

The Effectiveness of Online Parent Training for Narrative Language in Children with Down Syndrome

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Abstract

Purpose: The purpose of this study was to investigate the use of online parent training to increase narrative language comprehension and production in children with Down syndrome.

Method: Participants were 8 parent/child dyads who took part in a 4-week online training that included the use of online videos of children who modeled narrative language strategies in pre-reading, during reading and post-reading. Strategies included the use of semantic word maps, picture walk, internal states charts, story grammar prompts, and comprehension questions. Parents completed a survey before and after the completion of the study as well as after completion of each strategy module.

Results: Results showed positive results that mirrored that of in-person parent training. Parents reported that online delivery allowed them to be able to learn new skills to increase narrative language that was convenient and presented in a way that facilitated learning.

Conclusion: Results of the study have implications for reinforcing critical skills through a different platform that can reach more people than in-person training.

Keywords: Parent-training; Online; Digital; Children; Down syndrome

Introduction

Parent training is teaching parents to direct intervention for their children. Parents are their child's first teacher and interact with their child each day. Communication is an essential part of daily living, and is best learned, practiced, and mastered in natural settings. Parents are the constant 24/7 presence, and they have many more opportunities to teach and support communication skills in their child. Teaching parents how to work with their children makes it possible for therapy to extend from 1-2 therapy sessions per week to ongoing, real-life mastery and practice. There is much research supporting the use of parent training for various interventions, including literacy, behavior [1], communication [2], phonological issues [3], narrative language [4], and more. Parent training has been shown to be particularly useful for parents of children with intellectual disabilities [5].

There are many benefits to implementing parent training in intervention. When parents are trained to conduct intervention for their children, the behaviors of both the parents and the children improve. Parents of children with intellectual disabilities often doubt their ability to help their children, and they gain confidence in working with their children with intellectual disabilities from the training [6]. Training parents also improves the parents' teaching skills, which leads to the implementation of more frequent teaching opportunities in the homes [7,8]. These skills and teaching opportunities have been shown to be effective in improving children's speech, language, and communication [4,9-11].

Parent training also poses practical benefits for clinical practice. Olswang et al. found that when parent training is implemented, positive results on children's communication or behavior have been observed after a relatively short period of time [12]. Parent training can also produce long-lasting results for children with intellectual disabilities [5]. Lancaster et al. found that children continued to show improvements after the conclusion of formal clinical sessions with clinicians when parents were trained during intervention [3]. Roberts and Kaiser in a review of 18 research studies on the effects of parent training on the skills of their children, found that parent training was just as effective as intervention by speech-language pathologists across a variety of language areas, and was even more effective than traditional speech-language pathology service delivery at improving the child's receptive language and syntax [10]. Parent training may also have the potential to reach more parents in communities that may not have access to interventions otherwise [1].

Parent training can be implemented using a variety of delivery models. Meadan et al. reviewed studies of single subject training for parents [13]. The Hanen Parent Program delivers information to groups of 6-8 parents through weekly live classroom-based sessions, with a supplemental home visit that includes videotaping of the child communicating in his natural environment [14]. Van Balkom et al. used parent video home training [2]. Schoenbrodt et al. used live classroom-based information sessions, packets of materials and sessions, and weekly individual e-mail sessions with the primary investigator for feedback and direction [4].

Multiple studies have shown parent training to be effective over control groups [10,15]. Some studies have also looked at the

effectiveness of parent training as compared to traditional therapy. van Balkom et al. conducted a study that compared Direct Child Intervention (DCI) to Parent Video Home Training (PVHT) [2]. When mean length of utterance (MLU), language comprehension, and conversational coherence were compared at the end of the study, the PVHT group was shown to benefit more from intervention than the DCI group. The therapy time was the same for the DCI group and the PVHT group. Results of the PVHT group were also observed at a follow up after the conclusion of the intervention, indicating that the results were long-lasting. Roberts and Kaiser reviewed 18 research studies related to the effectiveness of parent training, and found that parent implemented training was significantly related to positive changes in receptive and expressive language skills, receptive and expressive vocabulary and expressive morphosyntax [10]. The effects were positive for both children who were typically developing and children with intellectual disability. The only exception was that significant positive effects were not found for expressive vocabulary in children with intellectual disability

