this concern. This research will evaluate whether a comprehensive, classroom-wide preschool intervention system, called Teaching Pyramid, promotes social skills, reduces challenging behavior, and enhances the school readiness of young children with and without disabilities. The research team will also investigate whether teachers continue to use the Teaching Pyramid system in the year after the research support has ended. Project Activities: A randomized controlled trial will be used to study the efficacy of the Teaching Pyramid system. Approximately 80 preschool classrooms will be randomly assigned to the Teaching Pyramid system or to practices as usual. The Teaching Pyramid system contains universal strategies for supporting the social-emotional development of all children in the classroom and intensified interventions for children who are at risk for problem behavior or display severe and persistent challenging behavior. While the Teaching Pyramid system will be used with all students in the preschool classroom, the research team is specifically targeting children with or at risk for emotional or behavior disorders in these classrooms. Targeted children will be assessed before, during, and immediately after intervention. Other children in the classroom will be assessed pre- and post-intervention. Multi-level modeling will be used to estimate the effects of Teaching Pyramid on social skills, behavior, and early learning of all students in the classroom, with particular focus on those at risk for behavior concerns. The team will also investigate whether classroom quality or teacher practices improve and whether teachers sustain implementation of the intervention in the year after the research support has ended. Products: The products of this project include published reports on the efficacy of Teaching Pyramid for improving social competence, behavior, and learning outcomes for preschoolers with and without disabilities. Structured Abstract Setting: The research project will take place in preschool classrooms in Tennessee and Florida. Sample: Approximately 80 preschool classrooms will participate. While the Teaching Pyramid system will be used with all students in the preschool classroom, the research team is specifically targeting children with or at risk for emotional or behavior disorders in these classrooms. Intervention: The Teaching Pyramid system is a comprehensive, three-tiered framework that includes universal practices for all children, secondary practices for children at risk for behavior problems, and intensive individualized practices for children with the most significant social skills deficits and persistent challenging behavior. The universal component will include implementation of strategies designed to create supportive and structured environments as well as nurturing and responsive relationships. The secondary prevention component will teach students at risk for challenging behavior and emotional or behavioral disorders how to express their emotions, promote self-regulation, handle anger and disappointment, and use problem solving and friendship skills. The third component will involve collaboration with other school personnel to develop and implement individualized, assessment-based, positive behavior interventions and supports. Teachers will participate in a 3-day workshop series that introduces them to the practices associated with each level of the intervention. They will also receive 16 on-site coaching sessions. The teachers will implement the Teaching Pyramid system in their classrooms for 26 weeks. Research Design and Methods: A randomized controlled trial will be used to study the efficacy of the Teaching Pyramid system. Classrooms will be randomly assigned to the Teaching Pyramid system or to implement practices as usual. Targeted children will be assessed before, during, and immediately after intervention. Other children in the classroom will be assessed pre- and post-intervention. Information on the fidelity of intervention implementation and changes in teacher practices and classroom quality will be collected in intervention and comparison classrooms. The researchers will also observe the preschool classrooms during the year following intervention implementation to evaluate whether teachers sustain implementation of the Teaching Pyramid system without support from the researchers. Control Condition: Teachers will implement their typical classroom practices. Key Measures: Key outcomes include teacher ratings and researcher observations of social competence and behavior as well as direct child assessments of learning outcomes for preschoolers with and without disabilities. The researchers will also collect data on child and teacher characteristics, fidelity of implementation, teacher practices, and classroom quality. Data Analytic Strategy: Multi-level modeling will be used to estimate the effects of the Teaching Pyramid system on social skills, behavior, and early learning of all students in the classroom, with particular focus on those at risk for behavior concerns. The team will also investigate whether classroom quality or teacher practices improve and whether teachers sustain implementation of the intervention in the year after research support has ended. 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Examining the Efficacy of Banking Time: A Teacher-Child Early Intervention to Improve Children's Emotional and Behavioral Development

Williford, Amanda

Efficacy and Replication

R324A100215

7/1/2010 through 6/30/2014

Purpose: Strong and supportive relationships between teachers and their students can be important to academic and social development. Children with significant problem behaviors, though, are less likely to develop close, positive, high quality relationships with their teachers. The purpose of this project is to assess the efficacy of a preschool program called Banking Time with preschoolers most at risk for developing a disruptive behavior disorder and receipt of special education services due to serious emotional disturbance. The intervention is intended to strengthen teachers’ interactions with their students, reduce problem behaviors, and improve the students’ behavioral and social emotional skills. Project Activities: Teachers will be randomly assigned to one of three conditions: the Banking Time experimental condition; a time-control comparison, or a business as usual condition. Teachers will implement Banking Time in eight week intervals, three times a week, with one student at a time. Three students in each Banking Time classroom will be randomly assigned to receive Banking Time in the fall, winter, or spring. In the time-control comparison group, teachers will be asked to meet with individual children for the same frequency and duration as the Banking Time condition, but the teacher will select the activities. In the second comparison group, students will be provided with "business as usual." Children’s behavioral and social emotional skills will be measured prior to and immediately after intervention as well as at entry into their next academic year. Products: The products of this project will be published reports on the efficacy of the Banking Time intervention for improving teacher and student relationships and students’ behavioral and social emotional outcomes. Structured Abstract Setting: The research project will take place in private, state, and Head Start preschool classrooms in Virginia and North Carolina. Population: Approximately 500 three and four year olds from over 170 classrooms will participate in this research. The children will be most at risk for developing a disruptive behavior disorder and receipt of special education services due to serious emotional disturbance. Intervention: Banking Time is a structured intervention targeted to improve teacher-child interactions and the quality of the teacher-child relationship. Banking Time sessions are brief, regular, play-focused and interactive. Teachers will implement Banking Time with the target child three times per week for eight weeks. During each Banking Time session, the teacher and child engage in an activity chosen by the child. The session is led by the child as the teacher watches, listens, and responds. Teachers work weekly with a consultant to support intervention implementation. Research Design and Methods: Teachers will be randomly assigned to one of three conditions: the Banking Time experimental condition; a time-control comparison, or a business as usual condition. Teachers will implement Banking Time in eight week intervals, three times a week, with one student at a time. Three students in each classroom will be randomly assigned to receive Banking Time in the fall, winter, or spring. Children’s behavioral and social emotional skills will be measured prior to and immediately after the intervention as well as at their entry into the next academic year. Information on the fidelity of intervention implementation will be collected. Control Condition: Two comparison groups will be part of this research. In the time-control comparison group, teachers will be asked to meet with individual children for the same frequency and duration as the Banking Time condition, but the teacher will select the activities. In the second group, students will be provided with "business as usual." Researchers will document activities of both of these groups so that comparisons with the Banking Time can be made. Key Measures: Key outcomes of behavior and social emotional skills will be administered including the Eyberg Child Behavior Inventory, the Sutter-Eyberg Student Behavior Inventory-Revised, Emotion Regulation Checklist, and Teacher-Child Rating Scale. Data will also be collected on school disciplinary actions, requests for parent-teacher conferences, referrals for participation in behavioral or psycho-educational assessment or special education services, formal diagnosis of a disruptive behavior diagnosis, and use of medication to treat child’s behavior. Finally, the researchers will collect data on teacher-student relationships, teacher practices, and fidelity of implementation. Data Analytic Strategy: A series of data analysis techniques, including hierarchical linear modeling and regression, will be used to estimate the effect of Banking Time on students’ behavioral and social emotional outcomes, teacher-student relationship, and teacher practices. Additional analyses will be conducted to determine variables that may influence the strength of the relation between the interventions and student outcomes. Publications Book chapter Williford, A.P., and Sanger, C.E. (in press). Student-Teacher Relationships. In R. Weissberg, J. Durlak, and T. Gullotta (Eds.), The Handbook of Social and Emotional Learning. New York: Guilford. Book chapter, edition specified Williford, A.P., Carter, L.M., and Pianta, R.C. (2016). Attachment and School Readiness. In J. Cassidy, and P. 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Examining the Efficacy of Project ImPACT for Toddlers

Rieth, Sarah

Efficacy

R324A190076

4 years (07/01/2019-06/30/2023)

Co-Principal Investigator: Stahmer, Aubyn Purpose: The goal of this project is to examine the efficacy of Project ImPACT for Toddlers (PIT), a naturalistic intervention that focuses on building parents' capacity to support the social communication development of their children with or at risk for autism spectrum disorder (ASD) in community-based early intervention settings. Focusing on toddlers is important because ASD diagnoses are occurring earlier and there is evidence that intervening at the first signs of ASD risk, even before diagnosis, may help prevent the onset of symptoms for some children. Because services provided to toddlers at risk for ASD and their families vary based on geographic location, family demographics, and provider training, there is a need to test the efficacy of using sustainable methods of delivering high-quality services through existing early intervention systems. PIT, a community-based model of intervention, was designed to address this need. PIT was pilot tested in a previous IES project and demonstrated promise for improving children's communication and social skills and positive parenting behaviors within parent-child interactions compared to usual care early intervention. In the current study, the efficacy of PIT will be examined to determine whether it improves the fidelity of provider coaching of parents, fidelity of parent implementation of intervention techniques, and communication and social skills for children with or at risk for ASD. The potential moderating roles of family and child characteristics will also be examined. Project Activities: The research team will evaluate PIT using a randomized wait-list controlled trial. Early intervention providers will be randomly assigned to receive training in PIT either 4 or 8 months after providing business-as-usual care. Once they receive training, they will provide the intervention to new families added to their caseloads. Families who received PIT after the providers' training will be compared to families who received usual care before the providers were trained to determine whether children from families who received the training demonstrate more significant improvements in communication and social skills. Researchers will examine whether child and family characteristics moderate the intervention's effect on parent and child outcomes as well as the cost-effectiveness of the intervention. Products: This project will provide evidence of the efficacy and cost-effectiveness of PIT for toddlers with or at risk for ASD. The project will also result in a final dataset to be shared, peer-reviewed publications and presentations, and additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: This research will take place in family homes or community clinics where early intervention programs, funded by Part C of the Individuals with Disabilities Education Act, take place in California. Sample: The participants for this study will include 60 early intervention providers and 230 families already receiving Part C services, including toddlers with or at risk for ASD (ages 12 to 30 months at the time of study enrollment) and their parents/caregivers. Intervention: PIT is a naturalistic intervention that focuses on equipping parents to support the social and communication development of children 12-36 months of age with or at risk of ASD. Implemented through a parent-coaching framework within Part C systems, the evidence-based practices blend developmental science and applied behavior analysis. Early interventionists are trained with interactive, online, didactic instruction and in-person meetings with opportunities to practice, followed by support with a coach until they reach fidelity. The early interventionists then provide 12 weeks of training to parents in developmental and behavioral techniques to use with their child during daily activities. The curriculum includes provider and parent manuals, provider strategy guides, activity planners, and assessment materials to guide the development of child goals. Research Design and Methods: The research team will use a randomized wait-list controlled trial to examine the efficacy of PIT. Upon enrollment, providers will be randomly assigned to either a 4-month or 8-month waiting period before receiving training in the intervention. During the waiting period, providers will deliver usual Part C early intervention services to two to four families for 4 months. Providers will then receive training and after training will deliver the intervention to two to four new families in their caseload. Outcomes assessed after 4 months of receiving early intervention services will be compared for children and their families who receive services before (control) versus after (intervention) the providers are trained. There will be two cohorts of participants. In the first year of the project, providers and families will be enrolled and pre-intervention data will be collected. In Year 2, the providers will receive training, with timing based on condition, followed by implementation of PIT. While the intervention is being implemented with the first cohort during Year 2, the second cohort will be enrolled and randomized, followed by data collection during usual services. In Year 3, the second cohort of providers will receive training and implement PIT with new families, continuing into Year 4. In Year 4, the final intervention phase will end, post-intervention data will be collected on this cohort, and the team will analyze and disseminate the results. Data will be analyzed to examine whether children exhibit greater improvements in communication and social skills as a result of participating in the intervention group as well as determine whether child and family characteristics—including socioeconomic status, maternal education, marital status, child functional communication, and child age—moderate the intervention impacts. The research team will also explore the cost-effectiveness of the intervention. Control Condition: The control condition will include early intervention services as usual, delivered by Part C providers before they receive any training in PIT. Key Measures: Child outcome measures include Communication-Symbolic Behavior Scales to measure social communication, the Preschool Language Scales, and the Vineland Adaptive Behavior Scales. Parent outcomes include the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes to measure developmentally supportive parenting behaviors and an intervention fidelity checklist scored from video observations. Provider outcomes in both groups include fidelity of parent coaching with PIT strategies assessed through video-recorded sessions, surveys about their use of intervention practices, an intervention satisfaction questionnaire, and a final implementation survey examining their use and possible barriers to implementation of the intervention. Additional child measures to characterize the sample and examine as moderators include questionnaires to determine child and family demographics, child developmental history, and family use of other interventions; Bayley Scales of Infant Development; and the Autism Diagnostic Observation Schedule—Toddler to determine severity of risk. Data Analytic Strategy: Multilevel modeling will be used to determine the intervention's efficacy. Models will take into account the nesting of time within families and families within early intervention providers. Moderators will be explored through interaction terms in the model. The team will examine the cost-effectiveness of the intervention by estimating the incremental net benefit of PIT compared to usual practice using net benefit regression. Related Projects: Adapting an Evidence-Based Program for Infants and Toddlers at High Risk for Autism (R324A140004)

Examining the Potential Efficacy of a Classroom Wide Model for Promoting Social Emotional Development and Addressing Challenging Behavior in Preschool Children With and Without Disabilities

Hemmeter, Mary Louise

Development and Innovation

R324A070212

3/1/2007 to 2/28/2011

Purpose: Although research has established a positive relationship between young children's social emotional skills and success in school, large numbers of young children are beginning their school experiences without the emotional, social, and behavioral skills necessary for academic success. The purpose of this project is to refine the Teaching Pyramid intervention, a multi-tiered intervention to address the social emotional development and challenging behavior of young children with or at risk for disabilities. The research team will further develop the intervention and then conduct an initial evaluation of the intervention in public preschool classrooms. Project Activities: The research team will first develop and field test intervention materials for teachers and establish the technical adequacy of a tool for measuring implementation fidelity. The team will then conduct an initial evaluation of the intervention in 40 classrooms randomly assigned to intervention classrooms or control classrooms. Teachers randomized to the intervention condition will be provided with training, technical assistance, and materials needed for the intervention and will be compared to teachers who are implementing "business as usual" practices. Researchers will assess whether intervention classrooms have improved teacher and child outcomes compared to control classrooms. Products: The products of this study include a fully developed intervention focused on promoting young children's social and emotional development and reducing challenging behavior, and validated measures of implementation fidelity. Published reports on the initial evaluation of the developed intervention on key outcomes such as student's behavior and social development, teacher-child interactions, overall classroom behavior and classroom climate will also be available. Structured Abstract Purpose: Although research has established a positive relationship between young children's social emotional skills and success in school, large numbers of young children are beginning their school experiences without the emotional, social, and behavioral skills necessary for academic success. The purpose of this project is to refine the Teaching Pyramid intervention, a multi-tiered intervention to address the social emotional development and challenging behavior of young children with or at risk for disabilities. The research team will further develop the intervention and then conduct an initial evaluation of the intervention in public preschool classrooms. Setting: Public preschool classrooms in urban areas in Tennessee and Florida. Population: A total of 40 preschool classrooms that serve children with, at risk for, and without disabilities. Intervention: The Teaching Pyramid provides educators with a multi-tiered model of universal strategies (classroom preventive practices), secondary strategies (social emotional teaching strategies), and targeted interventions (individualized interventions) focused on promoting young children's social and emotional development and reducing challenging behavior. Research Design and Methods: Phase 1 will involve developing and field testing implementation materials for teachers and establishing the psychometric integrity of an observation for measuring implementation fidelity. Phase 2 will involve an initial evaluation of the intervention in 40 classrooms (20 intervention and 20 control) in Tennessee and Florida. The design is a cluster-randomized trial with random assignment at the classroom level. Control Condition: Control classrooms will consist of teachers who are implementing "business as usual" practices. Key Measures: The project will collect demographic and descriptive measures as well as measures of intervention fidelity, teacher and classroom variables, and children's social skills and behavioral development. Key classroom-level measures include the Classroom Assessment Scoring System, the Arnett Caregiver Interaction Scale, The Engagement Checklist II, and direct observations of classroom behavior. Child-level measures include the Caregiver-Teacher Report Form, Child Behavior Checklist, and the Social Skills Rating System Preschool Version. Data Analytic Strategy: To establish the psychometric integrity of intervention instruments, generalizability theory and measures of concurrent validity will be used. Panels of key stakeholders will review implementation guides for teachers, and classroom teachers will field test the guides. Revisions to the guide will be based on reported usability, satisfaction, impact on practice, additional supports needed to implement the practices, and impact on children's behavior and engagement. To evaluate initial impact of the intervention, the research team will analyze the data using a random regression model, which takes into account the nested nature of the data. Publications Book chapter Fox, L., and Hemmeter, M.L. (2009). A Program-Wide Model for Supporting Social Emotional Development and Addressing Challenging Behavior in Early Childhood Settings. In W. Sailor, G. Dunlap, G. Sugai, and R. Horner (Eds.), Handbook of Positive Behavior Support (pp. 177–202). New York: Springer. Hemmeter, M.L., and Conroy, M. (2012). Supporting the Social Competence of Young Children With Challenging Behavior in the Context of the Teaching Pyramid Model: Research-Based Practices and Implementation in Early Childhood Settings. In R. Pianta, L. Justice, S. Barnett, and S. 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Expanding the Reach of Evidence-Based Interventions for Improving Social-Emotional Outcomes for Infants in Child Care

Baggett, Kathleen

Development and Innovation

R324A100041

3/1/2010 to 2/28/2013

Purpose: Social-emotional competence and development are central to children's overall school readiness and school success. However, knowledge about infant social-emotional development and about evidence-based practices for supporting positive social-emotional outcomes are often lacking among childcare teachers. The goal of this project is to create and test a professional development program aimed at increasing responsive childcare teacher interactions to promote infant social-emotional development. Specifically, this project will develop and test Infant Net for Child Care Teachers (Infant Net-CCT); a program that integrates evidence-based components of the Play and Language Strategies (PALS) program, a cognitive-behavioral skills based intervention, with a web-based delivery technology that can help address barriers that hinder teacher access to effective evidence-based professional development programs. Project Activities: Infant Net-CCT development will begin with three sets of iterative focus groups consisting of early intervention and early special education administrators, trainers of childcare teachers, as well as childcare teachers and parents of infants with and without disabilities who will provide feedback at all developmental stages. The intervention will then be field tested in a diverse set of 20 childcare settings. Once the Infant Net-CCT program is pilot tested, researchers will provide "visitor" access to the program that will allow key state and national policy stakeholders an opportunity to view selected portions of the program and offer feedback. Products: Study products will include a fully-developed Infant Net-CCT intervention, and an assessment of its usability (ease of use), feasibility, and acceptability/satisfaction. Evidence will also be provided on the potential impact of Infant Net-CCT on teacher sensitivity and responsiveness and infant social-emotional behavior. Structured Abstract Setting: The field test of the intervention will be conducted in twenty diverse child care settings in Oregon and Kansas. Population: The sample for the iterative intervention development will consist of 48 key stakeholders in early intervention and early childhood special education, including national experts, state policy leaders, teachers, and parents of children with and without disabilities. The sample for pre-post evaluation of the intervention will include a total of 20 childcare teachers, each working with two infants (for a total of 40 infants), one infant selected on disability status (existing disability label or elevated level of risk for disability) and one typically developing infant. Intervention: PALS, developed by Susan Landry and colleagues, is a cognitive-behavioral, skills-based intervention that has been linked to increased parent sensitivity and responsiveness as well as improvements in child trajectories of social and communication development. In earlier work, members of this research team adapted and tested PALS for delivery via the internet for the purpose of expanding the program to families that are more difficult to reach via traditional modes of delivery. The current effort will focus on the creation of a web-based delivery of PALS to child care teachers. Research Design and Methods: A continuous, iterative design involving feedback from stakeholders and experts on early social-emotional development will be used to develop and refine the Infant Net-CCT during the first half of the project. During the second half of the project, the research team will conduct two pre-post design evaluations to assess implementation and potential impact on teachers and infants. The first cohort will implement the program, with pre-post measures collected and refinements made based on the data collected for this cohort on Infant Net-CCT usability, feasibility, satisfaction/acceptability, and impact potential. The intervention will then be implemented and data collected from the second cohort. Control Condition: There is no control condition. Key Measures: Usability and acceptability/satisfaction will be assessed through teacher questionnaires. Teacher knowledge will be assessed through test questions at the end of tutorials and coaches' ratings of teacher knowledge. Teacher implementation will be assessed through observations of caregiver-child interaction and teacher practice videos. Teacher engagement will be measured through electronic tracking of program element completion and coach ratings. The potential impact of Infant Net–CCT will be assessed through observations and questionnaires aimed at teacher behavior and children's social-emotional behavior. Data Analytic Strategy: The analytic approach will involve qualitative data summaries of stakeholder feedback to inform iterative development efforts, and both qualitative and quantitative analyses of implementation feasibility, usability and satisfaction data, including summaries of open-ended comments and non-parametric analyses of questionnaire results (e.g., rank ordering of intervention components). The research team will also plot individual data points across time and compute slope estimates through linear regression techniques to assess process measures (e.g., teacher engagement feasibility) and impact measures (e.g., teacher responsiveness and sensitivity and children's social-emotional behavior).

Explicit Vocabulary Instruction in Automated Listening Centers for Young Children with Language Delays

Goldstein, Howard

Development and Innovation

R324A150132

3 years (7/1/2015-6/30/2018)

Co-Principal Investigator: Elizabeth Spencer Kelley, University of Missouri-Columbia Purpose: The purpose of this project is to complete the development of a technology-based curriculum program, Story Friends. The curriculum, which focuses on vocabulary, is designed to supplement a core reading program and be implemented with high levels of fidelity in a variety of preschool settings and instructional programs. Substantial differences in vocabulary skills can exist among children entering preschool. Preschoolers with limited oral language skills are at high risk for reading disabilities. Many early childhood classrooms, however, provide limited instruction in vocabulary, suggesting that preschoolers most at risk for reading disabilities are unlikely to receive the critical instruction on oral language that they need. Story Friends is intended to improve oral language skills of preschoolers most at risk for later reading disabilities and thereby reduce the incidence and severity of potential reading disabilities. Project Activities: A series of iterative activities will be accomplished over a 3-year period to develop the storybooks and accompanying lessons, teacher materials, and curriculum-based measures. A pilot study is planned to determine the feasibility and promise of the intervention for improving oral language, vocabulary, and comprehension skills compared to students who participate in small-group centers that allow them to hear the stories but without including the accompanying lessons or materials. Twenty classrooms will be randomly assigned to implement Story Friends or the control condition. Approximately three to six children from each classroom who demonstrate limited oral language skills will participate. The research team will also investigate whether fidelity of treatment and use of teacher materials predict student outcomes. Products: The products of this project include a fully developed intervention, Story Friends, peer-reviewed publications, and presentations. Structured Abstract Setting: The research takes place in child care and prekindergarten classrooms in Florida and Missouri. Population: Approximately 220 preschoolers with limited oral language skills will participate in this research. Some children may have identified disabilities or individualized education programs. Intervention: Story Friends is an automated intervention that delivers vocabulary instruction via headphones with storybooks. The automated program is intended to provide consistent content and dosage as well as reduce the demands placed on teachers. Story Friends will include 39 books with embedded explicit instruction for vocabulary, accompanying audio, and listening devices. The books, 16 to 18 pages long, will be created for the purpose of the intervention and include engaging materials, carefully selected instructional targets, explicit teaching, and systematic instructional language. They will feature groups of animal characters (e.g., animals in the ocean or on a farm). Students will follow along with an audio recording of the text that specifically targets four to five vocabulary words. Students will listen to each book multiple times and be given multiple opportunities to respond throughout the audio recording. The intervention will also be delivered via computer-assisted instruction during the course of this project. Research Design and Methods: Four activities will be accomplished over a 3-year period. First, the team will refine 26 previously developed story books and create 13 new books to complete the full set of 39 books. An iterative process will be used to develop prototypes of the books and accompanying lessons, pilot test them with small groups, monitor implementation and student learning, and revise the prototypes. The researchers will then develop computer-assisted instruction versions of the storybooks and lessons and examine the feasibility of implementation of this format. The third activity involves the development of teacher materials, supplemental activities, and curriculum-based measures and evaluating implementation and teacher satisfaction with the materials. Finally, the research team will conduct a small-scale cluster randomized trial investigating the feasibility and promise of the intervention for improving oral language, vocabulary, and comprehension skills. Twenty classrooms will be randomly assigned to the Story Friends or control condition. Approximately three to six children from each classroom who demonstrate limited oral language skills will participate. Control Condition: A comparison group will be included in the pilot study with students participating in small-group centers that allow them to hear the stories but do not include the accompanying lessons and materials. Key Measures: A series of measures of proximal and distal outcomes will be used to examine the promise of Story Friends. Proximal measures include researcher-created probes and unit tests to assess responsiveness to instruction. Distal measures include the Assessment of Story Comprehension, Picture Naming and Which One Doesn't Belong Individual Growth and Development Indicators, Peabody Picture Vocabulary Test—4, and Clinical Evaluation of Language Fundamentals—Preschool2. The researchers will also use teacher surveys and fidelity of implementation observations to inform revisions to the intervention and investigate whether fidelity and use of materials predict student outcomes. Data Analytic Strategy: Pilot data will be analyzed using hierarchical linear modeling to determine the promise of Story Friends for improving oral language, vocabulary, and comprehension skills; compare outcomes for students who received the intervention with students in the control condition; and investigate whether fidelity of treatment and use of teacher materials moderate student outcomes. Related IES Projects: Center for Response to Intervention in Early Childhood (R324C080011) Publications Book chapter, edition specified Carta, J.J., Greenwood, C.R., Goldstein, H., McConnell, S., Kaminski, R., Bradfield, T., Wackerle-Hollman, A., Linas, M., Guerrero, G., Spencer, E., and Atwater, J. (2016). Advances in Multi-Tiered Systems of Support for Prekindergarten Children: Lessons Learned From 5 Years of Research and Development From the Center for Response to Intervention in Early Childhood. In M.K. Jimerson, A.M. Burns, and A.M. 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Foundations for Literacy: An Intervention for Young Children Who Are Deaf and Hard of Hearing

Lederberg, Amy

Development and Innovation

R324A110101

07/01/2011–06/30/2014

Purpose: Poor literacy outcomes have characterized the deaf population for decades. National data suggest that overall literacy rates of deaf high school graduates remain consistently around the 4th grade level. Although children with less severe hearing loss fare better than children who are deaf, they are still at risk for poorer language and literacy skills than their hearing peers. The purpose of this project is to further develop an early literacy intervention specifically adapted to meet the needs of prekindergarteners who are deaf or hard of hearing called Foundations for Literacy. Although preliminary evidence suggests that Foundations for Literacy holds promise for fostering growth in alphabet knowledge and phonological awareness, further development is needed to promote vocabulary and language and to improve its implementation in authentic education environments. The researchers will also develop a coordinated parent and home component to facilitate children's language learning, develop teacher training materials, and develop adaptations necessary for children who are deaf or hard of hearing and do not have access to speech. Project Activities: Researchers will implement several iterative cycles to design, field test, and revise Foundations for Literacy. Revisions will include expanding the instructional activities, refining progress monitoring measures, and developing professional development and parent training materials. A pilot study will compare the pretest to posttest gains of children who received Foundations for Literacy with a comparison group of eligible children who did not. In addition, single-subject studies and case studies will be used to examine learning by children with no speech perception skills. Products: Products from this project will include a developed curriculum called Foundations for Literacy. This curriculum will include training materials for teachers and parents and adaptations for children who are deaf or hard of hearing and do not have access to speech. Products also include published reports describing the program's promise for improving outcomes. STRUCTURED ABSTRACT Setting: The research will take place in Georgia. Population: Approximately 70 prekindergarteners who are deaf or hard of hearing and attend specialized classes for children with hearing loss will participate, as will their teachers and parents. Intervention: Foundations for Literacy is a balanced early literacy program for children who are deaf or hard of hearing. It is designed to be taught during one-hour lessons each day for the full school year. Each week features a series of activities—such as dialogic story book reading, vocabulary instruction, and fluency instruction—that are organized around a simple story designed to teach grapheme-phoneme correspondences and vocabulary. The intervention also includes a parent or home component that fosters language development through shared reading. Research Design and Methods: An iterative design process will be used to develop, refine, and expand the instructional activities, progress monitoring measures, and professional development protocol. The materials will be refined based on teacher and parent feedback, observations of fidelity and use of instructional strategies, child outcomes, and child engagement. A pilot study will compare the pretest to posttest gains of children who received Foundations for Literacy with a comparison group of eligible children who did not. In addition, single-subject studies and case studies will be used to examine learning by children with no speech perception skills. Control Condition: Children in the comparison condition will be a historical sample who did not receive Foundations for Literacy. Key Measures: Information about program implementation and acceptability will be collected through observations of parents and teachers, teacher logs, interviews, and focus groups. In addition, the researchers will collect data on student word identification skills, phonological awareness, alphabetic knowledge, vocabulary, language skills, and theory of mind. Data Analytic Strategy: Multivariate analysis of variance and multivariate analysis of covariance will be used to determine whether students made significant gains in literacy skills after exposure to Foundations for Literacy. Related IES Projects:Improving Deaf Preschoolers' Literacy Skills (R324E060035) Publications Journal article, monograph, or newsletter Beal-Alvarez, J., Lederberg, A.R., and Easterbrooks, S.R. (2012). Grapheme-Phoneme Acquisition of Deaf Preschoolers. Journal of Deaf Studies and Deaf Education, 17(1): 39–60. doi:10.1093/deafed/enr030 Goldberg, H., and Lederberg, A.R. (2015). 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Impact of Professional Development on Preschool Teachers' Use of Embedded-Instruction Practices

