



Building Capacity in the AAC field: Preservice Training in Research and Evidence-based Practice

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The Problem

- There is an extreme shortage of professionals with expertise in AAC.
 - Researchers & university faculty
 - Speech language pathologists (SLPs) & teachers
- As a result, many individuals who require AAC services do not receive effective AAC services.

Negative impact on children with CCN

- Without effective research-based AAC interventions, children with CCN
 - Are limited in their attainment of communicative competence
 - Are severely restricted in their participation at home, at school and in the community
 - Are at significant risk for reduced educational expectations and exclusion from an appropriate education
- Without appropriate preservice training, speech language pathologists (SLPs) will not have the competencies required to
 - Implement evidence-based practices (EBPs) in AAC to improve services and results for children with complex communication needs (CCN)
 - Implement appropriate & effective services for high need children with CCN
 - E.g., children who are English language learners and/or live in poverty

Shortage of AAC researchers

- There are extreme shortages of scientists to conduct high quality research to improve outcomes for individuals who require AAC.
 - Fewer than 1,400 speech, language, & hearing scientists in the United States (ASHA, 2013)
 - Of this small number, only a tiny percentage focus on research to address the needs of children who require AAC
 - In a recent search, fewer than 12 AAC researchers had published more than 5 papers in a 5 year span (in English language journals)

Shortage of Ph.D. students in AAC

- The number of new Ph.D.s in speech language pathology awarded each year is limited
 - In 2013, 116 new Ph.D.s were awarded
 - Of these, only 44% assume an academic faculty position at a university where research may be considered part of the employment
 - Only a few of these engage in research to improve outcomes for individuals who require AAC
- This severe shortage has profound negative impacts in two areas:
 - It limits generation of the research that is essential to inform practice & improve results for individuals who require AAC; and
 - It severely restricts the quality & quantity of preservice training in AAC for future SLPs .

Impact of lack of research

- Given the lack of active researchers in AAC
 - The generation of new research is limited
 - Many unanswered questions remain
- Without a sufficient number of researchers generating scientifically sound research to determine effective evidence-based practices, SLP services are seriously compromised
 - Individuals who require AAC are at grave risk for not meeting their potential in all areas of educational achievement/ development

Lack of preservice training in AAC

- 18-35% of preservice programs in SLP do not offer any coursework at all in AAC
- Many of the programs that offer training in AAC, do so on a limited basis
 - 1-4 hours of AAC content infused in other courses
- Only a small percentage of programs offer full courses in AAC
 - Approximately half of these are not required courses (Costigan & Light, 2010; Ratcliff, Koul, & Lloyd, 2008)

Impact of lack of preservice training

- Lack of preservice training in AAC is troublesome since more than 53% of SLPs regularly serve children who require AAC (ASHA, 2012)
- Both the quantity & the quality of preservice training in AAC is severely compromised
 - As a result, current graduates are often ill prepared to meet the needs of children with CCN
- Ironically SLP preservice programs provide the least amount of training to meet the needs of the children who present with the most complex communication needs

Two Programs to Build Capacity in the AAC Field

- The Penn State AAC Leadership Project
- The Penn State Children's Communicative Competence Project

The Penn State AAC Leadership Project

- The Penn State AAC Leadership Project is designed to prepare doctoral level faculty to:
 - Conduct research to guide effective intervention for children who require AAC;
 - Provide high quality scientifically based preservice training in AAC for future SLPs; and
 - Assume leadership roles within the field.

Recruitment of doctoral students

- The Penn State AAC Leadership Project provides funding support for a total of 12 high quality doctoral students over a 6-year period
 - Full tuition support
 - Monthly stipend
 - More than \$18,000/ per year
 - Funding support for travel to national conferences
 - Seed grants to support doctoral research
- Students are recruited on a national basis
- 9 students funded to date

Doctoral curriculum

- The Penn State AAC Leadership Project doctoral curriculum is designed to provide training in
 - research methods
 - college level teaching
 - evidence-based practices for high need children who require AAC
 - policy and professional issues
 - interdisciplinary collaboration
 - leadership skills

Training in EBPs in AAC

- Advanced doctoral seminars are designed to build expertise in AAC research & evidence based practices:
 - Communication & language development for beginning communicators who require AAC;
 - Language, literacy, and educational achievement for children who require AAC;
 - Evidence-based services for high need children who require AAC;
 - Interdisciplinary collaborations to advance understanding and improve outcomes for children who require AAC;
 - Hands on lab experiences with state of the art AAC assistive technologies.

Curriculum Outcome Data

- 100% of courses are research-based
 - Mean of 54 research-based readings per course
 - Include at least 1 assignment per course requiring comprehensive synthesis and critical review of the research base
- Student ratings of teaching effectiveness
 - Means of 6.85 and 6.77 on a 7-point scale for quality of course and instructor respectively

Training in cognate fields

- Academic coursework to build foundation skills in
 - child language development
 - child language disabilities
 - policy and professional issues for SLPs, etc;
- Independent studies in cognate fields
 - e.g., universal design, cognitive science, motor performance, visual processing, literacy learning, strategy instruction, transitions, personnel preparation, etc.