A focus of recent research on parent training has been parent training delivered electronically, or digital parent training. This new method of delivery for parent training may be beneficial for families who cannot travel to therapy centers for intervention [7]. A digital approach to parent training also allows the parents to be in more constant contact with clinicians during training. Vismara et al. found that communication with therapists during training was highly important in parent training, and was crucial to a successful outcome [16].

Clinical considerations for digital parent training have also been highlighted by recent research. A systematic review by Baumel et al. found that digital parent training programs were most effective with younger children and when the programs were interactive [6]. Guðmundsdóttir and Sigurðardóttir also found that the quality and functionality of technology used in digital parent training, such as sound and video quality and internet connectivity, were influential in the electronically delivered intervention [7]. This is significant because the types and quality of resources available to different children who require intervention can be varied, which can influence the quality of intervention that they receive [3].

Previous studies have shown that parent training can be effective in improving narrative language skills of children with intellectual disabilities [4,17]. Schoenbrodt et al. found that parents could be effective in increasing the narrative language skills of their children, but that parents needed to have access to materials used in intervention after they were initially introduced [4]. Trenholm and Miranda surveyed parents of 224 adolescents and adults with intellectual disability. They reported that they rarely asked higher level questions when reading with their children, and that was a need for materials to help them learn how to ask higher level questions [18]. Schoenbrodt et al. also believe that parent training delivered electronically could be effective in increasing children's narrative language skills and reaching a wider participant base [17]. The current study uses digital parent training to train parents of children with Down syndrome to improve their children's narrative language skills.

Method

Participants

Participants in this study included 35 school-aged children, ranging from 5 to 14 yrs old. All participants were children with Down syndrome (DS). Participants come from a variety of demographic backgrounds. Prior to the study, parents completed a questionnaire about their child's specific etiology of DS, native language and/or secondary language(s), primary language spoken at home, if their child has difficulty with reading comprehension, and their child's current reading level of books. According to the participants' parents, all participants' native language is English.

Majority of the participants do not speak a second language. However, six participants use American Sign Language (ASL), Spanish, or Marathi as a second language, though English is the primary language spoken at home for all participants. All but one parent reported that their child has difficulty with reading comprehension skills. Reading levels varied for each participant, ranging from picture books, one word stories, short stories with/without illustrations to chapter books. See Table 1 for details on each participant.

Age	Etiology of DS	State	English as L1?	English as L2?	Primary Language spoken at home	Difficulties in Reading Comprehension?	Book Levels
8 yrs, 9 months	Trisomy 21	VA	Yes	ASL	English	Yes	Picture books, One Word, Short stories
8 yrs, 11 months	Trisomy 21	CA	Yes	N/A	English	Yes	Short stories, Chapter books
16 yrs, 7 months	Trisomy 21	TX	Yes	N/A	English	Yes	Picture books, Short stories, chapter books
12 yrs, 3 months	Trisomy 21	MO	Yes	N/A	English	Yes	Short stories, Chapter books
6 yrs, 1 months	Trisomy 21	CA	Yes	N/A	English	No	Picture books, Short stories
9 yrs, 2 months	Mosaic	SC	Yes	N/A	English	Yes	Chapter books
5 yrs, 3 months	Trisomy 21	MD	Yes	N/A	English	Yes	Picture, One word, Short stories
10 yrs, 11 months	Trisomy 21	WA	Yes	N/A	English	Yes	Short stories

