Assistive Technology Case Study

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Today’s students have arrived at the intersection of the increasing emphasis on technology integration in the classroom and the practices of full inclusion where a growing number of students with disabilities are supported in the general education classroom. This presents a challenge for IEP committees to address the needs of students as special educators and related service providers are called upon to provide expert knowledge as a means to increase student success and meaningful participation in inclusive environments. According to education researcher/assistant professor Terence Cavanaugh (2002) assistive technology (AT) tools and devices create accessibility where there was previously only a barrier to the educational experience and, as an added bonus, enhance the engagement and appeal of lessons for non-disabled students in the shared classroom. Therefore general educators are presented the opportunity to incorporate technology, especially AT, into instructional planning based upon the team’s evaluation of the individual student. Part one of this case study explores the application of one AT implementation model for a number of special education students within a fifth-grade inclusion English Language Arts & Reading classroom while part two will examine an exemplar lesson and assessment plan based on the recommended tools alongside a personal reflection of one of the three teachers employing the lesson (the author).

Model

A handful of models are emerging to guide school teams as they address the consideration process required by Individuals with Disabilities Education Act (IDEA). This legislation requires schools to ensure that AT devices or AT services, or both, are made available to a child with a disability if required as part of the child’s special education, related services, or supplementary aids and services and that the IEP team should consider whether the child needs AT devices and services. The government’s definition of AT devices and services, while lengthy, is broad and the intent behind the terms “consideration” and “made available” is less than clear.

Dr. Joy Zabala’s SETT framework stands out to me in its ability to prompt a collaborative discussion and recognition of the importance of a team approach when “determining which technology solution will be most effective” for a student as discussed by Lever-Duffy and McDonald (2011, p. 98). These authors advise
educators to combine input from not only teachers and related service personnel but also family members and student himself. SETT is an acronym for the areas in which a common understanding is sought for strategic and responsive planning: the student, the environment, tasks, and tools. With the idea of educational success in mind, Zabala states it best that the framework aids teams in building “shared knowledge about the strengths, challenges, and interests of a student, the facilitators and barriers of the student’s customary environments, and tasks that the student must do or learn to do to be an active participant in educational activities” (Zabala & Bowser, 2005, p. 1).

The SETT framework is essentially four sets of focused questions, for each of the four areas in its namesake, that allow the members of an IEP team to establish a solid foundation of background knowledge on which learning goals can be based. Student information includes information gathered pertaining to a student’s independent abilities, preferences and difficulties. I feel this profile is similar to the PLAAFP, or present levels of academic achievement and functional performance, synopsis used in annual ARD meetings. Environmental concerns include physical and instructional arrangements, accessibility and availability of materials and equipment, and even resources available to the student’s support team. The inclusion of attitudes and expectations of everyone involved spoke to my own teaching philosophy and is another reason the SETT framework stood out as the best for my teaching practice. Within the tasks segment, the team identifies activities and skills that are required for student involvement in the environment and progression in the curriculum. This section is reminiscent of one of Tomlinson’s (2001) rules of thumb in differentiated instruction: “be clear on what students must know, understand and be able to do in order to grow in their grasp of a subject” (p. 14) including the “multiple avenues to learning for varied needs” (p. 15). Based on the tasks and IEP goals generated for an individual student’s mastery in the given areas, the team finally brainstorms all the support tools a student will require including “devices, services, strategies, accommodations, and modifications” (Zabala & Bowser, 2005, p. 1) and determines the most fitting solution and technology. The plan is documented and reevaluated as necessary. Zabala (Rev. 2005) recognizes the model is not a protocol with predetermined steps but does detail several critical elements that must always be included in this AT evaluation
process to avoid “under-implementation of tools” (p. 4) and ensure increased opportunities for educational success. The seven critical elements are: (a) collaboration; (b) communication; (c) incorporation of multiple perspectives; (d) gathering of pertinent information; (e) use of shared knowledge; (f) flexibility and patience; and (g) on-going processes.

There is a wide range of no-tech, low-tech and hi-tech AT options so that students are able to engage in the essential components of the lesson. To further guide the AT assessment and recommendation process, Zabala and Korsten (Rev. 2005) created an Activity-Based Implementation Plan with 12 steps for planning the specifics of AT implementation. The first six steps address a student’s access and participation in specific learning activities and the supports that will be provided to aid him while the latter six steps help IEP teams think about expected changes and what needs to be done to ensure that ongoing progress monitoring is built into the implementation. When IEP committees follow the steps in SETT they should be able to predict “the ways that the student will use the technology that is provided to do identified tasks that are currently difficult or impossible” and expect improved student achievement (Zabala, Bowser, & Korsten, 2005, p. 2).

