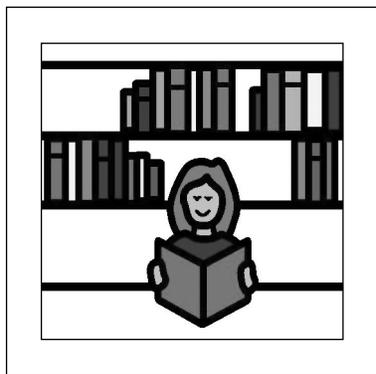# Autism, Literacy, and Libraries

The 3 Rs = Routine, Repetition, and Redundancy

Lynn Akin and Donna MacKinney

Library

Public and school library media specialists prepare library programming for groups that include special education children. A combination of factors: the Individuals with Disabilities Education Act (IDEA), a culture of inclusion, and the service ethics of librarianship, compel librarians to reach out to children who struggle with learning or processing problems. Children who have autism comprise one such group.

Research from other disciplines indicates that young people with autism benefit from oral reading, storytimes, multimedia, song, and literacy efforts. The professional expertise of the school library media specialist or the public librarian speaks directly to this group. This research looks at how the library can best serve children with autism. Results were gathered from interviews with autism specialists, a survey, and an analysis of literature on literacy and autism.

Autism

Autistic Spectrum Disorder (ASD) refers to a constellation of five pervasive developmental disorders including autistic disorder, Rett's Syndrome, childhood disintegrative disorder, Asperger Syndrome, and pervasive developmental disorder not otherwise specified (PDD-NOS).[1]

Autism refers to disruptions in development in three main areas: language and communication, social skills, and sensory modalities and behaviors. The *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* defines communication deficits as a delay of spoken language, stereotyped, repetitive, or idiosyncratic language, and lack of imagination or "make believe." Impaired social interaction can be explained as a failure to make friends, a lack of social or emotional sharing, or a lack of displaying interest by pointing or naming or showing. Finally, behaviors will be repetitive, nonproductive, intense, and characterized by inflexibility.[2]

Characteristics of autism are usually evident within the first three years of life, affecting an estimated one in one thousand children. Autism crosses all lines of race, nationality, ethnicity, geography, and economy. More than one million people in America suffer from one of the autistic disorders, and the problem is five times as common as Downs syndrome and three times as common as juvenile diabetes.[3]

It is not possible to specify the particular set of behaviors or skills that will be exhibited by any individual autistic child, as no two ASD children are exactly alike.[4] Expect to see disruptions in the areas of social skills, language development, uneven intellectual development, unpredictable interests, and possible motor and sensory processing difficulties. Within each of those areas there will be tremendous variation from child to child.

Social Skills

The social behavior of autistic children usually falls into one of three general categories: aloof, passive, or active and odd. The aloof child avoids physical or visual contact with others; there will be little demonstration of joint attention (attending to an object or event by following the gaze or pointing gesture of another person), and any interaction with a peer or adult is strictly instrumental.

Passive characteristics include not seeking social interaction, not interpreting gestures or facial expressions, and not using functional speech. The active and odd presentation is manifested by the child who actively seeks out interaction with others but often misinterprets cues and responds inappropriately, perhaps awkwardly or aggressively.[5]

Frequently, children with ASD have difficulty starting a project, task, or activity because beginning new tasks requires motivation, organization, and transition—difficult issues for an ASD child. Children with ASD have a high need for sameness, predictability, and routine. Activity cues help the child move from one activity to another. Picture activity schedules (picture cues used to show

what will happen next) in school eased transfer from one activity to another, increased student performance, and performance dropped when the activity schedules were removed. In general, a substantial body of research supports the use of such picture activity cues (see Mayer-Johnson www.mayer-johnson.com for examples) as an excellent way to support routine and repetition and aid transitions.[6]

Language Development

Children with ASD may have language skills that range from nonverbal to extensive vocabularies. They frequently exhibit echolalia, a speech pattern that involves repetition of the speech of others, whether immediate or delayed.[7] Occasionally a child with no functional verbal skills quotes the dialogue of an entire movie, complete with songs. Children with mature sounding speech skills do not necessarily comprehend everything an adult says, or all that they say themselves. Sometimes children with ASD develop a repertoire of phrases such as, "Are you hungry?" (when the child himself was in fact, hungry) or possibly the child uses "Are you hungry?" or other rote phrases in nonsensical ways. The grammar is correct; the context is not.