12 yrs, 5 months	Trisomy 21	IL	Yes	N/A	English	Yes	Short stories
16 yrs, 8 months	trisomy 21	AL	Yes	N/A	English	Yes	Short stories, chapter books
8 yrs, 1 months	Trisomy 21	TX	Yes	N/A	English	Yes	Picture books, One word, Short stories
6 yrs, 4 months	Trisomy 21	TX	Yes	N/A	English	Yes	Picture books, One word per page, Short stories
9 yrs, 4 months	Trisomy 21	TX	Yes	Yes	English	Yes	Short story books with illustrations
9 yrs, 10 months	Trisomy 21	FL	yes	N/A	English	Yes	Short stories, chapter books
14 yrs, 1 months	Trisomy 21	FL	yes	Spanish	English	Yes	Picture books, one word to a page, story books with illustrations
14 yrs, 4 months	Trisomy 21	FL	Yes	N/A	English	Yes	Picture books, One word per page, Short stories with illustrations, Chapter books
8 yrs 10 months	Trisomy 21	VA	yes	N/A	English	Yes	Short stories, chapter books
5 yrs, 10 months	Trisomy 21	NM	yes	ASL, Spanish	English	Yes	short stories
10 yrs 3 months	Trisomy 21	NY	yes	N/A	English	Yes	Picture books, short stories
7 yrs, 8 months	Trisomy 21	GA	yes	N/A	English	Yes	Picture books, short stories, chapter books
13 yrs, 4 months	Trisomy 21	NY	yes	N/A	English	Yes	Short stories, chapter books
6 yrs, 8 months	Trisomy 21	NJ	yes	N/A	English	Yes	Picture books, one word to a page, story books with illustrations
7 yrs, 5 months	Trisomy 21	TX	Yes	Marathi	English	Yes	Short stories with illustrations
7 yrs, 4 months	Trisomy 21	TX	Yes	Spanish	English	Yes	Picture books, One word on a page, Short stories
13 yrs, 11 months	Trisomy 21	VA	Yes	N/A	English	Yes	Short story books with illustrations
10 yrs, 7 months	Trisomy 21	KY	Yes	N/A	English	Yes	Short stories, Chapter books
9 yrs, 1 months	Unknown	VA	Yes	Spanish	English/Spanish	Yes	Picture books, One word to a page, Short story books
10 yrs, 2 months	Trisomy 21	KS	Yes	N/A	English	Yes	Short story books
8 yrs, 2 months	Trisomy 21	VT	Yes	N/A	English	Yes	Chapter books
7 yrs, 2 months	Trisomy 21	TX	Yes	ASL	English	Yes	Short story books
6 yrs, 2 months	Trisomy 21	NY	Yes	N/A	English	Yes	Short story books

11 yrs, 6 months	Trisomy 21	IL	Yes	N/A	English	Yes	Short story books, Chapter books
10 yrs, 3 months	Trisomy 21	NY	Yes	N/A	English	Yes	Picture books, Short stories
10 yrs, 10 months	Trisomy 21	FL	yes	N/A	English	Yes	Short stories, chapter books
11 yrs, 4 months	Trisomy 21	TX	Yes	N/A	English	Yes	Short stories

Table 1: Participants’ age, diagnosis, primary and secondary languages, current reading levels, and if he/she has difficulty with reading comprehension.

Procedures

Before receiving the narrative language intervention materials, parents filled out a pre-assessment survey. The pre-assessment survey consisted of questions relating to the parents’ prior knowledge and use of narrative language intervention, as well as understanding the various techniques that would be used in the intervention. Once completed and received by the principal investigator, parents were sent training materials containing online narrated PowerPoints with an overview of narrative language intervention development. In addition, parents received detailed explanations about each technique used in the intervention and access to video modules demonstrating how to implement each of the techniques. Parents were also given a four week, day-to-day schedule to follow indication which intervention to apply on what day. See Table 2 for a detailed schedule. The parents were instructed to work with the child four times a week, with a built-in break on Wednesday, when the parents were required to report on their child’s progress *via* e-mail to the principal investigator. In addition, a packet including materials and activities for each book was sent to or provided for to the parents. Parents were given the option to choose from two books which would be used during the intervention. Parents either chose “Rainbow Fish” by Marcus Pfister or “Strega Nona” by Tomie de Paola to read and complete the activities with their child. Activities include a semantic word map, picture walk discussion, teaching vocabulary, think alouds, story grammar chart, retelling the story with/without the story grammar chart, comprehension questions, and an art project.