Snyder, Patricia

Development and Innovation

R324A070008

3/1/2007 to 2/28/2010

Purpose: Despite a clear relationship between the quality of teaching practices and improved child outcomes, high quality, evidence-based practices are not typically used in early childhood special education or early childhood education settings. To improve the quality of instruction, practitioners need access to high quality professional development programs. To address this need, researchers are developing and conducting an initial evaluation of a professional development program called Tools for Teachers. Tools for Teachers is a multimedia toolkit with corresponding professional development materials. The purpose of this study is to develop and validate Tools for Teachers and to conduct an initial evaluation of whether its use leads to increased implementation of evidence-based practices and improved child outcomes. Project Activities: This research team is developing the Tools for Teachers professional development program. The program is designed to help teachers use embedded-instruction practices. Tools for Teachers development and initial evaluation will occur in three phases. During Phase 1, the program will be developed and refined with a panel of experts validating its materials and the corresponding professional development processes. Phase 2 involves conducting studies to inform revisions to Tools for Teachers. In Phase 3, the research team will conduct an initial evaluation of Tools for Teachers using a randomized experimental trial. Data will be analyzed to assess the potential efficacy of the program on teachers' quality and use of embedded-instruction practices and on children's engagement, school readiness, language, emergent literacy, behavior, and social skills. Products: Expected products include a multimedia toolkit and professional development materials designed to support teachers' use of embedded-instruction practices and improve multiple child outcomes. Structured Abstract Purpose: Despite a clear relationship between the quality of teaching practices and improved child outcomes, high quality, evidence-based practices are not typically used in early childhood special education or early childhood education settings. To improve the quality of instruction, practitioners need access to high quality professional development programs. To address this need, researchers are developing and conducting an initial evaluation of a professional development program called Tools for Teachers. Tools for Teachers is a multimedia toolkit with corresponding professional development materials. The purpose of this study is to develop and validate Tools for Teachers and to conduct an initial evaluation of whether its use leads to increased implementation of evidence-based practices and improved child outcomes. Setting: The preschools are located in Tennessee, Washington, and Wisconsin. Population: Approximately 48 teachers of young children with disabilities and 120 children with disabilities, across three states, will participate in the study. Eligible teachers are those working in preschool classrooms that enroll at least three children with disabilities who have an Individualized Education Program (IEP). Children eligible for the study must have an IEP and be between 3 and 4 years of age at pretest. Intervention: Two experimental interventions are being developed. Both experimental intervention conditions include the Tools for Teachers toolkit and accompanying workshops. The toolkit is comprised of multimedia professional development materials (e.g., CD and web-based materials) that provide information about embedded-instruction practices and why and how these practices should be used. In addition, teachers in both experimental intervention conditions will participate in workshop sessions designed to provide a practical and focused overview of embedded-instruction practices, deepen their content knowledge about these practices, and help them understand the coherence between embedded-instruction practices and early childhood curricular practices. The two experimental conditions will differ in terms of coaching approach provided. In one condition, teachers will participate in four hours of interactive professional development once a month for four months. This professional development will be conducted by project staff. Teachers will work in study groups and will discuss real-world cases of application of embedded instruction. In addition, teachers will receive individual expert coaching by project staff at least once a week for 30 minutes for four months. In the second experimental condition, teachers will participate in self-coaching. Teachers will access a website that will contain forms useful for self-monitoring and self-regulating embedded instruction implementation fidelity. The website will also include materials useful for goal-setting, self-evaluating, time planning and management, vignette analysis, and help-seeking. Research Design and Methods: An experimental study implementing random assignment of teacher to treatment condition will be implemented to determine the potential efficacy of the two intervention conditions as compared to each other and to a business-as-usual control group. A sample of 36 preschool teachers will be recruited from Tennessee, Washington, and Wisconsin, with 12 teachers recruited from each state. Teachers will then be randomly assigned to treatment condition. In each condition, approximately three children with disabilities will be randomly selected to participate in the study. Control Condition: The control group will receive professional development typically given by the district. Key Measures: Outcome measures include a rating scale to evaluate the quality of instructional goals, an observational measure to document implementation of planned learning opportunities, and an observational coding system to evaluate implementation of embedded learning trials. In addition, children's engagement, school readiness, language, emergent literacy, behavior, and social skills will be assessed. Finally, administrators will be interviewed to identify the contextual variables that might mediate or moderate the effect of professional development on teachers' use of embedded instruction, and they will complete self-report rating scale measures on embedded-instruction interventions and the social validity and the sustainability of the interventions. Data Analytic Strategy: Data will be analyzed using analysis of variance and analysis of covariance to show evidence of the potential efficacy of the interventions for improving teachers' instructional practices and children's engagement, school readiness, language, emergent literacy, behavior, and social skills. Publications Book chapter McLaughlin, T., and Snyder, P. (2014). Using Embedded Instruction to Enhance Social-Emotional Skills. In J.E. Hart, and K.J. Whalon (Eds.), Friendship 101: Helping Students Build Social Competence, Prism Series, Vol. 8, DADD Prism (pp. 63–78). Arlington, VA: Council for Exceptional Children. Snyder, P., Crowe, C., and Crow, R. (2012). Responsive Instructional Leadership for Early Intervention. In B. Billingsley, M.L. Boscardin, and J. Crockett (Eds.), The Handbook of Leadership and Administration for Special Education (pp. 315–336). New York: Routledge. Snyder, P., Denney, M., Pasia, C., Rakap, S., and Crowe, C. (2011). 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Impact of Professional Development on Preschool Teachers' Use of Embedded-Instruction Practices: An Efficacy Trial of Tools for Teachers

Snyder, Patricia

Efficacy and Replication

R324A150076

4 years (7/1/2015-6/30/2019)

Co-Principal Investigators: James Algina and Mary Louise Hemmeter (Vanderbilt University), and Mary McLean Purpose: The goal of this study is to examine the efficacy of Tools for Teachers (TfT), a professional development intervention for using embedded instruction with preschool children with disabilities. Embedded instruction involves intentional teaching of individual child learning goals within the context of routine classroom activities. Prior research has found evidence that this approach can be effective with young children with varying disabilities, but it is not always implemented with fidelity. Therefore, the research team created this professional development program to support teachers in implementing the strategy with children. This study will use a randomized controlled trial to compare the efficacy of two versions of the TfT professional development program— using on-site coaching versus web-based self coaching — to one another and a control group to determine the impacts on teacher practices and child outcomes. Project Activities: There will be 108 early childhood special education teachers randomly assigned to one of two TfT conditions (on-site coaching or self-coaching) or a business-as-usual control group. Each teacher will have three target children in their classroom with a developmental delay or disability. Child, teacher, and classroom data will be collected in four waves throughout the implementation year; teacher and classroom data will be collected during the sustainability year. Data will be analyzed primarily with analyses of covariance to determine group differences in outcomes, with additional analyses used to examine mediation, moderation, and sustainability of instructional practices in the second year. Products: The products of this project will include evidence of the efficacy of the TfT professional development intervention, including the relative efficacy of the two versions, on preschoolers with disabilities, as well as peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in preschool classrooms in rural, urban, and suburban areas in Florida and Tennessee. Sample: The researchers plan to recruit 108 certified or licensed teachers in early childhood and special education classrooms, and three children (age 3 and 4 years) with developmental delays or disabilities from each classroom for a total of 324 preschoolers. Intervention: Tools for Teachers (TfT) is a professional development intervention for using embedded instruction with preschool children with disabilities. Embedded instruction involves 14 key teaching practices organized by what to teach (specifying skills used in typically occurring activities), when to teach (identifying appropriate activities), how to teach (using intentional and systematic instruction during ongoing activities), and how to evaluate (using data-based decision making to evaluate and impact child learning). The four components of TfT professional development include (1) workshops with demonstrations and opportunities to practice, (2) teacher implementation guides and materials, (3) a multi-media website with videos and more in-depth information, and (4) coaching. Coaching involves assessing teacher needs, setting goals, observing, reflecting, and providing feedback. The two intervention groups in this study will receive the coaching component differently. The first group will receive on-site coaching, with 16 weekly interactions between a teacher and project-trained coach. The second group will engage in self-coaching, with access to a separate section of the website with materials and supports for self-coaching, and weekly emails to prompt self-coaching activities. Research Design and Methods: The research team will conduct a cluster randomized controlled trial, with randomization at the classroom/teacher level. Two cohorts of teachers will be assigned to the TfT professional development with on-site coaching, TfT with self-coaching, or a business-as-usual control group. Classrooms will participate for 2 years — the intervention year and sustainability year. In the first year of the study, the intervention will be implemented along with four waves of data collection from before the intervention begins to the end of the academic year. Data will be collected on child, classroom, and teacher variables. In the second year, there will be four waves of data collection on classroom and teacher variables. The primary aims of this efficacy trial are to examine the effects of the two TfT conditions relative to the control group on teacher implementation of embedded instruction, classroom quality, and child outcomes (learning target behaviors, engagement, functional skills, pre-academic learning, and social and behavioral skills); confirm that TfT with on-site coaching produces greater impacts than with self-coaching; determine what other differences between groups emerge on key variables; demonstrate that both TfT interventions can be implemented with fidelity; and describe the conditions needed to support fidelity of implementation. Control Condition: The business-as-usual control condition will receive their typical professional development activities and implement their typical instructional practices. Key Measures: The primary classroom outcome measures in this study include Classroom Assessment Scoring System (classroom instructional quality) and two measures of implementation of embedded instruction practices developed by the research team. Primary child outcome measures include the EIOS (measure of learning targets), Engagement Behavior Rating System, Preschool and Kindergarten Behavior Scales-II, Preschool Language Scale-5, Test of Early Reading Ability-3, Bracken Basic Concept Scale-3, and Adaptive Behavior Assessment System-II. Observations of classroom quality, teacher and parent questionnaires, school records, and a rating scale of child functional abilities will be used to measure mediators and moderators as well as study inclusion criteria. Data Analytic Strategy: Multivariate, multi-level analysis of covariance (ANCOVA) will be used to answer the primary research questions regarding the impact of the intervention on child and teacher outcomes. Multi-level mediation analysis will be used to examine mediators, interactions will be used to examine moderators, and latent growth analysis will be used to examine change over time during the sustainability year. Related IES Projects: Impact of Professional Development on Preschool Teachers' Use of Embedded-Instruction Practices (R324A070008) Project Website: http://embeddedinstruction.net/

Improving Deaf Preschoolers' Literacy Skills

Lederberg, Amy

Development and Innovation

R324E060035

7/1/2006 to 6/30/2009

Purpose: Poor literacy has characterized the deaf and hard of hearing population for decades, with national data suggesting that median literacy rates of deaf high school graduates have remained consistently at around the fourth grade level. Recent advances in both education (scientifically-based reading curricula for hearing children, early intervention for deaf and hard of hearing children) and technology (newborn hearing screening, cochlear implants, digital hearing aids) have created a greater potential for literacy achievement among students who are deaf and hard of hearing . Conversely, few advances in research address how to best teach emergent literacy skills to these children. To address this need, researchers at Georgia State University are developing and conducting an initial evaluation of a new curriculum called Foundations for Literacy, which is a phonics-based, language-rich, emergent literacy program for deaf and hard of hearing children. The curriculum is designed to promote children's acquisition of phonics, phonological awareness, vocabulary, and narrative skills. Foundations for Literacy will consist of 100 60-minute structured lessons that teachers and clinicians can use four days a week across the school year. An important component of the curriculum is the individualization of lessons based on the large variation in children's language, speech perception, and phonological skills. Setting: Participating students will be from schools in urban and suburban Georgia. Population: During the first two years, project personnel will assess growth across the school year of emergent literacy skills of approximately 60 deaf and hard of hearing 3 to 6 year olds. All children with parental permission who attend self-contained classes for children with hearing loss and have at least a 50 dB loss will be included. During all three years, certified teachers of the deaf (project personnel) will deliver the intervention to small groups of young deaf and hard of hearing children (n=5-10) who can identify spoken words from a closed set (i.e., word identification on the Early Speech Perception Test). Intervention: The intervention that is being developed –Foundations for Literacy – will consist of 100 60-minute structured lessons that teachers and clinicians can use four days a week across the school year. It embeds explicit instruction of phonics, phonological awareness, vocabulary, and narrative skills into language-rich, visually-supported activities. Lessons are individualized based on children's language, speech perception, and emergent literacy skills. Teachers and clinicians will introduce phonics (grapheme-phoneme correspondences) through the use of stories that give deaf and hard of hearing children a semantic context by which they can remember the phoneme and will provide children with multiple opportunities to produce the phoneme in isolation. Vocabulary learned in these language experiences and phoneme-associated picture cards reappear in phonological awareness activities that focus on rhyming, alliteration, and segmentation. Lessons are sequential and cumulative with children practicing phonics in fluency activities and reading decodable text as they build their phonics knowledge. Story-book reading based on dialogic reading research further facilitates the development of vocabulary and narrative skills. Project Activities: The research team will use an iterative process to develop Foundations for Literacy. The team will begin by developing a framework for the curriculum based on consultation with directors and teachers in schools for the deaf, as well as national experts, systematic review of scientifically-validated curricula for hearing preschoolers, and assessment of the strengths and weaknesses of deaf and hard of hearing children. Project personnel will implement short lessons to assess the effect of phonics instruction, as well as to pilot phonological awareness activities and dialogic reading. The full curriculum will then be implemented with small groups of deaf and hard of hearing children who represent a range of abilities. Single-case design studies will assess the effects of instructional strategies for teaching phonics and phonological awareness on children's acquisition of target skills, and pre- and post-tests will measure gains in curriculum-based skills, with a comparison of children receiving the intervention to those receiving typical literacy instruction. Products: The products of this include a fully developed literacy intervention for children who are deaf and hard of hearing, peer-reviewed publications, and presentations. Structured Abstract Research Design and Methods: Project personnel will use an iterative process to develop the curriculum. During the first phase, a framework for the curriculum will be developed based on consultation with directors and teachers in schools for the deaf, as well as national experts, systematic review of scientifically-validated curriculum for hearing preschoolers, and assessment of the strengths and weaknesses of deaf and hard of hearing children. Project personnel will implement a short-term implementation of half-hour lessons to assess the effect of phonics instruction, as well as to pilot phonological awareness activities and dialogic reading. During the second and third phase, research teachers will implement the full curriculum with small groups of deaf and hard of hearing children who represent a range of abilities. Single-case designs (multiple-baseline across content or across participants) will assess the effects of instructional strategies for teaching phonics and phonological awareness (e.g., rhyming, initial-sound segmentation). Throughout the year, results from progress monitoring assessments will be used to assess whether children are learning target skills and to improve the design of the lessons. A pre-posttest design using both standardized tests and curriculum-based assessments will be used to investigate the potential effects of the overall curriculum for acquisition of phonics, phonological awareness, and vocabulary. Results from the three sources of data, plus observations of effects of lessons will guide improvement of the scope and sequence of the curriculum and contribute to individualization of the lessons. Researchers will compare growth for children who received Foundations for Literacy with those who did not using a matched quasi-experimental design. Control Condition: The control group for the final study will include deaf and hard of hearing children 3–6 years of age enrolled in self-contained classrooms who will receive their school-selected instruction. Key Measures: The effects of the developed curriculum will be evaluated using a battery of commercially developed and non-commercially developed measures at pre and post intervention. Commercial measures assess phonological awareness (Phonological Awareness Test 2-PAT, the Test of Preschool Early Literacy -TOPEL, Individual Growth and Development Indicators-IGDI), vocabulary (PPVT, EOWVT) and literacy skills (WJAT-III; Letter-sound correspondence). Single-case design will use curriculum-based measures. Data Analytic Strategy: For single-subject designs, researchers will use visual inspection to determine differences across baseline and treatment phases. The percentage of overlapping data between baseline and treatment phases will assess the effect size of instruction. Researchers will use repeated measure analyses of covariance or hierarchical linear modeling (if intraclass correlations are large) to examine pretest/posttest gains in outcome measures for intervention children versus a matched-sample of comparison children. Publications Journal article, monograph, or newsletter Beal-Alvarez, J., Lederberg, A.R., and Easterbrooks, S.R. (2012). 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A Syllable Segmentation, Letter-Sound, and Initial Sound Intervention With Students who are Deaf or Hard of Hearing and use Sign Language. Journal of Special Education, 48(4): 279–289 . doi:10.1177/0022466913504462 Webb, M.Y, Lederberg, A R., Branum-Martin, L., and Connor, C.M. (2015). Evaluating the Structure of Early English Literacy Skills in Deaf and Hard-of-Hearing Children. Journal of Deaf Studies and Deaf Education, 20(4): 343–355. doi:10.1093/deafed/env024 Webb, M-Y, and Lederberg, A.R. (2014). Measuring Phonological Awareness in Deaf and Hard-of-Hearing Children. Journal of Speech, Language, and Hearing Research, 57(1): 131–142. doi:10.1044/1092–4388(2013/12–0106)

Improving Language and Literacy Outcomes for Preschool Children at Highest Risk for Reading Problems

Kaiser, Ann

Efficacy and Replication

R324E060088

6/1/2006 to 5/31/2010

Purpose: Language and early literacy skills are foundational to reading and school success. Effective early intervention during the preschool years for children at highest risk for school failure may improve their chances of learning to read and learning from reading in the early elementary school years. Children with Individualized Education Plans (IEP), children with very low language, and children with low language and high problem behaviors who are also enrolled in Head Start are of high risk for later reading problems. The purpose of this project is to examine the differential effects of three approaches to improving language and literacy skills in these very risk high children enrolled in Head Start. These approaches are: 1) Opening the World of Learning (OWL); 2) OWL + Enhanced Milieu Teaching (EMT), and 3) Creative Curriculum (CC), a general curriculum model which is widely used in Head Start. Project Activities: Children will be administered a battery of language, literacy and achievement tests at four time points to determine the immediate and longer term effects of the interventions (i.e.- pre intervention, post intervention, kindergarten follow-up, and first grade follow-up). Teacher reported measures of behavior, social skills, and classroom relationships will be collected. The differential effects will be examined for the (1) OWL (a curriculum specifically designed to provide instruction in early literacy skills); (2) OWL + Enhanced Milieu Teaching (an individualized naturalistic communication intervention designed to teach specific language skills in the context of every day activities); and (3) Creative Curriculum (a general curriculum model which is widely used in Head Start). Data will be analyzed using HLM techniques with a systematic examination of child, teacher, and classroom quality factors that moderate the effects of the interventions. In addition, growth curves for language and early literacy skills will be derived using Individual Growth and Development Indicators (IGDI). Products: The expected outcomes from this study include: Published reports describing the efficacy of the three programs for improving children's language and literacy skills and behavior and how child, teacher, and classroom factors interact with a program of instruction in producing learning outcomes, Presentations on mediating variables that account for differences in intervention groups and provide insight into how individual differences emerge, and Presentations on the cost analyses related to these intervention options. Purpose: The purpose of this project is to examine the differential effects of three approaches to improving language and literacy skills of children who are enrolled in Head Start and have Individualized Education Plans (IEP), very low language, or low language and high problem behaviors. These approaches are: 1) Opening the World of Learning (OWL); 2) OWL + Enhanced Milieu Teaching (EMT); and 3) Creative Curriculum (CC), a general curriculum model which is widely used in Head Start classrooms. Setting: The Head Start programs are located in Alabama. Population: Approximately 480 children in 60 Head Start classrooms will participate in this research. Of these children, 120 will have IEPs; 240 will have very low language as identified by Peabody Picture Vocabulary Test-III (PPVT-III) scores two standard deviations below national norms; and120 will have low language and behavior problems as identified by low PPVT scores and high problem behavior scores on the Social Skill Rating System (SSRS) behavior subscale. Intervention: Two interventions are being evaluated and compared to the Creative Curriculum control condition: (1) Opening the World of Learning (OWL) and (2) OWL + Enhanced Milieu Teaching (EMT). The OWL intervention is a published curriculum designed for use in preschool classrooms to support all aspects of child development. Language and literacy related skills are central to the content of the curriculum. Daily activities are emphasized in large group book reading, thematically related small and large group activities, and teacher-child interactions during center times, meals, and outdoor play. OWL provides teachers with detailed rubrics for teaching in small groups and centers, guidelines for behaviors to observe during activities, and suggestions for ways to adjust activities to meet individual child needs. The EMT intervention is a hybrid intervention technique that utilizes principles of environmental arrangement, responsive interaction, and incidental teaching to teach language to children with moderate to severe language delays. In everyday conversational interactions with children, adults arrange the environment to provide activities of interest, promote child engagement and communication, and prompt child production of target language in functional contexts. Research Design and Methods: A randomized treatment study will be conducted to determine the efficacy of the two interventions as compared to each other and to the Creative Curriculum control condition. Sixty Head Start classrooms will be randomly assigned to one of the three experimental conditions. Teachers will be trained to high levels of treatment fidelity on the curricula during the first year, and treatment will begin in the fall of the second year. Children will be followed each year through first grade. In addition, 240 children will be randomly selected and observed during small group instruction to examine behavior and interactions with teachers and explore variables that may account for differences in the three intervention groups. Control Condition: Creative Curriculum will serve as the control condition. This curriculum is one of the most widely used in Head Start. While it provides a framework for teachers, it does not provide specific activities or instructional approaches for teaching language or literacy skills. Key Measures: Children will be administered a battery of language, literacy and achievement measures at four time points (i.e.- pre intervention, post intervention, kindergarten follow-up, and first grade follow-up) to determine the immediate and longer term effects of the three interventions. In addition, data on the fidelity of intervention implementation and teacher reported measures of behavior, social skills, and classroom relationships will be collected. Data Analytic Strategy: Data will be analyzed using Hierarchical Linear Modeling (HLM) techniques with a systematic examination of child, teacher, and classroom quality factors that moderate the effects of the interventions. 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Individual Growth and Development Indicator (IGDI) Comprehensive Assessment Project

Luze, Gayle

Measurement

R324A070248

4/1/2007 to 3/31/2011

Purpose: Assessment tools and techniques used in early intervention settings have primarily focused on diagnosis of disabilities and the child's limitations. These tools and techniques generally are not designed to be progress-monitoring assessments that allow intervention providers to measure the child's incremental (short-term) growth. Assessment tools administered to infants and toddlers that are psychometrically sound, feasible to use, and sensitive to change over short periods of time are needed by early intervention providers and program administrators. Such tools are important for monitoring children's development and enabling intervention providers to determine if additional or different intervention strategies are needed to promote development. Investigators at the University of Iowa are continuing research on a set of progress monitoring measures, the Infant and Toddler Individual Growth and Development Indicators. This battery of assessments measures parent-child interaction and children's communication, motor, social, and cognitive skills. Preliminary research on individual subtests has indicated that they have adequate reliability and validity when used independently. The purpose of this study is to investigate the reliability and validity of the Infant and Toddler Individual Growth and Development Indicators when used as an integrated battery of assessments and the practical viability of using all of the subtests with infants and toddlers with disabilities. Project Activities: The researchers are conducting a longitudinal study in which the Infant and Toddler Individual Growth and Development Indicators will be administered by interventionists on a quarterly basis for all children and on a monthly basis for individual children as needed. Additional data on development will be collected when each child enrolls in the study and each subsequent year. Multiple statistical techniques will be used to examine the reliability of the Infant and Toddler Individual Growth and Development Indicators when used together as a comprehensive set and to demonstrate whether the entire battery has adequate validity when used as screening, progress monitoring, and outcome assessments. The researchers will also examine whether interventionists can implement all of the subtests with fidelity and whether interventionists utilize the data for decision-making and planning interventions over time. Products: Expected products include materials and training modules for teaching early interventionists how to administer, score, and use the Infant and Toddler Individual Growth and Development Indicators for decision-making. Additional products include reports on the reliability and validity of the assessment battery and on the practical viability of using the entire battery in practice with infants and toddlers with disabilities. Structured Abstract Setting: The research will take place in Iowa. Population: This study includes two groups of participants: early interventionist staff and children receiving early intervention services through Part C of the Individuals with Disabilities Education Improvement Act. Participating early interventionist staff will be randomly selected from staff who meet the criteria of having at least two years of service with the local education agency, are not planning to retire until the end of the study, and serve at least six children and families through early intervention. Children who are less than 2 years old are also participating in this research. These children will be randomly selected from the caseload of each participating early interventionist. When a child becomes too old for early intervention, he or she will be replaced with another child who is less than 2 years old and is randomly selected from the interventionist's caseload. Assessment: The Infant and Toddler Individual Growth and Development Indicators (IGDIs) address important domains of children’s development including: communication, social, movement, and problem solving/cognitive development. IGDIs are defined as psychometrically sound measures that monitor progress toward socially valid early childhood outcomes (McConnell, McEvoy, & Priest, 2002). The advantages of IGDIs are that they can be used frequently, are easy to administer, the same measure can be used over the first 3 years of life, and a growth trajectory can be created. IGDIs are also standardized so children’s progress (both level and rate of growth) can be compared to peers. IGDIs are directly linked to the desired outcomes and provide the information necessary (and until now lacking) for immediate decision making around intervention. Research Design and Methods: This project is utilizing a longitudinal design. Early interventionist staff will be divided into two groups. The first group will be comprised of only early intervention teachers or consultants. The second group will be comprised of teams of all types of early intervention providers such as physical therapists, school social workers, and speech and language pathologists. Interventionists will administer the Infant and Toddler Individual Growth and Development Indicators to all children on a quarterly basis and to individual children as needed on a monthly basis. For the group comprised of teams, team members will administer the Infant and Toddler Individual Growth and Development Indicators subtests most appropriate to their discipline. For example, physical therapists will administer the Infant and Toddler Individual Growth and Development Indicators subtest related to motor skills while speech and language pathologists will administer the Infant and Toddler Individual Growth and Development Indicators subtest related to communication. Control Condition: Due to the nature of this study, there is no control condition will be utilized. Key Measures: A variety of measures will be administered. All Infant and Toddler Individual Growth and Development Indicators subtests and additional child developmental assessments will be administered. Information related to the early intervention provider, family, and child's health and disability will be collected via interviews. Also, researchers will collect data related to the degree to which the Infant and Toddler Individual Growth and Development Indicators are administered correctly, the use of Infant and Toddler Individual Growth and Development Indicators data to make intervention decisions, and the implementation of professional development provided by research staff. Finally, a copy of each child's Individualized Family Service Plan will be obtained at the beginning of the study and updated annually. Data Analytic Strategy: Multiple statistical techniques including analysis of variance, Pearson correlations, and hierarchal linear modeling will be used to examine the reliability of the Infant and Toddler Individual Growth and Development Indicators when used together as a comprehensive set and to demonstrate whether the entire battery has adequate validity when used as screening, progress-monitoring, and outcome assessments. In addition, data will be analyzed to demonstrate how the Infant and Toddler Individual Growth and Development Indicators show growth in relation to each other when they are given as a comprehensive set. Finally, researchers will examine whether interventionists can implement all of the subtests with fidelity and whether interventionists utilize the data for decision-making and planning interventions over time. Publications Journal article, monograph, or newsletter Luze, G.J., and Hughes, K. (2008). Using Individual Growth and Development Indicators to Assess Child and Program Outcomes. Young Exceptional Children, 12(1): 31–41. doi:10.1177/1096250608324673 Sousa, D. A., Luze, G., & Hughes-Belding, K. (2014). Preferences and attitudes toward progress reporting methods of parents from diverse backgrounds. Journal of Research in Childhood Education, 28 (4), 499–512. doi: 10.1080/02568543.2014.945021

Investigating Psychometric Properties of BASC-3 Flex Progress Monitoring Forms with Preschool Students

DiStefano, Christine

Measurement

R324A190066

4 years (07/01/2019-06/30/2023)

Co-Principal Investigator: Greer, Fred; Shi, Dexin Purpose: The purpose of this study is to evaluate the forms for a social-emotional progress monitoring system, Flex System for Progress Monitoring (Flex PM), as part of conducting Response to Intervention (RtI) in the preschool environment. The Flex PM is part of the existing Behavioral Assessment System for Children, 3rd Edition (BASC-3), a widely used social-emotional system of measurement that includes a screener, observations forms, and other rating scales. RtI is a systematic process of prevention and early intervention using multiple tiers of intervention to target children at different levels of risk. To use RtI efficiently and effectively, there must be a method to systematically collect data on the impact of an intervention on individual children in order to make decisions about maintaining or adjusting their interventions. At the Tier 2 level (classroom or small group intervention), progress monitoring data is needed to determine whether a child is responding appropriately to the intervention or if the child needs individualized intervention (Tier 3). The Flex PM was recently developed to address the need for progress monitoring of social-emotional development in preschoolers; however, there is currently limited data on the its psychometric properties. The current project will investigate the measurement properties of the progress monitoring system, including the assessment forms' sensitivity to change, reliability, and validity for preschoolers who are and are not at risk. In addition, the project will examine stakeholders' perceptions of conducting progress monitoring of social-emotional risk in preschoolers, which has important implications for implementing RtI in a preschool program. Project Activities: The research team will analyze the existing norming sample dataset used to develop and initially validate the Flex PM to examine measurement properties of the standard assessment forms. In addition, the team will collect prospective data to examine assessment characteristics, measurement properties, and psychometric soundness of the Flex PM for preschoolers determined to be at risk for social-emotional or behavior problems and receiving Tier 2 intervention in the context of an RtI framework. The team will also collect data from school-based stakeholders, including teachers and administrators, to understand the type of assessments that are typically used to monitor social-emotional risk (before implementation of the Flex PM) and their perspectives on progress monitoring and RtI. Products: The products of this project will include more in-depth knowledge of the characteristics of the Flex PM standard forms within the context of RtI and stakeholders' perspectives and social validity of the assessment. The project will result in peer-reviewed publications and presentations as well as additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: The research will take place in public pre-Kindergarten (pre-K) programs across school districts in South Carolina that are implementing social-emotional RtI, including rural and suburban areas. In addition, the research team will also utilize previously collected norming data on preschoolers across the United States. Sample: The first sample includes teacher ratings of 418 preschoolers that were collected in a nationally representative norming dataset used to develop the Flex PM. The second sample will include newly collected data on teachers' ratings of preschool-aged children in public pre-K programs. The research team will screen all preschoolers as part of Tier 1 (approximately 1,000 children) across four school districts to identify children who are at risk for social-emotional or behavioral problems. From this screening, the evaluation sample will include 750 children who are at risk and involved in Tier 2 intervention and 500 children who are not at risk. In addition, the research team will collect data about progress monitoring and Tier 2 practices, as well as feedback on the Flex PM, from approximately 120 stakeholders (including teachers, teaching assistants, school-based psychologists, behavior coaches, and school administrators) who are likely to use the Flex PM forms. Assessment: The Flex PM – Teacher Rater-Preschool is a set of forms used by preschool teachers to monitor the progress of children participating in Tier 2 intervention for behavioral or social-emotional risk. There are four standard Flex PM – Teacher Rater-Preschool forms that cover three general domains within social-emotional risk. These include Adaptive Skills (Developmental Social Disorders form), Internalizing Problems (Internalizing Problems form), and Externalizing Problems (Attention Deficit/Hyperactivity Disorder form and Disruptive Behaviors form). The Flex PM standard forms are brief assessments, consisting of 8 to 14 items per domain. The forms use items from the BASC-3 TRS-P and the Behavioral and Emotional Screening System. The Flex PM forms are designed to be used for preschoolers participating in either Tier 2 or Tier 3 intervention, though this research will focus on its use as part of Tier 2 programs only. Research Design and Methods: This project will analyze an existing dataset, the national norming data used to develop the Flex PM, as well as collect prospective data from new teachers and preschoolers. In Year 1, the research team will analyze data from the existing norming sample to examine characteristics of the Flex PM. They will also collect data on the prospective sample. The new data collection will begin with universal screening for all the preschool children in participating schools. The children who are flagged by the screener as at-risk for social-emotional or behavior problems and in need of Tier 2 intervention will be chosen to participate in the study, along with a group of children not at risk who are matched on key demographic factors (such as sex and race/ethnicity) within each school. Before beginning measurement with the Flex PM, data will be collected from school-based stakeholders about what they are currently using as Tier 2 assessments. During the school year, the at-risk children will receive the relevant Tier 2 intervention and progress monitoring measures will be collected for both groups of children. At the end of the school year, student and teacher outcomes will be measured, including stakeholder views of the process. The same process for the prospective sample will occur for different classrooms to evaluate items for at-risk and not at-risk samples of preschoolers and to determine the psychometric soundness of the assessment forms in Years 2 and 3 respectively. In Year 4, social validity data will be collected from stakeholders to examine their perspectives on the Flex PM, progress monitoring, and RtI. Stakeholders (teachers, school psychologists, administrators) will be interviewed to examine their use of the system and usefulness for measuring intervention success. Control Condition: Although there is no control condition, researchers will examine differences in how the assessment functions for at-risk preschoolers compared to children not at risk and not participating in Tier 2 intervention. Key Measures: The primary measures for the current study are derived from the overall BASC-3 family of assessments, including the progress monitoring system being evaluated in this project – Flex PM. The Behavioral and Emotional Screening System for preschool teachers, the screening assessment used within the BASC-3 measurement system, will be used to identify which children in Tier 1 may be at risk and in need of Tier 2 intervention and as an outcome measure. To determine the validity of the Flex PM, the research team will use preschool office discipline referrals, a checklist of kindergarten readiness skills, the Pediatric Symptoms Checklist (behavioral screener), BASC-3 Student Observation System (teacher ratings of child behaviors during observation), and the Achenbach System of Empirically Based Assessment( ASEBA; teacher report of problem behaviors). Child and teacher demographic information will be provided by each school's attendance coordinator. Teachers will complete social validity scales to determine the Flex PM's acceptability, feasibility, and usability. Finally, teachers, administrators, and other stakeholders (including behavior coaches and school psychologists) will be interviewed at multiple time points to determine their current Tier 2 measures (prior to implementing the Flex PM) as well as their views towards progress monitoring and use of the Flex PM. Data Analytic Strategy: For the existing normative sample, item characteristics of the Flex PM standard forms will be examined using confirmatory factor analysis (CFA). Using this same sample, the quality of the forms will be examined to determine consistency (model-based reliability) and validity (variance accounted) associated with the CFA structure. Qualitative data on current practices will be examined using a content analysis to categorize current intervention practices in preschool settings. The prospective sample will be used to examine the capability of the Flex PM to identify differences between at-risk preschoolers and those not at risk. Sensitivity to identify differences will be measured by calculating five indices: odds ratios, standardized mean difference effect size, dependent and independent t-tests, interaction effects from a factorial analysis of variance, and the relative change index. In addition to these traditional tests, invariance testing will incorporate latent scale characteristics across groups and examine differential item functioning. For examining the capability of the Flex PM to identify change with at-risk children before and after Tier 2 intervention, the research team will determine reliability through Cronbach's alpha at each time point and temporal stability by correlating pre- and post-treatment scores. Concurrent validity will be examined by comparing the Flex PM to other forms of progress monitoring, including office discipline referrals, direct observation, and screeners. Criterion validity will be evaluated through the association between Flex PM and the ASEBA. Change in latent factor means scores from baseline to post-intervention will be examined to establish the stability of the form over administrations. Social validity will be examined through correlations between the scores on the questionnaire and the Flex PM scores. Data from open-ended questions and interviews about views on progress monitoring and RtI will be coded and interpreted to examine stakeholders' perceptions of progress monitoring as part of an RtI system. Related Projects: Validation of the Behavioral and Emotional Screening System for Early Identification for Social-Emotional and Behavioral Problems in Preschoolers (R324A100104); A Psychometric Investigation of Universal Screening for Social Emotional Development in Preschool Using Parent and Teacher Informants (R305A150152)

