

STORYTELLING NARRATIVE DEVELOPMENT FOR ADULTS WHO BENEFIT
FROM AAC

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A thesis submitted to the faculty of
San Francisco State University
In partial fulfillment of
the requirements for
the Degree

Masters of Science

In

Speech-Language and Hearing Sciences

by

Isabel Sierra Craik

San Francisco, California

Spring 2019

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2019

CERTIFICATION OF APPROVAL

I certify that I have read *Storytelling Narrative Development for Adults who Benefit from AAC* by Isabel Sierra Craik, and that in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirement for the degree (Masters of Science in Speech-Language and Hearing Sciences at San Francisco State University).



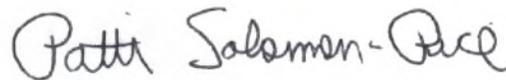
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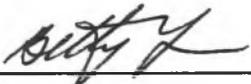
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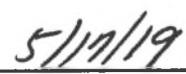
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This case study described the process used to teach narrative development to a 22-year-old adult who benefits from AAC using the model of a community Storytelling Club that incorporated peer-confederates. Methodology for testing the psychosocial implications of the group were measured using pre-test post-test surveys. Methodology for intervention included the implementation of narrative support materials including a self-graphing checklist and story template. Results were analyzed using statistical analysis of a two-sample t-test to determine if a change occurred with 1) the confidence of individuals with their storytelling 2) the complexity of their narratives. Results of the analysis determined that no significant change occurred with intervention however, clinical implications will be discussed.

I certify that the Abstract is a correct representation of the content of this thesis.



Chair, Thesis Committee



Date

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The purpose of this thesis was to test the effectiveness of a creative therapeutic intervention and framework that supported the communication of those with complex communication profiles. Dr. Patti Solomon-Rice, Dr. Gloria Soto, Dr. Laura Epstein and Project Building Bridges at San Francisco State provided the support and guidance for the questions posed by our project. The facilities for our group were graciously provided to us by Dan Phillips, MA-CCC SLP at the Technology Resource Center of Marin. Thank you to everyone who was involved in supporting our students and their stories.

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Introduction

Storytelling is a form of communication that predates written human history as a means of teaching lessons and passing history down from one generation to another (Rossiter, 2002). Evidence suggests that civilizations survived as a result of storytelling because they ensured the continuity of life experiences to subsequent generations (Abrahamson, 1998). Today, one may observe storytelling in a variety of contexts and environments for the purpose of entertainment, persuasion, or information sharing. These findings of prominent storytelling across cultures and settings are not surprising considering research suggesting that stories connect us emotionally (Morgan & Dennehy, 1997).

Shared stories activate certain areas of the brain that stimulate emotional connectivity with others and store new information (Perry, 2005). Dr. Paul Zak, a neuroscientist focusing on the effects of oxytocin on the brain, studies the effect neurotransmitters have on human connection. His research explores oxytocin, a molecule located within the hypothalamus in the brain, and how it is released during social exchanges. Current research findings conclude that the brain releases more oxytocin and cortisol after being exposed to a dramatic narrative told by a person. Additionally, oxytocin and cortisol release in the brain have been correlated with increases in empathy, a state that bonds humans and may lead people to future social actions that are driven by empathetic emotion (Zak, 2015). Collectively, neurological and historical research continue to support the importance and necessity of storytelling within society.

Additional research suggests that storytelling has a strong implication towards gathering information on the human experience, as well as supporting the formation of personal identity. Beginning at a young age, children begin to gravitate towards narratives instinctively. Even when children are developing language, they explore using idea to use proto-stories to communicate (Metas & Sengers, 2003). As children, narrative frameworks become an important part of the way we learn to approach the world (Nelson 1989).

Schank and Ableson claim that storytelling is vital for remembering anything at all (Schank, R. C., & Abelson, R. P., 2013). The social function that narratives serve not only supports memories, but also our relationships with others as, it is through sharing our personal stories that we develop positive relationships (Nelson, 1993; Ochs & Capps, 2001). Stories continue to play this vital role in our relationships as they illustrate the “landscape of action” and “landscape of intention” (Bruner 1986). These elements of human intention become clear when an audience is engaged with a story, connecting it to the storyteller.

When considering the human experience, it can be inferred that a variety of different types of narratives serve a critical role in identity development and social connectedness (Baquedo-Lopez, 2001). Some types of narratives have been explored in research to understand the construction of identity further, as well as consider societal and cultural elements. In Marina Umaschi Ber’s “Narrative Construction Kits: ‘Who am I? Who are you? What are we’” (1997), she describes an array of storytelling frameworks

that are designed to help children reflect on their own identity. Her research suggested that narrative construction kits are powerful tools to learn about one's self and then combine those aspects with storytelling to share with others. Her findings demonstrated that narrative construction kits do support telling both interpersonal and interpersonal stories with her teenage participants (Bers 1999).

Types of narratives may vary between cultures and each culture's storytelling style may be influenced by language (McCabe, 1997). A large repertoire of literature explores the social and cultural functions narratives serve (McCabe, 1997). It is suggested that when a personal narrative is delivered, information about the world and others can be shared through the communicative exchange (Nelson, 1993). These exchanges go far beyond making sense of one's world, but also form as a mirror to shape one's self, based on culture and personal experience. McCabe's research explores the extreme variety that exists interculturally between storytelling styles, and how despite the differences, they continue to serve the same function of connecting humans. She further notes the different styles of narratives influenced by customs and traditions and the unique style adopted by the culture. (McCabe, 1997). These findings have strong implications, as they suggest that storytelling is culturally specific, and shared in a dynamic nature that spreads information from culture to culture.

Storytelling and Speech-Language Pathology

The importance of personal storytelling competence expands beyond the self to encompass communication and relationship building with others (Miller, Potts, Fund, Hoogstra & Mintz, 1990). Narratives have been researched and noted to be collaboratively told and socially organized (Baquedo-Lopez, 2001). In addition to fulfilling necessary social functions, narrative telling also plays a large role in daily routines (Duinmeijer, de Jong, & Scheper, 2012). In speech-language pathology, storytelling plays a significant role in communication, as the ability to narrate a story in a form that can be clearly understood by others is fundamental for overall communicative competence (Ochs & Capps 2001).