The study was divided into four weeks, starting with simple interventions and progressing to more complex interventions. The first week of the study focused on introducing the story to the child and working on pre-story elements, before actually reading the story to their child. Pre-story activities are designed to help the child get ready to be involved with the story and think about the topics within the story. Parents engaged the child in pre-story activities throughout week one. On Monday/Tuesday parents participated with their child in completing a semantic word map and a picture walk discussion. A semantic word map helps individual make connections between a target word and a set of related words, concepts, and details surrounding the target word. At the top of the page, the child is asked to think of words that relate to a key word of the story. For instance, the word “ocean” can be a target word for the book “Rainbow Fish” and is placed in the center of the map. The child is then asked to think of words that are associated with ocean. Once, a list of related words is generated, the words are then placed into categories correlated to the list, such as sea-animals, types of oceans, plants, and things at the beach, which are then placed in the semantic web as extensions to the target word. In addition to the semantic word map. Parents were

instructed to conduct a picture walk discussion with their child. A picture walk introduces the story to the child and allows the child to comment and make inferences about the story based on the pictures on the pages. During the picture walk, parents were instructed to engage in discourse associated to the pictures such as, “What do you think is happening?” or “What do you think is going to happen here?” or “Who are the characters in the picture?” Wednesday is the day that parents reported back to the principal investigator. On Thursday/Friday of week one, parents were required to identify and define vocabulary within the story that warrants explicit teaching to the child based on his/her vocabulary level. Before beginning to read the story, parents had taught their child to individualized vocabulary words, so that the child would understand and read to story with more ease. These pre-story activities aid the child to understand and read through the story more easily and help him/her remain engaged throughout the duration of the story.

The second week of intervention focused on tasks to be completed while reading the story. Parents were required to read and re-read the story to their child on Monday/Tuesday. The story was read to the child at least two times a week. The purpose is to provide repetition to the child and repeated exposure to not only vocabulary, but also the story grammar. Story grammar is comprised of the characters, plot, inferences, prediction, the problem in the story, and the resolution. While the parents read the story to their child, he/she was encouraged to assess their child’s understanding of the story using ‘Think Alouds’. ‘Think Alouds’ are comprehension questions and/or questions that require the child to provide input about what he/she thinks will happen next in the story based on prior information read. For example, in “Rainbow Fish”, there is a part in the book that says, “if you go beyond the coral reef, you will find a wise octopus, maybe she can help you.” The parents can ask the child, what type of help do you think the wise octopus is going to give Rainbow Fish? After the child provides input, the parent is guided to respond, “I think we should read more to find out.” In this example, a ‘Think Aloud’ question is utilized to develop a prediction about the story using context clues. Furthermore, ‘Think Alouds’ are encouraged to be used through the entirety of the story to keep the child engaged.

Following week two, week three of the intervention included more challenging narrative language skills, such as utilizing story grammar maps and retelling the story using story grammar components independently. At this point in the intervention, the child should have an in depth understanding and knowledge of the story after having read the story during the prior two weeks. During week three, on Monday/Tuesday the parent read the story again with their child. After, a story grammar chart was completed by the child with guided prompts from their parent. The story grammar chart components

included: the setting including when and where the story took place, the characters (who are part of the story), the problem (something that happened in the story, which needs to be solved), the episodes (the events that happen in the story), the internal responses of the characters (how each of the characters respond/react based on the events), and the resolution of the story (how the story ends). The story grammar chart is utilized as an organizational tool to help the child understand each aspect of the story, organize his/her thoughts, and

sequence the events of the story. After completing the story grammar chart, on Thursday/Friday during week three, the child is required to retell the story. On the first attempt, the child was allowed to utilize the story grammar chart as a guide, furthermore after retelling the story using the story grammar chart, the child was encouraged to attempt to retell the story without any prompts. However, if the child needed assistance, parents were allowed to provide cues from the story grammar chart to help.

