

THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

DEPARTMENT OF COMMUNICATION SCIENCES & DISORDERS

Understanding Implementation Variables: Interviews with School SLPs Who Work with
Children Using AAC

GINA RUCCI

SPRING 2023

A thesis
submitted in partial fulfillment
of the requirements
for a baccalaureate degree
in Communication Sciences & Disorders
with honors in Communication Sciences & Disorders

Reviewed and approved* by the following:

Thesis Supervisor
Jessica Gosnell Caron
Professor of Communication Sciences and Disorders

Honors Advisor
Carol Miller
Professor of Communication Sciences and Disorders

* Electronic approvals are on file.

ABSTRACT

Only 10% of individuals who use augmentative and alternative communication (AAC) leave high school with functional literacy skills. Access to and implementation of quality adapted literacy instruction has been documented as a barrier to better outcomes. Interviews to understand lived experiences of those providing literacy instruction to individuals who use AAC is an important perspective in order to inform future curricula development. This qualitative research paper implemented an a priori framework analysis to understand key implementation variables (acceptability, feasibility, adoption appropriateness, fidelity, and sustainability) through interviews with 10 school speech-language pathologists (SLPs) who work with children using AAC. The results give insight on literacy curriculum adaptation and needs, how decisions about curricula are made, and supports required for sustained use and high-fidelity implementation of adapted literacy instruction for students who use AAC.

TABLE OF CONTENTS

LIST OF FIGURES.....	iv
LIST OF TABLES.....	v
ACKNOWLEDGEMENTS.....	vi
Chapter 1 Introduction.....	1
Complex Communication Needs & AAC	
Literary Acquisition	
Literacy & Individuals using AAC	
Challenges for Individuals using AAC (intrinsic factors)	
Challenges for Individuals using AAC (extrinsic factors)	
Implementation Framework	
Chapter 2 Study Aims.....	7
Chapter 3 Methods.....	8
Research Design	
Participants	
Materials	
Procedure	
Chapter 4 Data Analysis.....	15
Familiarize and Identify Initial Ideas	
Unitize and Organize Text	
Develop Initial Codebook and Code Data Subset & Identify and Define Themes	
Code Data and Assessing Reliability	
Resolve Discrepancies and Sort Data	
Chapter 5 Results.....	21
Chapter 6 Discussion.....	26
Summary	
Curricular Alignment	
Curricular Implementation	
Professional Support	

Clinical Implications
Limitations

Chapter 7 Conclusion..... 31

References..... 32

LIST OF FIGURES

Figure 1: Six Steps of the Thematic Analysis

LIST OF TABLES

Table 1: Demographic Information of SLPs Interviewed for Study 2

Table 2: Literacy Curriculum Experiences

Table 3: Interview Questions

Table 4: Thematic Codebook

ACKNOWLEDGMENTS

Thank you, Dr. Caron, for your time, help, and support over the last two years. I have learned so much from you and am very grateful for everything that you have taught me. Thank you, Dr. Miller, for your constant support during my time as a Schreyer Honors Scholar. Thank you, Penn State and the Communication Sciences and Disorders department, for giving me opportunities to grow as a student, leader, and future Speech Language Pathologist. To Ramya, my parent in crime, I have been so lucky to complete this project with you. I cannot wait to see all that you will accomplish. To my friends and family for always being there for me during this process, I would not have done it without all of you.

I acknowledge that this research paper is a part of a larger research project directed by Dr. Jessica Caron.

Chapter 1

Introduction

Complex Communication Needs & AAC

There are approximately 5 million Americans who have complex communication needs (CCN) (Wagner, 2020). This means that they struggle to communicate every day in most situations. According to ASHA, more than 2 million people with significant expressive language impairments use augmentative and alternative communication (AAC) to communicate (ASHA, 2023). AAC is defined as all the various ways someone can talk without using speech, like iPads, Picture Exchange Communication System (PECS), and sign language (ASHA, 2023). There are a variety of disabilities including developmental, acquired, neurological disorders and even temporary conditions that can cause struggles with communication. These disabilities can impact someone during childhood and even as adults. These individuals can thrive by communicating in these various ways if given the opportunity to understand how to use them properly.

Implementing AAC at all ages is so important, but to do so early on can greatly improve someone's life with these critical communication and language skills especially when they are still developing.

Literacy Acquisition

Along with communication and language comes literacy. Literacy at its most basic level consists of being able to read and write. Literacy is not something that can be taught overnight, and each skill is usually built upon to become generative. Noted by those at the University of Kansas, proficient literacy skills allow students to seek out and explore information and gain a better understanding about the world around them (University of Kansas, 2019). Without the basic literacy of knowing how to read and write, one will never get to the point of exploring

deeper meanings of topics. Overall, literacy starts off as an integration of higher and lower order skills (Allor & Chard, 2011) and builds to something that is considered necessary and used in everyday life.

Literacy & Individuals using AAC

Although AAC devices help individuals communicate with others, having good literacy skills while using AAC is imperative to use AAC to its full potential. If one has limited literacy skills, then they must rely on pre-programed phrases and graphic symbols given to communicate; this then requires the communication partner to be able to predict the individuals' thoughts and feelings in order to preprogram a device. Ultimately, the lack of or limited literacy skills significantly limits true generative communication (Yorke et al., 2021). With literacy though, comes endless opportunities for individuals to express themselves with AAC (Yorke et al., 2021). There are many barriers that play into one's ability to become literate while using AAC. Despite the fact that many individuals properly use AAC devices to communicate with others, as many as 90% of these individuals enter adulthood without functional literacy skills (Yorke et al., 2021). Factors that are accountable for this high percentage include intrinsic (skills the learner has naturally) and extrinsic (things in the environment that can affect the learner) barriers.

Challenges for Individuals using AAC (intrinsic factors)

Early literacy skill development often requires oral responses (e.g., students are show a letter and then instructed to orally make the sound that the letter makes). For individuals with CCN who use AAC, these students have limited or no speech and therefore cannot participate in early literacy tasks without adaptations (Caron et al., 2022). Additionally, many individuals with CCN present with cognitive, hearing, mobility, and vision impairments making literacy an even more complicated and complex task. Finally, low motivation to read/write can be an intrinsic

factor for children with CCN. This low motivation is typically caused by a lack of understanding and experience with written text. Without early literacy experiences, children do not develop an understanding as to why text is important. This barrier can be accommodated by initially presenting children with meaningful and motivating text experiences (Light & McNaughton, 2013). The creation of customized books incorporating images of the child, their interests, and family can incite motivation and build an interest in written text (Light & McNaughton, 2013).