Research training

- Academic coursework in statistics & research methods
- Training in the responsible conduct of research;
- Mentored research experiences each year
 - Completion of a minimum of 3 research projects

Research Outcome Data

- 100% of students involved in research to advance understanding and improve outcomes for individuals with CCN
- Submitted a mean of 43 peer-reviewed papers at state, national or international conferences per year
 - Mean of 5+ per scholar
- Total of 17 papers published or submitted in peer reviewed journals, or in preparation
 - Mean of 2+ per scholar

Training in college teaching

- Training in research-based methods of college teaching;
- Development of a teaching portfolio;
- Mentored experiences in college teaching each year
 - A minimum of 3 different teaching experiences

Teaching Outcome Data

- 100% of scholars involved in undergraduate or graduate teaching each year
- Mean of 68 preservice students taught per scholar
- Mean student ratings of teaching effectiveness of 5.67 and 5.78 on a 7-point scale for quality of course and instructor respectively

Leadership training

- Leadership training workshops / seminars
- A capstone leadership project designed to build greater capacity in AAC
 - e.g., inservice training, web resources, model demonstration project, etc.
- 100% of scholars participated in at least two leadership training courses/workshops

Benefits for children who require AAC

- The increases in AAC research will result in improved EBPs in AAC
- The improvements in AAC preservice training will result in increased numbers of SLPs with competencies in AAC service delivery
- Increased research and improved preservice training will result in improved services and results for children who require AAC

Projected grant outcomes

- Over a 3-year program, each doctoral scholar
 - completes a minimum of 3 new AAC research projects
 - Total of 30-36 new AAC research projects
 - teaches / mentors at least 30 preservice students in EBPs
 - Total of more than 300-360 future SLPs/ service providers with increased competence in EBPs
 - partners with at least one school district /service delivery program to build capacity in AAC
 - Minimum of 10-12 sites providing more effective evidence-based AAC services
- They will go on to assume faculty positions after graduation, and be prepared to carry out high-quality research, teach and mentor preservice students, and take on leadership roles

Acknowledgements

- The Penn State AAC Leadership Project grant is funded by the U.S. Department of Education grant #H325D110008.
- Funding support for the AAC doctoral program at Penn State is also provided through the Hintz Family Endowed Chair in Children's Communicative Competence.
- For further information, please contact Janice Light at JCL4@psu.edu or visit our website at <http://aac.psu.edu>



The Penn State Children's Communicative Competence Project

- The Penn State Children's Communicative Competence Project is designed to prepare MS scholars to
 - Attain all of the standard competencies required of SLPs for ASHA certification
 - Develop specialized competencies in the delivery of high quality evidence-based AAC services
 - Develop specialized competencies in the delivery of culturally appropriate services to high need children with CCN

Recruitment of MS students

- The Penn State Children's Communicative Competence Project provides funding support for a total of 21 MS students over a 6-year period
 - Full tuition support
 - Monthly stipend
- Students are recruited on a national basis
- 18 students funded to date
 - 28% of these MS students are from traditionally underrepresented groups

Curriculum

- The Children's Communicative Competence Project curriculum is designed to provide scholars with training in EBPs for children who require AAC through
 - Academic coursework
 - Research experiences
 - Clinical practicum
 - Web-based instructional modules

Academic courses in AAC

- MS scholars complete academic courses to build expertise in AAC evidence based practices
- 3 seminars (6 academic credits), including content in:
 - AAC assessment and intervention planning for individuals with CCN
 - Research-based interventions for beginning communicators with CCN
 - Research-based interventions to build communicative competence, literacy skills, & educational achievement with school-aged children with CCN;
 - Culturally appropriate research-based services for high need children with CCN;
 - Hands on lab in assistive technologies to promote communication and participation;
 - Universal design for learning and curriculum adaptation to foster educational achievement of children with CCN;
 - Effective strategies to work with consumers who use AAC and families of children with CCN;

Curriculum Outcome Data

- 100% of courses are research-based
 - Include at least 1 assignment per course requiring comprehensive synthesis and critical review of the research base and translation of this research to EBPs for children who require AAC
- Student ratings of teaching effectiveness
 - Means of 6.66 on a 7-point scale for quality of course

Training in AAC research

- Academic coursework in research methods
- Training in responsible conduct of research
- Mentored research experiences
 - To increase EBPs and
 - To improve outcomes for children with CCN

Research Outcome Data

- 100% of scholars have completed AAC research papers /theses
 - 85% have served as authors on peer-reviewed research papers or presentations at national/ international conferences

Clinical training in AAC

- Extended practicum experiences
 - Provide opportunities to translate research into effective EBPs with children with CCN
- 15-week full-time externship in early intervention /public schools reflecting wide diversity

Clinical Training Outcome Data

- 100% of practicum experiences incorporate EBPs
- Mean student rating of quality of practicum experiences 6.89 on 7-point scale
- Individuals with CCN served demonstrated positive gains in 94% of goals
- 100% of individuals with CCN/families reported satisfaction with services

Preliminary outcome data

- Preliminary outcome data demonstrate that the grant is on track to meet its projected outcomes
- 100% of scholars have graduated or are on track to graduate
- 100% passed their praxis exams
- 100% are fully qualified

Benefits for children who require AAC

- Increased research in AAC results in improved EBPs for children with CCN
- Increased numbers of SLPs and other professionals with competencies in AAC result in
 - Improved evidence-based practices for children with CCN, including those with high needs
 - Improved outcomes for children with CCN and their families

Acknowledgements

- The Penn State Children's Communicative Competence Project grant is funded by the U.S. Department of Education grant #H325110021.
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Web-based instructional modules

- Web-based instructional modules in EBPs in AAC providing
 - Step by step intervention
 - Video examples
- Web-based modules for use in
 - Preservice training
 - Inservice training

- <http://aackids.psu.edu>
- <http://aalliteracy.psu.edu>
- <http://aac.psu.edu>



Preliminary outcome data



- In the past year, more than 134,000 preservice & inservice professionals & other stakeholders have accessed the Penn State web resources to increase their knowledge of EBPs in AAC



<http://aac.psu.edu>