	Monday/Tuesday	Wednesday	Thursday/Friday
Week 1	Pre-story <ul style="list-style-type: none"> Semantic Word Map Picture Walk Through discussion 	No Intervention E-mail Dr. Schoenbrodt with progress updates	Pre-Story <ul style="list-style-type: none"> Identify vocabulary Explicitly teach vocabulary
Week 2	During story <ul style="list-style-type: none"> Read story Re-read story 	No Intervention E-mail Dr. Schoenbrodt with progress updates	During Story <ul style="list-style-type: none"> Read story Think Alouds
Week 3	During story <ul style="list-style-type: none"> Read story Story grammar chart 	No Intervention E-mail Dr. Schoenbrodt with progress updates	During story <ul style="list-style-type: none"> Retell story with/without story grammar prompts
Week 4	During/Post-story <ul style="list-style-type: none"> Read story Comprehension questions 	No Intervention E-mail Dr. Schoenbrodt with progress updates	Post-story <ul style="list-style-type: none"> Art project

Table 2: Four Week Intervention Schedule

Finally, during the fourth week of the intervention more advanced narrative language literacy skills were addressed as well, followed by a less demanding, but organized way to explore and expand skills beyond the story utilizing art projects. This part of the intervention taught strategies that could be used for other stories. On Monday/Tuesday of week four, the parent read the story to their child. Throughout reading the story and after the parents asked comprehension questions to assess their child's level of understanding. The comprehension questions encouraged the child to apply what he/she learned while reading the story. There are several types of comprehension questions to utilize during this portion of the intervention, such as direct questions (answers are taken directly from the story), thought questions (answers based on the story), and reflective questions (answers go beyond the story and require the child to reflect using their own experiences). For example, in the story "Rainbow Fish", the parents can ask "if you were the wise octopus, what advice would you give Rainbow Fish? Why?" In week four, on Thursday/Friday, art projects were also suggested for parents to complete with their child. Suggestions included crafting the child's own rainbow fish using colored sequins or for "Strega Nona" utilizing pasta in a craft.

After completing the intervention, parents were provided with surveys, to complete to provide detailed feedback on the study for post-analysis.

Results

The study measures the efficacy of a parent-training model for narratives. The intervention was delivered via modules of narrative

intervention sent via the internet to parents enrolled in the study. The survey sought to determine both the child's progress and how each parent perceived the efficiency of the delivery model to improve their child's narrative language skills. Directly after the 4-week parent-training narrative language intervention, the parents of the children with Down syndrome were asked to complete questionnaires via Qualtrics. The questionnaires inquired about each parent's prior knowledge of narrative language, which is graphically depicted in Figure 1. Findings show that 76% of parents had little to no prior knowledge of narrative language before beginning the study. After receiving parent-training via narrated PowerPoints and video modules, parents implemented several types of narrative language interventions across 4 weeks. Following each week of the program, the parents of the participants completed surveys which provided feedback about each intervention and the progress of their child in targeted narrative language skills.

Information about the participants' prior knowledge was also obtained through their parents' responses on the questionnaires. Pre-story activities, such as the picture walkthrough discussion and semantic word map provided data collection related to the child's ability to make inferences and predict outcomes (Figure 2), as well as indication the child's current vocabulary level (Figure 3).

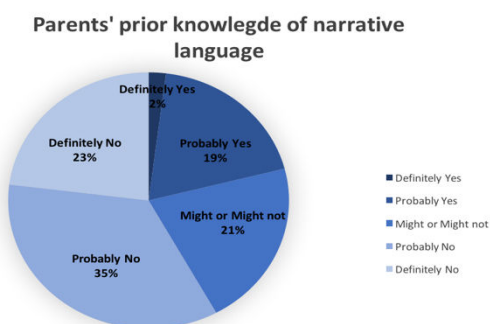


Figure 1 displays parents' previous knowledge of narrative language before completing the study.