Uneven Intellectual Development

It is important to note that a child with autism is not necessarily mentally retarded but will definitely have uneven skill development.[8] Autism can occur in combination with any other disability, or as a distinct and singular disorder. A librarian may be confused by a child who can speak articulately but who is unable to use the toilet independently.

Storyteller

Unpredictable Interests

Autistic children often pass through periods of extreme preoccupation with certain skills, activities, or materials. Perserverative behavior such as lining up a group of dinosaurs or vehicles in a very specific way is typical. Once an academic skill is acquired, the child may obsess on it by calling out letters or numbers. If the librarian attempts to actively disrupt this behavior, the perserverator may become agitated.

Motor and Sensory Processing Difficulties

Many children with ASD exhibit self-stimulatory (stim) behaviors. These can be full body rocking, flicking fingers, flapping arms, or any repetitive nonproductive physical behavior.[9] Some autistic children experience hypo- or hypersensitivity to noise, textures, or smells common in schools or libraries, such as the odor of clay or finger paint. ASD children need clear boundaries. Open spaces, such as hallways and gyms, require adaptive behaviors such as walking along the wall, or sitting sideways in a chair.

Instructional Techniques

Library literature has not closely examined how the library can best serve autistic children. The library and information studies field writes about the mentally retarded, the learning disabled, and the physically challenged. Issues regarding special needs services are discussed, as are specific learning disabilities such as attention deficit disorder, information disorders, and bipolar disorder.[10] Since school library media specialists or public librarians may create programs for children with special needs, a focus or a direction would be helpful to the librarian who is uncertain of how to proceed.

There are several current theories on literacy and children with autism. Research yields a link between increasing literacy efforts, such as guided reading and improved skill levels in autistic children. Studies of read-alouds show the autistic child benefits from oral readings and may be able to uncover story structure. A child who is literate can represent things, feelings, and thoughts into language and

then into narratives. Autistic children have impaired ability to access imagination, yet a study of storytelling ability found that with a free storytelling method, ASD children could produce imaginative elements.[11] Literacy techniques include related readings, directive scaffolding, social stories, technology, peer tutoring, and music therapy.

Related Readings

The concept of related readings involves presenting a unit of stories all related by a common theme or character. Rabbit stories formed the basis in Colasent and Griffith's 1998 study that tested literacy questions, recall levels, and behaviors of autistic students upon experiencing a series of related stories.[12] The related readings stress the concept being learned and repeat the lesson.

In repeated storybook readings (RSR), the storybooks provide an arena for joint attention and turn taking.[13] Illustrated storybooks are very effective as the child learns to focus on the pictures, and narrow the avenue of referents. Initially it is important to have the word and the picture in close proximity. In other words, the child associates the picture of the tree and the word "tree." Repeated tellings of the same story help the child focus attention, build vocabulary, inculcate the structure of literary experiences, and develop social skills, such as page turning.

Related Reading Materials and Formats

In terms of materials, all formats—videos, audiocassettes, books, kits, toys, games, computer software, puppets, and children's and young adult magazines in alternative formats—should be collected. Books using repetitive language are an excellent choice for a read-aloud. *Including Families of Children with Special Needs* offers lists of resources, publishers, and Web sites to use when developing a collection of materials for children with special needs. Picture dictionaries or word books are recommended, and while a picture dictionary does not lend itself to a story time alone, it definitely supports a themed program.[14]

Older autistic children may prefer to read calendars, atlases, phone books, encyclo-

pedias, and nonfiction.[15] Autistic children can read for pleasure, but they almost never read stories with elaborate plots and highly developed characters. Some ASD children will be happy reading the same book repeatedly. An effective teacher or librarian should reinforce new topics by linking them to established favorites.

