

Supporting Communication and Participation in Shared Storybook Reading

Using Visual Scene Displays

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Ms. Allen is the lead teacher in an inclusive kindergarten classroom. This year she is partnered with Ms. Jones, a special education teacher, to support the needs of the children in their classroom. Their classroom is comprised of 18 students, including four students with disabilities. Among them is Billy, a 5-year-old boy with Down syndrome and complex communication needs. Billy's speech is recognizable for a small number of words he uses frequently (e.g., "yes, "no, "Billy"), but difficult to understand when he wants to share original information or make use of longer phrases. He has been trialing different augmentative and alternative communication (AAC) devices that have helped him communicate with his peers and teachers, but supporting participation and communication in classroom activities is often challenging.

This week Ms. Allen is reading "Green Eggs and Ham" by Dr. Seuss during whole group shared storybook reading. Ms. Allen sits in a chair near the front of the carpet holding the book, so the students can see the pictures and words while she reads the book aloud. Billy sits with his device on the carpet next to Ms. Jones. His device has been programmed with some of the needed vocabulary (e.g., eggs, ham) before the whole group activity. An enthusiastic Ms. Allen reads the story of Sam-I-Am and his friend Guy-Am-I. Sam keeps asking his friend, Guy, to try a plate of green eggs and ham, which he refuses repeatedly throughout the story with the same phrase "I do not like green eggs and ham". Taking advantage of the repetitive structure of this storybook, Ms. Allen asks the class to make a prediction: "What do you think Guy will say?". As the class responds with "I do not like green eggs and ham", Ms. Jones prompts Billy to use his device, but Billy struggles to find the needed vocabulary (or a comparable response) to participate

in time. Even with Ms. Jones' assistance, Billy missed the learning opportunity, and the class continued on.

Ms. Allen and Ms. Jones usually take the time to program Billy's device before instruction. However, given the unique illustrations of this book (and the many books used in the class), it has been time-consuming to find easily recognizable symbols to represent the necessary vocabulary, and to program each individual word into Billy's AAC device. For Billy, it has become increasingly difficult to balance his attention between the teacher, book, and device. He also struggles with finding the words he wants to say before Ms. Allen has to move to the next question or page of the book. As a result, Billy's participation and communication in the classroom are often limited (and challenging for Billy, his peers, and his teachers).

Ms. Allen and Ms. Jones begin to look for a different approach. With all the new technology available these days, they know there has to be a more efficient way to get Billy involved! They would like something to supplement the basic vocabulary available in Billy's current AAC device, which features predictable words (names of friends and family, common classroom routines) and common phrases ("more please" and "I want to play." Ideally, the teachers would like something that could help Billy develop early language and literacy skills and support spontaneous interactions and participation in activities like shared storybook reading and literacy centers. With these communication and vocabulary supports, Billy would not only benefit from inclusion socially but also advance his early language and literacy skills.

Early Literacy Development

According to the National Institute for Literacy's Early Literacy Panel (2008), learning to read is a systematic process that begins at a very early age. Children who are exposed to literacy-related activities early develop more sophisticated literacy skills later in life. Most children get

their first glimpse of the world of literacy informally by observing and participating in early book reading activities with adults (Gilkerson, Richards, & Topping, 2015).

Involvement in early reading activities has a host of benefits, including exposure to a wide range of vocabulary and concepts, as well as aid in developing children's awareness of print and sounds (i.e., phonological awareness) and alphabet knowledge (National Institute for Literacy, 2001). During the early literacy stage, children also learn to talk about past, future, and imaginary events, which helps them develop the skills needed to retell a story – or make up their own (Kulkofsky, 2009).

Shared storybook reading. Shared storybook reading is categorized as an essential early literacy activity by the National Institute for Literacy's Early Literacy Panel (2008), as it has a "significant, substantial, and positive impact" (p. 109) on the development of oral language skills and print knowledge. Research shows children with and without disabilities who participate in shared storybook reading on a regular basis have higher scores in vocabulary, decoding, and comprehension activities (Browder, Mims, Spooner, Ahlgrim-Delzell, & Lee, 2008; Justice, Kaderavek, Bowles, & Grimm, 2005).