The American Speech-Language and Hearing Association (ASHA) states a primary role of a speech-language pathologist to treat language and social communication in children and adults (ASHA, 2019). Choosing culturally and linguistically relevant language goals for speech-language pathology clients is integral, and is considered best based practices by all speech-language pathologists (ASHA, 2017). Stories can fill a gap in linguistic and cultural divides. Narrative sharing techniques can be adapted for all ages without barriers for age segregation. Additionally, storytelling can be used as a method to teach values of society, ethics and cultural norms and differences. Thus, stories are an appropriate intervention to use across a group of heterogeneous population (Atta-Alla 2012).

Storytelling Elements

A narrative can be defined as a written or spoken account of events. These events must be embedded into appropriate spatial-temporal contexts. Stories consist of arcs that represent the chronological construction of a plot in a novel plot or story. Such orientation information plays a key role in making narratives unique and comprehensible (Polyani, 1982). Schank claims that stories evolve from a variety of different sources. These sources inspire stories that can be written as first-person, second-person, official stories, or fantasy-stories, all of which are learned from listening or reading (Schank, 1990). These story styles may be learned when provided with peer implemented instruction, which can serve as a model. Furthermore, peer implemented instruction has also shown to increase coherence in story structure (Weller et al., 2001).

According to Stein and Glen, a successful narrative requires story grammar. These elements include (a) *settings*- characters, location, or habitual contexts; (b) *initiating events*- actions, events, changes in physical environment, or character's internal perception of the event; (c) *internal responses*- a character's emotion, goals or desires; (d) *attempts*- actions toward resolving a situation or achieving a goal; (e) *direct consequences*- actions, natural occurrences and (f) *reactions*- how the character acts relative to the direct consequence. These structures guide the individuals' interpretation, expectations, and inferences about the possible relationships expressed in a story (Stein & Glenn, 1975).

An additional tool for measuring the completeness of a narrative in children with suspected language disorders is the Tests of Narrative Language (TNL) (Gillam & Pearson 2004). Speech-language pathologists often utilize the TNL, as it is one of the only available standardized tools that assesses comprehension and production of narratives. The elements that the TNL examines include the scoring criteria based on both identifying parts of a narrative receptively, as well as producing narratives when provided with a stimulus.

Storytelling and AAC

In the field of speech-language pathology, AAC is an area of clinical practice that addresses the needs of individuals with significant and complex communication disorders characterized by impairments in speech-language production and/or comprehension, including spoken and written modes of communication (ASHA, 2016). More than 2 million individuals in the United States use a variety of high, mid, and low tech devices to facilitate communication skills (ASHA, 2006). There are many advantages to using an AAC device for this growing group of heterogeneous individuals with complex communication needs who benefit from AAC, including participating in society with others using newly available technologies (Deryter et al., 2007).

Individuals who benefit from AAC have been noted to face barriers with accessibility and opportunities with their language (Buekelman & Mirenda, 2013). These opportunity barriers may be imposed by society within policy, practice, knowledge, and

attitude about AAC. Access barriers exist within the person's AAC system in regards to their message, vocabulary or symbol selection. Both types of barriers are assessed within a participation inventory comparing the typical communicator with the communicator to determine how and where communication differs. Identifying where the barrier exists can lead to purposeful language intervention and justify the supports required to provide access to different areas of communication. It has been noted that people who benefit from AAC are usually more passive and take on a respondent role as a communicator (Light, 1997). It is integral to identify such barriers, so individuals who benefit from AAC may continue to use more sophisticated forms of language including narratives.

Beukelman and Mirenda explain the importance of storytelling as a communication form for people who benefit from AAC. The authors highlight the importance of legacy narratives shared for adults, as it serves as a platform to entertain, teach, and establish social closeness with their peers. Furthermore, they state the sequence in which stories need to be constructed and programmed to be understood by the communication facilitator. This process involves practice opportunities, as well as access to other multimodal communications using timelines or line-drawings. (Beukelman & Mirenda 2013). These communicative activities become second-nature for individuals with typically developing communicative profiles. However, research demonstrates that children with complex communication profiles may experience challenges with learning narratives to fulfill these necessary communicative functions (Soto & Harmann, 2006).

Considering that narrative telling involves a variety of knowledge structures and linguistic abilities, intervention is often warranted for individuals who benefit from AAC (Soto & Hartmann, 2006). Speech-language pathologists have developed therapeutic methods to support narrative sharing in different contexts to continue the support of the inclusion in conversation for students who benefit from AAC. It has been observed that individuals who benefit from AAC may enhance their narrative skills with the use of co-construction techniques that incorporate a facilitator's model (Solomon Rice & Soto, 2011). Using multiple modalities for storytelling such as pictures, story maps, and linking emotions to pictures may also prove beneficial (Soto et al., 2007).

Storytelling Groups in Augmentative and Alternative Communication

Over the past ten years, many intervention models have been developed to support the teaching of people who benefit from AAC. Recent research suggests the use of a peer model, such as those who would participate in group therapy, can successfully support the use of AAC with students and adults. Utilizing peers for communication partners has been observed to provide more realistic learning opportunities for people with complex communication needs (Briggs et al., 2017). Additionally, it has been determined that these natural interactions can be taught to peer confederates with proper implementation and training (Brock et al., 2016). Using peer confederates in tasks that enhance the experience of personal information sharing may support the overall communication for people on AAC (Briggs et al., 2017).

Teaching story grammar and storytelling to students with complex communication needs may also be possible with the support of peer confederates. Peer confederate training focuses primarily on prompting typical peers to provide opportunities for children with disabilities to interact. Presumably, the increased opportunities lead the child to seek out other interactions with peers. (Goldstein & Cisar, 1992). Recently, Corbett and colleagues confirmed that students who participated in a peer-mediated drama workshop demonstrated stronger social competence and less stress. The collaborative and community-based nature of drama groups creates social opportunities for students with disabilities that they may have not experienced in isolated therapy (Corbet et al., 2017).

Learning story grammar in a performing arts setting may also help support inclusion. Lenakakis and Koltisida studied performing arts group with both students with disabilities and typical developing peers and found overall emotional benefits from daily personal inclusive interactions. These skills were deemed valuable as they enabled more natural social interactions that had not been fostered in groups with students that only had disabilities (Lenakakis & Koltisida, 2017).