Joint Attention Mediated Learning Intervention for Toddlers with Autism Spectrum Disorders and Their Families

Schertz, Hannah

Efficacy and Replication

R324A120291

7/1/12 – 6/30/16

Co-Principal Investigators: Samuel Odom (University of North Carolina, Chapel Hill) and Kathleen Baggett (University of Kansas) Purpose: The prevalence of autism spectrum disorders (ASD) has grown dramatically in recent years, with advances in early identification now resulting in an influx of toddlers to the early intervention system. Although early intervention providers are required to implement evidence-based practices for this population, few models are available that target social communication, the core difficulty in ASD, at the preverbal stage when neurological development is most malleable. The proposed project directly addresses this need through an efficacy study of Joint Attention Mediated Learning (JAML), an intervention practice for toddlers with ASD that directly targets foundational preverbal social communication competencies from within the parent-child relationship at a critical juncture (by 30 months of age). Specifically, this study will determine the efficacy of JAML on the early preverbal and verbal social communication development of toddlers with ASD and the self-efficacy of their caregivers, assess factors that mediate and moderate intervention effects, and address the feasibility and acceptability of JAML. Project Activities: Researchers will conduct a randomized controlled trial that compares the JAML intervention to a business-as-usual condition. The research team will recruit 126 toddlers, aged 30 months or younger, with ASD. Assessments will be conducted prior to the intervention (pre-test), post-intervention (post-test), and 6 months after the post-test to measure the sustainability of any intervention effects. Products: The products of this project include evidence of the efficacy of the JAML intervention on the social communication of children with autism and the self-efficacy of their caregivers, published reports, and presentations. Structured Abstract Setting: This study will take place in family homes in rural, suburban, and urban areas in Indiana, Kansas, and North Carolina. Sample: Participants will include 126 toddlers with ASD aged 30 months or younger and their primary caregivers who represent diverse socioeconomic and ethnic/racial groups. Intervention: JAML will be implemented over 8 months in three phases that promote increasingly complex social communication outcomes. The intervention focuses on the distinctly social functions of preverbal communication and targets engagement at a level just beyond the toddler's current capabilities. In the first of three phases, Focusing on Faces (FF), the child is helped to look freely and often to the parent's face. In the second phase, Turn-Taking (TT), the child engages with the parent in reciprocal repetitive play that requires tacit acknowledgment of the partner's shared interest (e.g., when the child waits for the parent's turn). TT is a more complex level of social engagement than FF and is intended to help the child move toward the reciprocal social interaction that occurs in the third phase, Joint Attention (JA). In the JA phase, the child is helped to visually share attention to an external focus (i.e., a toy), either by responding to the parent's bid for attention to the toy or initiating a bid. Each phase is structured around five mediated learning principles that promote active involvement in the learning process for the child: (1) sharpening attentional focus, (2) internalizing a sense of self-regulation and order to communicate, (3) developing self-confidence, (4) discerning nuances of social interaction, and (5) engaging more frequently in varied settings and with different people. Interventionists use multiple media to introduce JAML's components and to support parents' understanding as they embed intervention activities in daily planned and routine encounters. Research Design and Methods: The research team will conduct a randomized controlled trial with random assignment of toddlers with ASD and their families to the JAML treatment or the business-as-usual control conditions. Assessments will be conducted when the child enters the study (pre-test), after the 8-month intervention (post-test), and 6 months after post-test (to measure maintenance of treatment effects). Control Condition: Control group participants will receive early intervention services available in their communities. After final data are collected, they will receive three intervention sessions to introduce JAML self-guided materials, with each session focused on a JAML phase. Key Measures: Eligibility for study participation will be determined by the Autism Diagnostic Observational Scale-Toddler Version. Primary outcomes will be assessed through observations of preverbal social communication and standardized measures of general language and social outcomes (including the Mullen Scales of Early Learning and Vineland Adaptive Behavior Scales, Second Edition). Secondary outcomes will be assessed using measures of parent self-efficacy, ASD severity, and parent sensitivity. Social validity will be assessed through a Likert-type acceptability rating scale completed by parents. Implementation fidelity will be assessed through independent ratings for both parent-child and provider-parent intervention activities. Data Analytic Strategy: A repeated measures analysis of variance will be used to assess JAML's effects on child and caregiver outcomes. Publications Book chapter Schertz, H. H. & Horn, K. (in press). Facilitating toddlers' social communication from within the parent-child relationship: Application of family-centered early intervention and mediated learning principles. Siller, M., Morgan, L., Wetherby, A. M., Turner-Brown, L., Baranek, G. T., Crais, E. R., Odom, S. L., Reznick, J. S., Watson, L. R., Baggett, K. M., Brian, J., Roberts, W., Bryson, S. E., Smith, I. M., Carter, A. S., Estes, A., Kasari, C., Landa, R. J., Lord, C., Messinger, D. S., Mundy, P., Rogers, S. J., Schertz, H. H., Stone, W. L., Yoder, P., & Zwaigenbaum, L. (2013). Designing Studies to Evaluate Parent-Mediated Interventions for Toddlers With Autism Spectrum Disorder. Journal article, monograph, or newsletter Schertz, H. H., & Horn, K. (2017). Family capacity-building: Mediating parent learning through guided video reflection. Schertz, H. H., Call-Cummings, M., Horn, K., Quest, K., & Steffan, R. ( (in press). Social and instrumental interaction between parents and their toddlers with autism: A qualitative analysis. Journal of Early Intervention. Schertz, H. H., Horn, K., Lee, M., & Mitchell, S. (2017). 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LEAP - USA (Using Science-Based Approaches)

Strain, Phillip

Efficacy and Replication

R324E060068

3/1/2006 to 2/28/2010

Purpose: The purpose of this project is to assess the efficacy of LEAP-USA in achieving positive child and family outcomes as a model of intervention for young children with autism. The researchers intend to examine the differential effects on key outcomes resulting from high-fidelity implementation. Project Activities: The project is designed to address the following research questions: What are the effects of a manual only and manual plus training model on the social behavior, symptoms, cognitive development, and language development of children with autism who are 3–5 years of age? What are the effects of the intervention on family stress and insularity? The researchers will examine the efficacy of the LEAP-USA model over the course of four years and in 60 randomly assigned classrooms throughout the US. Thirty classrooms will be assigned to receive LEAP treatment manuals only and thirty other classrooms will receive the manuals along with the research team's 2-year training and mentoring model. Two hundred forty 3–5 year old children with autism and their families will participate in treatment and comparison classrooms. Analyses will monitor changes in children's social behavior, autism symptoms, cognitive development, and language development as well as changes in family members' stress and insularity over time. Three-level hierarchical linear modeling (HLM) will be employed for each outcome measure. Products: The expected outcomes from this study include: Published reports on the efficacy of the LEAP-USA model for use with 3–5 year old children with autism and their families, the results of the evaluation of moderators of the treatment effects, and results assessing the fidelity of implementation, A comparison of the differential effects on student outcomes for the manual only version of the LEAP program as compared to the version including the manual, professional development and support, and Presentations on teacher opinions of the compatibility of the program and a cost analysis of anticipated vs. unanticipated costs. Setting: LEAP programs in Colorado, Pennsylvania, Minnesota, and New Jersey. Population: Approximately 240 students, ages 3–5, in 60 LEAP classrooms will participate. Classrooms selected to participate will be randomly assigned to either a manual only or manual plus training support condition. Intervention: Preschools assigned to the full LEAP replication protocol will enter a 2-year training and mentoring relationship with project staff. In order to instruct replication site participants in the basic LEAP components, the intervention will employ a seven-phase educational model, comprised of: a) presentation of skill area to be learned in written format; b) discussion of skill area between trainee(s) and trainer(s); c) demonstration of skills by LEAP trainers with simultaneous observation by trainee(s); d) in-vivo practice by trainee(s) with observation and feedback provided by trainer; e) evaluation of trainee competency based upon direct observation or permanent product; f) training of on-site supervisor to support direct-line replication staff; and g) follow-up training and maintenance checks on a three month basis. Research Design and Methods: The experimental analysis will monitor changes in children's social behavior, autism symptoms, cognitive development, and language development. Changes in family members' stress and insularity will be assessed over time. Three-level hierarchical linear modeling (HLM) will be employed for each outcome measure. Level-1 will model the growth trajectories of children over time. Level-2 will reflect characteristics of individual children, such as age-at-start and entering developmental functioning and characteristics of families such as education, income-level, and stress. Level-3 will reflect characteristics of the classrooms, including experimental condition, prior education of teachers and implementation fidelity. Control Condition: Preschools assigned to the comparison condition will be provided LEAP's intervention manuals for: a) family skill training; b) social skills training and c) design and operation of the inclusive classroom. No follow-along training will be provided at the sites. District administrators will be interviewed on a yearly basis to track the amount and type of general training afforded to staff. Key Measures: The effects of the two intervention conditions on children with autism and their families will be evaluated using commercial and non-commercial measures. Key measures include, for example, Childhood Autism Rating Scale, Mullen Scales of Early Learning, and a questionnaire on resources and stress. The frequency in which measures are administered varies from every 3 months to once a year. Finally, data on fidelity as well as long-term sustainability and cost will be collected. Data Analytic Strategy: Quantitative data analysis techniques include hierarchical linear modeling (HLM) to evaluate the efficacy and replicability of the LEAP intervention. For each outcome measure a 3 level HLM will be conducted. Level-1 will model the growth trajectories of children over time. Level-2 will reflect characteristics of the individual children and characteristics of the families. Level-3 will reflect characteristics of the classroom. Publications Book chapter Strain, P.S., and Bovey, E. (2008). LEAP Preschool. In J. Handleman, and S. Harris (Eds.), Preschool Education Programs for Children With Autism (pp. 249–281). Austin, TX: Pro-Ed. Strain, P.S., Schwartz, I., and Bovey E. (2008). Social Skills Intervention for Young Children With Autism: Programmatic Research Findings and Implementation Issues. In W. Brown, S.L. Odom, and S.R. McConnell (Eds.), Social Competence of Young Children: Risk, Disability, and Intervention (pp. 253–272). Baltimore, MD: Paul Brookes Publishing Co. Journal article, monograph, or newsletter Strain, P.S., and Bovey, E.H. (2011). Randomized, Controlled Trial of the LEAP Model of Early Intervention for Young Children With Autism Spectrum Disorders. 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Making Professional Development Work for Preschool Classroom Teams Serving Students with ASD: Adapting a PD Model Using Normalization Process Theory

Dykstra Steinbrenner, Jessica

Development and Innovation

R324A200188

4 Years (07/01/2020 - 06/30/2024)

Co-Principal Investigators: Watson, Linda; Reszka, Stephanie Purpose: This project aims to develop and test an adapted professional development (PD) model to be used with the Advancing Social-communication And Play (ASAP) intervention, which is an intervention that focuses on improving early social communication and play skills of preschool children with autism spectrum disorder (ASD). Research suggests that current PD models may not sufficiently improve educator practice and student outcomes or lead to sustained implementation. To address this, the project will iteratively develop ASAP Professional Development for Preschool Teams (PD-ASAP), which will be a model grounded in Normalization Process Theory, an implementation science approach used in complex health interventions. The PD model aims to be more feasible for preschool educational teams, more effective in changing educator practices (including ASAP implementation), and to enhance student outcomes. The pilot study will examine the impact of PD-ASAP on educator burnout, self-efficacy, and adherence to ASAP fidelity as well as on student classroom engagement, social-communication, and play skills. The pilot study will also include a cost analysis of the PD-ASAP model. Project Activities: This project will develop a PD model for ASAP (PD-ASAP) and test the promise of the model for improving teacher and student outcomes for preschool classrooms with children with ASD. The study will include three phases: (1) feedback and adaptations, (2) design experimentation, and (3) a pilot study using a randomized controlled trial. Products: The primary products of this project include a fully developed adapted PD model to be used with the ASAP intervention. The project will also result in peer-reviewed publications and presentations as well as additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Settings: The research will take place in preschool classrooms in North Carolina. Sample: Participants in Phase 1 include an estimated 64 previous and potential end users (including educational team members, administrators, and parents of students with ASD) and expert advisory board members. Phase 2 will include 24 preschool educators and approximately 18 students with ASD. Phase 3 participants will include 80 preschool educators and approximately 60 students with ASD. Intervention: The research team anticipates that the PD-ASAP model will consist of six steps—orientation, initial planning, initial training, implementation, coaching, and booster training. PD-ASAP will incorporate activities, strategies, and tools that address core components of the Normalization Process Theory to improve the learning, use, and sustainability of the ASAP intervention. ASAP is a manualized intervention with two content components (social-communication and play) and two context components (1:1 and group) and is intended to be a supplemental intervention that can be embedded into preschool classrooms serving children with ASD. It is a process-oriented approach that uses evidence-based practices and data-based decision making to support preschoolers with ASD in moving through a developmental hierarchy of social-communication and play skills. Research Design and Methods: In Phase 1, the research team will use interviews, surveys, and focus groups to develop the PD. In Phase 2, the team will use design experimentation and rapid iterations to test and revise PD-ASAP. The pilot study, in Phase 3, will employ a cluster randomized trial in which schools will be randomly assigned to one of two groups – PD-ASAP or ASAP with the manual only. The team will examine the efficacy of PD-ASAP in improving educator outcomes (ASAP fidelity, self-efficacy, burnout) and student outcomes (engagement, social-communication, play). During this phase, the team will use the ingredients method to calculate the costs of implementation for each group. Control Condition: For the pilot study, the control condition will implement ASAP using only the manual, which includes a brief video training. Key Measures: Measures used in Phase 1 will include researcher-developed interviews, surveys and focus groups. Phase 2 will include a measure of educator fidelity of implementation of ASAP (researcher-developed ASAP-FOI), student joint engagement (Joint Engagement Coding), and educator ratings of child social-communication and play (researcher-developed, video-anchored rating tool used in previous ASAP studies). Phase 3measures will include educator measures of ASAP-FOI as a proximal outcome, and teacher self-efficacy (Autism Self-Efficacy for Teachers) and burnout (Maslach Burnout Inventory – Educator Survey) as distal outcomes. For student outcomes, the project will use the same measure of student joint attention as well as social-communication and play as measured by the Brief Observation of Social Communication Change. Data Analytic Strategy: In Phase 1, the research team will use the Rapid Assessment Process to synthesize the mixed methods data, a process that combines deductive and inductive data analysis to triangulate the information. Phase 2 will use weekly design experimentation meetings to review data and make iterative changes to the PD-ASAP model. Phase 3, the pilot study, will use hierarchical linear models to account for student nesting within schools to examine differences between the two groups. The CostOut tool will be used to estimate start-up and maintenance costs of PD-ASAP and ASAP at student, staff, school, and district levels. Related Projects:Social Communication and Symbolic Play Intervention for Preschoolers With Autism (R324B070056); Advancing Social-Communication and Play (ASAP): An Intervention Program for Preschoolers with Autism (R324A110256); Promoting ASAP Collaboration through Technology (PACT): An Intervention Modification to Enhance Home-School Collaboration (R324A170151)

Men's Parenting Behaviors in Families of Children with Disabilities: Findings from the ECLS-B

McBride, Brent

Exploration

R324A120174

7/1/2012–6/30/2014

Co-Principal Investigators: Rosa Milagros Santos (University of Illinois), Sungjin Hong (University of Illinois), W. Justin Dyer (Brigham Young University) Purpose: Although a rapidly growing body of research has documented the impact of father involvement with typically developing children, little is known about how men approach parenting children with disabilities, and how their involvement impacts child, mother, and family well-being that support child cognitive and socio-emotional development and school readiness. The purpose of the project is to examine the data available in the Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) to investigate the roles fathers play in families of children with disabilities. Project Activities: This project will analyze the ECLS-B to examine the structure, antecedents, and consequences of fathers' involvement in families of children with disabilities. Comparisons will be made between the underlying structures of paternal involvement of fathers of children with and without disabilities. Specifically, the researchers will address: (1) how the presence, timing, and severity of a child's disability relate to the structure and levels of father involvement; (2) how the presence, timing, and severity of a child's disability influence the trajectory of father involvement from 9 months to 4 years of age; (3) the antecedents (e.g., family processes, characteristics of the father and/or mother, characteristics of the child, maternal involvement, contextual sources of stress and support) of father involvement, and whether these antecedents differ by the presence, timing, and severity of a child's disability; and (4) the direct and indirect effects of father involvement on family process and maternal and child well-being in families of children with disabilities. Products: The expected products from this study include publications and presentations on research activities and findings that may serve as a basis for the development of educational interventions that promote father involvement and improve developmental outcomes for infants, toddlers, and preschoolers with disabilities. These findings will also offer direct service providers information they can use to support families and, in particular, fathers of infants, toddlers, and preschoolers with disabilities. Structured Abstract Setting: The ECLS-B is a nationally representative dataset. Sample: The ECLS-B includes approximately 14,000 children born in 2001. To date, information for this dataset has been collected from mothers, fathers, teachers, and child care providers when the children were 9 months, 2 years, and 4 years of age, and during the kindergarten transition year. The ECLS-B includes data from approximately 8,392 residential fathers and 2,198 non-residential fathers. The population of interest for the analyses will be those children that had a diagnosed disability or developmental delay and/or were receiving early intervention services. Children will be grouped based on when the child was identified with the disability and/or developmental delay (i.e., 9 months, 2 years, 4 years). Intervention: There is no intervention. Research Design and Methods: This project will conduct secondary data analysis with an existing dataset. Analyses will be designed to explore the structure, sources, and consequences of fathers' involvement in families of children with disabilities. Control Condition: There is no control condition in the study design. However, comparisons will be made between fathers of children with and without disabilities. Key Measures: Key outcome measures include those assessing children's cognitive development, emotional functioning, literacy skills, and school readiness. These data are collected from multiple sources (e.g., children, their parents, their child care providers), and through multiple formats (e.g., survey questionnaires, parent interviews, direct child assessments). Data Analytic Strategy: To address the research questions outlined above, a variety of structural equation modeling techniques (e.g., latent variable growth curve modeling, general growth mixture modeling) will be used to capitalize on the longitudinal nature of the ECLS-B data. Publications Journal article, monograph, or newsletter Jeans, L.M., Santos, R.M., Laxman, D.J., McBride, B.A., and Dyer, W.J. (2013). Early Predictors of ASD in Young Children Using a Nationally Representative Data Set. Journal of Early Intervention, 35(4): 303–331. Jeans, L.M., Santos, R.M., Laxman, D.J., McBride, B.A., and Dyer, W.J. (2013). Examining Early Childhood Longitudinal Study–Birth Cohort (ECLS-B): Maternal Stress and Depressive Symptoms When Raising Children With ASD. Topics in Early Childhood Special Education, 33(3): 162–171. doi:10.1177/0271121413481680 Kern, J. L., McBride, B. A., Laxman, D. J., Dyer, W. J., Santos, R. M., and Jeans, L. M. (2016). The Role of Multiple-Group Measurement Invariance in Family Psychology Research. Journal of Family Psychology, 30(3): 1–13. doi:10.1037/fam0000184 Laxman, D.J., McBride, B.A., Jeans, L.M., Dyer, W.J., Santos, R.M., Kern, J., Sugimura, N., and Curtiss, S.L. (2015). Father Involvement and Maternal Depressive Symptoms in Families of Children With Disabilities. Maternal and Child Health Journal, 19(5): 1078–1086. doi:10.1007/s10995–014–1608–7 McBride, B. A., Curtiss, S. J., Laxman, D. J., Santos, R. M., Weglarz, J., Dyer, W. J., Jeans, L. M., and Kern, J. (2017). Father Involvement in Early Intervention: Exploring the Gap Between Service Providers' Perceptions and Practices. Journal of Early Intervention, 39(2): 71–87. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/1053815116686118.

Meta-Analytic Structural Equation Modeling of Family Capacity-Building Early Intervention Practices

Dunst, Carl

Exploration

R324A110025

3/1/11–2/28/13

Purpose: A major premise of the Individuals with Disabilities Education Act (IDEA) Part C program is that early intervention builds and strengthens family capacity. This, in turn, has positive effects on parent and child outcomes. The aim of this study is to examine this premise by identifying the relationships between certain intervention characteristics and parent and child outcomes. These characteristics include program variables, such as service intensity and frequency of parent contacts, as well as process variables, such as the types of family-centered help provided. Project Activities: Meta-analytic structural equation modeling will be used to identify causal and mediating influences of the early intervention program and process variables on parenting and child outcomes. The extent to which the two sets of variables individually or in combination are related to parenting self-efficacy, parent-child interactions, and child behavior and development will be explored. Products: Products from this study include publications and presentations on research activities and findings related to the relationships between early intervention service characteristics and parent and child outcomes. Structured Abstract Setting: Studies included in the analyses are those in which families received early intervention services. Population: The target population is families who have received early intervention services. Intervention: This study does not involve a predetermined intervention. Instead, it will suggest possible characteristics of early intervention programs and processes as they are currently practiced that are found to correlate with parent and child outcomes. Research Design and Methods: Meta-analytic structural equation modeling will be used. Relevant studies will be identified through an extensive review of published and unpublished research. Included studies will involve children birth to three years of age in home-based early intervention programs or parent involvement programs. The studies will also include measures in at least three of the variables of interest (i.e., program variables, process variables, parenting self-efficacy, parent-child interactions, and child outcomes). Studies will also be included if correlations among measures are reported or are available. Studies will be coded and include variables of interest, constructs within the variables of interest, and other relevant variables such as background or demographic information. Meta-analytic structural equation modeling of studies will be used to identify causal and mediating influences of early intervention program and process variables on parenting and child outcomes. Control Condition: There is no control condition. Key Measures: Five types of variables will be included in this research. They include measures of program delivery, program processes, parent self-efficacy, parent-child interactions, and child developmental outcomes, including social, emotional, motor, communication, adaptive and cognitive development. Data Analytic Strategy: Meta-analytic structural equation modeling of studies will be used to discern direct and indirect relationships between the program and process variables and family and child outcomes. The analyses will determine the relations between program variables and parenting and child outcomes; the relations between process variables and parenting and child outcomes; and the relations between the combined program and process variables and parent-child interactions and child outcomes. The researchers will also examine the extent to which parenting self-efficacy beliefs mediate the relationship between early intervention program and process variables and parent-child interactions, parent outcomes, and child behavior and development. The models will also include parent and family background variables and child disability diagnosis.

Online Training for Paraeducators to Improve Communication Supports for Young Children with Complex Communication Needs

Douglas, Sarah

Development and Innovation

R324A180122

4 years (07/01/2018-06/30/2022)

Co-Principal Investigator: Bowles, Ryan; Plavnick, Joshua Purpose: The purpose of this project is to develop and pilot test an online training program, the POWR System, for paraeducators and their supervising special education teachers to improve the communication skills of young children with complex communication needs by supporting their use of augmentative and alternative communication (AAC) systems. Young children with complex communication needs, who are unable to use speech to express their needs, exchange information, or develop close relationships, are at risk for poor academic outcomes. These children frequently work directly with paraeducators in their early childhood programs, yet research-based training for paraeducators to support children's communication needs is lacking. This project aims to address this need by developing an online training for paraeducators and their supervising teachers to improve the communication skills of children with complex communication needs. Project Activities: The research team will iteratively develop and test the POWR System across three phases. In Phase 1, the team will build upon and revise an existing paraeducator version of POWR (Paraeducator POWR) and develop the training for implementing the POWR model (POWR +)through an iterative process involving educator review and feedback as well as single-case studies. In Phase 2, the team will develop the POWR for supervising teachers (Teacher POWR) using similar methods as Phase 1. In Phase 3, the researchers will use a multiple-baseline single-case design study to determine the promise of the entire POWR System for improving children's communication outcomes. Products: The products of this project will include a fully developed online training for paraeducators and their supervising teachers to provide support to children with complex communication needs, as well as publications and presentations. Structured Abstract Setting: The research will take place in early childhood centers in Michigan. Sample: A total of 19 paraeducators, 19 special education teachers, and 19 children ages 3-6 with complex communication needs will participate in this project. To be eligible to participate, children must have significant expressive language delays, receive speech language pathologist services as part of their Individual Education Program, and have an established AAC system in place. During Phases 1 and 2, 10 paraeducators, 10 special education teachers, and 10 children will participate. During the Phase 3 pilot study, 9 paraeducator/teacher/child triads will participate. Intervention: The intervention is an online training, the POWR System, for paraeducators and their supervising teachers to support children with complex communication needs. Paraeducator POWR will consist of two parts. The first will focus on POWR, a strategy for teaching communication skills — Prepare the activity and AAC, Offer opportunities for communication, Wait for the child's communication, and Respond to the child's communication. The second component, POWR +, will train paraeducators to model the use of AAC while implementing the POWR strategy. The Teacher POWR intervention will contain two parts. The first is a condensed version of Paraeducator POWR and POWR+ designed to familiarize teachers with the paraeducator training. The second part will provide training to help them supervise and support their paraeducators in implementing the strategies. Research Design and Methods: In Phase 1, the research team will build upon the existing POWR System by developing an online portal for the Paraeducator POWR, collecting feedback on POWR training materials from a panel of educators, and creating the POWR + training. Researchers will also conduct single-case studies to examine whether paraeducators can implement the Paraeducator POWR and POWR + strategies with fidelity, and to assess their perceptions of usability. In Phase 2, the team will develop each part of the Teacher POWR using a strategy parallel to Phase 1. In Phase 3, the promise of the intervention will be tested using a multiple-baseline single-case design study with nine paraeducator/teacher/child triads. This pilot study will investigate the intervention's impact on paraeducators' fidelity of implementing the POWR strategy and children's communication outcomes (i.e., communication turns, AAC use, and message complexity). Additionally, the research team will collect pre- and post-test data on language skills to explore potential increases in these outcomes. Control Condition: Participating paraeducators, teachers, and children will serve as their own controls during the baseline phase of the single-case design study. During this time, they will engage in business-as-usual instruction and communication support. Key Measures: The Preschool Language Scales (PLS-5) will be used to screen children for eligibility and serve as a pre- and post-intervention measure of language skills in the Phase 3 pilot study. Children's communication outcomes (i.e., communication turns, AAC use, and message complexity) will be assessed from video recordings of educationally-relevant joint communication activities. Paraeducators' fidelity of implementing the POWR strategy will also be assessed from these video recordings. Fidelity of teacher supervision will be assessed from video recordings of feedback sessions between teachers and paraeducators and online feedback and communication between teachers and paraeducators. Fidelity of the online paraeducator and teacher trainings will be assessed using knowledge tests, fidelity checklists, and self-reflections of their knowledge. Paraeducators will complete the Usage Rating Profile to assess usability of the intervention and both paraeducators and teachers will complete satisfaction surveys. Data Analytic Strategy: Phase 1 and 2 data related to fidelity and usability will be analyzed descriptively. Data from the video recordings of paraeducators and children during the single-case design study will be analyzed with visual analysis and calculation of effect sizes. The same data from the video recordings will be analyzed using multilevel interrupted time series to assess the statistical significance of the impact of the intervention in the pilot study. Changes in language skills measured through the standardized assessment will be examined with analysis of variance.