During shared storybook reading, an adult reads a book aloud to a child, while also engaging the child in a discussion of the text – pausing, asking the child questions, responding to their interests, evaluating the child's response and providing praise for correct responses and correcting incorrect responses, relating the story to the child's experiences, and expanding on the child's response by re-stating what the child said and adding additional information (Boyle, McNaughton, & Chapin, 2019) Shared storybook reading helps children develop language and literacy skills. This activity also increases their interest in books. Children who regularly participate in early reading activities learn critical early literacy-related skills, including (a) the

understanding that print conveys meaning, (b) the development of early story comprehension skills, and (c) the acquisition of a sight word vocabulary of frequently occurring words (Boyle et al., 2019; Browder et al., 2008; Justice et al., 2005).

Sight words. The term sight word is used to describe words that a child is able to read quickly and accurately. At first, these are often highly motivating words that children frequently encounter such as their name and the names of favorite movies, television characters, and restaurants. Over time, children will be expected to learn other frequently occurring words (including words that do not follow standard letter-sound correspondence rules) as sight words. Early sight word recognition of high-interest words helps children take a more active role in shared storybook reading with an adult – the child can call out words as they are used in the text. As children gain fluency in recognizing words, they can take greater responsibility in “reading along” with an adult partner (Boyle, 2018; Spector, 2010)

Shared Storybook Reading for Children with Complex Communication Needs

Given their speech, cognitive, motor, and sensory impairments, many children with developmental disabilities such as autism spectrum disorder, cerebral palsy, Down syndrome, and intellectual disability have severe communication and social difficulties or complex communication needs (Light & McNaughton, 2012). Early literacy skill activities, such as shared storybook reading, are fundamental to language and literacy development. However, children with disabilities, *especially* those with complex communication needs, often have fewer opportunities and lower levels of participation in these activities than their typically developing peers (Johnston et al., 2018; Kent-Walsh, Binger, & Hasham, 2010). For these children, traditional approaches to supporting participation in early literacy activities, which depend on oral speech, are not enough (Johnston, O’Keeffe, & Stokes, 2018).

Barriers. Children with complex communication needs often face challenges in participating in shared storybook reading (Browder et al., 2008; Boyle et al., 2019; Golloher, 2017). Too often, young children using AAC systems either do not have access to an appropriate AAC system or are provided with an AAC system with a very limited vocabulary (von Tetzchner, Brekke, Sjøthun, & Grindheim, 2005). Without access to appropriate vocabulary, children are unable to comment, make predictions, and engage in the storybook interactions that are a critical part of early literacy learning and enjoyment. Additionally, when reading a traditional storybook, a child with complex communication needs has to balance their attention between the book (McCarthy, Broach, & Benigno, 2016), their communication device (Moorcroft, Scarinci, & Meyer, 2019), and their partners, which reduces the communication opportunities for the child and their partners.

Another challenge in shared storybook reading activities for children with complex communication needs involves the behavior of their communication partners. Research shows that communication partners inadvertently engage in behaviors that restrict the communication and participation of students with disabilities (Justice & Kaderavek, 2002). Partners also tend to avoid asking questions, or only ask close-ended questions (e.g., questions answered with a yes/no response, or a limited vocabulary), which limits a child's opportunities for language development and relegates the child to a passive role. Like the child with complex communication needs, the communication partner also must coordinate their attention between the child, reading the book, and the communication board/device. The combination of these factors can make shared storybook reading a challenging experience for both the partner and the child with complex communication needs (Light, Binger, & Kelford-Smith, 1994).