RSR with Directive Scaffolding

Directive scaffolding refers to a series of questions asked in a reliable order, sometimes referred to as IRE, or initiation-response-evaluation. The inquiries provide cloze questions (the reader pauses for

Skills learned in the school library can be transferred into the local public library and then extended into other community situations. Skills learned in the public library transfer back to school, and a cycle of success is arranged.

the child to provide the answer), binary choices (is it this or that?), expansions (reader elaborates on child's answer), and constituents, or wh- questions (who, what, where, when). This type of directive scaffolding helps the child develop concepts and communication competence. Initial research, with a very small sample, indicated that RSR would be successful with children who already have some verbal skills. Introduction of wh- questions showed increases in communication skills in autistic children.[16]

In any test of comprehension or reading levels, hyperlexia should be ruled out. Hyperlexia refers to the ability to read well and to read every word, and yet have no significant comprehension of context.[17] Autistic readers in one study had developmentally appropriate comprehension but extraordinary reading speeds. Researchers suggested that autistic readers decode the text rapidly by following linguistic rules.[18] In certain cases, "hyperlexia is the written word's equivalent of echolalia."[19] A child may demonstrate very rapid reading skills, and the librarian would do well to examine how much of the material made sense to the autistic reader. Retellings

might be an effective way to measure comprehension.

Social Stories

Social stories illustrate a problem or situation, and then explicitly present the appropriate behavior so children learn common social conventions. Social stories are particularly helpful for ASD students that are mainstreamed. A social story is structured more like a list or script than the narrative form of a typical story. One study of autistic boys used social stories about hand washing with the added element of multimedia.[20] The multimedia component contained text, movies, audio read-aloud, and navigation buttons with generally successful results. Social stories tend to have an ordinariness about them. Similar to social stories are comic strip conversations, where the use of thought bubbles help the ASD child understand what the other person is thinking.[21] Social stories can be used to illustrate very basic activities, such as hand washing, to complex social interactions, such as taking turns when reading a book with another person. While not a common element in library story times, social stories are a useful tool for establishing group norms and behaviors for any child, as well as those children who have social deficits.

Interactive Multimedia Technology

Computer technology works well with special education children. Studies demonstrate that autistic children exhibit less disruptive or stim behaviors when using computers, and they experience increases in attending, response time, and problem solving. Interactive reading programs showed a significant increase in enjoyment by the autistic students and also stimulated verbal expression.[22]

Another use of technology is to locate a favorite storybook adaptation on closed-caption television or on a captioned video. The child can see and hear the words at the same time and learn to read. Additional research indicates that fast-paced games did not help autistic children, but talking books on CD-ROM and computerized simulations did lead to literacy increases.

A high number of autistic people show a marked preference for visual stimulation over auditory. For literate autistic children, word processing may be easier than verbal communication. Temple Grandin, assistant professor at Colorado State University and an autistic, stated she thinks in pictures and not in language and actually titled her book *Thinking in Pictures and Other Reports from My Life with Autism* (Bantam, 1995).

Peer Tutoring

Research shows that pairing a nonautistic reader with an autistic student works satisfactorily and can increase the autistic child's reading skills. One study researched a peer-tutoring situation, which consisted of twenty-five minutes of organized activities in which tutor-learner pairs worked. Results revealed an increase in reading fluency and correct responses to comprehension questions by the autistic students. Additional work with kindergarten children and multiple peer tutors showed that the peer buddy approach increased appropriate social interactions by the ASD children.[23]

The authors of this research however, find reasons to carefully consider placing the autistic child in such a situation because peer approaches require careful planning and implementation by well-trained staff. Our caution here is that the librarian, rather than the teacher or parent, directs the peer tutoring. The school library media specialist or the public librarian has sporadic contact with the child and may not be familiar with the signals of the autistic child's tolerance for social interaction.

Music Therapy

Therapists regularly and successfully use music and art strategies with ASD chil-

Sing

dren. While therapeutic intervention is certainly outside the professional jurisdiction of the school or public librarian, many library programs for elementary-aged children include drawing and singing. This will work just as effectively with the ASD child.

Music represents another style of communication and the song itself can be packed with context, environmental cues, movement, or pauses. If the song requires passing an object to one another, social skills are strengthened. If the song stresses movement or physical activity, coordination improves. The song can be paired with an object relating to the lesson, thus connecting the content element of the library visit. Old standards such as "itsy bitsy spider" and "open shut them" remain popular as both song and finger play.[24]

Creating classroom or library songs is time consuming, but the songs are repetitive in nature and certain lines of lyric may be repeated over and over, thus they are perfect for the child with autism. If the school includes a regular music therapist, the librarian will want to consult this person to create songs that reinforce library skills.