Parent Plus: Language Coach

Sawyer, L. Brook

Development and Innovation

R324A160070

3 years (9/1/2016–8/31/2019)

Co-Principal Investigators: Carol Scheffner Hammer (Teachers College, Columbia University) Purpose: The purpose of this project is to develop and pilot test an intervention aimed at improving the language outcomes of preschool children with language impairment (LI) by teaching parents to use evidence-based strategies with their children. LI is the most common disability during the preschool years. Although children with LI receive speech-language services in a preschool setting, speech-language pathologists (SLPs) do not have time to train parents to support their children's language abilities. Yet parents have the potential to be a valuable resource to help their children improve their language skills and prepare them for school success. The proposed intervention, Parents Plus: Language Coach (P+), is a web-based resource coupled with support from a certified SLP coach to teach parents to use focused stimulation strategies, an approach in which the adult engages the child in interactions that are constructed to enhance the likelihood that the child will express specific language forms through repeated modeling of targets and use of other responsive language techniques (e.g., following child's lead, establishing joint attention). Project Activities: In Phase 1, the research team will develop a web-based resource for parents –consisting of training modules, exemplar videos, and other resources—with feedback from parents, educators, and an expert consultant. In Phase 2, P+ will be assessed for its feasibility of use by parents in authentic educational settings (e.g., home and community settings) and perceived sustainability for preschool programs. Findings from this phase will be used to inform revisions to P+. In Phase 3, the research team will conduct a pilot study to examine the promise of P+ for improving language outcomes for children with LI and parents' implementation of focused stimulation strategies. Products: Researchers will produce a fully developed intervention, Parents Plus: Language Coach, for children with LI, peer-reviewed publications, and presentations. Structured Abstract Setting: The study will take place in family homes of preschoolers in Pennsylvania. Sample: Initial development will include approximately six to eight parents and six to eight educators (e.g., speech language pathologists, early intervention supervisors, program directors) to form two advisory boards. The research team will recruit six additional parents to review the intervention and pilot test the fidelity measure. Phase 2 participants will include 10 3- to 5-year-old preschool children with LI and one of their parents. Phase 3 participants will include 30 parent-child dyads. All participating children will continue to receive their regular language services through their preschool SLPs, who will also participate in data collection. Intervention: P+ is an intervention that teaches parents how to use focused stimulation strategies. The training takes place online and is supported by coaching from an SLP. The website is comprised of four components: (1) training modules, (2) exemplar video clips, (3) implementation plans and other written resources, and (4) a community chat room for parent peer support with coach facilitation of discussions. The primary responsibilities of the SLP coach are to develop individualized language goals for each child, which will complement the speech-language services children are receiving in their preschool settings, and aid parents' understanding and implementation of focused stimulation. Research Design and Methods: The research team will conduct this project in three phases. In Phase 1, the research team will develop an initial version of P+ in partnership with parent and educator advisory boards and an expert consultant. After initial feedback, a small sample of additional parents will review the website and materials, and assist in pilot testing the P+ fidelity measure to be used in subsequent implementation phases. In Phase 2, the research team will assess usability, feasibility, and fidelity of implementation. Following an initial home visit by a coach, the parents will begin their training and partnership for implementing the intervention with the coach. Data will be collected from the website, coaching logs, parent logs, interviews, and coach-parent interactions through videoconferencing. Data collected during this phase, as well as additional feedback from the advisory boards and consultant, will lead to revisions in the intervention. In Phase 3, the research team will pilot test the intervention through a matched randomized design in which 30 parent-child dyads will be assigned to either the P+ or control condition. The research team will collect data at baseline, immediately post intervention, and 3 months following the intervention. Control Condition: The control group will receive business-as-usual speech-language services according to their IEP. Following the conclusion of the pilot study, the control group will have access to the P+ website. Key Measures: The Kaufman Assessment Battery for Children and the Clinical Evaluation of Language Fundamentals—Preschool (CELF—P) Core Language Index will be used as screening measures for participant eligibility. Primary child outcome measures include the Word Structure, Sentence Structure, and Expressive Vocabulary subtests of the CELF—P and natural language samples from structured interactions between the child and the parents and researcher. Parents' fidelity measures include coaching and parent logs, data collected from the website, and videos of parent-child interactions. Coach fidelity measures include videos of coach-parent interactions and the coaching log. Feasibility will be assessed through interviews with parents and their children's SLPs, including their perceived sustainability of the intervention. Quality of the classroom language environment will be assessed using a time-sample observational measure, Language Interaction Snapshot. SLPs will also complete a weekly log that will provide information on child experiences with speech-language services. Data Analytic Strategy: Qualitative methods will be used to gather, transcribe, and code natural language samples, videos, and interviews. The research team will conduct descriptive analyses to examine the feasibility and fidelity of P+. The pilot study will use hierarchical regression analyses to determine the promise of P+ for improving parents' fidelity of implementation of focused stimulation strategies and child language outcomes.

Parent-implemented Language Intervention for Young Children with Developmental Disabilities

Romski, MaryAnn

Development and Innovation

R324A070122

3/1/2007 to 2/28/2011

Purpose: Proficient language is necessary for young children to communicate their needs. It also facilitates their social interactions. However, many young children with significant developmental disabilities are unable to acquire and use language to interact with their surroundings due to their overwhelming inability to produce or comprehend speech. Severe spoken language impairment, coupled with developmental disabilities, has profound consequences for a child's long-term development and success in school. In order to ameliorate these developmental and educational consequences, young children with language impairment need valid, specialized interventions that specifically address the scope and severity of their needs. To address this problem, researchers at Georgia State University are developing a parent-implemented augmented language intervention. The intervention is intended for young children with a range of developmental disabilities who encounter significant difficulty with speech and language. The researchers are also conducting an initial evaluation of whether the intervention improves these children's communication and school outcomes. Project Activities: Two studies will be conducted. The first study will follow up with children from a previous intervention study. The previous study compared three language interventions implemented by parents when their children were toddlers. Follow up will occur with these children who are now 6 to 9 years old to examine their progress since receiving the intervention as toddlers. In the second study, children will be given either a parent-implemented intervention that focuses on language comprehension and production or a parent-implemented intervention that focuses on only language production. Data on communication skills at three, six, and twelve months after the intervention will be collected and analyzed to determine the potential effects that the two interventions have on communication and school outcomes. Products: Expected outcomes include a parent-implemented language intervention and accompanying training materials designed to improve children's language skills; publications; and presentations. Structured Abstract Purpose: Proficient language is necessary for young children to communicate their needs. It also facilitates their social interactions. However, many young children with significant developmental disabilities are unable to acquire and use language to interact with their surroundings due to their overwhelming inability to produce or comprehend speech. Severe spoken language impairment, coupled with developmental disabilities, has profound consequences for a child's long-term development and success in school. In order to ameliorate these developmental and educational consequences, young children with language impairment need valid, specialized interventions that specifically address the scope and severity of their needs. To address this problem, researchers at Georgia State University are developing a parent-implemented augmented language intervention. The intervention is intended for young children with a range of developmental disabilities who encounter significant difficulty with speech and language. The researchers are also conducting an initial evaluation of whether the intervention improves these children's communication and school outcomes. Setting: The research will be conducted at Georgia State University and in the homes of young children with disabilities in Georgia. Population: There are two samples of children. The first sample includes 60 children who are six to nine years old, have developmental disabilities, and have previously participated in a longitudinal study of parent-implemented language interventions during their toddler years. Approximately 50 toddlers will comprise the second sample. The toddlers are 24 to 36 months old; are not speaking; and have significant developmental delays, primitive intentional communication abilities, upper extremity gross motor skills that permit them to touch symbols on a speech-generating communication device, and a primary disability other than delayed speech and language impairment, deafness/hearing impairment, or autism. Intervention: A parent-implemented augmented language intervention that focuses on language comprehension and production will be developed. The interventionist and parents will use a speech-generating device to provide communication input to the child, and the child will use it to produce communication. The intervention will take place over 12 weeks with two sessions per week. For 9 weeks, sessions will occur in a laboratory setting, and for three weeks, sessions will take place in the child's home. Each session will last for 30 minutes and consist of three 10-minute blocks of play, book reading, and snack time in that order. A set of targeted vocabulary words will be chosen for each child by the parent and project staff. Parents will receive an intervention protocol manual with weekly materials that include goals for the parent, interventionist, and child. For the first 4 weeks (8 sessions), the parents and a speech-language pathologist will observe the interventionist implementing the intervention with the child. During the observations, the speech language pathologist will highlight strategies used by the interventionist. Beginning in the fifth week, the parent will join intervention sessions on a limited basis. Parents will lead entire 30 minute sessions, including the intervention sessions conducted in the child's home, beginning in the eighth week. Research Design and Methods: Two studies are being conducted. The first study is a continuation of a previous intervention study comparing three types of parent-implemented language interventions during the toddler years. Follow up will occur with children who participated in the original longitudinal study and are now 6 to 9 years old. This study will investigate the course a child takes given his or her unique early communication experiences. In the second study, approximately 50 children will participate over three years. Half of the children will be randomly assigned to the newly developed intervention that focuses on language comprehension and production and half to a language production control condition. Within each intervention group, half of the children will be randomly assigned to receive the intervention immediately and half to receive the intervention in three months. Communication skills at three, six, and twelve months after the intervention will be assessed. Control Condition: The comparison intervention will focus on only language production. Children in the comparison condition will use a speech-generating device to communicate. The device will not be used for language comprehension. Key Measures: Outcome measures for both studies include measures of general development, and communication, language, and literacy development. In addition, data on parent perceptions of child experiences and development and information related to the child's medical, assessment, and intervention histories will be gathered. Finally, for the first study, a copy of the child's Individualized Education Program (IEP) will be obtained. Data Analytic Strategy: Multiple statistical analysis techniques will be used to analyze the data from the first study to illustrate how children's development, particularly communication skills, changed based on the type of intervention received. In addition, multiple regression techniques, analysis of variance, and analysis of covariance will be used in the second study to determine the (a) the potential efficacy of the speech comprehension and production intervention as compared to the language production control condition; (b) differences on outcomes between children who received the intervention immediately and those who received the intervention in three months (within each condition); and (c) children's growth in communication skills over time.

Parent-Implemented Social-Pragmatic Communication Intervention for Young Children with Developmental Disabilities

Angell, Maureen

Development and Innovation

R324A090005

3/1/2009 - 2/29/2012

Co-Principal Investigators: Hedda Meadan-Kaplansky and Julia Stoner Purpose: Many young children who have been identified with developmental disabilities including mental retardation, Down syndrome, and autism spectrum disorders, exhibit speech-language delays along with other impairments inherent in their diagnosed disabilities. Various interventions cited in the literature target the communicative and social behavior of school-aged children with developmental delays; however, there is limited information about these types of interventions for very young children with delays. Given that there are about one million infants and children through age five receiving early intervention and early childhood special education services under the Individuals with Disabilities Education Improvement Act, and that the number of young children identified with autism spectrum disorders is rising, there is a clear need to develop interventions that can be used with this age group. The purpose of this project is to develop and document the feasibility of an intervention to improve the social-pragmatic communication skills of young children with developmental delays. Social-pragmatic communication skills involve the ability to interpret and send appropriate verbal and nonverbal messages (e.g., eye contact, facial expressions, and body language) for successful communication exchanges in social environments. This intervention will be naturalistic, using the social context of naturally occurring interactions within everyday family activities. Because individuals with developmental delays often exhibit difficulty with generalization, strategies that promote skill generalization to untrained settings, people, and conditions (e.g., beyond the home) will be targeted. Project Activities: In the first year, the development team will recruit, meet with, and observe participating families to develop individualized objectives, materials, and training and coaching plans. The team will develop intervention materials that will include handouts with definitions and examples for each strategy, an action plan guide, and descriptions of various intervention scenarios for discussion. In the second and third years, training materials and procedures will be refined and improved based on input from participants and consultants. When parents have successfully completed the training sessions, one member of the development team will coach the parents in the use of the specific strategies in their home environments. Researchers will code videotaped training and implementation sessions for fidelity. Throughout the project period, researchers will interview and survey both parent participants and project consultants about the feasibility, appropriateness, and importance of the intervention strategies. Performance data on both parents' and children's behavior will be collected throughout the project to evaluate the feasibility and outcomes of the social-pragmatic skills intervention program. Researchers will also assess generalization and maintenance of the behaviors for parents and children. Products: At the end of the project, this intervention involving parent-implemented social-pragmatic communication skills will be fully developed. It will include prototypes of all materials needed for the implementation of the intervention in home settings and strategies for implementing the intervention with diverse families. Outcome data as well as data on participants' perceptions of the feasibility, appropriateness, and importance of the strategies will be available to assess the promise of the intervention for improving social-pragmatic communication skills of young children with developmental delays. Structured Abstract Setting: The developing intervention will be implemented by parents in their homes in three counties in Illinois. The households will be socioeconomically, culturally, and linguistically diverse. Population: Six to eight children, aged two to five who have developmental disabilities with limited expressive language and their parents, will be selected to participate in each of the three study years, for a total of 18 to 24 children and their parents. Intervention: Parents will be trained in four naturalistic strategies: (1) Modeling, in which parents present verbal cues or models for their child to imitate, and provide corrective or positive reinforcement; (2) Mand-modeling, in which parents present verbal prompts in the form of a question (e.g., "What do you want?") or choice (e.g., ". . . this or that?"), or mand (e.g., "Tell me what you want"); (3) Naturalistic time delay procedures, in which parents establish joint attention with their children and then wait for their children to initiate requests, responses, or comments. Parent follow-up is prescribed, depending on their child's response (e.g., parent provides child with the desired object) or non-response (e.g., parents model request); and (4) Incidental teaching strategies, in which parents arrange children's natural environments to encourage their child to request objects, activities, or assistance. Parents respond to their child's requests with models, mands, or delays for more elaborated responses or for a target level response. Parents will also be trained in five visual strategies that may provide cues to prompt or remind children to engage in a behavior or prepare them for an activity. These strategies include: (1) Visual schedules, such as those used to represent the order of activities during an afternoon; (2) Visuals to structure the environment, such as those that represent the place of a specific item or the task to be completed in a specific location; (3) Visual scripts, for example, scripts a child may use to calm down or ask for help; (4) Rule reminder cards, which represent rules such as putting a book back on a shelf after reading it; and (5) Visual task analysis, which involves the use of visuals that demonstrate each step of a procedure (e.g., hand washing). Researchers will first assess parents' use of these naturalistic and visual strategies. In collaboration with parents, social-communication objectives appropriate for their children's home routines (e.g., meal time, free play) will be identified. The intervention and related materials will be individualized to meet the needs of each participating family. Parents will receive training only on those strategies for which they did not reach the mastery performance criterion in the baseline assessment. Research Design and Methods: Researchers will use single case research methodologies. A multiple baseline design across families will be used to assess the feasibility and promise of the intervention. In addition, a multiple probe design will be used within each family with a new strategy being introduced after the prior one has been mastered. Independent and dependent variables will be recorded throughout the baseline, intervention, and post intervention phases. Observers will record the number and types of behaviors occurring within 15-second intervals. Control Condition: There is no control condition. Key Measures: Data on the intervention materials and procedures will be collected throughout the 3-year project from both parent participants and project consultants via qualitative interviews and surveys. In addition, observation data on both parents' and children's behavior will be collected to evaluate the feasibility and outcomes of the developed social-pragmatics skills intervention program. Standardized measures of communication and symbolic skills of young children will be administered pre-, mid-, and post-intervention. A measure of family life quality will also be administered pre-, mid-, and post-intervention. Data Analytic Strategy: Data related to the appropriateness and importance of the strategies will be collected and analyzed qualitatively by asking parents and professionals to view intervention sessions and to give feedback on their perspective of the feasibility of intervention implementation. Interviews with these parents and professionals will be audio taped and analyzed for emergent themes. All data collected within the multiple probe design will be analyzed using visual inspection of the graphed data. Mean, trend, magnitude, latency, and stability will be considered when analyzing change in adjacent phases as well as across all phases. Time series analyses and effect size calculations will be conducted to compare the data from each phase of the project for each individual participant as well as the group of participants to identify changes in behavior over the course of the intervention. Publications Journal article, monograph, or newsletter Angell, M.E., Meadan, H., and Stoner, J.B. (2012). The Experiences of Siblings of Individuals With Autism Spectrum Disorders. Autism Research and Treatment, 2012: 1–11. doi:10.1155/2012/949586 Full text Meadan, H., and Daczewitz, M. (2014). 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Journal of Developmental and Physical Disabilities, 26(4): 415–430. doi:10.1007/s10882–014–9376–2 Stoner, J.B., Meadan, H., and Angell, M.E. (2013). A Model for Coaching Parents to Implement Teaching Strategies With Their Young Children With Language Delay or Developmental Disabilities. Perspectives on Language Learning and Education, 20(3): 112–119. doi:10.1044/lle20.3.112 Stoner, J.B., Meadan, H., and Angell, M.E. (in press). Parent Perspectives on Home-Based Intervention for Young Children With Developmental Disabilities: The Parent-Implemented Communication Strategies (PiCS) Project in Illinois, USA. Journal of the American Association of Special Education Professionals. Stoner, J.B., Meadan, H., Angell, M.E., and Daczewitz, M. (2012). Evaluation of the Parent-Implemented Communication Strategies (PiCS) Project Using the Multiattribute Utility (MAU) Approach. Educational Assessment, Evaluation and Accountability, 24: 57–73. doi:10.1007/s11092–011–9136–0

Preschool First Step to Success: An Efficacy Replication Study

Feil, Edward

Efficacy and Replication

R324A150221

4 years (7/1/2015-6/30/2019)

Co-Principal Investigator: Hill Walker Long-Term Follow-Up Award: 3 Years (FY 2020–FY 2022), $1,261,392 Purpose: The purpose of this project is to replicate, via a randomized controlled trial, the efficacy of the preschool adaptation of the First Step to Success intervention for improving child behavior and social skills outcomes, as well as the overall school readiness, of preschool children who are at high risk for the development of oppositional and conduct disorders. There is a need to intervene early with young children who are exhibiting early signs of these disorders, before the severity and intensity of their problems increase. Results from a prior efficacy trial provide promising evidence that participating in Preschool First Step to Success (PFS) reduces children's problem behaviors and increases their social skills, and this project aims to replicate those findings with a diverse population of students. Project Activities: In Years 1–3 of the study, 50 early childhood program centers across two sites serving low-income families were recruited into three cohorts. Early childhood program centers were randomly assigned to a PFS or control condition. A total of 160 low-income children, their families, and their teachers participated. In the fall of each year, teachers identified students in participating classrooms who exhibited serious externalizing behaviors. Baseline data collection was completed prior to randomization and outcome assessments were conducted at (1) post-intervention, (2) approximately 2 months after completion of the intervention, and (3) a year later. To examine longer-term impacts of PFS, the research team received $1,261,392 in additional funding to collect follow-up data through third grade for all students. Products: The products of this project will include evidence of the efficacy of PFS on student behavioral and school readiness outcomes for preschool children who are at high risk for the development of oppositional and conduct disorders. They will also include peer-reviewed publications and presentations. Structured Abstract Setting: The research is taking place in Head Start settings in Oregon and a variety of early childhood programs (e.g., Head Start, Early Childhood Special Services) in Kentucky. Sample: From within 50 early childhood program centers, a total of 160 low-income preschool children (ages 3–4) with problem behaviors that put them at high risk for the development of oppositional and conduct disorders, the children's families, and their teachers participated in this study. Intervention: The Preschool First Step to Success is based on the First Step to Success early intervention program developed originally for use with students in early elementary grades. The original intervention consists of three components, to which additional pieces were added for the preschool version. In the first component of PFS, universal screening, teachers screen all students to identify those with behavior problems. In the second component, the classroom intervention, a trained behavior coach works with participating students and their classroom peers, teachers, and parents over a 3-month period (with a booster session 1 year later) to teach appropriate social skills and behaviors. The preschool version also includes classroom management training for all teachers on positive behavior support (establishing clear expectations, teaching expectations, reinforcing expectations, minimizing attention for minor inappropriate behavior, and delivering clear consequences for unacceptable behavior) and coaching the entire class before working one-on-one with the target child. The target children receive individual rewards for acceptable behavior, as well as earn awards for the whole class (to keep the whole class motivated to participate). The final component, parent education called HomeBase, consists of a series of six weekly lessons in the home designed to enable parents and caregivers to build child competencies and skills in six areas that affect school adjustment and performance (sharing at school, cooperation, limit setting, problem solving, making friends, and developing confidence). Research Design and Methods: This study used a cluster randomized controlled trial design that nests teachers and classrooms within early childhood program centers. A total of 50 early childhood centers across two states were randomly assigned to the PFS or control condition. PFS was implemented over a 3-month period, with a booster session implemented 1 year later with the children, their parents, and their teachers. Data were collected at baseline and approximately 2 months and 1 year after the intervention to determine the immediate and distal impacts of the intervention on child outcomes and examine potential moderating and mediating factors. With additional funding, the research team will examine longer-term impacts of PFS by collecting follow-up data through third grade for all participating children. Control Condition: Children in the business-as-usual condition received instruction and services typically provided by the early childhood programs. Key Measures: Child outcomes measures of behavior included the Social Skills Improvement System, the Child Behavior Checklist, the Student-Teacher Relationship scale, and a measure of relational aggression. Child academic outcome measures included the Preschool Early Learning Indicators (PELI) for preschool and the Dynamic Indicators of Basic Early Literacy Skills for elementary school. At preschool, classroom context was assessed with the Preschool-Wide Evaluation Tool and the Classroom Assessment Scoring System. Participating preschool teachers also completed a survey about classroom characteristics; instructional practices; teacher training, licensing, and experience; and self-reports of their skills in dealing with students with behavior problems. Additionally, preschool teachers completed a survey to assess intervention acceptability/relevance, feasibility, accessibility/support, and affordability. Moderators and mediators were measured through family reports on student and family demographics, services received, and parent involvement in the child's education. School records data are also being collected (e.g., school discipline, parent conferences, attendance). At each follow-up timepoint, a procedure called School Archival Records Search—which provides a template for the systematic coding, analysis, and aggregation of data from archival school records—is implemented to examine data on risk factors for behavior disorders over time. Data Analytic Strategy: A mixed-model analysis of covariance (ANCOVA) approach will be used to examine differences between intervention and control groups at two time points on outcomes, process, and social validity measures. For analysis of data collected at more than two time points, such as the estimation of maintenance of intervention effects at the within-year follow-up and long-term follow-up assessments, random coefficient models (RCA), an extension of the mixed-model ANCOVA, are used. Both mixed-model ANCOVA and RCA account for the nesting of classrooms within buildings. Related IES Projects: Early, Evidence Based Intervention for Severe Behavior Problems: First Step to Success (H324P040006); Early, Evidence-Based Intervention For Externalizing Behavior Problems in School: From Efficacy to Effectiveness of the First Step to Success Program (R324B060003); Enhanced First Step to Success: Improving School Readiness for Children with Disruptive Behavior (R324A090237); Efficacy of Enhanced First Step to Success Intervention for Tertiary-Level Students with Disruptive Behavior (R324A150179) Publications Journal article, monograph, or newsletter Feil, E. G., Small, J., Frey, A. J., Seeley, J., Walker, H. M. Golly, A., and Forness, S.R. (2016). Early Intervention for Preschoolers at Risk for Attention-Deficit/Hyperactivity Disorder: Preschool First Step to Success. Behavioral Disorders, 41(2): 95–106. doi:10.17988/0198–7429–41.2.95 Frey, A. J., Small, J., Feil, E. G., Seeley, J., Walker, H. M., and Forness, S. (2015). 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Professional Development of an MTSS Model for Early Childhood Educators to Prevent Reading Disabilities

Goldstein, Howard

Development and Innovation

R324A170073

3 years (07/01/2017 – 06/30/2020)

Purpose: This project will develop a professional development (PD) model to support teachers in implementing an early literacy Multi-Tiered System of Supports (MTSS) in early childhood classrooms to improve reading outcomes for children who are at risk for reading disabilities. MTSS provides varying levels (tiers) of instruction to students based on assessments that are used in data-based decision making by educators. Early childhood educators are rarely provided instruction in the philosophy and fundamentals of explicit instruction, curriculum-based assessment, data-based decision making, and individualized instruction. Thus, there is a critical need for feasible, effective, and sustainable PD that prepares early childhood educators to implement an MTSS model to support students in learning to read as they enter kindergarten and beyond. This project aims to reduce preventable reading disabilities by improving the ability of educators to implement an early literacy MTSS model. Project Activities: An iterative process will be used to develop an efficient, promising, and sustainable PD model to prepare early childhood teachers to implement an early literacy MTSS model. Data from focus groups, interviews, surveys, and observational measures will be used to inform the development and revision of the PD model and assess its feasibility. A small cluster randomized controlled trial will investigate the promise of efficacy of the PD model for improving educators' implementation of an early literacy MTSS model and, ultimately, children's literacy outcomes. Products: The products of this project include a fully-developed PD model (including the tools and materials associated with the model) aimed at improving educators' implementation of MTSS and children's literacy outcomes as well as presentations and peer-reviewed publications. Structured Abstract Setting: The research will take place in pre-kindergarten classrooms and child care centers in Florida. Classrooms will be recruited from predominantly high-poverty communities. Sample: Classrooms of teachers, paraeducators, and children with delayed early literacy skills will participate in the development and evaluation of the PD model. This includes 6 pre-kindergarten classrooms in Year 1, 12 in Year 2, and 24 in Year 3, leading to the expected participation of 84 teachers and paraeducators. Approximately 630 preschoolers will be screened and an estimated 168 will demonstrate persistent early literacy delays that qualify them for standard treatment protocol interventions to participate in the study. Intervention: The PD model will include a decision-making framework to assist teachers in moving children through tiers of instructional protocols in early literacy and standard treatment protocols that have been shown to be effective in improving phonological awareness and alphabet knowledge skills. The primary components of the intervention include the following: (a) problem-based learning and video modeling in online learning modules, (b) an Electronic Data Management and Expert Decision Making (EDM2) system, (c) in-class coaching support, and (d) standard treatment protocols to provide Tier 2 and Tier 3 support for teaching early literacy skills. Coaches will instruct, observe, and provide feedback to teachers as they learn to (a) use curriculum-based measures that align with learning objectives, (b) use data to identify students who require more intensive instruction and to shape instruction, (c) implement evidence-based standard treatment protocols with high fidelity for students requiring Tier 2 or Tier 3 instruction, (d) use progress monitoring tools to measure children's responses to intervention, and (e) use data from assessments to move children fluidly among appropriate tiers of instruction. Brief online problem-based learning modules that present authentic classroom challenges associated with MTSS and model their solutions will be used to prepare educators to strengthen problem-solving skills and apply components of the framework. To improve the ease and accuracy of identifying struggling children, the research team will develop a computerized data management system (EDM2) wherein teachers can input assessment results and the output will direct them towards instructional needs and future assessments. Research Design and Methods: In Years 1 and 2, an iterative model will be used to develop the PD intervention. Focus groups will provide initial input on early literacy MTSS PD content deemed most beneficial to address, identify examples of problems teachers face to be incorporated into problem-based learning case studies, and select the student assessments to input into the development of EDM2 system. Four cycles of development (of PD modules, coaching components, and EDM2), educator feedback, and field testing and evaluation will be used to prepare for the pilot study. In Year 3, a small cluster randomized controlled trial with 24 classrooms (12 treatment and 12 control) will be used to evaluate the promise of the PD program. Group differences in intervention and control teachers' implementation of MTSS, perceptions of acceptability and value of treatment, and fidelity of implementation of early literacy instruction will be examined. In addition, children in the intervention and control group with persistent delays in early literacy skills will be compared on curriculum-based measures and standardized tests of phonological awareness and alphabet knowledge skills. Moderating effects of teacher and student characteristics will also be explored. Control Condition: For the Year 3 pilot study, educators in the control condition will receive general training on MTSS without a focus on early literacy standard treatment protocols and the associated decision-making framework. Key Measures: Measures will include assessments of educators' implementation of key MTSS features (i.e., EDM2 system data on use of assessments and student receipt of treatment protocols, fidelity self-assessment rubric, observation checklist), social validity (semi-structured interviews and surveys), coaching fidelity (observation checklist), as well as data on the use of the EDM2 system and PD engagement (tracking of activities, surveys). Students will be screened using the Preschool Early Literacy Indicator. Three Dynamic Indicators of Basic Early Literacy Skills subtests (First Sound Fluency, Word Part Fluency, and Letter Naming Fluency) and the Letter Sound Short Form will be used to monitor students' progress. During intervention, weekly researcher-developed curriculum-based measures will assess mastery of blending, segmenting, first word part identification, first sound identification, and alphabet knowledge. Pre-post early literacy assessments will include the Alphabet Knowledge subtest of the Phonological Awareness Literacy Screening-PreK; the Phonological Awareness subtest of the Test of Preschool Early Literacy; and Florida's Voluntary Pre-K Assessment. Data Analytic Strategy: In Years 1 and 2, content analysis and descriptive statistics will be used to summarize focus group and interview data during the iterative development process. For the pilot study, Generalized Linear Modeling will be used to compare growth in teacher MTSS implementation and perceptions and satisfaction between groups. Due to the nesting of students within classrooms, Generalized Linear Mixed Effects Modeling will be used to assess associated student outcomes. Analyses will also be conducted to determine whether teaching variables (e.g., dosage), implementation fidelity, or child characteristics (e.g., oral language) moderate the impact of the PD model on student outcomes. Related Projects: Center for Response to Intervention in Early Childhood (R324C080011)

Professional Development to Support Intervention Implementation of the Promoting Communication Tools for Advancing Language in Kids (PC TALK) for Infants and Toddlers at Risk for or with Disabilities

Bigelow, Kathryn

Development and Innovation

R324A190223

4 years (07/01/2019-06/30/2023)

Co-Principal Investigators: Walker, Dale; Irvin, Dwight Purpose: The goal of this project is to design and test a professional development (PD) framework to support implementation of Promoting Communication Tools for Advancing Language in Kids (PC TALK), an existing intervention aimed at supporting parents in improving the language learning opportunities and outcomes of infants and toddlers with or at risk for disabilities. Research has documented the association between early opportunities to learn and practice language in daily interactions and later language/literacy development. Although there are evidence-based language strategies for caregivers to use with infants and toddlers, many children and families do not reap the benefits of these interventions due to low levels of implementation fidelity among early intervention providers. PD and coaching are key to ensuring effective implementation of intervention strategies. This project aims to improve provider implementation of PC TALK and, in turn, children's language outcomes, through PD, coaching, and additional technology-based tools. Although PC Talk has demonstrated efficacy in community settings, this study expands upon prior findings by developing a PD framework to support implementation of the intervention in more naturalistic home settings. Project Activities: In Year 1, the research team will develop the PD approach and related intervention components based on user and expert feedback. In Year 2, the team will implement the suggested changes and field test the revised model. In Year 3, single-case design studies will be used to identify the level of coaching needed to best support provider use of PC TALK. In Year 4, a randomized controlled trial will be used to determine the promise of the refined PC TALK intervention – with the new PD model, coaching, and tools – for improving provider implementation fidelity, parent fidelity of language strategies, and children's language outcomes. Products: The products of this project will include a fully developed PD model for early interventionists and home visitors who implement PC TALK with families and evidence of its promise for improving language outcomes in infants and toddlers with or at risk for disabilities. The project will result in peer-reviewed publications and presentations as well as additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: This research will take place in home-based Early Head Start as well as early intervention programs, funded by Part C of the Individuals with Disabilities Education Act (IDEA), in Kansas. Sample: Participants will include 76 providers (Part C early interventionists and Early Head Start home visitors) along with 204 infants and toddlers (ages 10-24 months) with or at risk for disabilities and their families. Of these participants, 60 providers and 180 child-parent dyads will participate in the pilot study. Intervention: A PD model and associated coaching and tools will be developed to improve implementation of PC TALK. PC TALK is a manualized set of language-promoting strategies and tools that home visitors and interventionists use to guide caregivers in promoting children's communication skills through natural interactions in daily routines. In addition to the manual, PC TALK uses video demonstrations of strategies, poster reminders, activity cards, self-checklists, an observation system to measure fidelity, and use of technology supports (in particular, text message reminders and the Talk Round Town mobile app for real-time, location-specific prompts to use intervention strategies). During this project the overall PD framework and coaching will be developed along with the associated resources and materials. The preliminary model includes group PD sessions, video tutorials, and group coaching with feedback on fidelity. The researchers will also improve the technology-based resources to support implementation fidelity, including a new mobile app to enhance parent-child interaction measurement (for parent fidelity and child communication). Research Design and Methods: The first 2 years of the project will involve iterative intervention development, including expert and end-user feedback about the intervention's usability as well as field testing that incorporates formative feedback. More specifically, in Year 1, researchers will gather feedback on components of the PD model as well as the feasibility and usability of the critical PC TALK intervention and PD components through surveys and focus groups with expert researchers, early interventionists, and home visitors. In Year 2, the PC TALK intervention and associated PD training, coaching, and materials will be revised based on feedback from focus groups and user surveys, and the refined model will be field tested by providers working with families to determine its acceptability and usability. Researchers will also complete the development of a mobile app to collect data on parent-child communication interactions, the Promoting Communication Observation Tool (PCObs). In Year 3, the research team will conduct two multiple-baseline single-case design studies to test the refined PD framework and determine the optimal coaching frequency for improving provider implementation of PC TALK. In Year 4, the research team will conduct a randomized controlled trial to pilot test the whole intervention and PD framework. Providers will be randomly assigned to the intervention group or to a control group. Those in the intervention group will receive the PD and coaching and implement PC TALK over a period of approximately 9 months. The research team will collect data at 3-month intervals to determine implementation fidelity compared to the control group as well as the associations between provider implementation fidelity, parent fidelity of language strategies, and growth in child language outcomes. Control Condition: For the pilot study, providers in the control group will participate in general training workshops that focus on child language development and promotion but will not learn the PC TALK strategies or receive coaching and access to related tools. Key Measures: For the initial iterative development process in Year 1, data will be collected through focus groups and questionnaires. For the field testing in Year 2, the research team will use a variety of measures to assess implementation fidelity, including the Coaching Implementation Checklist for coaching fidelity, the PC TALK Intervention Checklist (coding observations) for provider fidelity, observation of coaching sessions, and web analytics of engagement with video tutorials and use of the mobile app. Focus groups and questionnaires will be used to examine acceptability, feasibility, and clarity of training and coaching. In Year 3, researchers will use the same intervention and coaching implementation checklists as Year 2, as well as a social validity questionnaire that will be collected from providers at the end of the single-case design studies. Measures for the Year 4 pilot study will use the same intervention and coaching implementation checklists and social validity scale, as well as the Evidence-Based Practice Attitude Scale to assess the openness of providers to adopt EBPs, the Promoting Communication Observational Tool (PCObs): Parent Fidelity, web analytics to document delivery of text message prompts, a family demographic interview, and a provider survey to assess professional background. Primary child language outcomes for the pilot study will be measured through the Early Communication Indicator (observational progress monitoring tool), Preschool Language Scale – 5th Edition (auditory comprehension and expressive communication), PCObs: Child Communication (observations of parent-child communication interactions), and Language Environments Analysis (LENA; digital language processor and speech recognition tool). Data Analytic Strategy: Data from the Year 1 focus groups will categorized, coded, and used to identify themes related to the intervention's acceptability, feasibility, and clarity. Questionnaire data will be combined with the qualitative data to triangulate responses. For Year 2, data from observations, surveys, and focus groups will be compiled and summarized for the research team to use in making revisions. Survey data will also be analyzed descriptively. The single-case design studies in Year 3 will be analyzed using visual analyses and calculation of effect sizes. Multilevel growth curve analysis will be used for the Year 4 pilot study to examine the extent to which the PD and coaching framework improve providers' implementation fidelity, and the relationships between provider fidelity, parent fidelity, and children's language growth.