Supports. Successful shared storybook reading activities for children with complex communication needs should be interactive and create new communication opportunities for the child and the communication partner. The reading activities should foster the acquisition of new vocabulary and the development of new literacy skills, while also being easy to create and personalize. Given the current demands of the kindergarten classroom, teachers are understandably concerned about the amount of time needed to create personalized books and AAC supports. Fortunately, the use of assistive technology (e.g., AAC devices, adapted paper books, e-books, stories presented in PowerPoint® format, mobile applications) can help assist students with severe disabilities acquire early literacy skills (Stone, Rivera, & Weiss, 2018), as it can help teachers adapt books and individualize communication supports within books. However, these typically used systems and adaptations are often cumbersome and time consuming.

Visual Scene Displays

During the last district-wide professional development day, teachers were asked to choose from a series of workshops to attend. Given the unique needs of their students, Ms. Allen and Ms. Jones chose a session focused on assistive technology for literacy instruction. During the session, they learned about a type of AAC system, called visual scene displays (VSDs), that can be used to help students communicate, learn new vocabulary, and even advance their literacy skills! VSDs are interactive pictures, programmed using special apps on a mobile device, that provide audio and/or text output when the pictures are touched. For students with complex communication needs, VSDs can supplement their current AAC device and their speech – the teachers could use this technology to create interactive storybooks to help Billy follow along and communicate during shared storybook reading activities!

This technology has the potential to provide support in three areas that Ms. Allen and Ms. Jones consider beneficial in increasing Billy's participation: (1) VSDs could provide Billy with access to the vocabulary he will need to participate in shared storybook reading; (2) VSDs may be created quickly and easily from the same storybooks, with the same pictures, that are read to the entire class; and (3) a VSD approach combines the book and the AAC device into one, which could reduce the need to balance attention between partners and the device. The instructional team is excited to try it!

What are Visual Scene Displays (VSDs)?

VSDs are interactive images (often a photograph) that are created within a mobile device application. The images in the VSD application are made interactive by the addition of *hotspots*. Hotspots are specific areas in the photo (often represented by a mark on top of the specific area) that, when touched, produce audio and/or text. Hotspot recordings can be customized, so that they are of interest to the child! For example, in a photograph of a child baking cupcakes, there may be a hotspot around the child's face and a hotspot around the cupcakes. The child may then use the hotspots to answer questions such as "What did you bake?" or "Who made the cupcakes?". Figure 1 presents an overview of the key elements of VSDs.

VSDs have been used across multiple disciplines, including health and education, and are gaining popularity due to the widespread availability and accessibility of mobile technology. Current research provides evidence that VSDs can be used to increase the communication and participation of children with complex communication needs, particularly those who have had no previous experience with AAC technology (Boyle,

McNaughton, Light, Babb, & Chapin, 2020; Ganz, Hong, Gililand, Morin, & Svenkerud, 2014; Light et al., 2019). For some children, a VSD approach serves as their primary AAC system. For others, VSDs are used in conjunction with other AAC systems for specific activities that benefit from specific contextualized vocabulary (like storybook reading), and/or activities that require “in the moment” programming.

<insert Figure 1 about here>

VSDs and Shared Storybook Reading

For storybook reading, pictures of the book pages are uploaded into the VSD application before the activity takes place. Practitioners can program hotspots around key vocabulary items (before or during the activity) in each page. The student then uses the hotspots embedded in the pictures to participate and communicate in the shared storybook activity as the page is read aloud by the teacher. For example, a VSD of the cover page of “Green Eggs and Ham” (Geisel, 1960), could contain a hotspot around the green eggs. When the hotspot is pressed by the child, the voice output “green eggs” would be activated. The START! Strategy (Bhana, McNaughton, & Light, 2019; Caron, Light, & Drager, 2016) detailed in Figure 2 provides a step by step guide on how to transform traditional storybooks into interactive VSDs.