A caveat to any of these learning strategies is that they should be individually selected, rather than as an overused prescription.[25] If in a school, refer to the modifications specified in the child's Individual Education Plan (IEP). The range of autism requires an individual approach to best serve the needs of the child. However, the school library media specialist and the public librarian can choose among these strategies in order to maximize the students' library experiences.

Voices of Experience

An informal survey of faculty and staff in the Dallas, Texas, area who work primarily with autistic children inquired about common practices in literacy, books, and use of community spaces.[26] Teachers remarked on circle time, videos, books, songs, movements, and the library.

Circle Time

The teachers used circle time and on average, the groups included six to seven children. Two-thirds of the teachers included songs and finger plays in their program. While the teachers did not use the library, the circle time can be easily replicated in the library setting.

Videos

Many of the teachers included short videos. This not only appeals to the strong visual needs of many children with autism but also allows the teacher or librarian a bit of freedom to focus on the student's reactions and to move about the circle as needed, encouraging participation. Some noted that while their students do not typically model each other's behavior, they would sometimes model the behavior observed on videos. Iconographic videos (videos of the exact pages of the book) paired with their source book (*Dr. Seuss's ABC,* for example) provide a link from video format to traditional books.

Books

Teachers routinely used short books (five minutes was the most common length measured in read-aloud time) with animal characters (Berenstain Bears, Arthur, and Maisy, for example). Books with human characters comprised the next category. Books based on anthropomorphic characters like Thomas from *Thomas the Tank Engine,* or *Toy Story* characters proved very attractive.

Whatever the theme, survey respondents experienced the most success with books having a low ratio of words to pictures and rhyming text, as seen in *Mice Are Nice.* Concrete themes and clear endings were preferred over abstract concepts or open-ended plots. The children responded most consistently to books with bright, colorful illustrations rather than those with pastel or black-and-white drawings.

The experienced teachers relied on fiction stories, which are more readily available from the library media center, but nonfiction read-alouds served to focus in on appropriate subjects. Short, visually appealing informational books like the Adler biographies, the Eyewitness Books series and the Dorling Kindersley Readers series meet the general criteria for success with children with ASD while providing needed subject area content.

Some books effectively support social and behavioral goals and can also be combined with social stories. For instance, *Maisy Drives the Bus* could be paired very easily with *Riding a Bus* or *How to Board a City Bus* from the *Original Social Story Book.*[27] Another example is *Fractions* by Michele Koomen, paired with a social story about sharing, and perhaps a picture dictionary definition of sharing. Either one of these examples could form the basis for an effective, content-rich, library program.

Combining short social stories with picture books works particularly well in the mixed-age setting of public library story times. Since social stories are usually short and to the point, they often speak to the developmentally younger attendees, while picture books with longer text entertain more mature listeners.

Movement and Song

The teachers stressed the need for manipulatives, songs, and stories that encourage interaction and movement, including the use of activity schedules. Survey respondents remarked that visual strategies effectively compensated for the weaker auditory learning modality of ASD students. Finally, teachers found that consistency in the environment and adherence to routine in programming will promote success for children with ASD.

Community Space

Although the survey asked about the use of a community space, such as the library, no

one mentioned the library as a place where they take their students. One survey respondent stated she did not take her class to the library because they felt unwelcome. Another former teacher remarked that when she introduced herself to the librarian and mentioned that she would be teaching the ASD children, the librarian said, "Oh, I won't be seeing your children."

Model Programming

School library programs designed for autistic children support the Individualized Education Plan (IEP) goals for each student. Use of the library by children with ASD would, in general, facilitate their social functioning, provide a skill set to be employed at the library, and environmental cues on how to behave while at the library.

The ideal thirty-minute program employs the three Rs: routine, repetition, and redundancy. Consistent routine increases the comfort level of autistic children. Obvious cues orient the children to transitions in the program and repetition of these cues increases the child's comfort level. In fact, redundant programming encourages overall cooperation and independence.

So it makes sense that the ideal thirty-minute program follows the same routine: begin with *activity schedules*, perform an *environmental scan*, select *themed programming* using the best *resources and materials* selected specifically for this group, employ *scaffolding techniques*, read *social stories*, prepare *supplemental activities*, use *interactive technology*, and have an *ending ritual*.