Challenges for Individuals using AAC (extrinsic factors)

In addition to intrinsic factors, extrinsic factors also play a role in one's ability to become a successful reader. Extrinsic factors can include teachers' views on AAC, teachers not being trained enough or at all on AAC literacy, and the challenges that come with AAC curricula. Research suggests that "teachers do not know the strategies to teach grade equivalent literacy and they have skepticism that literacy instruction is crucial enough for a student to learn instead of life-skills that they can use in the future," (Ruppar, 2017). This skepticism may come from a lack of awareness of the importance of literacy for students who use AAC devices and a lack of knowledge on how to teach these students. Teachers who do not understand how to present the material and lessons to their students will have a hard time believing in it because they may not be seeing progress. Many special education teachers want to prepare their students for future work outside of the classroom, so they focus on teaching life skills without realizing that without fully understanding literacy, children with AAC devices may never be able to reach their full potential outside of the classroom. A study from Durando (2008) found that teachers looked at a student's cognitive ability in order to determine if a student should receive literacy instruction. As discussed in the previous paragraph, it is important to consider a student's cognitive ability, which is an intrinsic factor, however, it should not be used as a determiner. At times, teachers

may brush aside some of these intrinsic factors that students present with because they are not willing to adapt or change their teaching methods. Not only are teachers lacking information and knowledge on AAC, but so are SLPs. Results from Marvin et al., indicated that more than half of their [SLP] participants received poor and limited AAC training (Subihi, 2013). If the adults who are teaching these students are not fully trained with the knowledge to teach these students properly, then the students will continue to struggle. Advances made to better inform and educate teachers and others who work with these students on a continuous basis would greatly change the dynamics in the classroom. Additionally, research does indicate that when teachers and SLPs are provided with training opportunities related to adapted literacy instruction, the fidelity of instruction can improve. This was demonstrated with 12 SLPs and teachers who learned how to implement adapted letter-sound instruction lessons to learners with CCN who used AAC (Yorke et al., 2021).

It is easy to assume that AAC literacy curricula are widely available for individuals and school districts, however that is not the case. Participants from a study stated how there was always a lack of funding for these curricula (Soto et al., 2001). Limited adapted literacy curricula exist, as summarized by Yorke and colleagues (2021), with only three literacy options – the majority with only two to three experimental studies supporting their effects. As discussed previously, every child presents different intrinsic factors that may make learning harder for one curriculum to work for all individuals with CCN. Every child is different and within each classroom, some subjects may be easier to learn than others – especially if students all present different challenges. Because of this, not every curriculum will work for everyone. This means that the curriculum may have to be modified per student and there may need to be more than one

curriculum. Unfortunately, because of the cost and poor adaptability of a pre-made curriculum this may be strenuous.

Even though individuals who use AAC systems face intrinsic and extrinsic barriers that impede their literacy acquisition, these individuals can develop the literacy skills needed to communicate with others. AAC literacy interventions are still in its beginning stages and by focusing on the barriers present and understanding the lived experiences of those implementing adapted literacy instruction, adaptations and new developments can be made to make these curricula better.

Implementation Framework

In order to develop a solution to these barriers, some questions need to be answered like what is and what is not working regarding these curricula and what is desired by those practicing these curricula. One way better to understand some of these factors is by using implementation science outcomes. Based on the conceptual framework from Proctor et al. 2011, three main areas impact implementation outcomes: implementation variables, service, and client. Proctor's model positions implementation outcomes before service and client outcomes in the sense that implementation impacts service and the client. For example, after figuring out what makes a person adopt a curriculum, we then can see if it works with the client and in service. For each implementation outcome, Table 3 identifies a construct from the implementation literature, and we provide the conceptual definition based on this literature and propose our own definition for coding purposes. By involving stakeholders in the beginning of the research process and having their feedback and experiences to help develop curricula in we can potentially close the research to practice gap that exists. We know that the innovation of training is only as good if it meets the person's wants and needs, so by getting definite examples and real-life experiences we are able to

inform the research and the development of the curriculum. With the help of implementation science, we can get a better understanding of what individuals believe are successful outcomes.

Chapter 2

Study Aims

Previous research regarding Speech Language Pathologists (SLPs) views on Augmentative and Alternative Communication (AAC) literacy implementation and instruction is limited, but it has demonstrated that there have been successes and challenges related to it (Caron et al. 2021). As previously discussed, use of an implementation science framework can inform curriculum development and needs by potentially providing a richer and more specific understanding of what makes current curriculums acceptable or unacceptable, feasible, and why they were adopted, as well as what would make future curriculums acceptable, feasible, and adoptable (Proctor, 2011). We hope to have a better understanding of what curriculums people use, why they use them, and gather perspectives of those who are doing it. Six questions guided this study: (a) “How does a curriculum become acceptable?”; (b) “What features does a curriculum have to make it feasible?”; (c) “What characteristics make a curriculum adoptable?”; (d) “What makes a curriculum appropriate?”; (e) “What makes it that you can implement a curriculum with high fidelity?”; (f) “What fosters sustained use of a curriculum?”

Chapter 3

Methods

Research Design

This experiment is conducted in a qualitative phenomenological research design. This can be defined as describing the lived experiences of an individual and focusing on those experiences (Harappa Blogs, 2021). Qualitative research focuses on the "why" rather than the "what" of social phenomena. It relies on the direct experiences of human beings as meaning-making agents in their everyday lives (University of Texas Arlington Libraries, 2019). It is used to find commonality between a group of people. This study uses semi-structured interviews with open-ended questions to allow individuals to open and create that common ground (Harappa Blogs, 2021). This data is raw and pure and can hopefully answer questions about how the individual relates to the phenomenon and what factors influence the phenomenon (Harappa Blogs, 2021).