Benefits. The use of VSDs for shared storybook reading has several advantages. First, a VSD approach offers educators a create personalized communication supports for any book with images, based on the child’s ability level and interests. Additionally, because the VSD “mirrors” the activity, the needed communication supports for a particular page are available to the child as the page is read by the communication partner (Drager et al., 2017). As a result, the need to balance attention between a book, teacher, and AAC device is reduced. Another advantage of VSDs is that the child has immediate access to the most important content and vocabulary in the

storybook. Specifically, the images provided in the book support targeted shared book reading behaviors such as commenting, speaking repeated storylines, answering questions, and making predictions (Boyle et al., 2017).

VSDs are an ideal tool to use with younger children as the target vocabulary items appear in their “natural context” (i.e., surrounded by the other elements of the image), which allows the child to use context clues to recognize and use the vocabulary item appropriately (Light, McNaughton, & Caron, 2019). With the use of VSDs the child with complex communication needs has a wide, and activity-specific, vocabulary on which to draw – the teacher does not need to attempt to restrict questions to responses that can be generated using only the pre-programmed vocabulary on the AAC device (von Tetzchner et al., 2005).

What does the research say about VSDs? VSDs are an assistive technology tool that can be used in a variety of ways to modify the instructional environment and make it more accessible for students with different educational needs, as is recommended by the Division for Early Childhood of the Council for Exceptional Children (DEC, 2014; E2, E3, E4, E5, and INS4).

The use of VSDs during shared storybook reading has been shown to be beneficial for children with a variety of disabilities. For example, storybook VSDs have helped increase language opportunities for children with complex communication needs (Ganz et al., 2014) as well as improve interactions between children with complex communication needs and their peers (Boyle et al., 2020; Therrien & Light, 2016). Furthermore, storybook VSDs have been used in the classroom to increase responses after a read-aloud (Wood Jackson, Wahlquist, & Marquis, 2011) and teach sight words to

children with language delays and developmental disabilities (Boyle, McCoy, McNaughton, and Light, 2017; Mandak, Light, and McNaughton, 2019). Emerging research suggests that some early communicators learn to use VSDs more quickly than with traditional AAC approaches that present vocabulary as decontextualized symbols on a communication device (Hollyfield, Brooks, & Schluterman, 2019; Olin, Reichle, Johnson, & Monn, 2010; Gevarter et al., 2014). VSDs have also been found to increase the number of communication turns taken by children during interaction, and to support the rapid acquisition of new vocabulary concepts (Light et al., 2019).

VSDs in the Classroom

To successfully implement VSDs in the classroom, teachers should first consider the expected participation of children without disabilities, and then identify the supports needed to support the full participation of the student with complex communication needs (Beukelman & Mirenda, 2013). The AAC team should consider the child's current skills and communication goals to determine the features of an AAC approach (access to the desired vocabulary, speech output options, easily recognized images, alternate access support for students with fine motor difficulties) that will best suit the student's needs. Figure 3 presents a list of VSD applications currently available.

<insert Figure 3 about here>

Once the technology is selected, teachers can make almost any storybook interactive by taking photographs of pages of a chosen book and adding hotspots. When lesson planning, teachers may wish to consider the comments the student may want to make about the story as well as the responses to questions the teacher plans to ask. A combination of labels, questions, comments, and fun sound effects can be used to label, ask and answer questions, and make comments, would make

ideal hotspots. The goal is to provide access to vocabulary that can be used for a variety of functions.

VSDs are recommended for the classroom because they are efficient. On average, it takes less than one minute to create a VSD page and less than five minutes to capture and create a short storybook with VSDs (Caron, Light, Davidoff, & Drager, 2017).

Teachers can add one or two hotspots per page ahead of time. Also, it is easy for adults to add vocabulary (as hotspots) to VSDs in the moment by using “Just-in-time” technology.

Just-in-time. Just-in-time supports allow teachers to adapt instruction based on the student’s changing needs and interests. In the case of VSDs, hotspots can be added “in the moment” as the student expresses interests in a concept, which expands the opportunities for spontaneous conversations and opportunities to respond during instruction (Holyfield, Drager, Light, & Caron, 2017).