Purpose of the Study

Currently, there is evidence that supports improvements in conversational skills of students who use AAC with the help of peer confederates (Briggs et.al 2017). Additionally, research indicates that use of peer confederates in performing arts settings may also benefit social and emotional development (Lenakakis & Koltsida, 2017). When examining research further, it is evident that there are certain gaps that have yet to explore the importance of teaching narratives in a group setting using peers with typically developing language profiles. The purpose of this research is to describe the process used to teach narrative development to adults who benefit from AAC using the model of a community storytelling club that incorporates peer-confederates. The group incorporates both adults with typically developing communication and adults who benefit from AAC in the same group to allow for co-construction and discussion of stories. Each week, the facilitator presents a storytelling theme, along with the lesson plan and supportive materials. These supports include templates, focused language stimulation modeling videos and story grammar checklists. Each session, the facilitator will document the stories being written, and their completeness in regards to the elements identified to create a full story. The data collected throughout the sessions will support the guiding research hypothesis that examine if storytelling clubs that teach narrative construction and public speaking skills support narrative complexity in adults who benefit from AAC.

The research questions to be answered include:

- 1) Does overall storytelling confidence increase for a person who benefits from AAC when taught in a group with both people who benefit from AAC and typical communicators?
- 2) How effective are templates, modeling, and checklists at teaching narrative elements (character, setting, emotion, etc.).

Methods

Research Design

A case study research design was chosen to measure the effectiveness of a storytelling group on produced narrative complexity for adults who benefit from augmentative and alternative communication (AAC). Our single-subject case study utilized an intervention over the course of four sessions in a collaborative group setting with both typical developing communicators and adults who benefit from AAC. Two separate sets of variables and two separate sets of data were analyzed. These two sets include: 1) the qualitative aspects of a storytelling group on the person's overall experience and confidence and 2) the quantitative variables within the narratives produced by the students. The research design was created at San Francisco State University, and the informed consent for completion of the research study was obtained from the San Francisco State University Institutional Review Board.

Participants

Access to participants for the purposes of research and data collection was granted through a consent forms which required signatures prior to attending the first storytelling club meeting. Peer confederates were given a consent form (see Appendix C) to sign on the first day of the club, while adults who benefitted from AAC signed a separate consent form (see Appendix D). Both informed consent forms highlighted information regarding the purpose of the study, risks, and confidentiality for their viewing.

Throughout the course of the four sessions data was collected with two participants:

- 1) The case study participant identified with a complex communication profile and
- 2) An age-matched peer-identified with a typical developing communication profile.

To recruit participants who benefit from AAC, the principal investigator sent out a recruitment email to speech-language pathology professionals with expertise in the area of AAC (Appendix A). The email consisted of background information on the purpose of the storytelling club and a request for participant recommendation. Speech-language pathology professionals were encouraged to reach out the principal investigator with questions or recommendations through email. Peer participants for the storytelling club were recruited using a hand-made flier (see Appendix B). The principal investigator hung

fliers with the date, time and location of the club in common community areas of San Francisco State University. Participants interested in volunteering as a peer confederate were encouraged to contact the principal investigator and attend a meeting indicated with date and time on the flier.

The case study participant, Client 1, was a 22-year-old female who had been identified as an independent augmentative and alternative communicator as classified on the Dynamic AAC Goals Grid, Second Edition (2014). She had been using a variety of switch-activated Tobii Dynavox devices as her primary form of communication. At the time of this study, her speech-generating device was her primary form of communication. This was because she was unable to use oral speech due to muscular and respiratory limitations, which require support from a ventilator.

The peer confederate, Client 2, was a 26-year-old female graduate student at San Francisco State University within the Speech-Language and Hearing Sciences Department. Client 2 was considered a typical developing communicator and did not use an AAC device for communication. At the time of this study, she held a Bachelor's of Science Degree in Sociology.

The additional four members (peer-confederates) of the storytelling club consisted of San Francisco State University graduate students, ranging between 25-years-old and 35-years-old. All peer-confederate participants were female and considered typical communicators, and did not use AAC devices for communication. All students within the

group held Bachelor's degrees in Communicative Sciences and Disorders. Data was not collected regarding experience on the additional peer-confederate members' experiences; however, they did participate by writing and telling stories within the group and facilitating group discussions.

All clients who benefitted from AAC participating in the group had an etiology impacting their musculature (cerebral palsy and multiple sclerosis) and were considered Independent AAC users as established by the Dynamic AAC Goals Grid (2014), and all participants had used their AAC device for more than two years. Though most clients were using their speech-generating device, some clients used multi-modality communication, including vocalizations facial expressions, and reliable movements. Each client was either currently attending a public high school or had completed high school in the San Francisco Bay Area, as reported by their speech-language pathologist, Dan Philips. In regards to their speech and language skills, all clients were observed to follow multiple step directions, and to use the key-board function on their device to compose a message.

The principal investigator who facilitated the group was a 26-year old female graduate student who attended San Francisco State University within the Speech-Language Pathology master's program. She has worked with individuals with complex communication profiles in private and public settings for the past four years under a speech-language pathology assistant license issued by the State of California. She was a member of Project Building Bridges, a grant program at SFSU, that provides specialized

training to Master's level to speech-language pathology students in the area for treating clients from diverse backgrounds who use AAC.

Intervention

Club meetings took place at the Technology Research Center of Marin (TRC) in Marin County, Northern California. The storytelling society was invited to use the space as a facility to host the club by Dan Philips, M.S., CCC-SLP, a speech-language pathologist, Assistive Technology (AT) and AAC Specialist, and program director. TRC works in conjunction with the Marin County of Education to provide services and resources to students who benefit from AAC and was considered an all-volunteer parent organization center.

The storytelling club met four times in total. The first three meetings, the club met consistently once a week. Due to scheduling challenges, the third and fourth session met four weeks apart. Each meeting ranged between one to two hours in duration. At the beginning of every meeting, the storytelling society would be introduced to an age-appropriate, general theme to inspire and guide their storytelling process. These storytelling themes were decided by the group and were deemed applicable to individuals with physically compromising disabilities which may have influenced their range of life experiences.