Participants

Ethics approval was obtained from the Penn State University Office for Research Protections prior to the start of the study. Snowball and purposeful sampling were both used when recruiting participants who met the inclusion criteria. Snowball sampling is when research participants are asked to assist researchers in identifying other potential subjects (Naderifar et al., 2017). Purposeful sampling is widely used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest (Palinkas et. al, 2015). Those interested were sent the study criteria and commitments. The study criteria consisted of requirements to speak English, live in the United States, have a master's degree in speech pathology, and provide literacy instruction to an individual who used AAC. Interested participants had to accept participating in a virtually conducted and audio recorded interview.

This paper, meeting a school milestone, was randomly assigned ten of nineteen SLPs to report and summarize findings.

Table 1 displays demographic information for the SLP participants and their caseload. All participants were given a pseudonym to protect confidentiality. All participants went to a range of universities, but all graduated with a master's degree from their respective universities. The mean years worked as an SLP was 9 years (excluding EK who did not share their years worked). Their coursework in AAC greatly ranged from one class undergrad to working multiple hours in an AAC lab. Their coursework in literacy ranged from no coursework at undergrad or graduate level to writing an undergraduate thesis on literacy instruction. The average total caseload was 30 students (excluding CBM who does not have a specific caseload). The average total of those who use AAC was 12 students (excluding CBM who only sees students working with AAC). Table 2 displays the literacy curricula used, who approves these curricula, and the training the SLPs had in literacy. The literacy curricula ranged greatly from Unique Curriculum, ALL curriculum, to not being directly stated or "made up" on their own. Like the curricula, those who chose the curriculum also greatly differed from having not one specific person making the decision to the curriculum director, in most cases SLPs were not asked for input. Regarding training in literacy, many SLPs stated a lack of training at the undergraduate level, with a few exceptions of CBM, FT, and JJ2 who felt prepared and trained in literacy.

Table 1

Demographic Information of SLPs Interviewed for Study 2

Participant Initials	Highest Degrees Earned	Years of Work as an SLP	Coursework in AAC	Coursework in Literacy	Caseload Description (Total # and

					Total who use AAC)
AB 1	Master's Degree at William Paterson University	20	One class to go over different AAC devices	Online classes that included a class in phonemic awareness	24, 12
AB 2	Master's Degree at Boston University	6	Graduate AAC Course- 3 credit full semester course on AAC	None specifically, was included in early childhood graduate courses	35, 24
AK	Master's degree at Boston University	3	Intro to AAC, Advanced AAC elective, 1 year externship at BCH Communication Enhancement Clinic for AAC evaluations and treatment.	School-based language disorders class primarily focused on reading and reading interventions	17 direct. Consult to 8 in the outside district, direct. 6 of my consult students in an outside district use AAC
CBM	Master's Degree at MGH Institute of Health Professions	5	Stand-alone course in AAC, AAC-specific placement, partial completion of a post-graduate Assistive Technology certificate at the University of Illinois at Chicago	Coursework in written language disorders and in-house clinical placement in literacy in graduate school. "Teaching Reading" class in undergrad as part of a degree in Developmental Psychology	No specific caseload, but every student always uses AAC
CK 1	Master's Degree at Penn State University	8	AAC Course and Lab	Interwoven in courses	45, 6-7
CK 2	Master's Degree at Penn State University	3	AAC Grant at PSU and all related coursework	AAC Grant at PSU and all related coursework	45, 10

EK	Master's degree at Northeastern University	Does not say	Basic overview undergrad one graduate level course	None	31, 18
FT	Master's Degree at Western Washington University	7	3 semester credit class in AAC	5 semester credits in Literacy and AT, Lindamoodbell certified in LiPS, Seeing Stars, and Visualizing and Verbalizing	65, 12
JJ 1	Master's degree at Penn State University	19	Required AAC courses under Dr. Light during graduate school	One course, but does not feel like literacy (outside of language) was a focus of coursework	59, 7
JJ 2	Master's degree at Penn State University	13	Participated in the AAC training grant, under supervision of Janice Light, took extra courses, worked in the AAC lab 10 hours/week	Undergraduate thesis was in literacy instruction under supervision of Janice Light.	10, 8

Table 2*Literacy Curriculum Experiences*

Participant Initials	Literacy Curriculum the School uses	Literacy Curriculum for kids who use AAC	Who approves literacy curricula	Training in literacy curricula
AB 1	Not directly stated, but a collaborative program between teachers and SLPs	TouchChat, Go Talk, along with a Textbook	Administration	Not trained in literacy, did webinars and self-teaching to learn more
AB 2	All Curriculum	Reading comprehension goals, but also some site words, matching, pictures, or words	District AAC Person	Not trained until graduate school
AK	Unique	Unique	SLP chose Unique Curriculum after webinars with teachers	No courses focused on literacy
CBM	Unique	Unique	Curriculum Director	Classes at undergrad and graduate level, learning more as you teach student

CK 1	Foundation	Lamp, Daisy (trial), foundational skills, identifying letters, listening for letter sounds	The building principle	No formal training, but learned more (webinars and professional development groups) because needed to
CK 2	Unique	Unique, Direct instruction for 10-15 minutes	Administration, no input from SLPs	Training with Unique Curriculum
EK	All	ReThink, Go Talk Now, TouchChat, ProLoQuo	Director of Curriculum	No training
FT	Unique, News To You	Unique, Picture Exchange System, Touch Talk, GoTalk, ProLoQuo	Curriculum director, Special Education Director, asks for input from SLPs	Background in AAC classes, goes to ASHA conventions
JJ 1	Not directly stated	NovaChat	Not directly stated, but talked about the speech department using different ideas in their therapy	Not a lot of training
JJ 2	MelVille	MelVille	Curriculum Coordinator, but it is discussed	Very prepared in training

Materials

A demographic questionnaire was used to probe the individual SLP's demographics. An interview guide (see Table 3) was constructed and used to structure the SLP interviews. The questions from the guide were created by consulting recent work in literacy and AAC, to help pursue answers to gaps in research for these content areas (e.g., Light & McNaughton, 2013).