Figure 1: Displays parent's previous knowledge of narrative language before completing the study.

These pre-story grammar elements documented or provided data on the child's level of performance prior to receiving narrative language intervention. Figure 2 findings suggest that majority of the parents (48%) reported that the picture walkthrough discussion had no significance as a precursor for making predictions, although 33% of the parents reported the picture walkthrough discussion assisted their child in making prediction about the story.

In addition, 43% of the parents reported the semantic word map was helpful in determining the vocabulary their child knew about the story prior to reading it. These finding about pre-story activities suggest that parents found them to be beneficial in teaching, determining this child's current level of performance, and improving their child's narrative language skills.

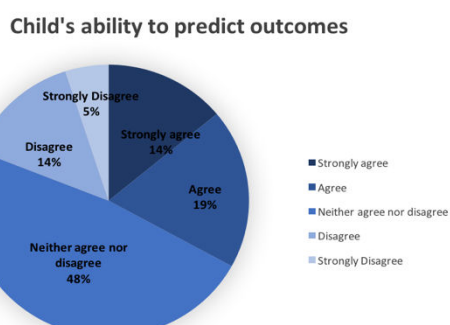


Figure 2 displays the effectiveness of the picture walkthrough on making predictions about the story outcome.

Figure 2: Displays the effectiveness of the picture walkthrough on making predictions about the story outcome

During story activities of the parent-training intervention, the parents were introduced to seven elements of story grammar: setting, internal response, problem, internal plan, attempt to solve the problem, consequence of the attempt, and resolution.

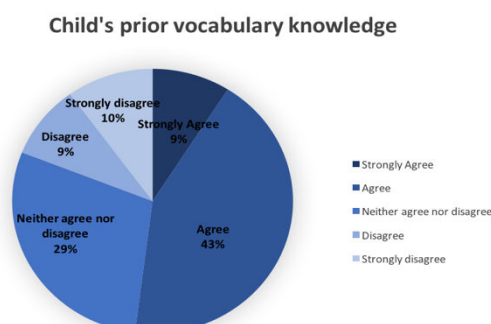


Figure 3 displays participants' vocabulary level based on their semantic word map.

Figure 3: Displays participants' vocabulary level based on their semantic word map.

Figure 4 represents the story grammar elements parents learned to use as a result of the training to assist their child to learn how to identify story grammar elements in a story. Story grammar elements of "setting," "internal response," and "problem" were utilized the most while teaching their child to identify them within stories. While, story grammar elements of "internal plan," "attempts to solve to problem," "consequence of an attempt," and "resolution" were utilized the least by parents during the intervention. After receiving parent-training on story grammar and implementing it with their child, half of the parents (50%) reported their child was able to retell the story using story grammar elements taught, which is depicted in Figure 5.

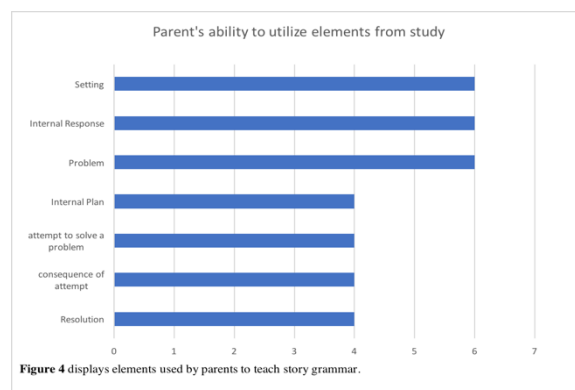


Figure 4 displays elements used by parents to teach story grammar.