Current research suggests that students with moderate to severe disabilities can learn to construct simple stories when given a model (Pennington & Kohler 2017). Often, these models have been presented in the form of a video that can be consistently replayed (Bellini & Akullian, 2007). After presenting the themes of the week (Appendix

E), the researcher provided focused language stimulation of a full-story using an AAC device. The modeling video was, at times, supplemented with live modeling by a peer-confederate when the opportunity to use a video was unavailable.

After providing the modeling video, the principal investigator provided the group with an age-appropriate storytelling template (see Appendix F) to teach the desired outcome of constructing a short-story. The purpose of the template was to provide an opportunity to construct a narrative with the necessary components required to tell the complete story. The narrative components targeted were derived incorporating Stein and Glen's (1975) components for successful language and elements from the Test of Narrative Language (Gillam & Pearson, 2004) Together, the target areas included: *Character/ Setting, Initiating Event, Response, Consequence, Emotion, Chronologically Appearing Events, and Completeness*. By using a story map/narrative template, the elements and the structure of a narrative were explicitly and visually targeted (Bedrosian et al., 2003). Additionally, the modeling video or live model showcased the way to fill out the template, as well as the process of developing the story based one's personal experience using vocabulary words on the template. Once the video model had been shared with the students, they were given the opportunity to write their own stories independently, using a provided template provided. All templates and word bank materials were presented on an overhead projector, which was displayed on a large screen in the front of the classroom.

In the aforementioned study targeting multiple intervention strategies to increase story grammar components, Pennington and Kohler (2017) used modeling, story-templates, and self-graphing to support students identified with moderate intellectual disabilities narrative development. Their findings concluded that there was a functional relationship between an intervention package comprised of video models, story templates, and self-graphing, and the number of story elements included in narratives by three middle school students during their intervention. Building on their findings, our research studied incorporated an age-appropriate self-graphing checklist (see Appendix G) to track their story elements.

Students developed their stories independently and then were provided with a self-graphing checklist to double-check the content (story grammar) of their developed story. Once given the opportunity to self-graph, students shared their stories with the group, or another partner, or in a small group for 10-15 minutes. Students were encouraged to make comments and ask questions while telling their story to a partner. Sample questions to start conversations were to be provided to encourage dialogue (see Appendix H) between the students. During the sharing of the personal narrative with a partner, the target participant was observed by the principal investigator and data was collected (see Appendix) on the elements of the story that are present. This observation took place in a small group as well as with other communication partners across the four sessions

Data Collection and Analysis

To answer the guiding research question of our study, we examined two objectives. The first objective answered a qualitative question, which measured the experience of the participants in the storytelling club using a pre-test and post-test survey (see Appendix I). To answer the second objective, we measured the quantitative element by counting the number of narrative story grammar components present in each story shared (see Appendix I).

Data collection for the first objective of the pre-survey and post-surveys were taken using a survey questionnaire measured by a Likert Scale (1973). The survey consisted of ten randomly assigned survey questions to self-report on between the degrees of: strongly agree, agree, neutral, disagree, and strongly disagree. Questions included: "I feel confident writing a story without help from another person" to "I am familiar with the different purposes of stories and the function sharing stories can serve."

The pre-survey was distributed on the first day of the storytelling club to each of the members and was filled out in private by each of the members. Participants with limited fine-motor capabilities answered their survey with the assistance of a paraprofessional who did not attend the group.

The post-survey was distributed on the last day of the storytelling group sessions and was filled out after four completed sessions of the storytelling club (approximately two months apart in time). Post-surveys were also completed privately and with the

assistance of paraprofessionals when necessary for participants with fine-motor limitations.

Upon receiving both sets of surveys for analysis (Client 1 pre-test and post-test, and client 2 pre-test and post-test), the Likert scale was converted into a 1-5 rating scale (1 representing strongly disagree, and 5 representing strongly agree) and stored on a confidential Microsoft Excel spreadsheet.

The goal of the data analysis was to identify if a positive change occurred between the pre-test experience, and post-test experience in using both clients (Client 1 and Client 2) pre-survey and post-survey results. To transform the data into statistical data for hypothesis testing, a *t*-test was used to determine the mean and standard deviation of both data sets, including client 1 pre-test and post-test, and client 2 pre-test and post-test), and to determine significance based on p-values.

When measuring the responses, all categories on the Likert scale were converted in to a one to five-point scale. (one corresponding with strongly disagree and 5 corresponding with strongly agree). The numerical data was transformed into a two-sample t-test equation to determine a p-value, which ultimately would either allow the researcher to either reject the null hypothesis or accept it when using a 95% confidence interval (i.e. p-value <.05).

Data collection for our second objective aimed to determine if the number of storytelling sessions attended, did, in fact, increase the number of story elements present in the story.

To measure the story grammar elements of each narrative, data was taken each week after the target participant produced their final narrative. The narrative was shared with the principal investigator and analyzed off-site using a story grammar checklist. Each component was accounted for across the four narratives and the documented on a Microsoft Excel Spreadsheet. T-tests were used to determine significance based on the p-value. When measuring the four produced narratives, the seven narrative components were marked either present or absent. The hypothesis was also tested using the two-sample t-test with the numerical data in the number of narratives (four) and the number of components in each narrative. This information revealed if the null hypothesis could be rejected using a 95% confidence interval (i.e. p-value <.05)

Results

The purpose of this research was to describe the process of teaching narrative development to adults who benefit from AAC using the model of a community storytelling club that incorporates peer-confederates. Objective one of our study was to identify the thoughts and feelings of students who participated in a storytelling social group that incorporated peer-confederates. Objective two was to determine how effective implementing supports in a group (modeling, story-templates and, self-graphing) would be in increasing necessary grammar components as established by Stein and Glenn (1975) in conjunction with Test of Narrative Language (2004). These two objectives guided the outcomes as to whether the social group were effective when examining both qualitative (psychosocial) and quantitative (language complexity elements) data using the Two-Sample *t*-Test.

Objective 1: Pre-test and Post-Test Findings of Experience in a
Storytelling Club

When converting the Likert scale to a 1-5 point scale, Client 1's average for baseline yielded an average score of 4 as a pre-test baseline. Client 2's score of baseline results yielded a score of 3.

When examining the post-test, the Likert scale was converted to a 1-5 point scale, Client 1's average for post-test (after treatment) yielded an average score of 5 as a pre-test baseline. Client 2's score post-test yielded an average score of 5.