Activity Schedules

Activity schedules allow the child with ASD to engage in a series of tasks by following visual cues, usually pictures and/or words. Activity cues help introduce the child to symbolic communication systems other than speech. Picture schedules, object schedules, or word cards can be used to help the child understand the sequence of the library program, including the beginning and end.[28] Picture cards by Mayer-Johnson have been used throughout this article so the reader can see examples.

A sample "start" may involve having the children put their library cards in the "begin" basket. Similarly, the children will rely on a marker for the end. The simple phrase "the end" accompanied with a behavior, such as putting materials in the "finish" bucket will punctuate the chronology of a library visit. Maintain these markers consistently and regularly because the child depends upon them. Accompany each transition with a tangible cue. This can be a word or picture card (laminated to withstand wear) or a small object (like a plastic dinosaur if the story's subject is dinosaurs), selected to cue the specific activity or support the program theme.[29]

Environment Scan

All children, particularly children with autism, benefit from repetition and regularity as they build a repertoire of library-related skills and orient themselves to many different stimuli, both internal and external. Children with ASD suffer stress and anxiety when faced with even minimal change.[30] Initially they experience the library as a new environment and must become accustomed to each facet. The environment will have to be learned. Keeping the environment, the activities, and the expectations routine helps the children.[31] Make the rules available visually and explicitly model the desired behaviors.

Observe the library before the children arrive to make sure it looks the same as it did last time. Greet the children the same way, sit in the same chair, and follow the same sequence. This aids the children in relaxing, anticipating, and enjoying the library visit. Even then, if a fluorescent light is flickering, or a printer is humming, or some new external stimuli intrudes, highly sensitive children may not be able to tolerate the visit and need to leave.[32] The librarian cannot control this but should be aware that it may happen, that it does not mean the program is a failure, nor does it mean the other children are not enjoying the program.

Themed Programming

Choose the themed program carefully because you will repeat it. If the school or public librarian sees the children once a week for thirty minutes, some elements of the program should be repeated for at least three weeks. Perhaps the beginning and ending stories will be consistent, or certain songs or finger plays will be repeated as transitions between stories. Here the RSR (repeated storybook readings) practice becomes a key element of the library visit.

With respect to materials, follow the survey recommendations and the suggestions from the literature review in selecting books and resources for the library visit. Select books carefully and make sure that the book has good real-aloud value, repeated thematic emphasis, and content-rich pictures, so minor variants can be added to the library lesson.

While reading the story, use dramatics. Voice changes, tone, rate of speech, and even pausing will attract interest and promote eye contact as you catch the attention of the children.[33] An introduction to the story using a related tangible object helps an anxious child focus. Repeat this same introduction for every reading.

Scaffolding

The librarian should experiment to discover what types of questions are most likely to elicit responses. Simple binary "yes-no" questions might be the best place to start and then slowly move into more involved questions. One aspect of scaffolding is that the librarian controls the types of questions asked. Do not allow a child to perseveratively discuss or ask questions about isolated incidents. Limit this behavior to a specified time and remind the child often, if necessary.
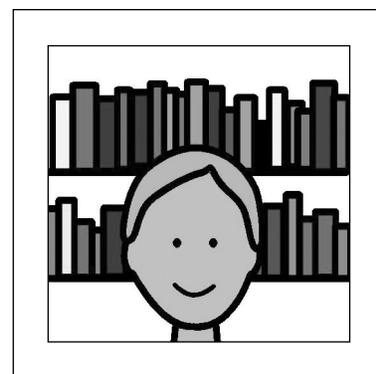
Librarian

Social Stories

Social stories help the autistic child learn a social skill in simple words. If, for example, the library visit focuses on dinosaurs, a social story on going to the museum fits nicely. The Jennison Public Schools (Mich.) assembled a book of social stories with titles like "getting dressed" or "thunderstorms" or "riding a bus." Examples like these can be themed to any library program and used successfully.

Supplemental Themed Activities

Reading the same small book several times, with related activities, will only take about fifteen minutes. If the story-time group includes children on diverse developmental levels who might become bored with too much repetition, the librarian can encourage them to join her on repeated readings or point to key words or phrases and have the children read them.

Make sure to plan finger plays, music, and perhaps a short video. If the children visit the library for thirty minutes, the librarian has an opportunity to enlarge the theme and reinforce additional library skills. Preselect books and place them on tables for browsing and quiet reading. Expect the children to stay seated and look at the books. The children will see the "sitting and looking and page-turning" behaviors mirrored by other visitors in the library. This behavior adapts well, and the children will recognize its appropriateness.[34] It also gives the children another success in social skills.