The two researchers were given the interview guide once questions were developed. The two researchers consisted of one with expertise in the field of complex communication needs (CCN) and AAC, and one in the field of qualitative methods. They both worked together to evaluate the questions. The qualitative methods researcher helped the first author make sure the wording of questions allowed for participant elaboration and methods for member validation.

The researcher with expertise in CCN and AAC helped determine the question order and probes that would be needed to help participants to provide more detailed responses.

The interview questions were field tested with a SLP who has worked with children using AAC for ten years. The questions were modified and adjusted regarding wording, question order, and to include specific probe examples that would help the researcher to pursue a participant's response further for elaboration or clarification after the feedback from the researchers and field testing.

Procedure

Scheduling for the interviews took place via email between the SLP participants and the first author. The interviews were conducted, lasting about an hour and over Zoom in private areas for both parties. Every interview was completed in a single session and conducted over a period of two months. The interviewer asked a set of questions giving the SLPs room to answer, and then asked follow-up questions. The semi-structured interview process gave order to the interview, but also allowed for the SLPs to expand on their ideas and create conversation. The interviewers used probes to inquire for more information and clarification regarding the interviewees' responses. The interviews were recorded over Zoom and the audio recordings were transcribed by Zoom. Later, statements were copied from both the interviewers and the SLPs into an excel sheet, each question having its own section.

Table 3

Interview Questions

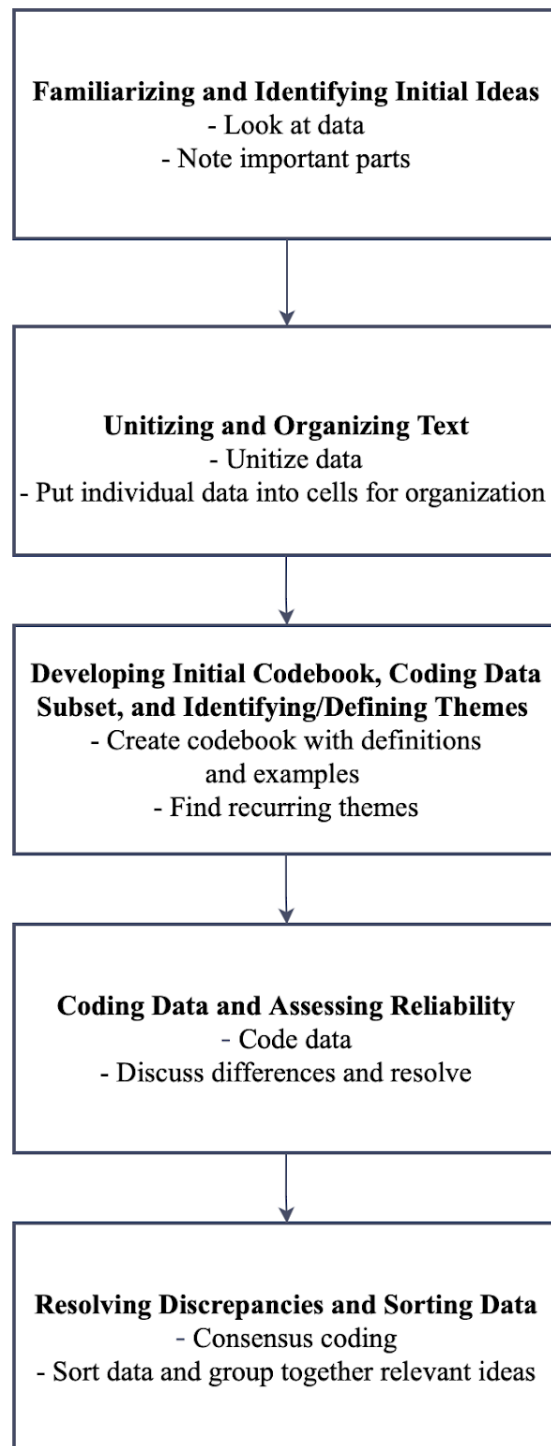
Questions
1) What makes a curriculum acceptable?
2) What makes a curriculum feasible?
3) What makes a curriculum adoptable?
4) What makes a curriculum adoptable?
5) What makes it that you can implement a curriculum with high fidelity?

6) What fosters a sustained curriculum?

Chapter 4

Data Analysis

The data analysis utilized in this study was a thematic analysis. Thematic analysis is used for “identifying, analyzing, and interpreting patterns of meaning (‘themes’) within qualitative data,” (Clarke & Braun, 2017). These themes were then added into a codebook that was used in the study. Conducting thematic analysis consists of five steps: (1) familiarizing and identifying initial ideas, (2) unitizing and organizing text, (3) developing initial codebook, coding data subset, and identifying and defining themes, (4) coding data and assessing reliability, and (5) resolving discrepancies and sorting data. Figure 1 provides a visual flowchart of six steps of thematic analysis. The interviewees, research assistants, and graduate students created the team that was involved in this analysis.



Familiarizing and Identifying Initial Ideas

The data analysis began with the research team reading over the transcripts in order to absorb the data. Each member had an assignment to reach a specific transcript and note, by highlighting on the excel sheet, questions or responses that seemed meaningful. Members of the team were trained prior in meetings leading up to the actual analysis. Initial ideas and themes were made during this step that created beginning codes and themes; however, these initial ideas were revisited further down the process.

Unitizing and Organizing Text

The next step of data analysis started the unitization of the actual interviews. The process of unitizing consists of dividing the SLPs responses into discrete units. It is the key step in transforming raw texts into representations that can be analyzed (Benoit, 2011). We deleted words that did not provide any extra meaning to the statement like “um” and “oh.” Things that may have been transcribed wrong or repetitions were removed to make it easier to read each segment and code them. After copying their verbatim answers, the data was unitized on the excel sheet by the research assistants (RA). Each question had its own excel cell and its response was in the corresponding cell next to it. Units could vary in length, but there was an effort to try to make them small to eliminate confusion.