In regards to both sets of responses to both surveys (Client 1 and Client 2) combined the following data was gathered.

Table 1: Pre-Post Test Response

$$P\text{- Value} = .99 > \alpha$$

Type of test	Number of Questions	Average of Response	Standard Deviation
PRE	20	4	1
POST	20	5	1

Two-sample t-test significance of results: the two-sample t- test revealed the amount of 3.17 with a p-value of .99. The results indicated there was no significant change in confidence after the implementation of intervention

Objective 2: Narrative Story-Grammar Checklist

The story grammar checklist highlights the narrative components evaluated during the collection of the composed stories over the course of the four completed narratives (Appendix I). The following information from the narratives were gathered:

Table 2: Narrative Components

P- Value: $0.83 > \alpha$

	Character	Initiating Event	Response	Consequence	Emotions	Complete Story	Sequential Story
Narrative # 1 (Baseline)	✓				✓		
Narrative # 2	✓	✓	✓	✓	✓	✓	✓
Narrative # 3	✓	✓		✓		✓	✓
Narrative # 4	✓	✓	✓	✓	✓	✓	✓

Table 3: Narrative Components Examples

	Example from Narrative # 2	Example from Narrative # 4
Character	"My grandma"	"I went to see Kelly Clarkson"
Initiating Event	"I started doing it"	"I was trying to call my nurse and she couldn't hear me"
Response	" I did animal photography"	"So my friend who was next to me had to tell her"
Consequence	"I got to express my artistic side"	"I would like to have a flashing light on my Tobii"
Emotions	"I still enjoy when I do it."	"It was really annoying"

The two-sample t- test revealed the amount of 2.054 with a p-value of .83. The results indicated there was no significant change in narrative complexity with the implementation of intervention.

When implementing the two-sample *t*-test, results indicate that no change occurred with the implementation of our intervention on the psychosocial attitudes towards storytelling or expressed narrative complexity.

Discussion

Research Question

This study sought to describe the experiences of adults who benefit from augmentative and alternative communication by examining two objectives. The first objective was to measure the psychosocial implications on the confidence of one's ability to tell a story by collecting data through a pre-test and post-test. The second objective aimed to examine if a person who benefits from AAC's narrative complexity increased by including more story grammar components when providing more storytelling materials while attending the group.

Interpretation of Results

The first objective required measuring pre-test and post-test data. Designing the qualitative survey required evaluating the psychosocial components that may be positively influenced by attending a social story-telling group with same-age, typically communicating peers. In previous research, it has been determined that groups that foster inclusion may have a positive influence on social interaction, confidence, and learning for students with disabilities. Positive peer interaction amidst shared learning activities provides a natural context to practice communication skills, strengthen social competence, and develop relationships (Carter, Sisco, Brown, Brickham, & Al-Khabbaz, 2008). Additionally, the influence of a peer in a group is considered evidence-based intervention for increasing social opportunities (Carter, E. W. et al 2011). The pre-post survey combined validated scales together with purposely developed items to assess baseline and post-treatment attitudes on storytelling in a group setting.

The two-sample t-test revealed a p-value of .99, which indicated that researcher was unable to reject the null hypothesis and unable to indicate that the data collected had any significant change at a confidence interval of 95%. Though there are no statistical differences confirmed through our data interpretation methods, there are clinical implications for the collected data results in our study.

Considering the small sample size of our data (two participants), the small number of questions that were asked of the participants (10 questions) and limited

storytelling club meetings (four sessions), the reliability and validity could not be established. However, notable observed clinical implications are as followed: when examining both Client 1 and Client 2's pre-test and post-test, there was a positive increase demonstrated by both participants as indicated by the Likert scale. Both participants increased their mean average of test result one whole rating (i.e. four to five and three to four) in the direction of feeling more confident and/or knowledgeable about storytelling. The assumed observation is that attending the storytelling club and practicing sharing stories there would be a positive influence on one's storytelling knowledge. In addition to the observations made on the pre-test and post-test, it was also observed the target participant (Client 1) began to use different modalities for storytelling while sharing her story during the "group presentation" portion of the storytelling club. These observed examples included using music while presenting. Though it is unclear that the storytelling club inspired additional creative elements of storytelling, it was observed and noted as an effective way to share a story that incorporated both engaging and entertaining elements.

The second objective of our study was to evaluate the storytelling components in each narrative and measure the complexity by using a story graphing chart. Story components make up episodes by presenting either logical relationships, either temporal or causal (Liles, 1993). Stein and Glenn have explored necessary components that are required to complete story; however, the researchers deemed the following three the most integral: an *initiating event*, an *attempt or actions* (to resolve a problem), and *the*

consequence to the problem (Stein 1979). The two-sample t-test revealed a p-value of .85, which indicated that researchers were unable to reject the null hypothesis and unable to indicate that the increase in narrative components across the four narratives was due to the implementation of the intervention. Similar to the pre-test and post-test results, though there are no statistical differences confirmed through statistical methods, there are clinical implications for the collected data results in our study. Internal validity for the pre-test and post-survey and the narrative components choices scales are considered acceptable, as were test confidence intervals of 95%. Results may have different outcomes with an adjustment in the confidence interval scale.

When observing the story grammar components across the four narratives produced, it is evident through that the story grammar elements increased after a baseline treatment. Due to the few amounts of narratives produced over a short time table, it not possible to confirm whether the intervention positively influenced the narrative components observed stories.

Limitations and Future Directions

Throughout the course of this study, several limitations were observed and documented. These noted shortcomings were accounted for when determining the validity and reliability of the results gathered from our study. The study itself was designed as a case-study, making the population sample size too small to infer generalization. Client 1 served as the subject of the narrative intervention, and her background information proved to be a great advantage for her as a participant. Client 1 was observed to be intrinsically motivated, social, and eager to learn in a social group. These personality traits cannot be assumed to exist with all participants who participate in a storytelling club. In regard to Client 2, her previous relationship as a friend and classmate to the principal investigator may have influenced her pre-survey and post-survey responses.