Figure 4: Displays elements used by parents to teach story grammar

On Wednesday each week, the parents reported back to the principal investigator, indicating which techniques they learned to use though the parent-training modules in order to effectively teach their child narrative language skills. Techniques learned by parents from the intervention included: the semantic word map, episode map, comprehensions questions, feelings/internal state chart, and story grammar chart.

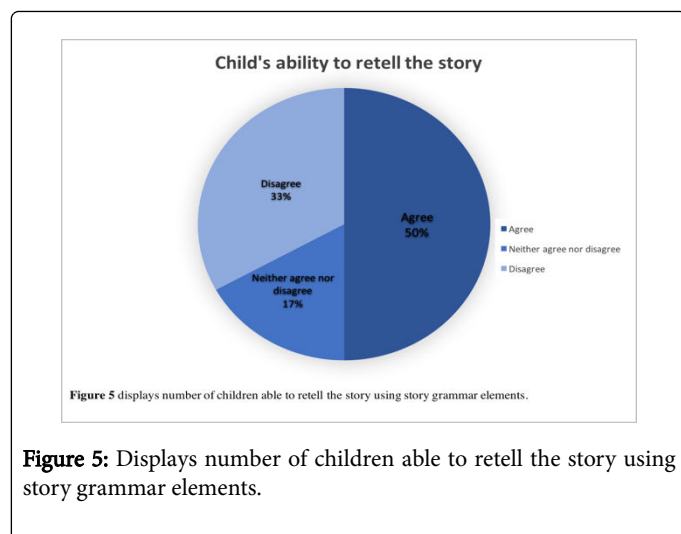


Figure 5: Displays number of children able to retell the story using story grammar elements.

It is important to note the techniques learned by the parents because the reports provide data on how effective parent-training modules were throughout this study. Therefore, results suggest this study successfully taught parents a variety of techniques which led to positive outcomes during the use of narrative language intervention with their child. Figure 6 represents the different narrative language intervention approaches parents learned from participating in this study. One hundred percent (n=8) reported that semantic word map was a new technique learned from the study, while 75% of the parents reported that story grammar charts and episode maps were new techniques. In addition, 50% of the parents learned how to implement comprehension questions and feelings/internal state chart while targeting narrative language skills.

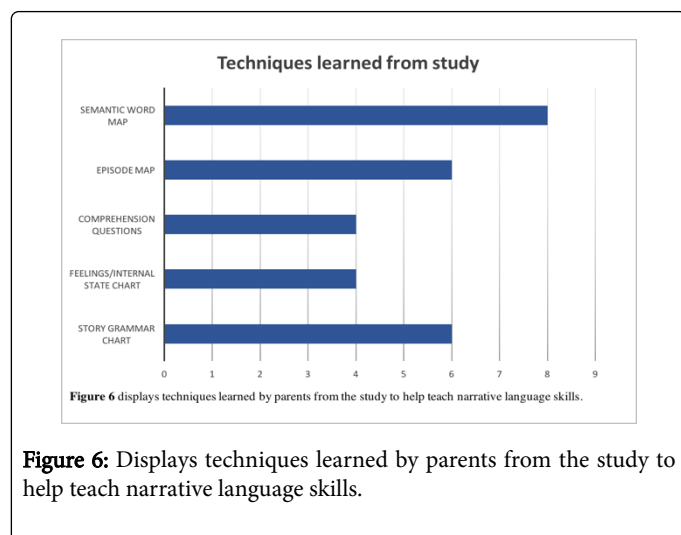


Figure 6: Displays techniques learned by parents from the study to help teach narrative language skills.

The information gathered from the post-intervention surveys documented that the parents (n=8), who complete the 4-week intervention found it to be beneficial and an effective way to learn how to teach narrative language skills to their child. When asked whether they would continue to implement the techniques learned to enhance their child's narrative language skills, 100% (n=8) of the parents reported they would continue to utilize this intervention in the future. However, when asked if the study were to be replicated in the future,

what modification would the parents make to ensure the intervention to be more helpful, the parents suggested additional information.