Developing Initial Codebook, Coding Data Subset, and Identifying/Defining themes

The initial codebook was designed using a priori framework analysis. Framework analysis can be defined as a “comparative form of thematic analysis which employs an organized structure of inductively- and deductively derived themes (i.e., a framework) to conduct cross-sectional analysis,” (Goldsmith, L. J., 2021). Framework analysis incorporates the key themes and ideas from the interviews and data. These themes were designed using prior knowledge and

because we were probing for specific things, and we previously looked at the interviews and had initial thoughts about them. Because the researchers were trying to gather more knowledge about AAC literacy in programs, they were looking to learn about the common successes, failures, programs, and important patterns regarding the implementation of programs. Definitions and examples were based on Proctor et al's (2011) acceptability, feasibility, adoption appropriateness, fidelity, and sustainability.

The third step of data analysis continues with identifying and defining the themes. Recurring patterns in the data allowed themes to be created and sorted. Themes were discussed with the team and agreed on. After briefly looking at the data, we found similar patterns and were able to create more themes or revise the other themes that possibly emerged and create subthemes. Framework analysis and thematic coding is a form of qualitative analysis which involves recording or identifying passages of text or images that are linked by a common theme or idea allowing you to index the text into categories and therefore establish a "framework of thematic ideas about it" (Gibbs, 2007) and allowed the team to put similar thoughts from different SLP's together. This made it easier for the team to analyze data and draw conclusions. It also gave evidence to overarching themes that could possibly need change (e.g., needed more AAC classes in undergraduate school). Table 4 describes each theme used in this framework analysis.

Table 4

Thematic Codebook

Theme	Definitions from Proctor et al., 2011	Our Definitions
1 - Acceptability	Perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory.	Positive experiences, meaningful satisfaction

2 - Feasibility	The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting	Practical, suitable, logically makes sense
3 - Adoption	The intention, initial decision, or action to try or employ an innovation or evidence-based practice	Uptake, implementation, trying something
4 - Appropriateness	The perceived fit, relevance, or compatibility of the innovation or evidence-based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem	Does it fit in, relate to context of instruction
5 - Fidelity	The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers	Quality assurance, delivered as intended
6 - Sustainability	The extent to which a newly implemented treatment is maintained or institutionalized within a service setting's ongoing, stable operations	Long term, sustainable, buy-in, maintenance
7 - Other	Unrelated	

Coding Data and Assessing Reliability

The fourth step of data analysis consisted of coding. Initial coding began with the two research team members independently coding the data. This included sorting through each unit and deciding what theme it resonated with. In research team meetings, the codes were then discussed and compared within the team to assess consistency. The team discussed disagreements and reasons for the differences. After coming to final conclusions, the team agreed on discrepancies and refined the codebook. This allowed each member to express their opinions and feedback about the coding. At this meeting, final coding occurred, and each code was looked at with the refined codebook.

Resolving Discrepancies and Sorting Data

Discrepancies found throughout the discussion were resolved when the research team participated in consensus coding. The team talked through each unit and how it would be coded. Debates like, “*is this really acceptable or would it be considered adoptable?*” occurred during meetings. Discussion occurred until discrepancies were resolved, and the team agreed. The coded data was sorted into Microsoft Excel and grouped together.

Chapter 5

Results

The results are depicted according to the six themes of acceptability, feasibility, adoption, appropriate, fidelity, and sustainability.

Acceptability

The SLPs explain what makes an AAC literacy curriculum have positive, meaningful experiences for the students and adults. EK believes that “the material needs to look age appropriate.” EK discusses how AAC literacy curricula sometimes “looks so babyish” even when you are giving it to a fourth or fifth grader.” EK thinks it is important to have a curriculum that “builds upon sounds they know and then age-appropriate vocabulary.” She describes this as a “sequence.” JJ2 also thinks that the main proponent of a reading program needs to include: “comprehension, vocabulary, decoding,” Overall, for a curriculum to be acceptable, materials need to be age appropriate and build upon each other, and not just work on one thing.

Feasibility

The SLPs illustrate what makes an AAC literacy curriculum practical, suitable, and logically make sense. EK says that curricula have “to be quick to learn” because “they [administration] like to give us a new curriculum every three to four years.” EK stresses that it has to be easy to learn because if it is not easy to learn, “by the time you’ve learned it, you’re getting a new curriculum.” CK1 thinks that “sometimes you don’t need extensive training” because there are “so many staff [members] in and out of our self-contained classrooms.” This means that many different people are working with these students, so they all need to know the curriculum briefly. Similarly, to CK1, CK2 discusses how “when we’ve tried slightly more complex curricula, they just haven’t been effective because teachers don’t have time to learn

them.” To get every staff member involved with these students to learn each new curriculum when they are already busy with other training is very difficult. AB2 believes it “comes down to whether or not individual SLPs are interested and able to do it,” which AB2 finds a challenge. AB2 says that “even if it [curriculum] sounds super cool, their [SLPs] days are so swamped back-to-back.” Generally, SLPs want new curricula to be easy to learn due to their already busy schedules.

Adoption

The SLP CK2 discusses what in an AAC literacy curriculum makes SLPs want to try it, even if it is new. CK2 states how “[If] it comes already assembled, right out of the box ready, and it’s fairly simple to learn.” CK2 continues by saying “[to get teachers to adopt it and use it] it has to be simple to use.” CK2 uses an example of “if we adopted [name of literacy program] it would take an intense amount of teacher training that our districts can’t offer right now.” CK2 hopes for something that will be simple enough to learn in order to reduce time of training.

A few SLPs describe who makes the choices on which AAC literacy curricula are chosen. AB2 starts with saying how “the district AT person [makes curriculum choices],” and how SLPs and special education teachers “communicate most with her [because] she has more overarching abilities to help purchase and then implement.” EK discusses how there is little say in his/her school district. EK says that the “director of curriculum will basically be like, “we are using this now,”” and then “usually someone will come into the district, and we will all go to the training and then they say, “all right, we’re doing this now.”” It is the EK’s job to be “ready to send a memo to the parents [saying] “we’re switching to this sort of curriculum; any feedback is appreciated.”” Similarly, to EK, CK2’s school district will be like “we now have this and we’re using it.”” CK2 says that “there was no discussion [with any of the 50 SLPs in the district]” and

“they never reached out to us for input on this curriculum.” AK says that “the district reading specialist makes the choices” and thinks they “choose based on evidence.” However, AK says “my students don’t access that [curriculum], which is sad.” AK believes there is an “overarching idea that these kids are not able to learn” and thinks “our reading specialists aren't trained to work with individuals like [his/her] students.” JJ2 mentions that it is “our principal who gets to decide what curriculum” and that they have a “curriculum coordinator” who also helps decide. JJ2 touches on how that decision is made and discusses that “if there’s money in the budget, then we purchase what’s needed, but we have to balance it between science curricula and other math curricula that they're also purchasing.” Like JJ2, CBM thinks curricula may be chosen on “cost, or [if] it’s easy for them to find because it’s linked to other programs.”