As aforementioned, the storytelling club took place over the course of four sessions, with a five-week gap between the third and the fourth session. The gap of time where the group did not meet may have contributed to the loss of skill or comfortability with storytelling or storytelling meeting framework. The limited number of sessions did not allow the group to establish very strong rapport between the principal investigator and the group. Additionally, it did not allow the group to re-visit some of the concepts that were taught in previous weeks. There were also instances where the group had to meet for shorter than two-hour due to logistical variables.

Another limitation was the lack of experience that the principal investigator had with teaching storytelling. Though the principal investigator who facilitated the group had experiences with different types of storytelling and storytelling performances, her experience as a teacher was intermediate. As a graduate student, her primary focus was incorporating co-construction as a language facilitation methods for AAC with the typical language peer-components.

The final limitation was human error that exists and increases with the lack of assistance in studies that consist of a large group of participants. Though the peer-confederates were graduate students in speech-language pathology, they were not expected to gather data or organize the club or club documents. The responsibility of the entire study fell on the principal investigators of the study.

Our current research project posed future questions to be answered by the researcher in relation to different methods of supporting individuals who benefit from augmentative and alternative communication using personal narrative sharing. Our study informed the future directions additional study.

To gather significant and substantial results, a future group that consisted of a larger sample of adults who benefit from AAC over a longer duration of time would be beneficial to infer the reliability of intervention treatment. The group may also benefit when working with students or young adults who are looking for more social opportunities in the augmentative and alternative communication community.

When designing story templates as support materials for future groups, it was observed that matching the client's linguistic system would be beneficial to their receptive language, and would also lend itself to the establishment of clear expectations. In the current study, Client 1 was literate and benefitted from printed, written materials. However, future groups with a larger, more heterogeneous group of participants may benefit from templates that were designed with symbols that corresponded with their linguistic system. It was also observed that low-tech supports (such as whiteboards) may have been beneficial for improvisational story templates that required to be configured during the group sessions.

The presence of the graduate student peer-confederates was ideal for the current storytelling study, as they were comfortable working with individuals with complex communication profiles. In the future, it would be optimal to incorporate peer-confederates who are well-versed in AAC. Additionally, it would be beneficial if prior to the storytelling club, the peer-confederates and a formal introduction or tutorial to co-construction techniques including focused language stimulation. The potential for recruiting peer-confederates for a future study may come from advertising at a university or potentially offering college or clinical credit.

It became apparent that many of the storytellers who benefitted from AAC were interested in using multi-modal storytelling including pictures, videos, and music while telling their stories. The use of extra media should be incorporated into future storytelling

club modules, as it may support the cohesion of their stories and bring creative entertaining elements to the storytelling discussions.

Lastly, the use of a pre-made, regular visual support of the club's agenda for each week (e.g. Google Slides or PowerPoint) should be used to share with families or caregivers prior to the meeting of the group. The visual guide will allow for the preparation of the group before meeting as well as provide clear set expectations of the storytelling components. An email list or calendar should be shared with the group to keep members of the group abreast on upcoming modules and timetable changes.

Conclusion

Though there was no change observed in either of the two guided research objectives, the information observed did guide our study to new directions that may support future findings in the area of augmentative and alternative communication, personal narratives, peer confederates, and social groups. The significance of this study, despite any limitations, does have clinical implications for supporting individuals with complex communication profiles and warrants a future study with a larger sample size over a longer duration of time.

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Appendix A

San Francisco State University

Recruitment Email

Storytelling for Narrative Development for Adults who Benefit from AAC

You are invited to take part in a research project conducted by San Francisco State University graduate student, Isabel Craik and Faculty Advisor, Dr. Patti Solomon-Rice. In this study, we hope to learn more about the ways in which students who use Alternative and Augmentative Communication (AAC) tell narratives after participating in a Storytelling Club. You are receiving this email because you either 1) teach, support, or work with an individual who uses AAC as their primary form of communication, 2) you are a person who benefits from AAC, or 3) you would like to participate in the club as a peer who does not benefit from AAC. We hope that our research will lead to a better understanding of the functional use of AAC, as well as the effectiveness of storytelling to improve expressed narratives.

To join the club as an official member, the participant must attend a 2-hour meeting once a week that is held at a community center in Marin, California. Participants do not have to become members of the University's official club organization to participate in the study. The participant will work in a collaborative setting learning new ways to compose and tell original stories. Some of these activities include: improvising, quick-writes, and writing responses to provided stimuli. The end-product of the club will be a performance where each club member will tell a short-story in front of a small audience with props if desired.

If you decide to participate, you will be asked to complete two surveys on your thoughts about narratives and storytelling. We expect the survey will take you approximately fifteen minutes to complete. Additionally, we may collect information about the components of your story during a spoken narrative. Aside from delivering the narrative, there is no other requirements for your involvement.

Please let me know if you would be interested in this study taking place within the Storytelling Society at SFSU by contacting Isabel Craik, B.A. SLP-A by email at icraik@mail.sfsu. If you have questions about the study, please also contact me or my faculty advisor, Dr. Patti Solomon-Rice, at psolomon@sfsu.edu

Sincerely,

Isabel Craik

Graduate Student, Department of Communicative Disorders,

Appendix B

San Francisco State University

Recruitment Email

Storytelling for Narrative Development in Adults who Benefit from AAC

Seeking participants interested in learning how to write and perform short stories!



PURPOSE AND BACKGROUND

The purpose of this research study is to examine narrative complexity in individuals who use Augmentative and Alternative Communication (AAC). In this research study, we will examine storytelling in a group setting, and the effects of *peer-confederates* (you!) as partners in developing stories.

Appendix B

San Francisco State University

Recruitment Email

San Francisco State University

Storytelling for Narrative Development in Adults who Benefit from AAC

What is Augmentative and Alternative Communication (AAC)? :

AAC includes all ways we share our ideas and feelings without talking. We all use forms of AAC every day. People with severe speech or language problems may need AAC to help them communicate. Some may use it all of the time, while others use it to supplement speech.

INCLUSION CRITERIA

- Interest in learning how to write and tell stories for performance
- 18 years of age or older

BENEFITS

Though there are no direct benefits, indirect benefits include: learning more about the development of narratives, and supporting students who benefit from AAC in a club setting.