Professional Development to Support Teachers' Implementation of a Tiered Model for Promoting Social-Emotional Development of Infants and Toddlers

Bigelow, Kathryn

Development and Innovation

R324A170118

4 years (07/01/2017-06/30/2020)

Co-Principal Investigators: Judith Carta; Mary Louise Hemmeter (Vanderbilt University) Purpose: The purpose of this project is to support teachers' implementation of a tiered model for promoting social-emotional growth in infants and toddlers by adapting an existing evidence-based tiered model and refining a professional development (PD) approach to support the teachers' implementation. Many early childhood teachers lack important skills for supporting children's early social-emotional development. As a result, many children enter kindergarten with or at high risk for challenging behavior that puts them on a trajectory for continuing behavioral and academic problems. Although an array of prevention-based tiered approaches are available for promoting social-emotional competence in preschool-aged children, none have focused on infants and toddlers. The current project will be the first to develop a three-tiered model withPD aimed at supporting teachers' implementation of tiered instruction to promote the social-emotional development of infants and toddlers. The Infant-Toddler Pyramid Practices (based on the Pyramid Model for preschoolers) will include PD to support teachers' implementation of three tiers of instructional practices, including instructional/caregiving practices for high-quality environments for all children, universal screening for behavioral or social-emotional delays, higher tiers of intentional teaching of social-emotional skills, progress monitoring for children in the higher tiers, and a decision-making model to determine appropriate intervention for children's changing social-emotional functioning. Project Activities: The project will begin with the iterative process of developing a tiered model for promoting the social-emotional development of infants and toddlers, which will include the adaptation of an existing tiered model for preschoolers and refinement of the PD approach to support teachers in implementing the model with infant and toddlers. In Years 1 and 2, the research team will partner with three advisory boards of stakeholders that will review and provide feedback on the features of each component of the tiered model and the feasibility and acceptability of the PD approach, as well as field test the components with a small number of teachers. Based on the feedback, the research team will refine the PD to support implementation, procedures for using measures to identify children who need higher levels of support, materials for use with infants and toddlers in each tier, and a decision-making framework to assist teachers in making instructional decisions. In Year 3, a randomized controlled trial will be conducted to evaluate the promise of the PD for improving teachers' implementation of the tiered model, teachers' skills in promoting growth on children's social-emotional competence, and children's reduction in challenging behavior. Products: The products of this project include a fully developed tiered model to promote social-emotional growth in infants and toddlers, including a PD approach to support teacher's implementation of the tiered model. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in infant/toddler classrooms in Kansas and Tennessee. Sample: The lead teachers in nine infant-toddler classrooms and at least six children per classroom will participate in the iterative development phase. In the pilot study, 24 infant-toddler classrooms, including 24 lead teachers and at least 6 children per room, will participate. Intervention: The tiered model for infants and toddlers, Infant-Toddler Pyramid Practices, is an adaptation of the Pyramid Model (designed to promote social-emotional development in preschoolers). The three tiers of the model include universal teaching practices for all children, secondary practices for children at risk for challenging behavior and social-emotional delays, and intensive individualized practices for children who continue to have social-emotional delays and ongoing challenging behavior despite implementation of the earlier tiers. The intervention components to be developed and refined in this project include the following: (1) PD—including group training, materials, and practice-based coaching—to support teachers' implementation of three tiers of instructional practices; (2) universal practices (Tier 1) for promoting the social and emotional development of all infants and toddlers, (3) processes for using sensitive measures to identify children who need higher levels of support, (4) Tier 2 materials for more explicit teaching of social skills, (5) Tier 3 materials for implementing behavior support plans for children who exhibit challenging behavior or social-emotional delays, and (6) a clearly defined decision-making model incorporating universal screening and progress monitoring to assist teachers in making instructional decisions to provide appropriate levels of support at all tiers. Research Design and Methods: In Years 1 and 2, the research team will partner with three advisory boards, each representing a different group of stakeholders (expert researchers, program administrators and teachers, and families) to obtain feedback on the features of each component of the model. The team will also field test components with nine lead teachers and the infants/toddlers in their classrooms. Based on the input and feedback, the research team will further develop/modify the three-tiered model with its PD approach, accompanying materials for each tier, and procedures for identifying children for higher tiers and making instructional decisions about the appropriate level of support. For the Year 3 pilot study, researchers will use a randomized controlled trial to evaluate the feasibility and promise of the tiered model with its PD approach for improving teacher implementation and student social-emotional outcomes. Teachers will be randomly assigned to the intervention or control condition. Teachers assigned to the intervention will participate in the PD and implement the full tiered model with the children in their classrooms. Baseline data on classrooms, teachers, and children will be collected before PD training; teacher fidelity data will be collected on a regular schedule throughout the school year; and child outcome data will be collected mid- and post-intervention. Data will be analyzed to determine the impact of the tiered model with PD on teachers' implementation of the evidence-based practices that promote children's social-emotional development, as well as children's growth in social-emotional competence and reductions in challenging behavior. The study will also evaluate changes in teacher stress and teacher engagement with families. Control Condition: The pilot study will use a business-as-usual control group in which teachers receive only the PD typically provided by their center. Key Measures: In the iterative development phase, data will be collected through surveys and focus groups on the acceptability of the PD approach, feasibility of the tiered instructional practices, clarity of the coaching, barriers to implementation, and other supports that will be needed to implement the tiered model. In the pilot study, the Teaching Pyramid Infant-Toddler Observation Scale will be used to assess teachers' use of Tier 1 practices. Teacher fidelity of Tiers 2 and 3 instruction will be assessed by researcher-developed fidelity measures. Teachers' engagement with families will be assessed with the Self-Assessment of Family Engagement Practices, teacher stress will be assessed by the Maslach Burnout Inventory, and teacher readiness to implement evidence-based practices will be measured by the Evidence-Based Practice Attitude Scale. Classroom and teacher demographics will also be collected. In terms of child outcomes, social-emotional development will be assessed by the Devereux Early Childhood Assessment for Infants and for Toddlers and the Early Social Indicator will be used to track improvements in child social-emotional competence. Children's challenging behavior will be assessed using the Target Child Observation System. Data Analytic Strategy: The iterative development will follow qualitative case study procedures for analyzing input from key stakeholders on the components of the tiered model with the PD approach. For the pilot study, the research team will use descriptive, cross-sectional, and longitudinal analytic approaches, including growth curve modeling, to examine the impact of the model on teachers' implementation fidelity and whether fidelity moderates the impact of the intervention on children's social-emotional growth, reduction of challenging behaviors, family engagement, and teacher stress. Analyses will also be conducted to determine whether fidelity moderates the relationship between the child outcomes and teacher stress. Project Website: https://prism.ku.edu/

Project Early Reading Intervention

Simmons, Deborah

Efficacy and Replication

R324E060067

6/1/2006 to 5/31/2010

Purpose: The purpose of this project is to evaluate the efficacy and study systematic variations of delivery intensity for the Early Reading Intervention (ERI), a commercial program that is designed for kindergarten children at risk of reading difficulty and used in more than 4,000 school districts in all 50 states. Also, the researchers intend to sample participating schools to capture a broad range of demographic diversity and to evaluate ERI's efficacy in sites distal to ERI developers. Project Activities: The researchers are using experimental randomized controlled field trials to gain information regarding the efficacy, replicability, and durability of student effects. Research will be conducted in three states (TX, FL, and CT), and participating schools have high concentrations of socioeconomically disadvantaged children from three predominant ethnicities: African American, Hispanic, and White NonHispanic. Over 4 years, 26 schools, 108 kindergarten teachers, 26 intervention teachers, and 624 kindergarteners will participate. Main effects and interactions will be tested using latent growth modeling methods, hierarchal linear modeling, and structural equation modeling. Also, the researchers will identify factors that moderate and mediate effects to determine the conditions necessary to effect student achievement. In addition, the study will examine ways to intensify the ERI program for children who do not respond adequately to conventional small-group delivery. Finally, cost/benefit analyses will also be conducted. Products: The expected outcomes from this study include: Published reports on the efficacy of the ERI program in 52 kindergarten classrooms; information on variables among children, teachers, and interventions that mediate or moderate the impacts of the intervention; and results on the varied intensity of delivery for the ERI program, Presentations on identified "profiles" of curricular and learner variables that best predict nonresponsiveness or underresponsiveness, and A cost analysis of the ERI program comparing the various experimental conditions. Purpose: The purpose of this project is to evaluate the efficacy of Early Reading Intervention (ERI), a commercial program that is designed for kindergarten children at risk of reading difficulty and used in more than 4,000 school districts in all 50 states. In addition, systematic variations of the delivery intensity of ERI will be studied. Setting: Participating schools will be located in Texas, Florida, and Connecticut. Population: During the project period, 26 schools, 108 kindergarten teachers, and 624 kindergarteners will participate. Participating schools will have high concentrations of socioeconomically disadvantaged children from three predominant ethnicities: African American, Hispanic, and White Nonhispanic. The study will focus on the performance of the 4 lowest performing children from each class since they are most at risk of reading difficulty. Intervention: ERI is designed to provide at-risk kindergarten children with an intervention intended to improve reading achievement through supplementing the general education curriculum. A teacher or teacher assistant delivers 30-minute daily lessons to small groups of two to five children. Each 30-minute lesson consists of seven activities, which are designed to last only three to five minutes. The first 15 minutes of each lesson focus on phonological awareness and alphabetic understanding, while the next 15 minutes center on writing and spelling. A comprehensive assessment plan is an important part of this intervention. An assessment handbook that accompanies ERI provides teachers with tools needed to make instructional decisions before the intervention is implemented (the placement test), during the intervention (progress monitoring), and after the intervention is completed (an exit test). Research Design and Methods: In Years 1 and 2, an experimental study will be conducted with teachers being randomly assigned to ERI or typical school implemented interventions to test the efficacy of the ERI intervention. In Year 1, research will be conducted in Texas and Connecticut in sites close to ERI developers, while in Year 2, research will be conducted in Florida at distal sites. Children will be followed through second grade to evaluate durability of intervention effects. In Years 3 and 4, students most at risk of inadequately responding to ERI will be randomly assigned to one of two forms of ERI in order to examine ways of intensifying the program. Control Condition: In Years 1 and 2, children in the comparison group will not receive treatment but continue with intervention support typically provided by their schools. Key Measures: The efficacy of ERI will be evaluated on a range of standardized, norm-referenced measures of phonemic awareness, letter naming, letter-sound and word identification, word attack, oral reading fluency and comprehension. In addition, data related to fidelity and costs of intervention implementation will be collected. Data Analytic Strategy: Quantitative data analysis techniques, including latent growth modeling methods, hierarchical linear modeling (HLM), and structural equation modeling, will be utilized to test main effects of the ERI program and its intensified versions and to identify factors that mediate and moderate these effects. Publications Journal article, monograph, or newsletter Clemens, N.H., Oslund, E.L., Simmons, L.E., and Simmons, D.C. (2014). Assessing Spelling in Kindergarten: Further Comparison of Scoring Metrics and Their Relation to Reading Skills. Journal of School Psychology, 52(1): 49–61. doi:10.1016/j.jsp.2013.12.005 Coyne, M.D., Little, M.E., Rawlinson, D.M., Simmons, D.C., Kwok, O., Kim, M., Simmons, L.E., Hagan-Burke, S., and Civetelli, C. (2013). Replicating the Impact of a Supplemental Beginning Reading Intervention: The Role of Instructional Context. 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Project Engage: Developing a Cloud-Based Measurement System for Data-Informed Implementation of Practices Promoting Children's Active Engagement

Johnson, LeAnne

Measurement

R324A170032

4 years (9/1/2017–8/31/2021)

Co-Principal Investigator: Joseph Rios Purpose: This project will develop a technology-enhanced observation system, the Tool to Observe Practices and Supports for Engagement (TOPSE), to simultaneously monitor and promote the use of essential provider interaction practices while measuring children's active engagement within early learning environments. Children's engagement with their environment is an essential ingredient for learning, and hence crucial to preschool child outcomes including school readiness. Although global classroom quality measures aid in creating foundations for learning, children with developmental delays and disabilities need educators to supplement and augment universally applied, high-quality classroom practices. Educators may need unique data and professional development to promote specific practices that serve the unique and often differentiated needs of young children within authentic daily routines. This project will address this need by designing a psychometrically sound observation and data-driven feedback system that can be used in a broad array of early learning environments to support educators' use of interaction practices that promote active engagement in learning for children with and without disabilities and improve children's outcomes. Project Activities: An iterative process will be used over the course of the project to develop and validate the TOPSE. In Year 1, a blueprint specifying the factors and structure of the system will be created, followed by the development of items that will be repeatedly tested in classrooms representing a broad array of different learning environments. In Year 2, the first technology-based version of the system will be tested in a laboratory setting, followed by testing in authentic early learning environments to begin examination of administration, standardization, and validation. Years 3 and 4 will focus on refinement of administration and standards as well as validation of feasibility and use. This process will involve repeated observations within different classroom routines to refine and enhance the system's psychometric properties, and most importantly, the feasibility and use of the system as a tool for delivering data-based and targeted professional development. Products: The primary product of this project will be a fully developed cloud-based observation system, the TOPSE, for use in a broad array of authentic early learning environments to guide and monitor the use of provider-child interaction practices that promote active engagement in learning for children with and without disabilities. The products will also include peer-reviewed publications and presentations. Structured Abstract Setting: Development of the TOPSE will begin in laboratory and controlled classroom settings before being further refined and tested in authentic early childhood classrooms that include preschoolers who are receiving early childhood special education (ECSE) services. Classrooms will be located in Minnesota and will represent a broad array of service delivery models (e.g., inclusive classrooms, dedicated ECSE), instructional paradigms (e.g., adult-directed, child-directed), and educator experience (e.g., team working together for years, new class team). Sample: Over the course of 4 years, approximately 300 observers (novice and experienced educators), 200 preschool classrooms, and an estimated 1,500 children (ages 3-5) with and without disabilities and/or developmental delays will be involved in the research. Assessment: The TOPSE is a technology-enhanced, cloud-based system that will support the implementation and ongoing monitoring of classroom interaction practices for promoting children's active engagement in natural routines. The TOPSE can be used for brief observation sessions across different types of classroom routines. Completion of the TOPSE will lead to automated graphic and written performance feedback within and across routines. This feedback will offer meaningful interpretations and recommendations about classroom practices in addition to the data summary and display. Unique to the TOPSE, performance feedback will explicitly link classroom practices to observed child engagement as a meaningful, proximal criterion by which to evaluate the impact of classroom practices. Research Design and Methods: A multi-phase, iterative process will guide the development and validation of the TOPSE. Phase 1 (Blueprint) will occur during Year 1 and involve development of the overall plan/blueprint, content definition, and test specifications. Phase 2 (Production) will span Years 1 and 2 and include item development, test design and assembly, and test production. Phase 3 (Administration and Scoring) will span Years 2 through 4 and include test administration/observations, scoring responses, standard setting, score reporting, item banking, and technical reporting. Phase 4 (Validation) will occur throughout Years 1 through 4 of the project and will provide information on the TOPSE's feasibility, psychometric, and utility validation. Control Condition: Due to the nature of the research design, there is no control condition. Key Measures: The primary measure used in this project is the one being developed, the Tool for Observing Practices and Supporting Engagement (TOPSE). As part of measurement development of the TOPSE, children's observed engagement using momentary time sampling on a variable schedule will serve as the primary, most proximal criterion measure. To provide a preliminary evaluation of the constructs measured by TOPSE, the Classroom Assessment and Scoring System will be used in a subset of classrooms in Years 3 and 4. Further, to provide a preliminary evaluation of the child engagement ratings on the TOPSE relative to existing measures, the Social Skills Intervention Rating System as well as three tools for monitoring children's overall development and emerging academic skills (i.e., FAST's Developmental Milestones, earlyReading, and earlyMath) will be used with a subset of children in Years 3 and 4. Data Analytic Strategy: The specific analytic approaches will vary in alignment with the intended outcomes of each phase of development. Across all phases of the iterative development process, the research team will use a combination of methods from Classical Test Theory (CTT), Generalizability Theory (GT), and Confirmatory Factor Analysis (CFA). CTT will be used to evaluate reliability, which includes internal consistency within and across factors and to estimate standard errors of measurement. Within the iterative process, this approach will also contribute to psychometric validation of the TOPSE. GT will be used in a series of generalizability and decision studies to refine measurement and scoring within and across types of settings, activities, and observers. Within the iterative process, this approach will also contribute to validation of feasibility and utility of the TOPSE. CFA will be used to test the hypothesis that the observed items represent the hypothesized factor structure and associated constructs. In addition, CFA will be used to scale the TOPSE scores. Within the iterative process, this approach will also contribute to validating the psychometric properties and utility of TOPSE. Although this project is primarily focused on development, preliminary analyses of construct, criterion, and predictive validity will be based on associating measures of interaction practices with classroom quality measures as well as associating children's engagement with measures of children's developmental skills.

Project SELECT: Social Emotional Learning in Early Childhood for Infants and Toddlers

Squires, Jane

Development and Innovation

R324A150145

4 years (9/1/2015-8/31/2019)

Purpose: The purpose of this project is to develop a social-emotional intervention, Social Emotional Learning in Early Childhood for Infants and Toddlers (SELECT) to increase the quality of key parent-child interaction skills, improve children's social-emotional skills, and ultimately improve school readiness for infants and toddlers with disabilities. Significant numbers of infants and toddlers—particularly those with developmental disabilities—have social-emotional problems that are neither recognized nor targeted for intervention. Although relationships between early social-emotional competence and later academic success have been documented, little attention has been given to the development of a curriculum-based approach aimed at evaluating important social-emotional constructs and tying the evaluation to simple, straightforward, routines-based early intervention in the home. Project Activities: This research will use an iterative process to develop an intervention for infants and toddlers and their parents in home visiting programs. Data from multiple sources, including interventionists and parents, will be used in the development process to guide revisions. The research team will document the feasibility and potential efficacy of the intervention through two types of studies. The feasibility study will consist of preliminary tests of the intervention to examine acceptability and feasibility using child performance data and provider feedback to further guide, evaluate, and enhance the intervention. The pilot study will use a single-subject multiple baseline design to examine fidelity of implementation and the promise for efficacy in enhancing parent–child interaction skills and improved child social-emotional competence. Products: The products of this project will include a fully developed intervention package aimed at improving young children's social-emotional skills and child–parent interactions, and provide evidence of feasibility, fidelity, and promise of efficacy. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: The implementation of the intervention will take place in family homes in urban and rural Oregon. The focus groups will be conducted at the university or local early intervention sites. Sample: Approximately 40 parents and their infants and toddlers (ages 2 to 36 months) who are eligible for services under Part C of the Individuals with Disabilities Education Act (IDEA) will participate in this study. In addition, eight early intervention teachers will participate over the course of this project. Intervention: SELECT will be the curricular component to a social-emotional intervention that will link directly to the benchmarks of the Social Emotional Assessment Measure (SEAM), an assessment previously developed and validated by this research team. Providers of Part C early intervention services will work with families in their homes and focus on self-regulation, communication, and adaptive functioning. SELECT will address two different age groups—infants (2 to 18 months) and toddlers (19 to 36 months). The intervention will consist of two major components. The Interventionist Strategies component is intended to guide providers in their work with parents during home visits. The Parent Activities component will provide suggestions and examples of strategies that support parents in addressing targeted social-emotional goals embedded within daily routine activities. Research Design and Methods: In the first phase of this project, the intervention will be developed and refined through three steps: 1) A team consisting of experts in social-emotional assessment and curriculum development and teachers will engage in the initial development of the intervention; 2) experts in research, early intervention, social-emotional development and assessment, parent–child interactions, and coaching will review the initial intervention and provide feedback for revisions; and 3) naturalistic intervention trials will take place in which early interventionists use the SEAM to assess children and identify appropriate social-emotional goals, implement portions of SELECT with families during home visits to address identified goals, and provide feedback on the usability and feasibility of SELECT through focus groups and surveys. The next phase includes the feasibility and pilot studies. The feasibility study will examine whether early interventionists can implement SELECT with fidelity in home settings with parents, whether this fidelity is related to parent practices, and whether the parents are able to implement SELECT strategies with their children. Feedback at this stage will further guide, evaluate, and enhance the intervention. The pilot study will examine evidence of the promise of the intervention for achieving its intended outcomes. In the first part, early interventionists will implement the revised intervention during home visits conducted weekly or biweekly with two parent–child dyads to determine fidelity of implementation (by both interventionist and parent) and whether parent–child interactions are enhanced. In the second part of the pilot study, a single-subject multiple baseline design will be used to examine changes in parenting behaviors and key child social-emotional skills. Control Condition: In the pilot study, the participants will serve as their own controls through the use of a baseline phase within a single-case research design. Key Measures: Usability and feasibility surveys will be developed by the researchers and used for early interventionists and parents after naturalistic intervention trials and the feasibility studies. Child outcome measures will include the SEAM, Ages and Stages Questionnaire: Social-Emotional (ASQ:SE), and the Infant-Toddler Social-Emotional Assessment (ITSEA). Parent–child interactions will be observed and rated using the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO). Fidelity checklists will be developed and used to rate early interventionists' use of the SELECT intervention as well as parents' implementation of SELECT strategies. Data Analytic Strategy: Data from the multiple sources during the iterative development will be used to triangulate major findings using themes to further refine the intervention and provide descriptive data on the feasibility and appropriateness of SELECT. The single-subject design studies for the pilot test will be analyzed using visual analysis and calculation of effect sizes, and the researchers will use several techniques (generalized least squares regression models, order-1 autoregressive correlation structure between residuals) to account for non-independence of observations. Related IES Projects: Project SEAM: Preventing Behavior Disorders and Improving Social-Emotional Competence for Infants and Toddlers with Disabilities (R324A070255)

Promoting ASAP Collaboration through Technology (PACT): An Intervention Modification to Enhance Home-School Collaboration

Boyd, Brian

Development and Innovation

R324A170151

3 years (7/1/2016-6/30/2020)

Previous institution: University of North Carolina, Chapel Hill Previous sward number: R324A160033 Co-Principal Investigators: Stephanie Reszka; Deb Childress (3C Institute) Purpose: The purpose of this project is to develop and pilot test a web-based enhancement of the classroom-based Advancing Social-Communication and Play (ASAP) intervention to support collaborations between home and school. ASAP was designed to develop joint attention (i.e., shared attention toward an object or event with another person) and symbolic play (i.e., pretending), both pivotal skills for young children with Autism Spectrum Disorders (ASD). Although there is evidence that ASAP is efficacious, there is little evidence of generalization across school and home contexts. Further, providing a greater connection between the two settings will help establish a more comprehensive assessment of the child's needs as part of ASAP. This new website, Promoting ASAP Collaboration through Technology (PACT), will be designed to generate individualized implementation recommendations based on child needs, and allow for electronic communication between school providers and parents who are implementing ASAP across school and home settings. Project Activities: The project will be conducted in three phases. In Phase 1, the PACT website will be developed using feedback from parents and school providers. In Phase 2, the research team will assess the feasibility of parents using the website in their homes to implement the ASAP intervention and examine fidelity of implementation using single-case design studies. In Phase 3, the team will collect pilot data on the co-implementation of ASAP by school providers and parents across both contexts using a quasi-experimental design. Products: The products of this project will include the fully developed web-based enhancement to ASAP, as well as peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in the classrooms and homes of preschool-aged children with ASD in North Carolina. Sample: Preschool children (ages 3-5 years) with ASD, as well as their parents and school providers, will participate in this project. For Phase 1, 40 parents will participate in focus groups and 30 school providers will participate in semi-structured interviews. For Phase 2, eight parent-child dyads will participate in the single-case design studies. In Phase 3, 24 classrooms will participate in the pilot study. All classrooms will have lead teachers who have previously been trained in ASAP, though the whole classroom team will participate in the intervention. Within each classroom, there will be two target children participating, resulting in a total of 48 children and their families. Intervention: ASAP, previously developed and evaluated through IES funding, is a classroom-based intervention aimed at increasing social-communication and play skills. The classroom team implements the intervention through group activities and one-to-one sessions. For the current study, after the school team is trained in ASAP, teachers will invite parents of children with ASD to participate in the new PACT website, and the parents, in turn, will be able to invite additional caregivers to participate. The website will consist of a tutorial on using the website, an overview of ASAP for parents, a language assessment, supports for parents to implement ASAP at home (e.g., video library, implementation guide, activity examples), questions for self-monitoring, and ASAP tips of the week. An additional feature is the home/school communication component. The parent website will automatically transfer information about the child's progress to the lead teacher, and teachers can send emails or texts to the parents to share progress information or ideas for implementation. Finally, the website will generate child progress reports. A mobile interface of the website will also be developed. Research Design and Methods: The PACT website will be developed and tested iteratively through three phases. In Phase 1, the website will be developed with input from focus groups of parents and semi-structured interviews with school providers of children with ASD. Participants will then have access to the website to evaluate usability, with data gathered through the software and rating scales. In Phase 2, multiple-baseline, single-case design studies will be used to assess feasibility and fidelity of implementation of parents' use of the website at home. In the final stage, a quasi-experimental design will be used for the pilot study. Classrooms will include those in which the lead teacher is already trained in ASAP. The treatment group, receiving ASAP with PACT, will be larger than the control group (16 versus 8 classrooms) to examine variability in implementation. This study aims to examine the promise of the website for improving parent outcomes, improving the generalization of child skills to the home, and exploring associations between parental characteristics (e.g., self-efficacy, quality of relationship with teacher) and fidelity of implementation. Control Condition: For the pilot study, the control group will participate in ASAP as usual, without access to the PACT website. Key Measures: In the first phase, parent and school provider usability outcomes will be measured through software usage data (e.g., time for task completion, frequency of errors) and feedback provided through focus groups and semi-structured interviews. For the single-case design studies, parent usage data will be measured again, fidelity of implementation will be measured through a modified version of the previously developed ASAP fidelity rating scale measure, and feasibility and social validity will be measured through parental interviews. In addition, observations of parent-child dyads will be used to assess child outcome data (e.g., engagement). For the final pilot study, fidelity of implementation by classroom teachers will be measured through interviews and behavioral observations. Feasibility data will be gathered from teachers through software usage data and questionnaires. Parent characteristic measures will include the Parental Efficacy subscale of the Parent Locus of Control Scale and the Parent-Teacher Relationship Scale. Child outcome measures will include the behavioral observations and coding of engagement and social-communication and play skills. Treatment acceptability and usability scales will also measure parents' and school teams' satisfaction with the website. The Autism Diagnostic Observation Schedule-2 will be used to determine child participant eligibility. Data Analytic Strategy: Focus group and interview data will be transcribed and analyzed qualitatively by identifying themes and perspectives. The team will use visual analysis for the single-case design studies. For the pilot study, analysis of covariance will be used to examine associations between exposure to the website and changes in parent outcomes and group differences across time in the generalization of children's social and play skills to the home setting. Additional associations between fidelity of implementation and parent characteristics will be explored through correlational analyses. Project Website: https://www.med.unc.edu/ahs/asap/ Related IES Projects: Social Communication and Symbolic Play Intervention for Preschoolers with Autism (R324B070056) and Advancing Social-Communication and Play (ASAP): An Intervention Program for Preschoolers with Autism (R324A110256)

Promoting School Readiness in Preschool-Age Children with Fetal Alcohol Spectrum Disorders

Paley, Blair

Development and Innovation

R324A120180

03/01/2012 – 02/28/2015

Purpose: Children with a history of prenatal alcohol exposure or Fetal Alcohol Spectrum Disorders exhibit early signs of developmental delays that are manifested in a host of neurocognitive, behavioral, and social problems throughout life including major obstacles to success in school. These children show deficits in language comprehension, reading, spelling, and math; are at increased risk for learning disabilities and problematic classroom behaviors; and are likely to require special education services. The purpose of this project is to develop an intervention, Strategies to Enhance Early Developmental Success for School Readiness, that can be used with preschools to promote school readiness and positive school outcomes for children with Fetal Alcohol Spectrum Disorders. The proposed intervention will provide center-based, child-focused instruction intended to improve self-regulation, socioemotional competence, and early literacy and numeracy skills. Additionally, this intervention will provide programs to equip parents with strategies for promoting school readiness skills at home and for collaborating with school personnel. Project Activities: Approximately 40 3- to 5-year-old children will participate in this research. The children will meet criteria for Fetal Alcohol Spectrum Disorders, Partial Fetal Alcohol Spectrum Disorders, or Alcohol-Related Neurodevelopmental Disorder. During the first phase of development, multiple stakeholders will provide input on the intervention components and an initial version of the intervention. During Phase 2, Strategies to Enhance Early Developmental Success for School Readiness will be implemented in a pilot study with families. The intervention will be modified based on findings from Phase 2. The revised intervention will be implemented in Phase 3. Another pilot study will determine whether children's school readiness skills showed improvement after receiving the intervention. Data will be analyzed to determine whether Strategies to Enhance Early Developmental Success for School Readiness improves children's self-regulation, socioemotional competence, and early literacy and numeracy skills. Data will also be analyzed to determine whether parents show increases in parental efficacy and knowledge about Fetal Alcohol Spectrum Disorders as well as decreases in parental stress. Products: The products of this project will be a fully developed intervention, Strategies to Enhance Early Developmental Success for School Readiness, designed to improve the self-regulation, socioemotional, and early literacy and numeracy skills of young children with Fetal Alcohol Spectrum Disorders. Published reports describing its promise for improving outcomes will also be released. Structured Abstract Setting: For the purposes of this development project, the research will take place in university outpatient mental health settings in California. Sample: Approximately 40 children from 3 to 5 years of age will participate in this research. The children will meet criteria for Fetal Alcohol Spectrum Disorders, Partial Fetal Alcohol Spectrum Disorders, or Alcohol-Related Neurodevelopmental Disorder. Intervention: The proposed intervention will be designed to improve self-regulation, socioemotional competence, and early literacy and numeracy skills. The intervention will consist of child and parent groups that run concurrently and have related content. The child groups will meet for 3-hour sessions, two times per week over the course of 15 weeks. Approximately 10 children will participate in each group. The groups will be facilitated by two group leaders and two assistants to allow for large group, small group, and individualized instruction. The group activities will include free play, structured facilitator-guided activities, snack time, and bathroom time. The intervention will be divided into three 5-week thematic blocks, with blocks organized around a particular theme such as family and community or safety. Parent groups will meet weekly and focus on teaching parents how to promote school readiness skills at home and advocate for their children. Research Design and Methods: The development of Strategies to Enhance Early Developmental Success for School Readiness will proceed in three phrases. During the first phase, multiple stakeholders—including parents, service providers, and researchers—will provide input on the intervention components and an initial version of the intervention. During Phase 2, Strategies to Enhance Early Developmental Success for School Readiness will be implemented in a pilot study with two groups of families. Observational data will be collected to determine fidelity of implementation. In addition, group facilitators will provide feedback after each session. The intervention will be modified based on findings from Phase 2. The revised Strategies to Enhance Early Developmental Success for School Readiness will be implemented in Phase 3. A quasi-experimental design using a waitlist-control group is planned to determine the promise of the intervention for improving children's school readiness skills. Control Condition: A waitlist-control condition is planned for Phase 3. Until they are provided the Strategies to Enhance Early Developmental Success for School Readiness intervention, children in this control condition will receive the intervention and services that they typically receive in community or early childhood special education programs. Key Measures: Two types of data will be collected to inform the development of Strategies to Enhance Early Developmental Success for School Readiness—process data and child assessment data. The research team will complete observations of activities for every session, and focus groups will be held with parents and service providers to elicit feedback regarding the groups and session materials. Parents will report on their children's behavior as well as perceptions of their own competence and stress. The team will also administer measures of children's emotional understanding, executive functioning, and early literacy and numeracy skills before and immediately after the intervention. Data Analytic Strategy: A general linear mixed model series of data analytic strategies will be used to determine whether Strategies to Enhance Early Developmental Success for School Readiness shows promise for improving children's self-regulation, socioemotional competence, and early literacy and numeracy skills. Data will also be analyzed to determine whether parents show increases in parental efficacy and knowledge about Fetal Alcohol Spectrum Disorders as well as decreases in parental stress.