Appropriate

The SLPs address what makes AAC literacy curricula compatible and appropriate with the population it was made for. AB1 likes to “have an outline of what to be teaching, when, and the resources to use would be helpful.” AB1 also believes that having, “ideas of how to adapt it [for different kids with different needs],” is critical in order for the curriculum to be compatible with different students. AB1 likes to, “read what the program is and how it is supposed to go, what the steps are, the materials I should use, and how I should problem solve.” SLPS AB2, EK, and CK1 speak about materials used to keep curricula appropriate and compatible. EK thinks that “leaning towards everything to be kind of web based and something that will be able to go on a smart board.” EK states how “[the smart board] is so much easier [because] it's less prep because you're not printing out, you're not laminating, you're not velcroing. It saves you time.” Similarly, AB2 wants “ready-to-go materials,” that make the curriculum easy to use. CK1 thinks curriculum material should have, “something tactile, fun, engaging, and not all online.

Something collaborative, flexible, and motivating.” CK1 furthered her thoughts for curriculum by adding that an appropriate curriculum, “a home piece to it, something with really great progress monitoring and benchmarking.”

Fidelity

The SLPs discuss what makes AAC literacy curricula delivered as it was intended and continuing to be delivered as intended to, FT wants “something that’s almost a bit more consistent,” and thinks they [school districts] “need to be something almost automatic, [like] a video or a newsletter or something that doesn't take as much time as putting on a training and getting all those people together, to ensure people are implementing.” FT states that “working something into a curriculum, something that's week or monthly based,” can keep SLPs accounted for. However, FT knows that this would take “a lot of buy-in from multiple sources.” Like FT wanting something more consistent, CK says that “having [a curriculum] be somewhat universal [across special education teachers] has been really helpful for implementing,” because “it seems like most people before were using just random different stuff.” The SLPs think that having consistency, whether across the school district or across all special education teachers, is important to keep a curriculum delivered as it was intended to.

Sustainability

The SLPs discussed what characteristics they think new AAC literacy curricula should have to last long term and be sustainable. SLP AB2 describes how it comes down to successful implementation and buy-in. AB2 explains how, “If you start a new program with ten kids and it doesn't work for any of them, you're going to abandon it,” however, “if you see some really good results for some of the kids (even if it's not the majority)...you can kind of start to figure out who it works really well for and then think how to change it so it works for more students.” AB2

believes that this “success and buy-in keeps you going.” Similarly, FT makes note about the importance of buy-in. FT states, “I think that the more people you can get to buy in the more it will stick. Especially in the schools, the more teachers, parents, physical therapists, occupational therapists that I can get to buy into what I'm doing, the better.” FT backs this up with personal experience expressing, “I found that if I can get every teaching assistant to buy into how I'm doing something, then I see gigantic leaps and growth because they understand, and when they understand they're going to do better.” This buy-in that FT and AB2 speak about is important and goes hand in hand with AK's beliefs that, “having one person in charge of the program and doing additional training, pushing things out, and checking in with teachers to make sure protocols are being followed or making one person whose accountable keeps things going,” is crucial for sustaining a curriculum. Without the buy-in of people in charge of the program, what AK describes seems unattainable, and can affect the long-term outcomes of material. AK describes how, “we find this great material, it works really well, and then it falls apart because there's nothing new coming out or because situations in the classroom change.” Buy-in is a critical portion of sustaining an AAC literacy curriculum.

Chapter 6

Discussion

Summary

The purpose of the study was to get a better understanding from current SLPs on what makes an AAC literacy curriculum something that they would use. Participants described that to have positive, meaningful experiences for students and adults, materials need to be age appropriate and be able to build on each other for growth. Materials should start where the students are educationally and continue to build in difficulty to expand the students' knowledge. Regarding feasibility of curricula, SLPs discussed how new curricula needs to be quick to learn due to the lack of time each special educator (teachers, SLPs, paraprofessionals, etc.) has during their day. The SLPs explained how they do not get much say in choosing AAC literacy curricula, and most times are just told to use a new curriculum without being able to discuss or look at the materials. The SLPs explained how having an outline on what they are teaching along with resources they can use would keep the curriculum compatible and appropriate for the students. To keep the curriculum delivered as intended, the SLPs spoke of having consistency and an even more universal curriculum than what is current. Regarding sustainability, the biggest point that the SLPs made was the importance of the success of the participants and that they were able to thrive. When this goal is achieved using this curriculum, it will be easy to gain support from administration and other teachers.

Curricular Alignment

From Nevenglosky et al. (2018), curricular alignment is supported “when teachers implement the curriculum with fidelity.” Having curriculum alignment between the same grades and the preceding and following grades levels offers consistency in supporting learning

objectives and expectations designed to promote student preparedness and growth (Nevenglosky et al., 2018). Supporting this, EK thinks a curriculum needs to build upon each other and use age-appropriate vocabulary in order to accommodate the age and needs of the student. EK describes this as a “sequence.” By starting the students on age and grade level material and working on building that for them to continue working towards the next grade level and next age is important. A study from Theobald et al. (2022) provided evidence supporting “the importance of alignment between teacher preparation and K–12 literacy instructional practices for the reading achievement of students with high incidence disabilities,” (Theobald et al., 2022). While many of the SLPs agreed that they need to be prepared and trained in the literacy curricula for their students to succeed, they want training to be fast and easy. CK2 uses an example of “if we adopted [name of literacy program] it would take an intense amount of teacher training that our districts can’t offer right now.” Without adequate preparation and training, the student’s achievement is at risk. Their findings also suggest “that these students experience greater learning gains when both their district and their special education teachers’ preparation program are aligned in their emphasis on evidence-based literacy practice,” (Theobald et al., 2022). Although many of the SLPs say that curriculum choices are made without their say, AK says that “the district reading specialist makes the choices” and thinks they “choose based on evidence.” AK’s district may not be the only district that uses evidence-based practice to make decisions, but it is important to note that the other SLPs did not say anything about evidence-based practice. Evidence-based practice is important and keeping up to date with current programs and different curricula that show signs of success is important to create an ideal curriculum.