Sight Words. VSDs can also be used to introduce or practice sight words by adding hotspots with text. This feature, called transition to literacy (T2L) (Light, McNaughton, Jakobs, & Hershberger, 2014), allows students to touch hotspots within VSDs that provide a spoken label paired with dynamic text (i.e., text that emerges and then recedes on the display; visit <https://tinyurl.com/lerc-on-aac-T2L> for video examples of the T2L feature). Growing research provides evidence that a mix of small number of repeated exposures, repeated practice, and the inclusion of technology that increases the student’s motivation and attention can result in sight word gains for children with developmental disabilities (Boyle et al., 2017; Holyfield, Caron, Light, & McNaughton, 2019; Mandak et al., 2018).

Now that Ms. Jones and Ms. Allen have learned how to transform the books they read during shared storybook reading into interactive texts, Billy has started using VSDs during whole group reading instruction. For example, this week the class is reading “The Very Hungry Caterpillar” (Carle, 1969). A few minutes before starting the activity, Ms. Allen takes pictures of the pages in the book using the tablet’s onboard camera within the VSD application. Next, with her index finger, she draws circles around a couple of pictures on selected pages – for example, the apple and the pears. In doing so, she quickly creates two hotspots. The application prompts her to add audio to the hotspots, so she quickly speaks and records “one apple” and “two pears” using the tablet’s microphone before giving the device back to Billy. As Ms. Jones reads the story to the whole class, Ms. Allen monitors the class’ performance and supports Billy. She notices that Billy has been able to independently use his device to follow along, selecting the different pages in his VSD app as the teacher turns the pages in her book. When Ms. Jones asks, “What do you think the caterpillar will eat on Tuesday?” Billy was able to touch the hotspot around the two pears, activating the voice output “two pears.” Billy was not only able to answer a prediction question but did so at the same time as his classmates. Billy even uses his speech to comment “Hungry!” to indicate the caterpillar was still hungry - precisely what the teachers wanted to see. Other ideas for hotspots for “The Very Hungry Caterpillar” are presented in Table 1.

<insert Table 1 about here>

Personalized VSD Storybooks

Supporting children in learning and using new vocabulary concepts, especially vocabulary of interest to the child, is a critical element of supporting language growth (Roberts & Kaiser, 2011). Just as in typical language development for speaking children, children with

complex communication needs will have personal interests that they want to express therefore requiring individualized vocabulary. A VSD approach provides a simple route to create personalized books and add vocabulary during an ongoing social interaction to support the child in communicating on topics of their choosing (Holyfield et al., 2017).

Ms. Jones recalls that the VSD workshop speaker described how real-life pictures could be used to create personalized VSD storybooks to practice specific sight words. The VSD storybooks are especially engaging when the photographs portray colorful and appealing activities. Using the tablet, Ms. Jones uses the START! (Bhana et al., 2019; Caron et al., 2016) strategy (Figure 2) to create some personalized books for Billy. She starts by taking some photos of Billy and his classmate, Abby, decorating cupcakes during a special activity one afternoon. After taking a photo of the children cooking together, Ms. Jones draws a hotspot around Billy's face and programs his name as a label with the T2L feature and auditory feedback. She does the same for Abby's name. With the addition of the T2L feature, Billy can practice reading his name as well as Abby's. Ms. Jones also programs other hotspots such as "Can you pass the icing?" and "Yum!." Billy loves being able to call Abby's name and tell her how yummy the cupcakes are!

<insert Figure 2 about here>

After the activity, Ms. Jones creates a short storybook with all the photos she took during the activity so that Billy can continue practicing identifying his name. Ms. Jones gives the tablet to Ms. Allen to use in the literacy center. Ms. Allen is thrilled! During centers, Ms. Allen shows Billy and Abby the VSD storybook. They read the book together (using the partner strategies summarized in table 2), and Ms. Allen notices that Billy's

eyes light up when he points to the sprinkles. She quickly adds a hotspot for “sprinkles” and provides instant access to the needed vocabulary. Now when Billy touches the bottle of sprinkles, an audio recording of “sprinkles” is activated. Abby looks at Billy and laughs. She says, “I love sprinkles too, Billy! Yummy!”.