Read It Again! In Early Childhood Special Education

Justice, Laura

Efficacy and Replication

R324A130066

7/1/13–6/30/17

Purpose: The majority of children in early childhood special education programs exhibit disabilities that place them at high risk for future reading difficulties, including primary speech-language impairment or a general developmental delay in which language skills are impaired concomitantly with one or more other developmental domains, typically cognition. Children with primary speech-language impairment or a general developmental delay typically show significant lags in attainment of important early literacy skills during the preschool years, exhibit significantly poorer kindergarten readiness compared to their peers, and are susceptible to exhibiting a reading disability in the later primary grades. In the last decade, numerous intervention studies have focused on improving the language and literacy skills of young children. However, very few of these interventions emphasize teachers' use of differentiated instructional strategies, which are essential for such interventions to be used effectively in early childhood special education classrooms. Furthermore, very few available language and literacy interventions have been rigorously examined for their relevance to children with disabilities. The purpose of this project is to examine the efficacy of an intervention called Read It Again! for children with disabilities enrolled in early childhood special education and their typically developing classmates over the academic year and during kindergarten. Read It Again! comprises 60 lessons delivered over a 30-week period in twice weekly whole-class sessions. Components of the intervention include a systematic scope and sequence of instruction targeting four key areas of literacy development (narrative, vocabulary, phonological awareness, and print knowledge) and embedding of explicit language and literacy instruction within shared-reading sessions. Project Activities: The research team will conduct a randomized controlled trial of Read It Again! over the course of 4 years by recruiting over 100 early childhood special educators and their students. Two sequential cohorts of teachers will be assigned to a treatment or control condition and will participate in the study during an initial implementation year followed by a maintenance year. Data will be collected across a range of literacy outcomes at pretest and at posttest for each cohort of participants. Hierarchical linear models with children nested within classrooms will be used to compare the relative impacts of Read It Again! to the comparison condition on children's language, literacy, and school readiness outcomes. Products: The main products from this project will be the assessment of evidence for the efficacy of Read It Again! in early childhood special education classrooms, peer-reviewed publications, and presentations. Structured Abstract Setting: The research will take place in early intervention settings in Ohio and Pennsylvania. Sample: Participants will include 104 early childhood special education classroom teachers, approximately 600 children with disabilities, and 400 typically developing children. Intervention: Read It Again! is a 60-lesson intervention delivered over a 30-week period in whole-class sessions that center around a teacher-led shared book reading. The core components of the intervention include: (1) addressing a systematic scope and sequence of instruction targeting four key areas of literacy development: narrative, vocabulary, phonological awareness, and print knowledge; and (2) embedding explicit language and literacy instruction within shared-reading sessions, scaffolding the verbal participation and learning of children. The program is manualized, freely disseminated, and designed to promote high levels of implementation integrity. Research Design and Methods: The research design involves a multilevel randomized controlled trial, implemented in two states, using a two-group pretest-posttest design to estimate the efficacy of Read It Again! on teacher and child outcomes. Two sequential cohorts of teachers and children will participate with approximately 100 teachers and an estimated 1,000 children sampled from their classrooms. Each cohort of teachers will participate for a 2-year period (an implementation year and a maintenance year) and fidelity of implementation will be measured during both years. Children will participate during the implementation year and then followed through kindergarten. Control Condition: In the control condition, approximately 50 teachers will implement their business-as-usual classroom programs and practices. Key Measures: Teacher measures include the Preschool Early Education Questionnaire, Teacher Knowledge Assessment Survey, Preschool Teacher Literacy Belief Questionnaire, and the Teacher Self-Efficacy Scale. The researchers will assess fidelity of implementation (e.g., adherence, exposure, program differentiation, and participant responsiveness) using lesson logs and videotaping of lessons along with a variety of specific fidelity measures developed for the Read It Again! program. The researchers will capture information about children's home literacy environments using the Home Literacy Environment survey and the Parental Reading Belief Inventory. Student print knowledge will be assessed using the Preschool Word and Print Awareness, the Alphabet Knowledge subtest of the Phonological Awareness Literacy Screening, and a short form measure of letter-sound knowledge to assess children's understanding of basic letter-sound correspondences. Phonological awareness will be measured by the Pre-Reading Inventory of Phonological Awareness. Narrative will be measured by the Narrative Assessment Protocol. Language ability, including vocabulary, will be measured by three subtests of the standardized, norm-referenced Clinical Evaluation of Language Fundamentals-Preschool–2. The Definitional Vocabulary subtest of the Test of Preschool Early Literacy will be used as an additional measure of vocabulary to capture more decontextualized knowledge of words. To assess children's cognitive abilities, the researchers will use the Kaufman Brief Intelligence Test-2 Nonverbal subtest. Data Analytic Strategy: Hierarchical linear models with children nested within classrooms will be used to compare the effect of the Read It Again! intervention to business as usual on children's language, literacy, and school readiness outcomes. For language and literacy outcomes, the researchers will analyze the Read It Again! impact both at posttest and follow-up assessments using residualized change (posttest/follow-up scores controlling for pretest scores). For kindergarten readiness outcomes, the researchers will use children's initial language and literacy scores as covariates. Related IES Projects: Efficacy of Read It Again! In Rural Preschool Settings (R305A080459)

Recognition and Response: Addressing Early Learning Difficulties in Math through an RTI Model for Pre-K

Buysse, Virginia

Development and Innovation

R324A120059

03/01/2012–02/28/2015

Co-Principal Investigator: Ellen Peisner-Feinberg Historically, little attention has been paid to teaching math prior to kindergarten entry. The National Research Council's Committee on Early Childhood Mathematics concluded that while virtually all young children have the capability to learn and acquire core competencies in math, most do not realize their full potential. The Committee attributed this to children's limited opportunities to learn math in either early childhood education programs or through every day experiences at home. This lack of instructional opportunities could be particularly problematic for children most at risk for math failure. These children start school behind their peers and may be unable to catch up without extensive, high-quality early math instruction. The purpose of this project is to adapt an instructional system, called Recognition and Response, for preschool mathematics instruction. The model is intended to improve the quality of math practices for all children and provide additional supports for some children to ensure that every child is ready for kindergarten. Project Activities: Approximately 50 preschool classrooms in North Carolina will participate in this study. All classroom children will participate, but the researchers will focus on children most at risk for math failure. The Recognition and Response model has shown promise for improving language and literacy outcomes for preschool children. The basic framework of the model—including screening and frequent monitoring of children's progress, use of quality classroom instruction and intensive interventions, and problem solving across collaborative partners—will be modified with preschool math content. Development and revision of the intervention and assessment and professional development materials will occur in years 1 and 2. A pilot study investigating the promise of the system for improving math outcomes and for changing instructional practices will occur in year 3. Using a quasi-experimental design, classrooms will be matched on classroom and teacher variables. Students in the comparison condition will receive math instruction as usual. A series of data analytic strategies, including multi-level modeling, will be used to determine whether the Recognition and Response-Math system shows promise for improving mathematics outcomes. The researchers will also investigate whether differences in growth exist for intervention and comparison children most at risk for math failure or need special education services. Products: The products of this project will be a fully developed preschool system, called Recognition and Response-Math, to teach math to preschool children. Published reports describing the intervention's promise for improving outcomes will also be produced. Structured Abstract Setting: The research will take place in preschools in North Carolina. Sample: Approximately 50 preschool classrooms will participate in this study. All classroom children will participate, but the researchers will focus on children most at risk for math failure. Intervention: Recognition and Response is a particular response to intervention model designed for preschool children. There are three key components of the model: (1) recognition, which involves gathering formative assessment information by screening all of the children in the classroom and periodically monitoring those who need more targeted intervention; (2) response, which involves providing an effective core curriculum and targeted interventions linked to formative assessment results, and (3) problem solving based on collaboration among teachers, parents, and specialists. This research project will adapt this model, which has been developed for early literacy skills, and extend it to teaching mathematics. The team will use the Big Math for Little Kids curriculum as the core curriculum and basis for intensified instruction. The Big Math for Little Kids curriculum is comprised of six sequenced units with five lessons per unit. Each unit is centered on a different mathematical concept: number; shape; measurement; construction and partition numbers; patterns and logic; and navigation and special concepts. Research Design and Methods: The activities will consist of four phases. The team will design and adapt the intervention and assessment components and professional development materials, iteratively test and revise the components, investigate the teacher proficiency for implementation, and conduct a pilot study to examine the promise of the intervention for improving math outcomes. Development and revision of the materials will occur in years 1 and 2. The separate components will be tested and revised based on data assessing the acceptability and feasibility of the component and teachers' implementation fidelity. A pilot study investigating the promise of the system for improving math outcomes and for changing instructional practices will occur in year 3. A quasi-experimental design will be used with classrooms matched on classroom and teacher variables. Control Condition: Students in the comparison condition will receive math instruction as usual. Key Measures: A variety of student assessment and observational data will be collected. The mCLASS:CIRCLE math assessment will be used as a universal screening and progress monitoring tool. Additional measures of math will be administered to measure students' overall math growth and individual skills with problem solving, number comparison, numeral literacy, calculation, shape and pattern. Fidelity of implementation data will also be collected through teacher observations and the team will conduct focus groups and interviews with participating teachers. Data Analytic Strategy: Multi-level modeling will be used to determine whether the Recognition and Response-Math system shows promise for improving math outcomes. The researchers will also investigate whether differences in growth exist for intervention and comparison children most at risk for math failure or need special education services. Related IES Projects: Recognition and Response: A Response to Intervention Model for Early Childhood (R324A080152)

Relative Effectiveness of Contrasting Approaches to Response-Contingent Learning Interventions

Raab, Melinda

Efficacy and Replication

R324A110183

07/01/2011–06/30/2015

Purpose: Young children with profound developmental delays often do not draw associations between their actions and the resulting effects. Young children gain understanding of the relationship between their behavior and its consequences through response-contingent learning opportunities. These learning opportunities involve the use of a targeted behavior to produce interesting social or nonsocial responses. Understanding these associations is a building block for future adaptive behaviors, and it is foundational for further learning. Early intervention service providers typically use strategies that target behaviors a child needs to learn despite their current levels of functioning. The researchers in this study are testing the efficacy of an ability-based intervention. Ability-based interventions build upon behaviors that children are already capable of doing but may not use intentionally to affect consequences. The researchers are evaluating whether the ability-based approach to targeting behavior leads to greater improvement in current skills/associations when compared to a needs-based approach commonly used by service providers. Project Activities: Researchers in this study will use a randomized controlled trial to assess the efficacy of the ability-based approach to response-contingent learning. Children will be randomly assigned to receive a response-contingent learning intervention using either an ability-based or a needs-based approach to identifying targeted behavior. Over an 8-month period, children and their families will be visited every other week and participate in response-contingent learning games. Child outcomes include child response-contingent learning, social-emotional behaviors during the learning games, non-targeted behaviors, and child development. Multivariate hierarchal linear modeling will be used to examine the efficacy of the ability-based approach compared to the needs-based approach. Products: The products from this project include evidence of the efficacy of the ability-based response-continent learning intervention, published reports, and presentations. Structured Abstract Setting: The research will take place in the homes of children participating in early intervention programs in North Carolina and Tennessee. Population: Approximately 120 infants and toddlers with profound developmental delays will participate in this research. The participants will be children who are functioning at less than a 5- to 6-month level and do not use behavior intentionally to produce consequences. Intervention: In the ability-based intervention, an early interventionist and parents will select targeted behaviors based on behaviors the child already has in his or her repertoire. The selected reinforcing consequences are based on observations and interviews on what the child enjoys and what maintains the child's attention. The combination of the targeted behavior and the reinforcing consequences inform the development of the active learning games. Parents learn to implement active learning games with their child in their home. The interventionist will visit the family every other week to monitor progress and make changes to the active learning games. Research Design and Methods: The study will use a randomized trial design to examine the relative efficacy of two contrasting approaches to response-contingent learning interventions. A total of 120 young children will be randomly assigned to an ability-based intervention or the comparison condition (needs-based intervention). Over an 8-month period, children and their families will be visited every other week and participate in response-contingent learning games. Data will be collected on the child developmental progress at baseline, 4 months, and 8 months. Parental implementation logs will be kept daily. Control Condition: The comparison group is a business-as-usual model in which children receive the needs-based intervention. Targeted behaviors a child needs to learn will be selected based on the results of a development assessment. The selection of reinforcing consequences and the development and implementation of the active learning games will be similar to the ability-based treatment condition. Key Measures: Data will be collected on child outcomes—child response-contingent learning, social-emotional behaviors during the learning games, non-targeted behaviors used outside the learning games, and child developmental progress—using a variety of measures (e.g., Active Learning Observation Survey, Carolina Record of Individual Behavior, Mullen Scales of Early Learning). Data will also be collected on parental responsiveness (Maternal Behavior Rating Scale) as well as child and family background characteristics, including child and parent's age, child's gender, type of disability, child developmental status, parent education, parent work status, and income level. Fidelity of implementation data will be measured through daily implementation logs. Data Analytic Strategy: Multivariate hierarchal linear modeling analysis will be used to examine the efficacy of the ability-based approach compared to the needs-based approach for improving child outcomes. Separate multivariate hierarchal linear modeling analyses will be conducted for each child outcome. Publications Journal article, monograph, or newsletter Dunst, C. J., Raab, M., and Hamby, D. W. (2017). Contrasting Approaches to the Response Contingent Learning of Young Children with Significant Delays and Their Social-Emotional Consequences. Research in Developmental Disabilities, 63. doi:10.1016/j.ridd.2017.02.009 Full text Raab, M., Dunst, C. J., and Hamby, D. W. (2017). Efficacy Trial of Contrasting Approaches to the Response-Contingent Learning of Young Children with Significant Developmental Delays and Multiple Disabilities. Journal of Educational and Developmental Psychology, 7(1). doi:10.5539/jedp.v7n1p12 Full text Raab, M., Dunst, C.J., and Hamby, D.W. (2016). Effectiveness of Contrasting Approaches to Response-Contingent Learning Among Children With Significant Developmental Delays and Disabilities. Research and Practice for Persons With Severe Disabilities, 41(1): 36–51. doi:10.1177/1540796915621189

Risk Factors and Services for Vocabulary Delays in Early Childhood: Population-based Estimates

Morgan, Paul

Exploration

R324A120046

3/1/2012–2/28/2014

Co-Principal Investigators: George Farkas (University of California, Irvine), Carol Hammer (Temple University), and Marianne Hillemeier (The Pennsylvania State University) Purpose: Little is currently known about early precursors of academic and behavioral school readiness for children, particularly those with or at risk for disabilities. Evidence indicates that vocabulary knowledge constitutes a potentially malleable factor that, if increased, may improve children's reading, mathematics, and behavioral readiness for kindergarten. Yet these relations have not been convincingly established. It is also critical to better understand the onset of vocabulary delays during at-risk children's infant, toddler, and preschool years, and how these delays are affected by the receipt of early intervention services. The primary aim of this study is to determine whether and to what extent vocabulary knowledge, as well as parenting and child care quality and early intervention services, constitute potentially malleable and educationally relevant factors that may increase at-risk children's reading, mathematical, and behavioral readiness for schooling. This study will also seek to identify moderators of the relation between earlier vocabulary knowledge and children's school readiness. Project Activities: The researchers will analyze the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B) to determine: (1) factors that most strongly predict children's vocabulary knowledge at 24 months of age; (2) which children are most likely to receive early intervention or early childhood special education when they are 24–48 and 48–60 months of age; (3) which children are most likely to display vocabulary delays at 48 months of age; (4) factors that strongly predict children's general cognitive and behavioral functioning at 24 months, as well as their pre-academic and behavioral functioning at 48 months of age; and (5) which children are most likely to display lower academic and/or behavioral readiness at 60 months of age. Products: The expected products from this study include publications and presentations on research activities and findings that may serve as a basis for developing interventions for infants, toddlers, and preschoolers at risk for disabilities. Structured Abstract Setting: The ECLS-B is a dataset with a nationally-representative sample of children born in the United States in 2001. Sample: The ECLS-B includes data on children born in the United States in 2001 (sampled from birth certificate files) who were then assessed up to kindergarten, at 9, 24, 48, and 60 months of age. ECLS-B oversampled for low birth weight children and racial and ethnic minorities. Parents of 550 24-month-olds reported that their children received early intervention services. At both the 48- and 60-month assessments, 850 parents reported that their children received early intervention services. Intervention: There is no intervention. Research Design and Methods: This study involves secondary data analyses of standardized direct measures and questionnaire data collected in the ECLS-B. Control Condition: Due to the nature of the research design, there is no control condition. Key Measures: Measures included in the analysis of the ECLS-B data include individually administered and parental reports of children's vocabulary knowledge, cognitive functioning, reading and mathematics achievement, and direct observation and teacher ratings of learning-related, externalizing, and internalizing problem behaviors. Measures also include direct observation of parent-child interactions, direct observation of child care quality, birth certificate data on socio-demographic, gestational, and birth characteristics, and parent interviews. Outcomes include children's vocabulary knowledge, cognitive functioning, reading and mathematics achievement, and learning-related, externalizing, and internalizing problem behaviors. Data Analytic Strategy: The researchers will use regression analyses to address the research questions in this study. These will include cross-lagged regression models with extensive statistical control for likely confounds and weighted adjustments to account for sample clustering, multiple imputation to account for missing data, and propensity score matching methods to better identify the predicted effects of natural variation in receipt of specific early intervention services on the school readiness of children with identified delays or disabilities. Publications Journal article, monograph, or newsletter Hammer, C. S., Morgan, P. L., Farkas, G., Hillemeier, M. M., Bitetti, D., and Maczuga, S. (2017). Late Talkers: A Population-Based Study of Risk Factors and School Readiness Consequences. Journal of Speech, Hearing, and Language Research, 60: 607–626. doi:10.1044/2016\_JSLHR-L-15–0417 Morgan, P. L., Hammer, C. S., Farkas, G., Hillemeier, M. M., Maczuga, S., Cook, M., and Morano, S. (2016). Who Receives Speech/Language Services by Five Years of Age in the U.S.? 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Sit Together and Read: Early Childhood Special Education

Justice, Laura

Efficacy and Replication

R324A080037

6/1/2008 to 5/31/2012

Purpose: Children who exhibit primary language impairment in preschool often fail to become good readers. In fact, more than half of these children exhibit a reading disability in second grade. Reading proficiently is a vital skill for academic success and gainful employment. Current practices for preschoolers with language impairment focus on teaching language skills such as vocabulary or grammar. These traditional practices are largely inadequate for improving these children's pre-literacy skills. Therefore, alternative practices, such as print-referencing, need to be tested to determine whether they improve the language and pre-reading skills of preschool children with language impairment. Researchers are addressing this need by examining the efficacy of a fully-developed, print-referencing intervention for improving pre-reading skills of preschoolers who have a primary language impairment and are educated in early childhood special education classrooms. They will also determine the extent to which children's pre-reading skills are accelerated by combined use of print-referencing in the classroom by teachers and at home by parents. Project Activities: Print-referencing employs the adult-child shared storybook-reading context to accelerate children's pre-reading skills. Each year, 30 classrooms will be randomly assigned to one of two print-referencing interventions or instruction as usual. The two print-referencing interventions differ on who implements print-referencing strategies. In the first intervention, teachers will implement print-referencing strategies while parents continue to read to their children using their typical reading style. In the second intervention, both teachers and parents will implement print-referencing strategies. To determine intervention impacts, a variety of statistical analyses ranging from basic descriptive analyses to multi-level modeling of children's pre-reading outcomes will be used. Products: The products of this project include evidence of the efficacy of two print-referencing interventions, published reports, and presentations. Setting: The research will occur in Ohio. Population: Approximately 90 classrooms in Ohio will participate in this study. Researchers estimate that four children in each classroom will meet their criteria for having a language impairment. While the research focuses on children with a language impairment, data will also be collected on typically developing children as well as children who have disabilities other than a language impairment. Intervention: The efficacy of two print-referencing interventions will be examined. Print-referencing employs the adult-child shared storybook-reading context to accelerate children's pre-reading skills. It features adult's use of explicit verbal and nonverbal references to specific print features during repeated reading interactions. Both interventions will be implemented over a 30-week period using a set of 30 books that were selected for their print salient features, such as speech bubbles, font changes and accentuated words. All teachers will read each book to the class four times per week. In addition, parents will be asked to read the book to their children twice a week. The two print-referencing interventions differ on who implements print-referencing strategies. In the first intervention, teachers will implement print-referencing strategies during the 30 week intervention period. Parents will continue to read using their typical reading style. In the second intervention, both teachers and parents will implement print-referencing strategies. Research Design and Methods: A cohort model with three sequential cohorts of 30 classrooms will be utilized. Each year, 30 classrooms will be randomly assigned to one of the two interventions or to the control condition. Data on pre-reading skills of children with language impairments will be collected during the fall and spring of the intervention year and a year after intervention implementation. Control Condition: In the control condition, teachers and parents will read the same set of storybooks using their typical reading style. Key Measures: Assessments include measures of children's alphabet knowledge, name-writing ability, and print concepts. In addition, the researchers will collect data on children's social and behavior skills, book-reading engagement, speech and language services, teacher beliefs, and home and classroom environments. Finally, data will be collected on the quality and fidelity of intervention implementation. Data Analytic Strategy: To determine intervention impacts, a variety of statistical analyses ranging from basic descriptive analyses to multi-level modeling of children's pre-reading outcomes will be used. Analyses will also include variables that might moderate or mediate the effect of the interventions on children's pre-reading outcomes. Publications Journal article, monograph, or newsletter Dinnebeil, L. A., Sawyer, B., Cancio, E., Dynia, J., & Justice, L. (in press). Congruence between parents' and teachers' ratings of the social skills and problem behavior of preschoolers with disabilities. Early Childhood Research Quarterly. Dinnebeil, L., Sawyer, B., Logan, J., Cancio, E., Dynia, J., and Justice, L.M. (2013). Influences on the Congruence Between Parents' and Teachers' Ratings of Young Children's Social Skills and Problem Behaviors. Early Childhood Research Quarterly, 28(1): 144–152. doi:10.1016/j.ecresq.2012.03.001 Dynia, J. M., Brock, M. E., Logan, J. A., Justice, L. M., and Kaderavek, J. N. (2016). Comparing Children with ASD and Their Peers' Growth in Print Knowledge. 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Supporting Early Interventionists of Toddlers with Autism to Build Family Capacity

Schertz, Hannah

Development and Innovation

R324A180083

3 years (07/01/2018-06/30/2021)

Co-Principal Investigator: Baggett, Kathleen Purpose: The purpose of this project is to develop and test a framework, Supporting Early Interventionists of Toddlers with Autism to Build Family Capacity (SEITA), to help early interventionists (EIs) promote parent mediation of social communication in toddlers with emerging signs of autism spectrum disorder (ASD). ASD is the fastest growing developmental disability, and earlier detection means that more children showing early signs of ASD will be receiving services through the Individuals with Disabilities Education Act Part C programs. SEITA will be developed to work within Part C systems and will address the need for interventions that enhance family capacity and integrate interventions into natural environments for toddlers with ASD. Ultimately, the aim of SEITA is to improve the social communication skills of toddlers with ASD. Project Activities: The research team will conduct three studies to develop and test the SEITA framework. In Study 1, they will use focus groups to inform intervention development. Specifically, they will explore the perspectives of EIs and parents about intervention-related topics. In Study 2, they will iteratively implement a preliminary framework while assessing EI, parent, and toddler outcomes, as well as the feasibility and acceptability of the framework. In the final pilot study, the team will use a multiple-baseline single-case design to test the promise of SEITA for improving EI, parent, and child outcomes. Products: The products of this project will include a fully developed framework to support EIs in building family capacity to work on social-communication skills with their toddlers with ASD. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: Research will take place in homes in urban and rural areas of Indiana and Kansas where Part C early intervention services are received, Sample: Approximately 24 EIs and families within the Part C system will participate in Study 1. Six EIs who serve families that include a toddler with ASD (one family per EI) will participate in Study 2. For the pilot study, 12 EIs, parents/caregivers, and toddlers with ASD will participate. Toddlers will be under 30 months of age and have at least one social communication outcome on their Individual Family Service Plan. Intervention: In the SEITA framework, an Intervention Consultant will guide EIs to help parents learn to mediate their toddlers' learning in social communication, a core challenge for children with ASD. There are three major components to the framework. First, the content to be learned is social communication. EIs, and in turn, the parents, will learn to distinguish between social communication and instrumental communication (e.g., requesting, following directions), as the former but not the latter is generally the challenge in ASD. The distinction will be illustrated through four different focus areas: reciprocal interaction, joint attention, play, and functional behavior (repetitive and challenging behaviors). The content will be learned through manuals, online modules, and other resource materials. The focus of the intervention will depend upon the identified area of need for each child. The second component is mediated learning, the intervention process through which the EI guides the parents and the parents, in turn, guide their children. The mediated learning processes used to enhance toddlers' social communication skills include focusing, organizing and planning, giving meaning, encouraging self-reliance, and expanding. The third key component is the parent-child relationship,which is the learning context in which interactive learning takes place. Rather than working directly with the child, the EI will provide systematic and focused support for the parent in implementing learning strategies with their children. Research Design and Methods: This project will involve three studies. In Study 1, the research team will gather information from focus groups of parents and EIs about their perception of intervention-related topics (e.g., intervention priorities, their own competencies, feasibility issues, initial SEITA features) to inform the development of the initial framework. The team will perform this initial development work in conjunction with the Intervention Consultant, who will be working with the EIs in implementing the framework in subsequent studies. The team will also develop project-specific measures of fidelity during this phase. In Study 2, the team will conduct a series of single-case design studies to gather data on various iterations of the framework. The team will iteratively develop and test the framework with two groups of EIs, and gather data on fidelity of implementation, feasibility, and social validity, as well as child outcomes. In Study 3, the pilot study, the team will use a multiple-baseline single-case design to determine the potential efficacy of the revised SEITA framework in improving EIs' implementation fidelity when working with caregivers, caregivers' implementation fidelity when working with their toddlers, and toddlers' social communication skills. For each child, the focus will be on one of four competencies: reciprocal interaction, joint attention, play, and repetitive/challenging behavior, with multiple children in each focus area. Control Condition: For the pilot study, each EI, parent, and child serves as their own control during the baseline phase of the single-case design study. Key Measures: To determine child eligibility for the study researchers will use the Modified Checklist for Autism in Toddlers — Revised (M-CHAT) screening tool followed by the Autism Diagnostic Observation Schedule for Toddlers (ADOS-T). For Study 1, data will be gathered through focus groups with EIs and parents. For Studies 2 and 3, the research team will measure feasibility, usability, and acceptability/social validity through researcher-developed checklists and rating scales. For child outcomes, one social communication domain will be measured for each child, depending on their needs and primary area of intervention focus. Precursors of Joint Attention Measures, an observation coding system, will be used to measure reciprocal interactions (turn taking between caregiver and child) and joint attention (responding to joint attention and initiating joint attention). An observation-based coding system, based in part on The Developmental Play Assessment, will be used to measure play during parent-child interaction. Repetitive and challenging behavior will be assessed through observations of the frequency of these behaviors. Data Analytic Strategy: The researchers will analyze qualitative focus group data in Study 1 to identify themes that inform the development of the initial version of SEITA. Single-case design data from Study 2 will be analyzed using visual analysis. To analyze data from Study 3, researchers will use both visual analysis and a between-case standardized effect size analysis.