Interactive Technology

Many studies support the use of computer technology for children with learning disabilities. Autistic children are no different. If the themed story had been about colors, the librarian could use color recognition games and software on the computer. Older children may be able to use search engines to search out Internet sites about colors. An effort to include peer tutoring might work with students paired up at the computer. But public and school librarians should proceed only with the approval of either the teacher or the parent.

Ending Ritual

A clean-up time produces activities such as replacing chairs, cleaning work areas, and lining up. Repeating the sequence helps the child know that "the end" is approaching. The child will need a "the end" to mark the conclusion of an activity. The ending activities will be clear and done exactly when the visit has concluded. The librarian may use a cue of her choice, whether it be a clean-up song, a small behavior such as a wave, or a sticker. But the librarian should be prepared to repeat this cue regularly and often and in exactly the same way for each library visit.

Evaluation

The librarian who seeks overt responses to a library story-time visit may not find such validation with autistic children. However, observing the children, questioning the teacher or parent, relying on traditional measures, and performing a self-check can provide feedback. Evaluation should be carefully planned and scheduled into the program on a regular basis.[35]

Children with ASD may or may not verbally indicate enjoyment of the story time. However, an absence of distress indicates that the child accepts the activity. The ASD child may reduce self-stimulatory activities or make brief eye contact. There may be evidence of an increased attention span that signifies tolerance of the library visit. During the library program, the children may respond to simple yes-no questions about the story, or they may fill in an answer if you prompt, then pause. There is no way to identify a common set of autistic deficits, thus there is no way to anticipate a particular set of positive responses.

Always ask the classroom teacher or parent for comments. Seek out suggestions for what to change, what to avoid, and how to improve the program. "Coordination and collaboration appear to be more than worth the effort, and without these two ingredients, a successful program is unlikely to emerge."[36] The authors believe that asking the teacher or parent, who knows the child best, will provide the most informed opinion about the success of the program.
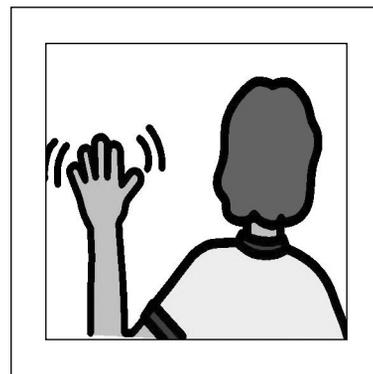
Goodbye

Traditional library evaluation measures can also be used. If you do a program on animals, check to see if materials on animals are checked out. Have the students asked related questions about animals? Ask the children to draw a picture of the library visit, and see what the drawings magnify or minimize. Can the children remember your name? Do the children ask for books on other subjects? How does the library look after the children leave? Can you tell they used the library or does it appear untouched? Do the children remember the words to the songs?

Another evaluation technique is to use a grid worksheet targeting specific areas of library skills or behaviors.[37] The worksheet might aim for areas such as "listens to the story," "answers successfully when called upon," "raises hand," "mirrors book handling behaviors," "demonstrates appropriate library behaviors," and so on. If the school library media specialist is working with the teacher, the two can determine the focus of the evaluation plan. The school media professional can keep a running worksheet showing how the children are doing during library visits. Longitudinal data will highlight where small changes in the program might be made without disrupting the consistent routine. Repeat what works well . . . often.

Make sure your interactions with the children have been positive and encouraging. Be consistent, calm, low key, direct, and patient. Analyze changes in the children's behavior from visit to visit. Do not be discouraged; this is a slow process, and gains are small and incremental.

The professional librarian will want to develop resources on autism for personal

use and development. Several reputable Web sites, including www.autism.org, www.teacch.com, or Autism-PDD Resources Network at www.autism-pdd.net, will provide information, bibliographies, and teaching tips.

Conclusion

Librarians are instrumental in introducing an underserved population to the joys and routine of a library visit. Skills learned in the school library can be transferred into the local public library and then extended into other community situations. Skills learned in the public library transfer back to school, and a cycle of success is arranged. Librarians have an opportunity to make a real contribution to the lives of children who face many challenges. Seize the chance and make a difference. ᠘

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