****The Storytelling Society follows an inclusive framework organized by speech-language pathology graduate students. We support individuals with a variety of communicative disorders and disabilities from different backgrounds**

Appendix C

San Francisco State University

Informed Consent Form - Peer

Storytelling for Narrative Development for Adults who Benefit from AAC

PURPOSE AND BACKGROUND

The purpose of this research study is to examine narrative complexity in individuals who use Augmentative and Alternative Communication (AAC). In this research study, we will examine storytelling in a group setting, and the effects of peer-confederates as partners in developing stories.

The researcher, Isabel Craik, is a speech-language pathology graduate student at San Francisco State University who is interested in exploring creative interventions to support individuals with complex communication profiles. Her advisor, Dr. Patti Solomon- Rice, is an associate professor at San Francisco State University and has conducted research and taught classes in the areas of Augmentative and Alternative Communication. She is the co-project director of a federally funded grant, Project Building Bridges, which trains graduate students in the knowledge and skills needed to provide services for culturally and linguistically diverse children benefitting from augmentative and alternative communication.

You are being asked to participate in this study because you have communicated an interest participating in the Storytelling Society which will take place at a community center in Marin, CA. As a participant, your involvement will help us learn about the different methods to support adults who benefit from AAC when telling personal narratives. To be considered a participant in this study, you must be over the age of eighteen and benefit from using a high-tech augmentative and alternative (AAC) communication device.

Appendix C

San Francisco State University

Informed Consent Form- Peer

Storytelling for Narrative Development in Adults who Benefit from AAC

PROCEDURES

If you decide to participate in this research, the following will occur:

- You will participate in six, 2-hour long storytelling clubs and complete the following forms relating to storytelling:
 - Story template, to organize a story
 - Self-graphing checklist worksheet, to check for story content
- You will be asked to share your story with a partner, or within a small group
- You will be asked to complete two surveys on your thoughts of narratives and storytelling;
- The survey will take approximately fifteen minutes to complete;
- The club will be held in Marin, CA.
- We may collect data about your story during club storytelling activities.
- The total time commitment is approximately 12 hours.

RISKS

There is a risk of loss privacy. However, no names or identities will be used for any published reports or research. Only the researcher and faculty advisor will have access to collected data. There is also a possibility that participants may feel uncomfortable when answering questions or participating in different activities.

BENEFITS

There will be no direct benefits to the participants.

CONFIDENTIALITY

Participant names will be de-identified. No personal information (address, phone number) will be collected. All research data will be stored in a device with full encryption and password-protection in the faculty advisor's office in Burk Hall 101 at San Francisco State University. Only the Principal Investigator and the faculty advisor of the project

Appendix C

San Francisco State University

Informed Consent Form- Peer

Storytelling for Narrative Development in Adults who Benefit from AAC

Storytelling for Narrative Development in Adults who Benefit from AAC will have access to the data. The data will be retained for a minimum of 3 years per CSU policy, and de-identified data will be retained indefinitely for possible future use.

COSTS

There will be no costs for this project.

COMPENSATION

There will be no compensation for this project.

ALTERNATIVES

You have the right not to participate in this research study.

QUESTIONS: If you have questions about this study, contact Isabel Craik, B.A. SLP-A by email at icraik@mail.sfsu.edu or Dr. Patti Solomon Rice at psolomon@mail.sfsu.edu.

Questions about your rights as a study participant, or comments of complaints about the study, may also be addressed to the Hum and Animal Protections at 415.338-1093 or protocol@sfsu.edu.

Participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time. Deciding not to participate or choosing to leave the study will not result in any penalty or loss of benefits to which you are entitled, and it will not harm your relationship with San Francisco State University.

CONSENT

You have been given a copy of this consent form to keep.

PARTICIPATION IN THIS RESEARCH IS VOLUNTARY. You are free to decline to participate in this research, or to withdraw your participation at any point, without penalty. Your decision to participate in this research will have no influence on your present or future status at San Francisco State University.

Signature _____

Research Participant

Date: _____

Appendix D

San Francisco State University

Informed Consent Form – Person who benefits from AAC

Storytelling for Narrative Development for Adults who Benefit from AAC

PURPOSE AND BACKGROUND

The purpose of this research study is to examine narrative complexity in individuals who use Augmentative and Alternative Communication (AAC). In this research study, we will examine storytelling in a group setting, and the effects of peer-confederates as partners in developing stories.

The researcher, Isabel Craik, is a speech-language pathology graduate student at San Francisco University who is interested in exploring creative interventions to support individuals with complex communication profiles. Her advisor, Dr. Patti Solomon- Rice, is an associate professor at San Francisco State University and has conducted research and taught classes in the areas of Augmentative and Alternative Communication. She is the co-project director of a federally funded grant, Project Building Bridges, which trains graduate students in the knowledge and skills needed to provide services for culturally and linguistically diverse children benefitting from augmentative and alternative communication.

You are being asked to participate in this study because you have communicated an interest participating in the Storytelling Society at San Francisco State. As a participant, your involvement will help us learn about the different methods to support adults who benefit from AAC when telling personal narratives

If you decide to participate in this research, the following will occur: San Francisco State University

Appendix D

San Francisco State University

Informed Consent Form – Person who benefits from AAC

Storytelling for Narrative Development for Adults who Benefit from AAC

PROCEDURES

- you will participate in six, 2-hour long storytelling clubs and complete the following forms relating to storytelling:
 - Story template, to organize a story
 - Self-graphing checklist worksheet, to check for story content
- you will be asked to share your story with a partner, or within a small group
- you will be asked to complete two surveys on your thoughts of narratives and storytelling;
- the survey will take approximately fifteen minutes to complete;
- the club will be held in Marin, CA.
- we may collect data about your story during club storytelling activities.
- The total time commitment is approximately 12 hours.

RISKS

There is a risk of loss privacy. However, no names or identities will be used for any published reports or research. Only the researcher and faculty advisor will have access to collected data.

BENEFITS

There will be no direct benefits to the participants. Indirect benefits include: knowing more about the development of narratives for AAC users who are involved in a storytelling club.

CONFIDENTIALITY

Appendix D

San Francisco State University

Informed Consent Form – Person who benefits from AAC

Storytelling for Narrative Development in Adults who Benefit from AAC

Participant names will be de-identified. No personal information (address, phone number) will be collected. All research data will be stored in a device with full encryption and password-protection in the faculty advisor's office in Burk Hall 101 at San Francisco State University. Only the Principal Investigator and the faculty advisor of the project

will have access to the data. The data will be retained for a minimum of 3 years per CSU policy, and de-identified data will be retained indefinitely for possible future use.