Supporting Young Children's School Readiness and Reduced Challenging Behaviors: An Online Course to Enhance Toddler Teacher-Child Interactions

LoCasale-Crouch, Jennifer

Development and Innovation

R324A130249

9/1/13-8/31/17

Purpose: Children who struggle with behavioral problems at school entry are at significant risk for a host of school difficulties. Many of these children will be referred for special education because of adjustment problems in the classroom, achievement problems co-varying with behavioral concerns, or both. Many will ultimately be placed within the special education system. Interventions are available to prevent and reduce these early disruptive behaviors by providing children with high-quality teacher-child interactions and targeted supports for their skill development. Teachers in toddler classrooms, however, are not receiving access to these interventions or effective professional development on how to use them. As a result, the quality of teacher-child interactions in toddler classrooms is low, and the number of children with early challenging behaviors who receive special education services in elementary school is high. The purpose of this study is to develop, refine, and test an online course for teachers of toddlers aimed at improving the quality of their interactions with children as a mechanism to support children's school readiness and reduce challenging behaviors. Project Activities: There will be three phases for this work, corresponding to each project year: (1) module development, (2) field testing, and (3) pilot testing. The first year will focus on the development of an initial course module that will provide an opportunity for early feedback from small groups of teachers and expert consultants. Course development will cover both content and technology for delivering the content. The team will revise the initial module based on feedback received, creating a version that will be field tested. Following feedback from the field test, a revised version of the course will then be pilot tested. In the fourth and final project year, data will be analyzed and final revisions to the course made. Products: The expected products of this project include a fully developed online course for teachers of toddlers with behavioral challenges, data on the feasibility and promise of the intervention, and peer-reviewed publications and presentations. Structured Abstract Setting: This research will take place in a mix of urban and rural Early Head Start and private child care centers in Arizona and Virginia. Sample: A total of 90 teachers will participate in the study (10 in module development; 20 in field testing; 60 in pilot testing). One hundred eighty children (the three children ranked highest on challenging behavior from each of the pilot teacher classrooms) will participate in the pilot test. Intervention: The research team will develop a 6-month, online course for early teachers of toddlers focused on improving the quality of their interactions and teaching them targeted practices that support toddlers' emerging relational, regulatory, and language skills, and reducing challenging behaviors. The course will build off of successful elements of prior professional development programs. Content will focus on specific domains of children's skill development (relational, regulatory, language) and include multiple sessions covering three major areas: (1) children's development of the focus skills; (2) universal/classroom-wide practices that support development of the skills; and (3) targeted strategies to promote development of the skills to support children displaying challenging classroom behaviors. The interactive activities provided in the online course will provide teachers with: (1) engaging opportunities to gain new knowledge about the area of child development and the teacher-child interactions and targeted practices that support it (KNOW); (2) extensive use of videos that allow teachers to see development and interactions as they occur in classroom settings (SEE); (3) practice implementing the universal and targeted practices in their own classrooms (DO); and (4) opportunities to reflect on the impact their universal and targeted supports have on children's development (REFLECT). Built into the modules are opportunities for teachers to share video footage of their teaching with their instructor, who provides feedback to improve the teacher's classroom practice. Research Design and Methods: The research team will use an iterative process to develop both the content of and the technology for the online course. The pilot study will employ a randomized waitlist control design to assess the promise of the intervention. Thirty teachers (15 from each site) will be randomly assigned to participate in the online course over a 6-month period. The other 30 teachers (15 from each site) will be assigned to the waitlist control condition. These control teachers will then complete the course in the fall of 2016. Teachers and children will be assessed before and at the end of the 6-months of the pilot. Teachers will also be assessed on understanding of online course content throughout the pilot period. Control Condition: Participants in the waitlist control condition will receive the course at the end of the 6-month pilot. Teachers in the intervention condition will be asked not to share resources with those in the control group. Key Measures: The research team will use a multi-method, multi-informant assessment approach that includes one-on-one interviews and focus groups, teacher surveys, and structured teacher-child observations. Additionally, during the pilot study, the research team will conduct observations of children's classroom behavior and collect pre/post intervention data on children's relational, regulatory, and language skills as well as challenging behaviors using caregiver reports of skill development across multiple domains, the Multiple Option Observation System for Experimental Studies, and teacher reports of student behavior. Data Analytic Strategy: Qualitative methods will be used to analyze data from focus groups. Descriptive analyses will be conducted on the survey and questionnaire responses from teachers. Multiple regression models will be used to estimate the effects of the course on teachers' knowledge and ability to use effective universal teacher-child interactions and targeted teaching practices. Hierarchical linear modeling will be used to estimate the effects of the course on children's outcomes.

Teacher and Peer Speech in Inclusion Classrooms: Malleable Factors Affecting Language Outcomes for Children with Disabilities

Messinger, Daniel

Exploration

R324A180203

4 years (07/01/2018-06/30/2022)

Purpose: The purpose of this project is to use innovative technologies to understand the role of teacher and peer speech in the language development and social relationships of preschool children with disabilities in inclusive settings. There is evidence that language-related experiences in the classroom impact children's language development. However, previous studies have been relatively short in duration. In this study, the researchers will use technologies that allow for real-time measurement of language in a natural context, over an extended period of time, to investigate whether teacher turn-taking with children and exposure to peer language during social contact are associated with improvements in children's expressive and receptive language and social interactions. Researchers will also explore whether these relationships differ for inclusive classrooms in which most children with disabilities have autism spectrum disorder (ASD) and those in which most children with disabilities have other disabilities, primarily language delays. Project Activities: The investigators will collect data on language input, social interaction, and language development repeatedly over the 9-month school year to investigate the role of teacher and peer speech in the development of language and social connections within inclusive preschool classrooms. In addition to more traditional measures of observation and child- and teacher-report, the project will make use of several advanced technology systems that capture language input and spatial orientation at the individual child level. Analyses will test the relationship between language input from teachers and peers and later language development and the relationship between language ability and exposure to vocal input; and to explore whether the relationships are moderated by type of disability. Products: The products of this project will include preliminary evidence of the association between teacher conversational turn-taking and exposure to peer language and the language and social development of preschoolers with disabilities. Products will also include peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in 20 inclusive preschool classrooms in urban and suburban areas in Florida. Of these classrooms, 10 will be ASD Inclusion classrooms (i.e., ratio of typically developing children to those with ASD is approximately 2:1) and 10 classrooms will be Language Delay Inclusion classrooms (i.e., ratio of typically developing children to those with other disabilities, primarily language delay, is approximately 1:1). Sample: Approximately 350 3- to 4-year-old children (50 children with ASD, 100 children with other disabilities, and 200 typically developing children), and their teachers (50 teachers, at least 2 per classroom) will participate in this study. Malleable Factors: Malleable factors include teacher conversational turn-taking with children and peer speech during social contact. Research Design and Methods: This study will use a longitudinal design with repeated assessment of children's language exposure and development over the 9-month school year. Automated data collection of language will occur monthly; standardized language assessments will be collected at the beginning and end of the school year; observer ratings of child behavior and peer interactions and sociometric data on children's friendship networks will be collected every 3 months. Each year, new children will join the study as they enroll in the participating classrooms. The design will allow researchers to investigate a reciprocal model of language development to determine whether language exposure is related to later language development as well as whether language development is related to later language exposure. Control Condition: Due to the nature of the research design, there is no control group. Key Measures: Proximal language measures (overall vocalizations, vocalizations in contact with peers, and teacher's turn-taking with individual children) will be captured through automated, synchronized recording devices on children and teachers that capture information on physical location and orientation to others (Ubisense Tag Module) as well as vocalizations (Language Environment Analysis). Measures of more distal language outcomes include the Preschool Language Scales — 5th Edition (expressive and receptive language, syntax skills). The technology used to capture language will also be used to capture observational data for coding of child behavior and peer interactions. Additional measures of peer interaction in the classroom include the sociometric ratings by peers to determine friendship networks, Individualized Classroom Assessment System (inCLASS) to capture classroom engagement and peer interactions, and the Penn Interactive Peer Play Scale to measure teacher-reported quality of peer interactions during play. Finally, the Battelle Developmental Inventory (2nd edition) will be used to assess levels of developmental delay of children in inclusion classrooms. Data Analytic Strategy: The research team will analyze the data to examine associations and moderation using multi-level modeling in which observations are nested within children and children are nested within classrooms.

TEIDS Plus: Integrating Quality Assurance and Data-Based Decision Making To Enhance IFSP Quality, Implementation, and Child and Family Outcomes

McWilliam, Robin

Development and Innovation

R324B070003

7/1/2007 to 6/30/2011

Purpose: Despite being compliant with state and federal requirements, Individualized Family Service Plans (IFSP) are often poorly written. They do not provide detailed descriptions of services to be provided, child and family goals, and criteria for determining when a goal has been achieved. More importantly, IFSPs as they are currently written do not guarantee high quality early intervention services for infants and toddlers with disabilities and their families. Because IFSPs can be in compliance with regulations and still not meet criteria for substantive quality, a need exists for the development of systemic interventions that employ effective and practical strategies for increasing the quality and usefulness of these plans. The research team is addressing this need though developing and evaluating a web-based quality assurance system, Tennessee Early Intervention Data System Plus. This system will build upon the existing Tennessee data system. It will incorporate components related to statutory requirements and recommended practices for developing and implementing quality IFSPs and improving child and family outcomes. The purpose of this study is to develop and conduct an initial evaluation of whether use of the Tennessee Early Intervention Data System Plus leads to higher quality IFSPs, improved fidelity to IFSP implementation, and improved child and family outcomes. Project Activities: Three phases of research are planned. During the first phase, the Tennessee Early Intervention Data System Plus will be developed and refined. A feasibility study will be conducted during the second phase to validate the quality assurance system components and outcome measures. During the third phase, an initial evaluation of the quality assurance system will be conducted. Two districts in Tennessee will implement the Tennessee Early Intervention Data System Plus, and two will continue to use the existing Tennessee system. A combination of quantitative and qualitative data analysis strategies will be used to provide evidence of the potential effect of the Tennessee Early Intervention Data System Plus on IFSP quality, IFSP implementation, early intervention services quality, and child and family outcomes. Products: Expected outcomes include the Tennessee Early Intervention Data System Plus web-based system and reports on the potential effect of the Tennessee Early Intervention Data System Plus on child and family outcomes and IFSP and early intervention services quality and implementation. Structured Abstract Setting: The early intervention system districts are located in Tennessee. Population: Approximately 200 service coordinators across four districts will participate in this research. Each service coordinator will randomly select 15 children and families from their caseload. Intervention: The newly developed quality assurance system will build upon the existing data system in Tennessee. It will address five key components: functional assessment, functional goal planning, linking functional goals to services decisions, integrating service delivery and service decisions, and monitoring progress. Practitioners will view a series of prompts or guiding questions about the IFSP process as they proceed through various stages of IFSP development with each child and family. In addition to these guiding questions, links to additional resources (e.g., presentations, video clips, procedural guidelines) will be available. Research Design and Methods: Three phases of research are planned. During the first phase, the quality assurance system will be developed and refined. The quality assurance system components and outcome measures will be validated during the second phase by conducting a feasibility study in one early intervention district in Tennessee. During the third phase, an initial evaluation of the quality assurance system will be conducted. Two districts in Tennessee will implement the Tennessee Early Intervention Data System Plus, and two will continue to use the existing Tennessee system. Control Condition: The control districts will continue with implementation of the existing Tennessee system. Key Measures: Child communication, movement, problem-solving, and social interaction skills will be assessed. In addition, data related to family participation in IFSP development, provider knowledge and skills about recommended practices in IFSP development and implementation, quality of IFSPs, IFSP implementation, early intervention service delivery quality, and cost will be collected. Data Analytic Strategy: A combination of quantitative and qualitative data analysis strategies including hierarchical linear modeling will be used to conduct an initial evaluation of the quality assurance system on IFSP quality, IFSP implementation, early intervention service quality, and child and family outcomes. Publications Journal article, monograph, or newsletter Ridgley, R., Snyder, P.A., McWilliam, R.A., and Davis, J.E. (2011). Development and Initial Validation of a Professional Development Intervention to Enhance the Quality of Individualized Family Service Plans. Infants and Young Children, 24(4): 309–328. doi:10.1097/IYC.0b013e318229e54d

Testing an Integrated Preschool Curriculum for English Language Learners

Landry, Susan H.

Efficacy and Replication

R324A110079

3/1/2011–2/28/2015

Purpose: The number of English language learners (ELL) has grown considerably in recent years, and the number of children classified as limited English proficient rose 76 percent in a 10-year span. The ELL population is also impoverished: over three-quarters of Spanish-speaking ELL children in the United States come from low-income families. Many of these children are at risk for developing disabilities and special education referrals. Yet there is a lack of empirically validated instructional approaches and effective tools for helping teachers deliver individualized instruction to this population. The current study will evaluate the use of a Spanish adaptation of a comprehensive curriculum, Literacy Express, which focuses on cognitive instruction in small groups in preschool classrooms. It will be compared to a "business as usual" condition with teachers using the Scholastic Early Childhood Program (SECP) curriculum, developed for large group and center-based activities without attention to the use of small group instruction. Both conditions will receive paraprofessional support for 90 minutes, four days each week. In the treatment condition, paraprofessionals will be trained on the implementation of small group activities using Literacy Express. In the business as usual condition, teachers will use the paraprofessionals in any way they want in their classrooms. Project Activities: Researchers will conduct a randomized controlled trial to test the efficacy of the Spanish adaptation of Literacy Express on low-income preschool English language learners (ELL) at risk for developing disabilities. Across the first three years of the project, 102 preschool classrooms (34 per year) will be recruited and randomly assigned into the Literacy Express or SECP condition. Eight children screened for disability risk will be recruited from each preschool classroom. Pre- and post-assessments will be conducted during the preschool year, and a follow-up will be conducted in kindergarten to assess whether the effects of the intervention are sustained after the intervention year. Outcomes will include measures of child literacy, language, math, and social skills and teacher instructional practices. Products: The products of this project include evidence of the efficacy of the Spanish adaptation of the Literacy Express intervention, published reports, and presentations. Structured Abstract Setting: This study will be conducted in preschool classrooms in Texas. Population: The study will target 4-year-old ELL children from low-income families who are at risk for developing disabilities. Intervention: The Spanish adaptation of Literacy Express is a comprehensive, small-group focused, school readiness curriculum for improving literacy, language, and math in ways that also support social skills for at-risk preschool children. The teachers and aides in the Literacy Express condition will receive training at the beginning and across the school year (five days total) in how to implement the curriculum. This training includes using data to inform the formation of the small groups that will occur across four 15-minute modules (90 minutes total) and two 15-minute curriculum-linked center activities four days each week. Content topics for training will include: 1) professional practices (including classroom management and supportive teaching styles); 2) language building activities; 3) conducting book readings in ways that promote language/literacy skills (e.g., word repetition); 4) using effective teaching strategies to build language comprehension and expression (e.g., linking words to literature); 5) print and book awareness; 6) motivation to read; 7) phonological awareness; 8) alphabet knowledge and early word recognition; 9) written expression; and 10) mathematics. The training will include didactic information, discussion, role playing of the instructional activities and specialized dual-language scaffolding techniques. It also will include guidance on using a personal digital assistant (PDA) progress monitoring system to inform the formation of the small learning groups and guide instruction. Further support for teachers' and teacher aides' effective use of PDA monitoring information will come from monthly mentor visits. Research Design and Methods: This study will utilize a three-cohort cluster randomized trial. One classroom will be selected per school, and children will be nested within classroom. Classrooms will be randomly assigned to the Literacy Express intervention or to the business as usual SCEP condition. Eight children will be recruited from each classroom. Pre- and post measures will assess immediate effects of the intervention, and follow-up in kindergarten will assess sustained effects of the intervention. Control Condition: Classrooms assigned to this condition will represent standard practice (i.e., "business as usual") in their districts. They will receive the Scholastic Early Childhood Program (SECP) curriculum, which focuses on large group and center-based activities. They will also receive paraprofessional support 90 minutes per day, four days per week. Key Measures: Multiple measures will be used to assess child literacy, language, math, and social skills, as well as teacher instructional practices. The researchers will also collect data on the fidelity of the intervention implementation. Data Analytic Strategy: To test the efficacy of the Spanish adaptation of Literacy Express while adequately addressing the nested structure of the data, the team will conduct multilevel analyses that account for repeated measurements of individuals across time. Researchers will test hypotheses with mixed-model analysis of covariance. These analyses will include variables that may moderate or mediate the outcomes. Publications Journal article, monograph, or newsletter Landry, S.H., Anthony, J.L., Swank, P.R., and Monseque-Bailey, P. (2009). Effectiveness of Comprehensive Professional Development for Teachers of At-Risk Preschoolers. Journal of Educational Psychology, 101(2): 488–465. doi:10.1037/a0013842

The Development and Efficacy of a Curriculum-Based Language and Early Literacy Intervention for Preschool Children with Developmental Disabilities

Wilcox, M. Jeanne

Development and Innovation

R324E060023

7/1/2006 to 6/30/2009

Purpose: The purposes of the proposed investigation are to (a) develop a language and early literacy curriculum called Teaching Emergent Literacy and Language across the Curriculum for use with preschool children with developmental disabilities, (b) to evaluate the extent to which the addition of an explicit oral language teaching protocol (EOLT) further enhances children's gains in oral language, pre-reading, and pre-writing skills, and (c) to determine the intensity of intentional instruction required for all children to progress in the curriculum. Secondary purposes are to examine factors that influence children's response to the interventions, professional development and intervention fidelity, and the perceived value and feasibility of the interventions from the perspective of the preschool classroom personnel. Project Activities: The researchers are developing an early literacy curriculum called Teaching Emergent Literacy and Language across the Curriculum for use with preschool children with developmental disabilities. A repeated measures design with random assignment will be conducted across three conditions (i.e., Teaching Emergent Literacy and Language across the Curriculum, Teaching Emergent Literacy and Language across the Curriculum + EOLT, and contrast conditions) in three cohorts of preschool children, one cohort each project year. The first and second cohorts will be followed into kindergarten, and the first cohort will be followed into first grade. Language and early literacy outcomes will be measured at the beginning and end of each year. Data will be analyzed using mixed and multivariate ANOVA, growth models, and moderator/mediator analyses to determine the efficacy of the modified curriculum. Products: The expected outcomes from this study include: A new intervention designed to support language and early literacy skills for use with preschool children with speech and language impairments or speech and language impairments and developmental delays, Mentoring, training, and developed materials on the adapted curriculum for teachers in the Phoenix Metropolitan Area; and Published reports on the efficacy of the intervention and the extent to which supplementing the intervention with an explicit oral language protocol further enhances gains in oral language, pre-reading, and pre-writing skills of children with developmental disabilities. Purpose: This project will develop a language and early literacy curriculum called Teaching Emergent Literacy and Language across the Curriculum for use with preschool children with developmental disabilities and evaluate the extent to which the addition of an explicit oral language teaching protocol (EOLT) further enhances children's gains in oral language, pre-reading, and pre-writing skills. It will also examine factors that influence children's response to the interventions, professional development and intervention fidelity, and the perceived value and feasibility of the interventions from the perspective of preschool classroom personnel. Setting: The preschools are located in Arizona. Population: Approximately, 45 classes and 216 preschool children will participate in this research. Of these 216 children, half of them will be children with speech and language impairments while the other half will be children with speech and language impairments plus developmental delay in other areas (e.g., cognitive) and have a nonverbal IQ of at least 65. Intervention: Both experimental intervention conditions include the Teaching Emergent Literacy and Language across the Curriculum intervention. The conditions are differentiated by the presence or absence of an EOLT. Teaching Emergent Literacy and Language across the Curriculum is a comprehensive curriculum designed to promote oral language and emergent literacy development in young children with developmental disabilities. An EOLT will be added to the curriculum in the second intervention condition. This will determine whether providing teachers with explicit oral language teaching strategies that can be integrated with the curriculum and infused across all classroom activities further enhances children's gains in oral language, pre-reading, and pre-writing skills. For both intervention conditions, teachers and their teaching assistants will be provided with training, mentoring, and support to implement their assigned intervention for all children in their classrooms. A total of 24 hours of formal training is planned throughout the year for each intervention. This training includes three key activities tailored to the specific intervention: (a) Didactic instructional classes to give teaching teams the knowledge and skills to teach intervention content; (b) In-classroom mentoring to ensure that teachers know how to provide explicit and intentional instruction within teacher-directed and child-directed activities, and (c) Guided teacher practice in the classroom to ensure that training has a positive and lasting impact on classroom instruction and teaching team performance. Research Design and Methods: An experimental study implementing random assignment of classroom to treatment condition will be implemented to determine the potential efficacy of the two interventions as compared to each other and a business as usual control group. A sample of 45 preschool classrooms will be recruited from the Phoenix metropolitan area. This sample will be recruited in three cohorts of 15 classrooms, which will then be randomly assigned to treatment condition. In each condition, approximately 4–5 children with speech and language impairments or speech and language impairments plus developmental delay in other areas will be randomly selected, and their progress will be measured through preschool. In addition, the progress of children in the first cohort will be measured through first grade, and the progress of children in the second cohort will be measured through kindergarten. Control Condition: The control groups will use the current preschool curriculum in their districts. One district will be implementing Creative Curriculum while the other will be implementing Hi-Scope. Key Measures: Children's nonverbal cognitive abilities, expressive and receptive vocabulary development, pre-writing, and literacy skills will be measured. In addition, data on the print richness of the classroom literacy environments, teacher use of oral language teaching practices, and teacher perspective regarding classroom activities, goals and environment will be collected. Finally, parents will complete surveys regarding their home literacy environments including the availability of literacy items and implementation of literacy-focused activities. Data Analytic Strategy: A combination of quantitative and qualitative analyses will be utilized to show evidence of the potential efficacy of the interventions and estimate growth trajectories over time for children with speech and language impairments and children with speech and language impairments plus developmental delay in other areas. The influences of family and home characteristics and environments on child outcomes will also be examined. Data will be analyzed using mixed and multivariate ANOVA, growth models, and moderator/mediator analyses to determine the efficacy of the modified curriculum. Publications Journal article, monograph, or newsletter Wilcox, M.J., Gray, S., Guimond, A., and Lafferty, A. (2011). Efficacy of the "TELL" Language and Literacy Curriculum for Preschoolers With Developmental Speech and/or Language Impairment. Early Childhood Research Quarterly, 26(3): 278–294. doi:10.1016/j.ecresq.2010.12.003

The Development and Validation of the Inventory of Phonological Awareness using Alternative Responses (IPAAR): An Assessment of Phonological Awareness Appropriate for Children with Speech Production Difficulties

Skibbe, Lori

Measurement

R324A150063

4 years (7/1/2015-6/30/2019)

Purpose: The purpose of this study is to develop a computerized adaptive test of phonological awareness, called the Inventory of Phonological Awareness using Alternative Responses (IPAAR). Phonological awareness, the explicit awareness of and ability to manipulate the sound structure of language, is a key predictor of later literacy development. However, there are no standardized, validated tools of phonological awareness suited to meet the needs of children with limited speech production, despite the critical nature of this emergent literacy skill. This project will address this gap by developing the IPAAR to assess levels of phonological awareness for children with speech production difficulties as well as a wide range of children with and without disabilities. Project Activities: The development and evaluation of the IPAAR will occur in three phases. During the first phase, the team will create and revise items, assessment instructions, and the user interface. The item pool will be administered to approximately 1000 typically developing children during the second phase to calibrate and eliminate items, create a common scale of phonological awareness, and examine construct validity. The final IPAAR will be administered to 300 children with speech production difficulties during the third phase to assess item validity for this population. The research team will use exploratory factor analysis and item response theory to determine the items to use and the instrument's validity. Products: The project will result in a new assessment called the IPAAR to assess levels phonological awareness for children with speech production difficulties. The project will also develop a website to make the assessment widely available. Setting: The research will primarily occur in Michigan. Children from Pennsylvania, Texas, and California will also participate during item development. Population: Approximately 300 children in preschool or early elementary school with speech production difficulties will participate in the research. Children will be included if they have an Individualized Education Program with active goals related to speech or language services. In addition, approximately 1000 typically developing 3- to 7-year-old children will participate in phases one and two of the research. Assessment: IPAAR is intended to be a computerized adaptive assessment that measures phonological awareness of children ages 3 to 7. It will address children's rhyming, blending, and segmentation skills. Its features will include options for nonverbal responses, scores that can be easily interpreted in terms of other assessments of phonological awareness, and individualized instructions depending on a child's skills. Research Design and Methods: A three-phase process will guide the development and evaluation of the IPAAR. During the first phase, the team will create and revise items, assessment instructions, and user interface. The item pool will be administered to typically developing children during the second phase to calibrate and eliminate items that are not functioning properly, create a common scale of phonological awareness, and examine the construct validity of items. During the third phase, the final IPAAR will be administered to children with speech production difficulties to assess item validity for this population. Control Condition: Due to the nature of this research, there is no control condition. Key Measures: Across all phases, children will be administered items from the IPAAR. During the second phase, the 3-year-old children in the sample and half of the participating 4- and 5-year old children will also be administered the phonological awareness subtest of the Test of Preschool Early Literacy; the other half of the 4- and 5-year-old children and all 6- and 7-year old children will be administered the phonological awareness subtest of the Comprehensive Test of Phonological Processing-2. All 5- to 7-year-old children will be administered the first sound fluency and phoneme segmentation fluency subtests of the Dynamic Indicators of Basic Early Literacy Skills Next. Data Analytic Strategy: Exploratory factor analysis and item response theory analysis will be used to identify items that should be eliminated or revised and to demonstrate that the IPAAR is measuring a unidimensional construct with construct validity.

The Effects of Online Decision Making Support for Home Visitors Using an RTI Approach to Promote the Language Development of At-risk Infants and Toddlers

Buzhardt, Jay

Efficacy and Replication

R324A120365

7/1/12-6/30/16

Co-Principal Investigators: Charles Greenwood and Dale Walker Purpose: Children who lack key early language and literacy experiences prior to kindergarten face significant challenges learning to read. Because of impoverished early language experiences, many children are not adequately prepared to benefit from the reading instruction they receive when they reach school. Home visitation is a viable model for improving the home language experiences that are known to promote children's growth in language and early communication. However, home visitors face challenges in promoting these outcomes including how to (a) identify children who are on a path toward language delay, and (b) provide the needed supports to parents/caregivers for changing that trajectory. The long-term goal of this research is to reduce the number of children who are not ready for school because of delays and disabilities in language and early communication skills that have antecedents prior to preschool. The aim of this project is to test the efficacy of a web-based intervention decision support system for home visitors, MOD: Making Online Decisions. This intervention (a) identifies children at risk for early language delay in a Response to Intervention (RTI) approach, and (b) assists home visitors in the design, delivery, and maintenance of a parent-implemented intervention for promoting their child's early language development. Project Activities: The researchers will conduct a waitlist randomized controlled trial to investigate the effects of the web-based MOD support system on home visitors' intervention decision making and children's communication outcomes. Home visitors serving infants and toddlers at risk for language delay will be randomly assigned to one of two conditions. Condition A consists of didactic training on data-based decision making, access to evidence-based language intervention, and use of the Early Communication Indicator (ECI) for progress monitoring. Condition B includes Condition A plus MOD decision-making support. The research team will recruit 80 home visitors and 160 children aged 6–34 months who are at risk for language delays. Children's early communication skills will be assessed before, during, and after the intervention to document intervention effectiveness. Products: The products of this project include evidence of the efficacy of MOD as a decision support system for implementing the RTI approach for early communication interventions with infants and toddlers in a home-visiting context, published reports, and presentations. Structured Abstract Setting: This study will be conducted in participants' homes in Kansas, Iowa, Minnesota, and Ohio. Sample: The sample will include 80 home visitors and 160 children (average of 2 per home visitor), aged 6–34 months, at risk for language delay. Children from both English- and Spanish-speaking homes will be included. Intervention: The MOD is a fully developed online decision support system for implementing the RTI approach with early communication interventions for infants and toddlers in a home-visiting context. It follows a systematic set of steps that lead to the provision of a more intensive intervention (Tier 2) as necessary. These steps are identified by the following questions posed to home visitors through the online MOD system: (1) Is there a problem? Children whose score on the progress monitoring assessment, the Early Communication Indicator (ECI), is at least one standard deviation below their age-based norm are identified as not making adequate progress and the child's growth chart is examined. (2) What is causing the problem? A list of clinical issues linked to poor progress are considered and ruled in or out (e.g., hearing loss). (3) What intervention should be used? A planning process leads to an appropriate intervention selection. The MOD recommends language-promoting strategies based on the child's communication skills as measured by the ECI. (4) Is the intervention being implemented? The home visitor and caregiver document the fidelity and dosage of the caregiver intervention, and enter it into the MOD to help guide subsequent coaching of the caregivers. (5) Is the intervention working? The MOD monitors, analyzes, and reports to the home visitor the child's performance on the ECI before and after intervention. If there is a lack of improvement, the recommendation is to revise the intervention. If progress is being made, the intervention is updated based on the progress monitoring data with new strategies recommended as the child develops more advanced means of communicating. The MOD also provides the home visitor with implementation support at each decision step. For example, home visitor and caregiver checklists supporting implementation of the language-promoting strategies are provided to document home visitor and parent intervention implementation activities. Research Design and Methods: The research team will conduct a waitlist randomized controlled trial with random assignment of 80 home visitors to one of two conditions: (1) Condition A (Comparison), which includes didactic training on data-based decision making, access to evidence-based intervention (language promoting strategies for parents/caregivers to use during daily routines with their children), RTI data-based decision-making framework for changing and intensifying interventions (e.g., Tier 2), and data from the online ECI for frequent screening and progress monitoring of growth in early communication; or (2) Condition B (Treatment) which includes all that Condition A receives plus MOD support. After 18 months of no MOD in Phase I of the study, home visitors in the Condition A waitlist group will use the MOD for 18 months in Phase 2. An average of two children per home visitor will be included in the study for a total of 160 children. Child outcome measures will be collected pre-intervention and every 6 months until the child turns 36 months or until the end of the study. Control Condition: As described above, the waitlist control group will receive all intervention components (training on decision making, language promotion strategies for parents, RTI framework, and progress monitoring with the ECI) but no MOD support for 18 months in Phase I of the study. In Phase 2, this group will receive MOD support along with the intervention for 18 months. Key Measures: Multiple measures will be used to assess child communication outcomes, including the Preschool Language Scale-5 and MacArthur-Bates Communicative Development Inventory. Researchers will also conduct assessments of parent engagement in the intervention and relationship with the home visitor. The researchers will collect data on the fidelity of the intervention implementation by home visitors in both groups through review of an online information system, independent observation by assessors during home visits, and surveys of home visitors. Implementation fidelity will be assessed for parents through direct observations and a self-report fidelity checklist. Data Analytic Strategy: The primary analytic techniques used to address the study research questions will be hierarchical linear modeling and structural equation modeling. Related IES Projects: The Infancy to Preschool Early Literacy Connection: Validation Studies of the Early Communication (ECI) Indicator of Growth and Development (R324A070085) Publications Journal article, monograph, or newsletter Greenwood, C.R., Walker, D., Buzhardt, J., Howard, W.J., McCune, L., and Anderson, R. (2013). Evidence of a Continuum in Foundational Expressive Communication Skills. Early Childhood Research Quarterly, 28(3): 540–554. doi:10.1016/j.ecresq.2013.02.006 Greenwood, C.R., Walker, D., Buzhardt, J., McCune, L., and Howard, W. (2013). Advancing the Construct Validity of the Early Communication Indicator (ECI) for Infants and Toddlers: Equivalence of Growth Trajectories Across Two Early Head Start Samples. Early Childhood Research Quarterly, 28(4): 743–758. doi:10.1016/j.ecresq.2013.07.002

The Infancy to Preschool Early Literacy Connection: Validation Studies of the Early Communication (ECI) Indicator of Growth and Development

Greenwood, Charles

Measurement

R324A070085

3/1/2007 to 2/28/2011

Purpose: Speech and communication impairments or delays are the most frequently reported reason for need of early intervention services. To enable teachers and other service providers to target instruction to young children's specific needs, valid and sensitive assessments are needed that measure incremental growth in early language skills, accurately predict early literacy development, and are easily administered. To address this need, researchers are evaluating a progress monitoring measure of early communication skills called the Early Communication Indicator (ECI). The ECI is intended to be used with infants and toddlers, including those who have disabilities or developmental delays. The purpose of this study is to assess whether the ECI is sufficiently sensitive for use as a progress monitoring assessment and to determine whether performance on the instrument predicts subsequent and important early literacy outcomes when the children are 4 years old. Project Activities: The researchers are following four cohorts of children until they are 48 months old. The youngest group begins when they are 6 months old; cohort 2 begins at 24 months old; cohort 3 at 36 months; and cohort 4 is over 36 months at the start. All children are enrolled in Kansas Early Start and Head Start Programs. Nine percent of the children receive early intervention or childhood special education services. Data on children's communication skills will be collected quarterly using the ECI along with other early language and early literacy measures. The researchers will use these data to determine relationships among key communication skills measured by the ECI and subsequent early literacy skills over time. Products: Reports on the use of the ECI as a progress monitoring assessment of the development of young children's communication skills and its usefulness for predicting early literacy outcomes. Structured Abstract Purpose: Speech and communication impairments or delays are the most frequently reported reason for need of early intervention services. To enable teachers and other service providers to target instruction to young children's specific needs, valid and sensitive assessments are needed that measure incremental growth in early language skills, accurately predict early literacy development, and are easily administered. To address this need, researchers are evaluating a progress monitoring measure of early communication skills called the Early Communication Indicator (ECI). The ECI is intended to be used with infants and toddlers, including those who have disabilities or developmental delays. The purpose of this study is to assess whether the ECI is sufficiently sensitive for use as a progress monitoring assessment and to determine whether performance on the instrument predicts subsequent and important early literacy outcomes when the children are 4 years old. Setting: The research will take place in Kansas. Population: Historical data previously collected and prospective new samples will be utilized. All participating children are enrolled in Kansas Early Head Start and Head Start Programs. Of these children, 9 percent also receive early childhood special education services. Assessment: The ECI is a play-based progress monitoring assessment that uses standard toy sets as alternate test forms to monitor children's growth in expressive communication. The ECI focuses on four key skill elements: gestures, vocalizations, and single and multiple word utterances. Research Design and Methods: This study will utilize a sequential cohort longitudinal design with repeated measurements of participants. The researchers are following four cohorts of children until they are 48 months old. The youngest group begins when they are 6 months old; cohort 2 begins at 24 months old; and cohort 3 at 36 months. Cohort 4 is over 36 months at the start of the study, and it will be comprised of children from a historical data sample. Cohorts 1-3 will be followed longitudinally to 48 months of age. Child progress monitoring data will be collected at least quarterly, and child outcome language and early literacy data will be collected at 12-, 24-, 36-, and 48-month age points. Cohort 4 will be assessed only at 48 months of age. Control Condition: Due to the nature of this study, there was no control condition was utilized. Key Measures: A set of measures that reflect growth in young children's language and early literacy proficiency is planned. The ECI will be administered at least quarterly for early screening and progress monitoring of children 6 to 36 months of age. Other progress monitoring and norm-referenced measures of children's receptive and expressive language, cognitive ability, and early literacy skills will be administered. Finally, sociodemographics information related to participating children and their families will be collected. Data Analytic Strategy: Structural equation modeling will be used to examine direct, mediational, moderational, and recipriocal effects over time. Data from the historical sample will be analyzed to derive initial growth models and dynamic over-time relationships among the ECI four key skill elements. Data from the new sample will be used to cross-validate the relationships derived by analyses of the historical sample. Publications Book Carta, J.J., Greenwood, C.R., Walker, D., and Buzhardt, J. (2010). Using IGDIs: Monitoring Progress and Improving Intervention Results for Infants and Young Children. Baltimore, MD: Paul H. Brookes. Book chapter Buzhardt, J. and Walker, D. (2010). General Guidelines for IGDI Training and Certification. In J.J. Carta, C.R. Greenwood, D. Walker, and J. 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Tools for Families

Bishop, Crystal D.