Curricular Implementation

According to Nevenglosky et al. (2018) curriculum implementation refers to “how teachers deliver instruction and assessment through the use of specific resources provided in a curriculum,” (Nevenglosky et al., 2018). Nevenglosky says that most curricula provide scripts on how to instruct, give lesson plans, and even supply assessments. According to AB1, having an outline of what they should be teaching makes implementation easier. Designs are focused to keep consistency in order to maintain fidelity (Nevenglosky et al., 2018). Similarly, FT likes consistency, but thinks having something even more consistent can make implementation of a curriculum be as intended.

Nevenglosky et al. also discuss how “teacher preparedness for curriculum implementation plays a vital role,” (Nevenglosky et al., 2018). Findings supported the need for teachers to understand the curriculum to teach it. Similarly, in a study done by Amy Petersen, “teachers indicated that both academics and functional skills were important yet were unprepared for how to provide both academic and functional skill instruction,” (Petersen, 2015). Teachers and SLPs need to be prepared to make progress with their students. Many SLPs agreed with this, however, AB2 finds training for new curriculums is hard due to the SLPs busy schedules. Many lack the time to fully understand the curriculum, and by the time they fully understand it, they are already switching to a new curriculum. Similarly, CK2’s school district hands them the new curriculum without training and tells them they are now using it without any discussion. It was also found that teachers “did not have access to general education and age-appropriate curriculum materials, teachers in this study also lacked materials and resources to facilitate curriculum access,” (Petersen, 2015). SLPs noted that they want a curriculum to come with “ready-to-go materials,” because it makes their life easier. AB1 likes to, “read what the program is and how it is supposed to go, what the steps are, the materials I should use, and how I should

problem solve.” It is important to take materials into consideration when implementing a new curriculum.

Professional Support

Support was not widely discussed by the SLPs within the data. The SLPs discussed how buy-in, from other professionals and on the administrative team, is very important when trying a new curriculum. FT found “if I can get every teaching assistant to buy into how I’m doing something, then I see gigantic leaps and growth because they understand, and when they understand they’re going to do better.” No curriculum will work without the buy-in and support from others. Along with the buy-in, having extensive and ongoing professional development is crucial regarding professional support, (Petersen, 2015). AK’s beliefs of “having one person in charge of the program and doing additional training, pushing things out, and checking in with teachers to make sure protocols are being followed or making one person whose accountable keeps things going,” supports this because AK finds it important for check-ins within the school year. Check-ins that assist “teachers in how to prepare, plan, and deliver instruction that ensures not only curriculum access, but positive student outcomes are vital,” (Petersen, 2015). Similarly, demonstrating for teachers how to explicitly use the curriculum with example lesson plans and models helps teachers understand the “how,” (Petersen, 2015). Supporting this, AB1 likes to “have an outline of what to be teaching, when, and the resources to use would be helpful.” This support will make things easier for SLPs and special education teachers because they would be able to problem solve using the resources provided for them.

Clinical Implications

Implementation outcomes are an important part of implementation science, especially with reform of curricula (in this case). Our goal is to develop a curriculum that is meeting the

needs of people (SLPs, teachers, etc.) who will be using said curricula. With implementation science, we are trying to identify these factors by looking at the outcomes before making something. Our purpose is to accurately identify sticking points and base future development needs by looking at them. What they say needs to be taken into consideration and should inform what curricula we create, or what curricula we adapt.

Limitations

Although this study provided an abundance of information about potential AAC curriculum adaptations, there are still some limitations that could warrant consideration before making changes to curricula. Potential limitations and weaknesses found in this study include a small sample size. With a reduced sample size comes a reduction in generalizability due to the fact this population may not be properly represented because of the limited size and could be altered with a larger sample size. The backgrounds, including cultural and economical, of the participants and the schools they work at were not disclosed, but could also alter the data and outcomes.

Limitations associated with qualitative research include the data quality is heavily dependent on the individual skill of the researcher and could be influenced by the researcher's bias (Anderson, 2010). The better the interviewing is at probing for answers, the richer data the research will get. Interpretation can also be influenced by researchers' bias because they are looking and probing for something specific. Qualitative research is also something that may not be as well accepted as quantitative research within the scientific community (Anderson, 2010).

Chapter 7

Conclusion

This study analyzed the perspectives of 10 SLP's views and personal experiences on providing adapted literacy instruction for individuals with CCN who use AAC. The SLPs reported characteristics of curricula that they would like to see in an AAC literacy curriculum in the future. They hope for a curriculum that is easy to use with age-appropriate materials, does not take a lot of time to learn, and has the ability to build upon for continuity and growth. The SLPs think having an outline on what to teach, how to teach, and resources would be ideal in a curriculum. The new curricula should also consider extrinsic and intrinsic factors that those who use AAC devices face. Overall, the idea of using implementation science to better support special education outcomes is an important piece to help make accommodations and adaptations for this population. Future research and implementing new curricula can result in positive changes related to literacy outcomes for the students who use AAC.