Discussion

The results of the study provide some information about online training for parents, particularly in teaching narrative language skills to children with Down syndrome. Schoenbrodt and Kumin conducted an in-person training study with parents in the area of narrative language skills, on the same content and found similar results as the current study [4]. Parents from the in-person study indicated the need for online modules that would enhance training and also allow for multiple views that would aid in the delivery of the intervention. The current study sought to deliver the content online to allow for greater participation and different ways to access the content for training parents. One of the most glaring outcomes of the current study is the attrition of participants in the training. The number of children/parent dyads began at 35 and decreased gradually across the training period to 8. In reaching out to parents who dropped out, many indicated that the timing of the training was difficult as it coincided with the beginning of the school year. They further reported that the demands of outside activities and homework did not allow for extra time to implement activities even if they were encouraged to see how the training would generalize to the content and literature presented in school. Finally, many indicated that with reading as an area of weakness, their children did not willingly participate and that it was difficult to force their child to participate in the activities.

Of the participants who continued with the study, results showed that an increase in learning techniques in retelling a story. In particular, parents reported they had a greater understanding of story grammar elements and felt proficient in helping their child identify: setting, internal response, and the problem in the story. They felt moderately equipped to help their child develop an internal plan to solve the problem, the consequences of an attempt, and the resolution. In the study, there were many tools that were explicitly taught. These tools included: semantic word map, episode map, comprehension questions, feelings/internal states chart, and story grammar prompts. All parents reported an increase in being able to use these tools and particularly found the semantic word map, episode map, and story grammar prompts to be ones where they felt most proficient. They felt empowered to use the tools.

In terms of the timing and materials in the study, half of the parents reported they felt that the time allotted to complete the study was sufficient, while others reported that another week or two would have been helpful. Parents were asked if modifications were needed to complete the study. All reported that open ended questions were difficult for their child and that prompts and additional visual cards with pictures or words would have been helpful to improve the response rate. Similar to the in-person study, parents reported many surprise or "aha" moments. One parent reported that she was surprised to find out that she was already using many of the strategies that were presented in the study. Another was surprised how much the word map helped her in reading the story. Several reported that their child's confidence was boosted as they successfully explored the story. In evaluating the format and delivery of the intervention, parents all reported that the video examples, PowerPoint's, and materials were very helpful. They indicated that the ability to be able to access these materials in their home environment was effective and accommodating as the format allowed them to view multiple times and review when they were not sure that they were conducting in the

correct way. One parent did report that she was disappointed that the children in the training videos were typically developing and did not have Down syndrome (as did the study participants). During the development of the study, a child with Down syndrome who participated in the in-person study was initially used. Unfortunately, based on his availability, he was tired during the taping and did not want to participate. We debated including both training formats with one being the optimal outcome and the other being the possible outcome, but decided to go with the best model for training. Finally, all parents reported that they would continue to use the strategies in the future and would appreciate continued access to the training materials.

The results of the study indicate that parent training can have effective outcomes for children with Down syndrome in the area of narrative language. Parents who participated to the conclusion of the study reported an increase in skill level that they felt comfortable with to continue to reinforce their child. While many did not report being able to see an immediate correlation to material presented in school, parents stated that they gained a better understanding of not only strategies needed to enhance narrative language for reading, but also the necessity and importance of repetition and pre-teaching concepts. For those who did not remain to the conclusion of the study, many reported that time was the barrier for continued participation. They did not indicate that technology was the issue or the reason for not participating. While online formats may provide for greater participation and access, there is no accountability as there is in an in-person study where one may feel compelled to attend after meeting the facilitator and other participants. The optimal study may be one that is hybrid in nature allowing for in-person training that is supplemented by online training components that reinforce the skills while parents deliver the intervention at home. There is no doubt that parents are capable and willing to learn strategies to help their children develop language and literacy in many areas including narrative language. Being able to find the time to add another task, no matter how worthwhile, is challenging for all parents, and particularly parents of children with special needs, who have many demands on their time.

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