<insert Table 2 about here>

Conclusion

Providing support to a child with complex communication needs during shared storybook reading activities can be challenging. Storybooks often contain specific vocabulary items (e.g., character names) that are key to conversations about the story but would be difficult to add and of limited long-term use in an AAC system. It can also be challenging to support participation and communication at the same time (e.g., helping a child both turn the pages in a book and have access to an AAC system). VSDs are an easy to implement strategy, that can be used with most storybooks and in combination with other AAC systems. VSDs provide quick access to important vocabulary from the storybook, support sight word acquisition, and can be used to promote interactions with peers. The use of VSDs can help to ensure that all children, including those with complex communication needs, experience the enjoyment and benefits of shared storybook reading.

After a few weeks of using shared VSD storybooks with Billy during whole group reading instruction and literacy centers, Ms. Allen recognizes the VSD application as an effective tool to increase Billy’s classroom participation and communication. By incorporating VSDs as one of Billy’s communication supports, Ms. Allen and Ms. Jones’ are able to reduce the time needed to prepare Billy’s AAC device for classroom literacy activities and increase the amount of time Billy and his classmates engage with their favorite books. In the last couple of weeks, Billy has

even begun to help in the programming of his device! He especially enjoys selecting the elements of the picture he wants to talk about and drawing a circle around them to turn them into hotspots. After seeing how powerful yet simple VSDs can be, Ms. Allen is now eager to show other teachers how to incorporate VSDs in their classrooms,

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Table 1

Example Hotspots for “The Very Hungry Caterpillar”

Hotspot Idea	Example	Page in text
Spoken label for item	<i>“caterpillar”</i>	Cover page and throughout the text
	<i>“moon”</i>	Pages 4, 5
	<i>“leaf”</i>	Page 4
	<i>“sun”</i>	Pages 6, 7 and 8
	<i>“butterfly”</i>	Pages 24, 25
	<i>“chocolate cake”, “ice cream”,</i>	Page 18
	<i>“pickle, “swiss cheese”, “salami”</i>	Page 23
Sound effect	<i>“cocoon”</i>	
	The caterpillar comes out of the egg and the cocoon: <i>“pop!”</i>	Page 6
	For the caterpillar eating the various foods: <i>“nom, nom, nom”</i>	Pages 9, 11, 13, 15, 17, 18, 19
Remarks/Comments	<i>“big and fat caterpillar”</i>	Page 22
	<i>“beautiful butterfly”</i>	Page 24
	<i>“eats and eats”</i>	Throughout the text around the holes in the food
	Counting the fruit: <i>“one pear”, “two pears”; “one strawberry”, two strawberries, three strawberries, four strawberries”</i>	Page 9, 11, 13, 15, 17

Table 2

Partner Strategies (adapted from Light and McNaughton, 2009).

Step	Examples
1. Read the book	Read the text out loud with appropriate intonation and frequent pauses to encourage commenting
2. Model use of VSDs	Activate hotspots while reading text Comment on the pictures
3. Provide opportunities to respond	Ask factual questions (Who, What, and Where) questions that can be answered by the learner using pre-programmed hotspots in the book Ask open-ended questions that encourage the learner to think about what is happening, make predictions, and relate the text to the child's experience
4. Provide wait time	Pause and provide wait time after each exchange
5. Respond to communication attempts	Reinforce and expand communication attempts Add hotspots as needed Provide feedback

VSDs are interactive pictures or photographs that have been programmed using specialized software or applications on tablet computers (Light, McNaughton, & Caron, 2019).

The pictures are made interactive by programming “hotspots” to support communication and literacy.

The hotspots are created by drawing a circle (or any shape) directly on the image with your finger – this can be done before the interaction, or during the activity, in response to the interests of the child.