References

- Anderson, C. (2010). Presenting and Evaluating Qualitative Research. *American Journal of Pharmaceutical Education*, 74(8), 141. <https://doi.org/10.5688/aj7408141>
- Allor, J. H., & Chard, D. J. (2011). A comprehensive approach to improving reading fluency for students with disabilities. *Focus on Exceptional Children*, 43, 1–12. <https://doi.org/10.17161/foec.v43i5.6909>.
- ASHA. (2023). *Augmentative and Alternative Communication (AAC)*. American Speech-Language-Hearing Association. <https://www.asha.org/NJC/AAC/>
- Benoit, K. (2011). *Day 5: Classical quantitative content analysis*. https://kenbenoit.net/assets/courses/ctaessex2011/CTA_Essex_Day5.pdf
- Caron, Jessica G.; O'Brien, Meghan; Weintraub, Rachel (2022): *Letter–sound correspondence online training for individuals who use AAC*. ASHA journals. Journal contribution. <https://doi.org/10.23641/asha.19400741.v1>
- Clarke, V., & Braun, V. (2017). Thematic Analysis. *The Journal of Positive Psychology*, 12(3), 297–298. <https://doi.org/10.1080/17439760.2016.1262613>
- Gibbs, G. (2007). Analyzing Qualitative Data. *Analyzing Qualitative Data*, 38–55. <https://doi.org/10.4135/9781849208574>
- Goldsmith, L. (2021). Using Framework Analysis in Applied Qualitative Research. *The Qualitative Report*, 26(6). <https://doi.org/10.46743/2160-3715/2021.5011>
- Harappa Blogs. (2021, September 27). *Phenomenological Research: Methods And Examples*. Harappa Blogs. https://harappa.education/harappa-diaries/phenomenological-research/#heading_1

- Light, J., McNaughton, D., & Caron, J. (2019). New and emerging AAC technology supports for children with complex communication needs and their communication partners: State of the science and future research directions. *Augmentative and Alternative Communication*, 35(1), 26–41. <https://doi.org/10.1080/07434618.2018.1557251>
- McNaughton, D., & Light, J. (2013). The iPad and Mobile Technology Revolution: Benefits and Challenges for Individuals who require Augmentative and Alternative Communication. *Augmentative and Alternative Communication*, 29(2), 107–116. <https://doi.org/10.3109/07434618.2013.784930>
- Naderifar, M., Goli, H., & Ghaljaie, F. (2017). Snowball sampling: a Purposeful Method of Sampling in Qualitative Research. *Strides in Development of Medical Education*, 14(3). Researchgate. <https://doi.org/10.5812/sdme.67670>
- Nevenghlosky, E., Cale, C., & Panesar Aguilar, S. (2019). Barriers to effective curriculum implementation. *Research in Higher Education Journal*, 36. <https://files.eric.ed.gov/fulltext/EJ1203958.pdf>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. NCBI. <https://doi.org/10.1007/s10488-013-0528-y>
- Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., Griffey, R., & Hensley, M. (2011). Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Administration and policy in mental health*, 38(2), 65–76. <https://doi.org/10.1007/s10488-010-0319-7>

- Petersen, A. (2015). Perspectives of Special Education Teachers on General Education Curriculum Access. *Research and Practice for Persons with Severe Disabilities, 41*(1), 19–35. <https://doi.org/10.1177/1540796915604835>
- Ruppar, A. L. (2017). “Without being able to read, what’s literacy mean to them?”: Situated beliefs about literacy for students with significant disabilities. *Teaching and Teacher Education, 67*, 114–124. <https://doi.org/10.1016/j.tate.2017.06.003>
- Soto, G., Müller, E., Hunt, P., & Goetz, L. (2001). Critical issues in the inclusion of students who use augmentative and alternative communication: An educational team perspective. *Augmentative and Alternative Communication, 17*(2), 62–72. <https://doi.org/10.1080/aac.17.2.62.72>
- Subihi, A. (2013). Saudi Special Education Student Teacher’s Knowledge of Augmentative and Alternative Communication (AAC). *International Journal of Special Education, 28*(3). <https://files.eric.ed.gov/fulltext/EJ1024412.pdf>
- Theobald, R. J., Goldhaber, D. D., Holden, K. L., & Stein, M. L. (2022). Special Education Teacher Preparation, Literacy Instructional Alignment, and Reading Achievement for Students With High-incidence Disabilities. *Exceptional Children, 001440292210812*. <https://doi.org/10.1177/00144029221081236>
- University of Kansas. (2019). *Teaching Literacy in Your K-12 Classrooms*. Ku.edu. <https://educationonline.ku.edu/community/teaching-reading-and-writing-skills>
- University of Texas Arlington Libraries. (2019). *Subject and Course Guides: Quantitative and Qualitative Research: Understand What Qualitative Research Is*. Uta.edu. https://libguides.uta.edu/quantitative_and_qualitative_research/qual

Wagner, A. (2020, September 24). *New \$4.6 million award to make sure that every voice is heard* | Penn State University. www.psu.edu.

<https://www.psu.edu/news/research/story/new-46-million-award-make-sure-every-voice-heard/>

Yorke, A. M., Caron, J. G., Pukys, N., Sternad, E., Grecol, C., & Shermak, C. (2020).

Foundational Reading Interventions Adapted for Individuals Who Require Augmentative and Alternative Communication (AAC): a Systematic Review of the Research. *Journal of Developmental and Physical Disabilities*, 33(4). <https://doi.org/10.1007/s10882-020-09767-5>

ACADEMIC VITA

Education & Credentials

The Pennsylvania State University - Schreyer Honors College, University Park, PA

Bachelor of Science in Communication Sciences & Disorders

Minor in Human Development & Family Studies and Special Education

Awards: Dean's List (2019-2022)

Relevant Trainings: First Aid Mental Health certification, NJ Substitute Teacher certified,
NJ Paraprofessional certified, CPR certified

Honors Societies: Phi Eta Sigma, Health & Human Development Honors Society

Research Experience

Dr. Jessica Caron's Augmentative & Alternative Communication and Literacy Lab -

Research Assistant

Fall 2021-Present

- Completion of honors research paper about an ongoing phenomenological qualitative research study within the lab.
- Working in a team setting in the AAC-literacy lab, screening, and organizing interview data, giving an overview of the study process
- Researching thematic coding and assessing reliability for ongoing projects while simultaneously assisting with development of AAC books for the community

Work Experience

ESS Paraprofessional/Aide and NJ Certified Substitute Teacher *July 2022 - Present*

Work directly with Middle & High School students as both Substitute Teacher or Paraprofessional Aide - *Clearview Regional Middle School ESY Program for Special Education*

Clubs & Organizations

<u>Health & Human Development Honors Society– Member</u>	Fall 2022-Present
<u>Sign Language Organization- Member</u>	Fall 2019-Present
<u>Phi Sigma Sigma Sorority- Member</u>	Spring 2020-Present