Development and Innovation

R324A200044

3 years (07/01/2020 - 06/30/2023)

Co-Principal Investigator: Reichow, Brian; Snyder, Patricia; Algina, James J. Purpose: This project aims to develop and test for promise an intervention for preschool teachers to enhance their knowledge and skills to use relational and participatory family-centered practices to engage families of young children with disabilities in planning, implementing, and evaluating embedded instruction for early learning (EIEL) at school and at home. Tools for Families (TFF) will be a new component of EIEL, which currently includes Tools for Teachers, an existing IES-funded professional development (PD) intervention and toolkit for preschool teachers to use EIEL practices in the classroom. This intervention aims to increase families' engagement in EIEL across school, home, and community settings and enhance their self-efficacy (confidence and competence) to use EIEL practices with their children, as well as improve children's adaptive and school readiness skills Project Activities: The research team will use an iterative process of development, including focus groups and field testing, to develop the TFF intervention. TFF will be tested for its promise for improving family and child outcomes using a small randomized controlled trial (RCT). A cost analysis will also be conducted to assess the cost of implementing Tools for Teachers plus TFF relative to the cost of Tools for Teachers only. Products: The products of this project will include a fully developed TFF intervention for preschool teachers in inclusive classrooms and evidence of its promise for improving outcomes for children with disabilities and their families. The project will also result in peer-reviewed publications and presentations as well as additional dissemination products that reach education stakeholders such as practitioners and policymakers. Structured Abstract Setting: The project takes place in inclusive preschool classrooms in Florida and California. Sample: Up to 24 stakeholders including content experts on EIEL and family-centered practices, preschool teachers, families of preschool-aged children with disabilities, and administrators of special education and preschool programs will participate in stakeholder panels to inform the development and refinement of TFF. Fifty teachers who have completed Tools for Teachers PD and 140 families and children will participate in a field test and a randomized pilot study of TFF. Intervention: The TFF intervention will include an operationalized set of relational and participatory family-centered practices, an embedded instruction framework and visual model for facilitating shared decision-making between teachers and families, and a multimedia toolkit. Teachers will learn to engage families in identifying (a) learning priorities for their children and why these priorities are important, (b) logical times to teach priority skills at school and at home, (c) strategies for embedding learning opportunities within school and home activities and routines, and (d) strategies for evaluating the effects of EIEL. TFF will be a 6-month intervention that includes teacher-family meetings and ongoing, individualized communication between teachers and families to facilitate collaboration and implementation of EIEL across school and home contexts. Research Design and Methods: An iterative design consisting of focus groups and a field trial followed by intervention refinement will be used to develop the TFF intervention in the first 2 years of the project. In the final year, a randomized pilot study will be conducted to examine the potential efficacy of TFF. Forty preschool teachers who have demonstrated competence to implement EIEL will be randomly assigned to conditions. Three children with a disability and one of their family members will be recruited from each classroom to participate in the study. The pilot study will examine the impact of TFF on (a) family self-efficacy to use EIEL practices, (b) family engagement in EIEL, and (c) children's adaptive and school readiness skills relative to the comparison condition. In addition, the study will examine teachers' intervention fidelity as well as teacher and family perspectives about the utility, feasibility, and acceptability of the intervention. A cost analysis will also be conducted to examine the cost of implementing Tools for Teachers plus TFF relative to Tools for Teachers only, looking at overall costs and costs incurred by school districts. Control Condition: Teachers in the control condition will have completed Tools for Teachers PD and demonstrated competence to implement EIEL with fidelity, but they will not receive TFF. Key Measures: Teachers' use of family-centered relational and participatory practices to engage families in EIEL will be assessed with an observational measure and teacher and family reports that will be developed and validated by the research team. Family outcome measures include an observational measure, family reports of their engagement in EIEL, and a family self-efficacy scale that will be developed and validated for this study. Child outcomes will be assessed using the Vineland Adaptive Behavior Scales – Third Edition and the Desired Results Developmental Profile, which is an instrument used by teachers to assess children's developmental and school readiness skills. Social validity measures and focus groups will be used to assess the usability, feasibility, and acceptability of TFF. Data Analytic Strategy: Descriptive analyses of teacher and family surveys and thematic analyses of focus group data will be conducted during the iterative process of development. Pre-post descriptive analyses of teacher, family, and child outcomes will be examined in the field trial. Multilevel analysis of covariance and multilevel multivariate analysis of covariance, supplemented by effect size estimates, will be used to examine teacher, family, and child outcomes in the pilot study. The ingredients method to cost analysis will be used to determine the incremental cost of implementing Tools for Teachers plus TFF relative to Tools for Teachers only. Related Projects: Impact of Professional Development on Preschool Teachers' Use of Embedded-Instruction Practices (R324A070008); Impact of Professional Development on Preschool Teachers' Use of Embedded-Instruction Practices: An Efficacy Trial of Tools for Teachers (R324A150076)

Validating the Child Outcomes Summary Form (COSF) for Use in Accountability Systems for Programs Serving Young Children with Disabilities

Hebbeler, Kathleen

Measurement

R324A090171

7/1/2009 to 6/30/2013

Purpose: The purpose of this project is to evaluate the reliability and validity of the Child Outcomes Summary Form (COSF), a summary tool used by many states in reporting annual child progress for IDEA Part B and C Preschool Programs. The COSF is used by local education teams to synthesize multiple sources of information on how a child receiving special education preschool services functions across settings and situations. As part of COSF, each child is assigned a rating which indicates the child's overall functioning in three educational outcome areas: social-emotional skills, acquisition and use of knowledge and skills, and use of appropriate behavior to meet their needs. The COSF ratings at the program entry and exit point provide an indication on whether the child is making progress in these educational outcome areas. Project Activities: The research team will conduct a series of research studies to examine the reliability and validity of the Child Outcomes Summary Form. Based on the findings from these studies, the research team will then revise the COSF and supporting documents for implementing the revised COSF. Products: The researchers will provide data on the reliability and validity of the COSF. The researchers will also provide a revised version of the COSF and supporting documents. Other expected products include reports on the validation and the revision of the COSF. Setting: Eighteen states currently using the COSF system to meet the IDEA Part B and C Preschool Programs accountability requirements, and selected local early intervention and early childhood special education programs within these states will participate in the study. Population: The population varies across the five studies in this project, but includes children between birth and 5 years of age and local education provider team members consisting of teachers, parents, early interventionists, and therapists who assess young children with disabilities in early intervention or early childhood special education programs. Assessment: The COSF is used by local education teams (e.g., teachers, parents, early interventionists, therapists) to synthesize multiple sources of information on how a child receiving special education preschool services functions across settings and situations. As part of COSF, each child is assigned a 7-point rating which indicates the child's overall functioning in three educational outcome areas: social-emotional skills, acquisition and use of knowledge and skills, and use of appropriate behavior to meet their needs. Ratings of 6 or 7 indicate that the child is showing varied levels of age-appropriate functioning related to the outcome across settings and situations; ratings of 1 to 5 indicate varying degrees of delay in functioning. The COSF ratings at the program entry and exit point provide an indication on whether the child is making progress in these educational outcome areas. Because the scale was developed to be used by programs serving young children with disabilities, it was intentionally designed to be sensitive to change among children who are functioning below age expectations and to have minimal sensitivity among children whose functioning is considered age appropriate. Research Design and Methods: The reliability and validity of the COSF will be established through five studies that together examine the reliability of the COSF rating process, the COSF's construct and concurrent validity, and other validity claims. The reliability of the COSF rating process will be studied by examining the consistency of local program team ratings, and by examining how well children's COSF ratings match their assessment and evaluation data. The construct validity of the COSF will be established by examining the relationship among three outcome areas as well as changes in children's COSF ratings in each outcome area between program entry and exit. The concurrent validity of the COSF will be established through examining the relationship between children's COSF ratings and their scores on existing standardized measures of child development and behaviors. Survey data will be collected to examine the team members' perceptions on COSF usage and perceived impact on practice. Control Condition: Due to the nature of this study, there will be no control condition in this study. Key Measures: Researcher-developed measures include video coding forms that will be used to record and evaluate the team's decision making process, record review forms that will be used to synthesize children's assessment and evaluation data, and local provider surveys that will be used to collect data on the team member's perceptions regarding COSF usage. Existing standardized child outcome measures include Second Edition of the Battelle Developmental Inventory (BDI-2) and the Vineland Adaptive Behavior Scales (Vineland-II); both will be used to assess the concurrent validity of the COSF. Data Analytic Strategy: Multiple statistical and measurement techniques as well as qualitative analysis will be used to evaluate the reliability and validity of the COSF. Correlational analysis will be used to examine the relationship between children's COSF ratings and their BDI-2 and Vineland-II scores and to examine the relationship between children's COSF ratings and their educational outcomes. Qualitative analysis will be used to analyze of the team's decisions-making process and to evaluate the consistency between children's COSF ratings and their assessment and evaluation data.

Validation of Cognitive Problem-Solving and Movement Infant-Toddler IGDIs for Screening and General Outcome Progress Monitoring

Walker, Dale

Measurement

R324A150166

7/1/2015-6/30/2019

Co-Principal Investigators: Charles Greenwood and Jay Buzhardt Purpose: This study will examine the reliability and validity of two Individual Growth and Development Indicators (IGDIs) — the Early Cognitive Problem Solving Indicator (EPSI) and the Early Movement Indicator (EMI) — designed for screening and progress monitoring in intervention decision making with infants and toddlers with and without disabilities. High-quality services for young children with or at risk for disabilities increasingly rely on the use of data for decision making. The IGDIs were designed to meet this need. They are fully developed brief assessments with evidence of feasibility for practitioners to administer. This project will conduct parallel studies to determine whether the EPSI and EMI are reliable and valid, sensitive to growth over time, and have predictive utility for screening decisions. Project Activities: Using both extant and prospective data from similarly aged samples of children, this study will investigate the psychometric properties of the EPSI and EMI. For each of the two measures, children will be assessed quarterly from age 6 to 36 months, with follow-up data collected at 48 months. In addition to examining reliability and validity, the data will be analyzed to determine a variety of other characteristics of the assessments, including normative benchmarks for each age, sensitivity to growth and change over time, and the predictive value of the measures for use in screening decisions. Products: The products of this project will include the information on psychometric properties of the EPSI and EMI and the predictive utility of using data from these measures for intervention decision making for infants and toddlers with and without disabilities. There will also be peer-reviewed publications and presentations. Structured Abstract Setting: The research will take place in Part C of the Individuals with Disabilities Education Act (IDEA) early intervention programs (centers and homes) for children with identified disabilities and Early Head Start programs serving children with and at risk for disabilities in Kansas and Missouri. Sample: The first sample, for which data collection began in 2008, is anticipated to include up to 600 infants and toddlers with or at risk for disabilities. The prospective sample will include approximately 400 infants and toddlers with or at risk for disabilities, as well as the staff of their early education and home visitor programs. The children will begin participation at ages 6 to 36 months with the final measurements at age 48 months. Assessment: The EPSI and EMI are two of four previously developed infant/toddler Individual Growth and Development Indicators (IGDIs). The IGDIs were designed for making data-based decisions in early intervention, including universal screenings for risk or need for services, intervention decisions, and progress monitoring over time. These are direct observation assessments of the child in an authentic play context, with a web-based system available to help early educators make data-based intervention decisions. The EPSI focuses on measuring early problem solving and cognition and the EMI focuses on early movement and motor development. Research Design and Methods: The children in the prospective sample will be tested quarterly from age 6 to 36 months and at 48 months, similar to the ages at which children were assessed for the extant data. Assessments will be the same in both samples, though there will be additional criterion measures of cognition and motor ability for children in the prospective sample to examine psychometric properties. The researchers will examine (1) assessment benchmarks for determining whether children's skills are developing within a normative range of expectation for their chronological age, (2) whether the assessments are sensitive to growth and change over time, (3) whether the measures are sensitive to moderators, (4) whether key measured skills support a continuum of growth and change over time, (5) whether patterns of growth for each key skill are equivalent across samples, (6) concurrent and predictive validity, and (7) predictive utility of each assessment as it relates to screening decisions. The researchers will also compare the two samples, assessed at different points in time, for measurement invariance or equivalence, as well as differences in growth trajectories of the total sample and subgroups. Control Condition: Due to the nature of the research design, there is no control condition. Key Measures: The measures used in this project are the EPSI and EMI, the standardized criterion measures for determining validity, and socio-demographic measures for children, family, and teachers/interventionists. The criterion outcome measures include the Bayley Scales of Infant and Toddler Development-III, Peabody Scales of Motor Development, Brigance Early Childhood Screens, and Ages and Stages Questionaire-3. Data Analytic Strategy: The research team will use the following data analytic methods : Multivariate growth curve modeling will be used for the first three research questions (normative benchmarks, sensitivity to growth and change, and sensitivity to moderators); exploratory visual analysis of the predicted multilevel growth curves for the fourth research question (skills supporting continuum of growth and change over time); a cross-level interaction of group with growth parameters for the fifth question (growth equivalency across samples); Pearson correlations for the sixth research question (concurrent and predictive validity); and Receiver Operating Characteristic curve analysis for the seventh research question (predictive utility related to screening decisions). Publications Book chapter Carta, J. J., Greenwood, C. R., Goldstein, H., McConnell, . . . Atwater, J. (2016). Advances in multitiered systems of support for prekindergarten children: Lessons learned. In S. R. Jimerson, M. K. Burns, & A. M. VanDerHeyden (Eds.), Handbook of Response to Intervention (pp. 587–606): Springer US. Journal article, monograph, or newsletter Greenwood, C., Carta, J., Walker, D., Watson-Thompson, J., Gilkerson, J., Larson, A., and Schnitz, A. (2017). Conceptualizing a Public Health Prevention Intervention for Bridging the 30 Million Word Gap. Clinical Child and Family Psychology Review, 20(1): 3–24. Retrieved from https://link.springer.com/article/10.1007%2Fs10567–017–0223–8.

Validation of the Behavioral and Emotional Screening System for Early Identification for Social-Emotional and Behavioral Problems in Preschoolers

DiStefano, Christine

Measurement

R324A100104

7/1/2010 to 6/30/2014

Purpose: During the last four decades, the number of preschoolers served in center-based programs (e.g., childcare centers, Head Start Programs, publicly funded pre-kindergarten programs, private preschools) has increased dramatically. Concurrent with the expansion of services to young children has been the fact that many young children who are enrolling in preschools exhibit emerging behavioral and social emotional difficulties that are severe enough to impede their social development and educational progress. The purpose of this study is to validate the Behavioral and Emotional Screening System (BESS) teacher rating form for preschool-aged children to determine the plausibility of the instrument as part of a universal screening system. There is limited information on screening systems for use with preschoolers. This project will examine the BESS to determine its: (a) psychometric properties, (b) accuracy in predicting children’s behavior over time, and (c) implementation feasibility. Project Activities: As a first step, researchers will review the pool of items from which the BESS was developed to make sure that those chosen are the ones that are most likely to identify children at-risk for poor social-emotional development. Data from children will be collected twice yearly over the course of three years to provide information on various aspects of reliability and validity. Data will also be collected from teachers and assistant teachers to assess the feasibility of the BESS. Products: The main product will be a fully developed and validated assessment for wide-scale use in preschools to identify early those who at risk for social-emotional disorders. Data will be made available on the BESS’ feasibility, efficiency, acceptability, validity, and reliability. Structured Abstract Setting: The research will be conducted in school districts across South Carolina. Population: Children aged 4-5 will be included in this study. Assessment: This study will validate the BESS teacher rating form for preschoolers (BESS TRS-P). The BESS was developed from the longer preschool form of the Behavioral Assessment System for Children (BASC 2nd Ed.; Reynolds & Kamphaus, 2004) which is widely used across the U.S. for behavioral assessment and intervention for children, especially those with behavioral and emotional problems. Research Design and Methods: The research team will first conduct an in-depth analysis of the norming data base from which the BESS items were selected, to ensure that the screener is using the best performing items on children’s behavioral and emotional status. The reliability and validity of the BESS will then be tested in four stages. Stage 1 focuses on establishing construct stability, which will include determining if scores on the BESS are internally consistent, stable across raters, and stable across time. In addition, the research team will determine whether the time requirements for assessing a student are reasonable for use by preschool teachers. Stage 2 focuses on concurrent validity, to determine whether the BESS relates to other screening instruments measuring similar constructs. In Stage 2, researchers will assess the trade-off between the time saved using the short form of the BESS compared to the information gained from using the longer assessment the BESS was developed from, the Behavioral Assessment System for Children. Stage 3 focuses on the evidence of predictive validity of the BESS over a longer time period than one academic year. In this stage, the research team will also use a teacher questionnaire to assess the acceptability, feasibility, and usability of the BESS as a screening tool. In Stage 4, the research team will assess the differential validity of the BESS to determine whether this measure can distinguish between preschoolers who possess a disorder and those who are developing normally. The cut scores for the screener must have an acceptable balance of sensitivity (the proportion of children with disorders that are correctly identified) and specificity (the proportion of students without a disorder that are not flagged at risk by the screener). In Stage 4, researchers will also address feedback from teachers on any weaknesses of the BESS screener. Data will be collected twice yearly (fall and spring) over the course of three school years. Cross-sectional and longitudinal data will be available for three cohorts of children over these three years from pre-kindergarten through first grade. Data will also be collected from teachers and assistant teachers over this time. Control Condition: Due to the nature of the design of this project, there is no control group. Key Measures: In addition to the BESS, other social-emotional, school readiness, and academic assessment measures will be included in this study. Questionnaires will also be used to assess the acceptability, feasibility, and usability of the BESS, and to document referrals for significant behavior problems, special services, and problematic classroom behavior. Data Analytic Strategy: Correlational analyses will be the primary analytic method used in Stages 1 through 3. ROC (Receiver Operating Characteristic Curve) analyses and Item Response Theory procedures will be used in Stage 4 to determine differential validity of the BESS. Publications Book Horn, E.M., Palmer, S.B., Butera, G.D., and Lieber, J.A (2016). Six Steps to Inclusive Preschool Curriculum: A UDL-Based Framework for Children's School Success. Baltimore, MD: Brookes Publishing. 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Mihai, A., Friesen, A., Butera, G., Horn, E., Lieber, J., and Palmer, S. (2015). Teaching Phonological Awareness to all Children Through Storybook Reading. Young Exceptional Children, 18(4): 3–18. doi:10.1177/1096250614535221

Validity Studies of the Classroom Code for Interactive Recording of Children's Learning Environments (CIRCLE) (Version 2.0)

Irwin, Dwight

Measurement

R324A170048

4 years (9/1/2017-8/31/2021)

Co-Principal Investigators: Charles Greenwood; Judith J. Carta; Alana Schnitz Purpose: The goal of this project is to validate a classroom observational measure that can be used to assist preschool teachers in revising and implementing interventions for children who are identified as unresponsive to existing classroom learning contexts (e.g., classroom activity structure such as small groups, academic content such as literacy). When a child's behavior is not responsive to the instruction provided, intervention adjustments are necessary. The Classroom Code for Interactive Recording of Children's Learning Environments (CIRCLE) (Version 2.0) is a classroom observation system that provides information to teachers on what adjustments are needed by assessing time-sampled contexts, teacher behavior and child behavior, and using these data to estimate response dependencies (i.e., the probability that a certain child behavior co-occurs with a specific classroom context and teacher behavior). To provide this information, the measure must be sensitive to variations in children's response dependencies, psychometrically sound, and provide benchmarks for decision making. This project aims to strengthen the evidence for the validity of the CIRCLE for use within inclusive preschool settings that use a tiered approach to learning, with the ultimate goal of improving outcomes for young children with or at risk for disabilities. Project Activities: To validate the CIRCLE, the research team will combine extant data with prospective data collection from the CIRCLE. The extant data will be derived from three completed studies of preschool classrooms. For the prospective sample, data will be collected from preschool classrooms using CIRCLE and existing criterion measures. The project will analyze these data to examine construct, predictive, and criterion validity; benchmarks; moderation effects; and cross-validation/replicability across samples, as well as develop new procedures for using the Tune-up Checklist, a tool for supporting teacher's use of data from the CIRCLE for intervention decision making. Products: The products of this project will include findings related to the validity of CIRCLE, benchmarks, and new practice knowledge. Products will also include technical information about the instrument, observer training manuals, tablet software, a tool for supporting teachers' data-based decision making, as well as peer-reviewed publications and presentations. Structured Abstract Setting: The prospective research will take place in inclusive preschool classrooms in school and community programs (i.e., Federal/state funded Pre-K, Title 1, Head Start) in Kansas and Missouri that serve low-income, at-risk children and children with Individual Education Plans (IEPs). The extant data will be derived from three previous investigations of preschool classrooms that used data collected with the CIRCLE. Sample: The extant dataset includes 489 preschool children (ages 3-5) in 106 classrooms and at least one teacher per classroom. The prospective sample will include approximately 360 preschool children in 120 classrooms (three target children per classroom) and at least one teacher per classroom. The sample will include preschool children who are typically developing and from low-income backgrounds, children who have IEPs, and children who are dual-language learners (DLL). Assessment: The CIRCLE is a fully developed observation system for use in preschool classrooms that uses multiple recurring time samples of learning contexts, teacher behaviors, and child behaviors to estimate child response dependencies. The information is intended to guide preschool teachers in implementing and revising interventions when children are not responsive to their current intervention. Observational data is collected using mobile technology (i.e., tablets). The assessment system is designed so that it can be used by a number of different professionals, including school psychologists, early childhood education specialists, teacher trainers, response-to-intervention teams, and researchers. In practice, CIRCLE data is analyzed to create displays of the information to guide intervention adaptations. The data is then to be used to inform the collaborative creation (e.g., between a coach and teacher) of a Tune-up Checklist, a tool to help plan intervention modifications and reach implementation fidelity. Research Design: The purpose of this project is to validate CIRCLE, an observational measure that assesses the classroom context and teacher and child behaviors, to determine what changes are needed to support children who are unresponsive to existing interventions. More specifically, the research aims to examine the following: (1) whether children's behaviors are significantly dependent on variations in classroom academic content, activity structures, teacher literacy focus contexts, and teacher behaviors (i.e., construct/predictive validity); (2) the benchmarks (base levels occurrence) of CIRCLE events and associated response dependences; (3) whether children's characteristics (age, gender, IEP and dual-language learner status) moderate children's response dependencies; (4) whether exposure to an instructional intervention moderates differences in children's response dependencies in the extant sample (i.e., treatment validity); (5) whether child response dependencies measured by CIRCLE replicate across two time-displaced samples (i.e., cross-validation/replicability); and (6) the relationship of CIRCLE outcomes to existing measures of language, literacy, and social behavior (i.e., criterion validity). To address these questions, a cross-validation design comprised of two, time-displaced samples will be used. For the prospective data, the team will collect data across all four years of the project, with CIRCLE assessments conducted in the middle of the year, criterion outcome measures in the fall and spring, and sample description measures in the fall. The investigators will use generalized linear mixed models (GLMM) to analyze the data. Control Condition: Due to the nature of the research, there is no control group. Key Measures: In addition to the primary measure, CIRCLE, the following measures will be used as criterion for the validity study: Preschool Early Literacy Indicator, Get Ready to Read, Test of Preschool Early Literacy, Pre-IPT–Oral Language Tests (English and Spanish), and Social Skills Improvement System-Rating Scale. Measures will also include surveys and assessments to gather background information on the sample to use as predictors in the model, including a child/family demographics questionnaire, teacher preparation and experience survey, and the Teacher Self-Efficacy Scale. Data Analytic Strategy: Three-level GLMM will be used to analyze response dependencies based on time-sampled categorical data nested within teachers/classrooms. GLMM will be used to estimate the effects of teacher-level (i.e., attained education, self-efficacy) and child-level (i.e., IEP and/or DLL status, socioeconomic status, literacy, age, gender) predictors on response dependencies. They will also use GLMM to examine criterion test measures as predictors of response dependencies. Project Website: http://earlyliteracyjgcp.res.ku.edu/circle

Vocabulary, Oral Language, and Academic Readiness (VOLAR): A Language Intervention for Latino Preschool English Language Learners with Language Disorders

Gutierrez-Clellen, Vera

Development and Innovation

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6/1/2006 to 5/31/2009

Purpose: The purpose of this project is to develop and evaluate the potential efficacy of a focused vocabulary and oral language intervention for improving the academic readiness (VOLAR) of preschool Spanish-speaking children with language disorders within the preschool curriculum. The VOLAR program was designed to evaluate whether a focused and direct vocabulary and oral language instruction facilitates academic readiness (i.e., vocabulary, oral language, phonological awareness, cognitive, and socioemotional outcomes) in English Language Learners (ELLs) with language disorders compared to their peers with language disorders who do not receive the VOLAR intervention. In addition, the effects of the VOLAR intervention will be compared across bilingual and English-only modalities to determine whether the intervention presented in a bilingual modality (BIVOLAR) leads to greater improvements in vocabulary, oral language, and academic readiness than the VOLAR intervention presented in English only (EVOLAR). Project Activities: The researchers are developing the VOLAR intervention for use with ELL preschool children with language disorders. The effects of the VOLAR intervention will be evaluated using measures of vocabulary, oral language, phonological awareness, as well as measures of cognitive and socioemotional development. Hierarchical linear modeling will be used to (a) estimate growth trajectories over four testing times (prior to the intervention, immediately after the intervention ends, at 3 months, and at 8 months) based on student-level data and (b) to evaluate the research questions. Products: The expected outcomes from this study include: A vocabulary and oral language intervention for improving the academic readiness of preschool, Spanish-speaking, preschool children with language disorders, and Published reports on the effects of the VOLAR intervention on academic readiness. Setting: The preschools are located in Arizona and Southern California. Population: Approximately 300 preschool children will participate; 240 of these children will have language disorders while 60 children will have typical language development. All participants will be 4 years old, speak Spanish as their first language, speak minimal or no English, and attend bilingual classrooms. Children with typical language development will have no history of language or developmental delay, based on parent and teacher reports. Intervention: The VOLAR intervention is designed to improve vocabulary and oral language skills for Spanish speaking children with language disorders. VOLAR will be provided for four days per week for twelve weeks. Each session will last 45 minutes and take place in small groups with a trained language teacher. Children will receive instruction through read-alouds, repeated dialogic reading, and hand-on activities thematically related to the intervention texts. The children will be taught six target vocabulary words per week, including two verbs, that will be embedded in either narrative or expository texts. In addition, the children will be taught to understand and answer "who," "what," "where," "when," "how," and "why" questions; produce complex sentences; and formulate questions. Research Design and Methods: A sample of 300 participants will be evenly recruited from Phoenix and San Diego. Children with language disorders will be randomly assigned to the VOLAR experimental or control (NOVOLAR) groups. Children in the VOLAR group will then be randomly assigned to one of two intervention groups: English-only VOLAR or Bilingual VOLAR. Children in the NOVOLAR control group will be randomly assigned to one of two NOVOLAR groups: English-only NOVOLAR or Bilingual NOVOLAR. The sample will be recruited in three cohorts of 100 children each. All children will be followed from preschool to kindergarten and assessed three months and eight months after receiving the intervention. The 60 children with typical language development will participate only in the scheduled assessment activities in order to provide typical language developmental data from preschool to kindergarten. They will not receive VOLAR or NOVOLAR interventions. Control Condition: Children in the control groups will participate in curriculum-based hands on activities (e.g., memory games, manipulatives, etc), but will not be taught target vocabulary or oral language skills. Key Measures: Children will be evaluated using measures of vocabulary, oral language, phonological awareness, as well as measures of cognitive and socioemotional development. Data Analytic Strategy: Hierarchical linear modeling (HLM) will be used to evaluate the potential efficacy of the VOLAR interventions and estimate child growth trajectories over time. Publications Book Gutiérrez-Clellen, V., Simon-Cereijido, G., and Restrepo, M.A. (2013). Improving the Vocabulary and Oral Language Skills of Bilingual Latino Preschoolers: An Intervention for Speech-Language Pathologists. San Diego: Plural Publishing, Inc. Journal article, monograph, or newsletter Gutiérrez-Clellen, V., Simon-Cereijido, G., and Sweet, M. (2012). Predictors of Second Language Acquisition in Latino Children With Specific Language Impairment. American Journal of Speech-Language Pathology, 21(21): 64–77. doi:10.1044/1058–0360(2011/10–0090) Restrepo, M.A., Morgan, G.P., and Thompson, M.S. (2013). 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