Hotspots can be programmed to produce a sound, say a word, and/or display text when touched.

This hotspot has been programmed (using the microphone in the tablet) to speak the word “Billy” when the hotspot is touched.

Using the Transition to Literacy (T2L) feature available in some VSD apps, activating the hotspot also produces the sight word “Billy”. The word dynamically appears on the screen, and then fades from view.

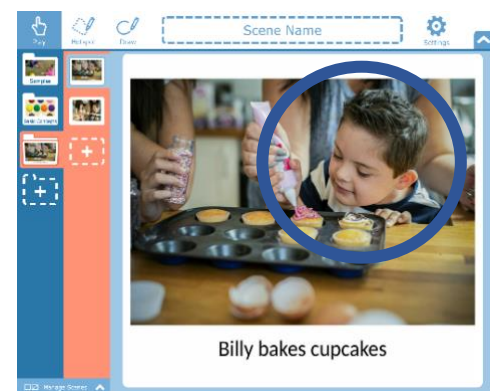


Figure 1: Overview of the Key Features of a VSD with T2L

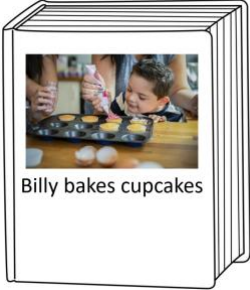
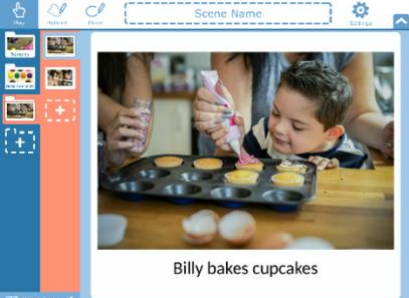



<p>STEP 1</p> <p style="font-size: 48pt; text-align: center;">S</p>		<p>Select Book Look for books that have:</p> <ul style="list-style-type: none"> • Few words per page • Many pictures • Large, bold, narrative print • Repeated text
<p>STEP 2</p> <p style="font-size: 48pt; text-align: center;">T</p>		<p>Take Pictures using the camera on the tablet Pictures that make the best VSDs are:</p> <ul style="list-style-type: none"> • Large • Colorful • Appealing
<p>STEP 3</p> <p style="font-size: 48pt; text-align: center;">A</p>		<p>Add Hotspots Use your finger to draw hotspots that allow the student to:</p> <ul style="list-style-type: none"> • Make comments • Ask question and answer questions • Make predictions
<p>STEP 4</p> <p style="font-size: 48pt; text-align: center;">R</p>		<p>Record Audio Hotspots are motivating when they include:</p> <ul style="list-style-type: none"> • A spoken label for the item • A sound effect • A short phrase
<p>STEP 5</p> <p style="font-size: 48pt; text-align: center;">T</p>		<p>Turn on T2L Feature In addition to having audio, hotspots can also include text with the “Transition to Literacy” (T2L) feature</p>

Figure 2: START! Strategy. Step by step guide for creating VSD storybooks

Application	Cost	Text Feature
 Snap Scene (Tobii Dynavox, Pittsburgh, PA)	\$49.99	Yes (Animated-T2L)
 GoTalk Start and GoTalk NOW (Attainment Company, Verona, WI)	\$19.99 and \$79.99	Yes
 Scene Speak	\$9.99	Yes
 Snap 'n Speak	\$9.99	Yes (Animated)
 Scene & Heard	\$84.99	N/A
 GoVisual Scene Maker (Attainment Company, Verona, WI)	\$49.99	Yes (Animated-T2L)
 Other technologies that can be support a VSD like approach: <ul style="list-style-type: none"> • Power Point • Google Slides 	Microsoft Office Home & Student \$149.99 Google Slides have no cost	Text boxes with animations can be added to emulate the animated text feature

Figure 3: Commercially available applications that support VSD technology