

Strategies to Enhance Cultural Competency of an Assistive Technology Program to Promote Early Literacy Among Preschoolers with Disabilities

Ruby Natale, Ph.D., Psy.D., Sarah E. Messiah, Ph.D., MPH, Patricia C. Pujals, M.A., Monica Dowling, Ph.D., Michelle Schladant, Ph.D.
University of Miami Miller School of Medicine, Mailman Center for Child Development, Miami, Florida USA

Abstract

The overall aims of this 5-year Step UP AT project are to advance evidence-based, culturally sensitive assistive technology (AT) practices to (1) promote inclusion and (2) improve early literacy skills among children with disabilities. We describe here the first year, 16-week pilot phase of this project. Throughout this phase **cultural targeting strategies** were employed when promoting AT use and in developing the intervention *toolkit* for use in the classroom and home settings. Focus groups were conducted to explore cultural variables that may have an impact on acceptance of AT with this population. Focus group results show that the pilot phase has laid promising groundwork for the full AT program trial targeting underserved children.

Table 1. Step UP AT Interactive Toolkit Components*

Self-Guided Learning Online Modules	Assistive Technology Resources	Expert Training
A total of 4 for teachers A total of 4 for parents	1. Classroom kits of AT devices 2. Access to a Step Up AT Device Lending Library of AT resources 3. Demonstration guides for AT devices	1. A total of 3 coaching sessions for teachers per module 2. Parent workshop 3. Follow-up sessions with primary caregivers to review AT strategies

*All materials were available in Spanish and English



Table 2. Step UP AT Pilot Study Participant Demographic Characteristics (Total N=64)

Role	N (%)
Teacher	10 (16)
Teacher Assistant	10 (16)
Primary Caregiver	22 (34)
Child	22 (34)
Ethnicity	N (%)
Hispanic	64 (100)
Child Disability	N (%)
Autism Spectrum Disorder	2 (5)
Developmental Delay	1 (4)
Speech and Language Delays	19 (86)
Severity of Disability	N (%)
Severe	9 (41)
Moderate	12 (55)
Mild	1 (4)

Child study inclusion criteria included: (1) be between the ages of three and five years old; (2) documented disability on an individualized education plan (IEP); and (3) consent to participate from primary caregivers.

Methods

Participants were recruited to participate in a 16-week pilot intervention. Table 3 below describes each specific strategy and gives examples that were used during the pilot. Post-intervention, three focus groups (one for teachers (N=8) age (M= 45.1); teacher assistants (N=9) age (M=50.7); and primary caregivers (N=10) age (M=37.9)) were conducted in Spanish to elicit feedback on the utility, relevance, quality and cultural appropriateness of the pilot project and inform adaptations of subsequent interventions. Those who participated in the focus groups were volunteers from the pilot intervention. All participants were female except for one male in the primary caregiver focus group. The focus groups were transcribed, translated, and coded by a project team member and an independent coder. They used deductive methods applying established pre-codes (usefulness, relevance, quality and culture). Coders checked for interrater agreement, identified emerging sub-codes related to the barriers and facilitators of the intervention, and patterns of convergence of the themes generated in the focus groups.

Table 3. Strategies to Improve Pilot Cultural Competency

Strategy	Examples
Peripheral: package and represent programs and materials in a culturally congruent way.	<ul style="list-style-type: none"> ❖ Graphics included individuals from various ethnic and racial backgrounds representative of the target population. www.stepupat.com ❖ Curriculum, project design/implementation informed by data on teacher practices and ethnic minority children's learning
Evidential: enhance relevance of topics or issues by providing data that is specific to that group.	<ul style="list-style-type: none"> ❖ Parent Online Modules addressed language encouraged multilingual families to speak/provide literacy enrichment in the language they know best
Linguistic: make programs and materials more accessible by providing them in the dominant language of the target group.	<ul style="list-style-type: none"> ❖ All project recruitment/intervention materials, and assessment batteries available in Spanish and English ❖ Development and adaptation of the assessment batteries followed recommended practices for translation/backtranslation procedures ❖ Community Advisory Committee: representative of target population/stakeholders, offered insight into the needs of participants and provided input on the utility, relevance, quality and cultural relevance of the project ❖ Bilingual AT coordinator (Coach): representative of target population, "natural helper", engaged in cultural matching/brokering
Constituent-Involving: draw directly on the experiences of members of the target group. Participatory research	<ul style="list-style-type: none"> ❖ Considered salient Latino development/implementation of the intervention <ul style="list-style-type: none"> ❖ <i>Interconnectedness</i> ❖ <i>Personalismo</i> ❖ <i>Familismo</i>
Socio-Cultural: programs and materials reflect an understanding and are rooted in culturally normative practices and beliefs.	

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Results

Highlighted themes of focus group are summarized in Table 4 below. In summary, groups recommended that study team members increase (1) their participation in community culturally driven literacy events to more effectively address issues pertinent to Latino families; (2) primary caregivers' "buy-in", AT knowledge and use; and (3) participation in family literacy activities.

Table 4. Highlighted Themes and Strategies to Enhance Cultural Competency from Teacher, Teacher Assistant, and Primary Caregiver Focus Groups

Focus Group	Theme and Related Cultural Targeting Strategy
Teacher	❖ Coach engaged in cultural brokering (Linguistic/Constituent-Involving)
	❖ Pleased with resources in Spanish (Linguistic)
	❖ Coach built rapport "Integrated in their community"(Constituent-Involving)
Teacher Assistant	❖ Felt empowered by coach (Socio-Cultural)
	❖ Appreciated having materials In Spanish (Linguistic)
	❖ Parent of child with disability participated (Constituent-Involving)
Primary Caregiver	❖ Coach made participants at all levels feel comfortable (Socio-Cultural)
	❖ Modules available in Spanish and easy to understand (Linguistic)
	❖ AT team available and invested (Constituent-Involving)
	❖ Fostered skill development relevant for "digital age" while still encouraging use of traditional tools (Socio-Cultural)



Conclusions

The 16-week pilot phase of the Step UP AT project aimed to identify and employ culturally competent strategies to implement AT to individuals from multiple minority backgrounds (e.g., identifying as Latino and having a disability), to ultimately increase participant engagement. Teacher, teacher assistant and primary caregiver focus groups identified key effective strategies, as well as new ones that will be integrated in the next research development phase. Overall pilot phase results show promising groundwork for the full AT program trial targeting a group of children that have traditionally been underserved.