COSTS: There will be no costs for this project aside from the cost of time.

COMPENSATION: There will be no compensation for this project.

ALTERNATIVES: You have the right not to participate in this research study.

Participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time. Deciding not to participate or choosing to leave the study will not result in any penalty or loss of benefits to which you are entitled, and it will not harm your relationship with San Francisco State University.

QUESTIONS: If you have questions about this study, contact Isabel Craik, B.A. SLP-A by email at icraik@mail.sfsu.edu or Dr. Patti Solomon Rice at psolomon@mail.sfsu.edu.

Questions about your rights as a study participant, or comments of complaints about the study, may also be addressed to the Hum and Animal Protections at 415.338-1093 or protocol@sfsu.edu.

CONSENT

You have been given a copy of this consent form to keep.

PARTICIPATION IN THIS RESEARCH IS VOLUNTARY. You are free to decline to participate in this research, or to withdraw your participation at any point, without

Appendix D

San Francisco State University

Informed Consent Form – Person who benefits from AAC

Storytelling for Narrative Development in Adults who Benefit from AAC

penalty. Your decision to participate in this research will have no influence on your present or future status at San Francisco State University.

San Francisco State University

Signature _____
Research Participant

Date: _____

Signature _____
Researcher

Date: _____

Appendix E

San Francisco State University

Weekly Themes

Storytelling for Narrative Development in Adults who Benefit from AAC

WEEK 1	Heroes; real or fictitious
WEEK 2	Adventures into something unknown; real or metaphorical
WEEK 3	Stories of discovering new friendships
WEEK 4	Traveling and/or exploring new places (near or far)
WEEK 5	Overcoming challenges/ obstacles
WEEK 6	Personal interest/ hobby, etc.

Appendix F

San Francisco State University

Story-Writing Template

Storytelling for Narrative Development in Adults who Benefit from AAC

In a place called _____, I had an interesting experience/ I met a person named _____.

It all started with _____. Next, _____

Then _____ Last _____. This story makes me feel _____ because _____.

WORD BANK

Far away/ Close	Cool/ Fun/ Awesome	Happy/ Excited/ Good
Outside/ Inside	Boring/ Annoying	Sad/ Upset/ Bad
Next to/ Behind/ In front of	Walk/ Run/ Drive/ Fly	Worried
Different/ Same/ Similar	Tell/ Take/ Want/ Give	Silly/ Weird
Familiar/ New	Ready/ Busy	Sick/ Tired

Appendix G

San Francisco State University

Self-Graphing Chart

Storytelling for Narrative Development in Adults who Benefit from AAC

How many parts did your story have?

Put a Check Mark or an "X" next to the parts your story has.

DATE: Wk 1 Wk 2 Wk 3 Wk 4 Wk 5 Wk 6

Setting/Character						
Initiating Event						
Response						
Consequences						
Reactions/ Emotions						

Appendix H

San Francisco State University

Discussion Questions

Storytelling for Narrative Development in Adults who Benefit from AAC

How did you know the person in your story?

Where did you meet that person in your story?

Do you still know that person?

Tell me more about the way that person looks.

Why do you think that character did that?

What was something else that character could have done?

How do you think the character feels?

Can you see how that story could have ended differently? How?

What that character do that again? Why?

Appendix I

San Francisco State University

Questionnaire

Storytelling for Narrative Development for Adults who Benefit from AAC

Please read each statement and indicate your answer by circling one of the corresponding options:

1. I feel confident writing a story without help from another person.

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

2. I have the skills to write about many different topics of stories.

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

3. I feel confident about writing a complete story with a beginning, middle and end.

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

4. I am familiar with the different purposes of stories and the function sharing stories can serve.

Appendix I

San Francisco State University

Questionnaire

Storytelling for Narrative Development for Adults who Benefit from AAC

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

5. I feel confident that my stories are clear and concise and my listener understands me.

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

6. I feel confident telling stories to familiar people (friends, family, etc).

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

7. I feel confident telling stories to unfamiliar people (classmates, new people, etc).

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

8. I have the skills to tell story using dialogue from different characters that have different points of view.

Strongly Disagree *Disagree* *Neither Agree or Disagree* *Agree* *Strongly Agree*

Appendix I

San Francisco State University

Questionnaire

Storytelling for Narrative Development for Adults who Benefit from AAC

9. I have the skills to improvise a story and tell it without a paper in front of me.
Strongly Disagree Disagree Neither Agree or Disagree Agree Strongly Agree

10. I enjoy telling stories about myself and about topics not related to me
Strongly Disagree Disagree Neither Agree or Disagree Agree Strongly Agree

Appendix J

San Francisco State University

Client 1 Collective Narratives

Storytelling for Narrative Development for Adults who Benefit from AAC

[Heroes Theme] Narrative #1: "I think wonder woman is a hero because she gives such a strong woman power vibe. She's so confident and gets through whatever obstacles she faces. She makes me feel empowered and strong as a woman.:

[Travel Theme] Narrative #2:" My friend Kristin and I went to Paris. We went to fashion shows, we went shopping at so many cool stores and we had stylists to help us with out shopping. We stayed at a hotel that had a spa and it was in downtown Paris. We met a lot of awesome people there. After two weeks we came home.

[Hobby Theme] Narrative #3: "One of my hobbies is photography. My grandma introduced me to it, she is a professional animal photographer. I started doing it when I was in high school. I got a canon camera my junior year of high school as a Christmas present from my family, and my mom got me something called a camrager so that I can control the camera with my iPhone or iPad. I did animal photography for my high school senior project and my grandma was my mentor. I like photography because I get to express my artistic side. Even though I don't do it as often as I used to I still enjoy it when I do.

[Overcoming Challenge Theme] Narrative # 4: "When I am at a very loud event like a concert no one can hear me. I went to see Kelly Clarkson and I was trying to call my nurse because I needed Suctioning and she couldn't hear me so my friend who was next to me had to tell her that I needed her. It was really annoying and worrying to not be able to get her attention. I would like a flashing light on my tobii so I can get someone attention."