Case Study

The following sections address the various needs, abilities, and interests of a selection of students in my classroom as well as the details of the environments where they learn. Finally, typical classroom tasks are identified and evaluated from the perspective of the three primary networks of the brain (recognition, strategic, and affective) as discussed by Rose and Meyer (2002) in *Teaching Every Student in the Digital Age*. These connections are valuable in helping educators “understand our students better and tailor learning experiences in ways that will maximize their opportunities to progress” (Rose & Meyer, 2002).

Students

My school organizes instruction by “clusters” so that students travel together for instruction in the core content areas and electives. Students are assigned to a homeroom class but are then reorganized homogenously within the cluster. Fifth grade inclusion has two general education teachers: (a) Mrs. Gaytan for English Language Arts/Reading and Social Studies and (b) Mr. Cooper for Science and Mathematics, as well as myself,
a co-teaching special educator in all four areas. The inclusion support class is made up of 18 students, one of which is homebound due to compromised immunity from chemotherapy. There are eight female students and 10 male students; 15 total students receive special education services or are on a 504 plan. All students struggle in reading, math, or both subjects due to specific learning disabilities, dyslexia or attention deficits. For the purposes of this study I have chosen to highlight the needs of three students, two males and one female, receiving modified curriculum instruction.

Miguel is an 11-year-old Hispanic boy living with relatives under a guardianship agreement. His parents have been in and out of jail and his older brother is currently incarcerated. Miguel is not limited English proficient and neither speaks nor understands Spanish. He was serviced in a self-contained special education classroom working on goals in speech, reading and math in his previous out-of-state district. Miguel has qualified in Texas as a student with specific learning disabilities in the areas of basic reading, reading fluency, reading comprehension, math calculations, and math problem solving. His overall IQ is 73. He was exited from speech services in the spring of 4th grade. Currently he especially struggles with vocabulary, figurative language, and drawing conclusions. According to Rose & Meyer (2002), the top-down processing component of the brain’s recognition network is best suited for these tasks as they rely on higher-order thinking skills and analyzing the context of words within a story. Based on a nationally normed assessment, Miguel’s independent reading level is equivalent to a 1st grader in the sixth month of school. He is not however the weakest reader in the class. His oral reading skills are also deficient though he does attempt to break words into smaller parts and is familiar with the majority of sight words due to regular guided reading at home. These relative strengths are associated with the bottom-up processing of his brain’s recognition network but both types of processing play important roles in our learning (Rose & Meyer, 2002). Miguel’s behavior is somewhat concerning as he has fallen into a mischievous group of boys and was recently suspended for possession of a loaded weapon (Air soft pistol) on campus. This example of his impulsivity and lack of self-monitoring demonstrates a weakness in his brain’s strategic network (Rose & Meyer, 2002).
Despite his shortcomings, Miguel is respectful and hard working – willingly participating in classroom discussions, completing homework on time, and volunteering answers on a regular basis. His receptive language skills and paragraph comprehension, given oral reading assistance, are strengths. While he does not perform on grade level in math, he is relatively stronger with his calculations and understands the processes for basic arithmetic operations. He currently utilizes a number of low-tech assistive devices including a color overlay, highlighter, and student created word list. He was successful on the modified state assessments in all subject areas in 4th grade and I expect him to perform equally well this year. He has shown dedication to improving his spelling abilities and earned a perfect score on the last quiz of commonly misspelled words. Outside the classroom he is athletic, playing football for a local youth league. Like most pre-teen boys, he enjoys playing video games and riding his bike.

Kayleena is an 11-year-old girl of two or more races and alternates living with her mother and siblings and her father and stepmother in a shared custody arrangement. She has received special education services including speech therapy, occupational therapy and inclusion support her entire educational career, including preschool years in PPCD. In elementary she was serviced in a self-contained special education classroom working on goals in speech, reading and math. She received pullout inclusion support in 4th grade. Kayleena is identified as a student with “other health impairment” (for ADHD), speech impairment (articulation/rate), and specific learning disabilities in the areas of listening comprehension, oral expression, math calculation and math problem solving. Her overall IQ is 81. A developmental pediatrician has also diagnosed Kayleena with high functioning autism and aphasia though the IEP team has not adopted Autism as a qualifying condition for services. Her biggest difficulties involve syntax/construction, specifically word endings and tenses. Kayleena has a processing delay and will often impulsively raise her hand to answer a question without having an answer. Based on a nationally normed assessment, her independent reading level is equivalent to a 3rd grader in the fifth month of school. Her speech impairment makes it difficult to assess her oral reading skills but she is able to read 2nd grade passages with average fluency but grade level passages are filled with errors due to her limited
vocabulary. Kayleena’s only behavior concern is her lack of focus and tendency to seek out positive feedback too frequently. She seems to lack a number of social skills and is extremely shy with her peers and adults.

Kayleena is shy in most situations but shines during Science lessons and in the Art classroom. She draws intricate designs and creates miniature clay figurines with great detail. She is respectful and is becoming more assertive in requesting help and standing up for herself with peers. Kayleena currently utilizes a couple of low-tech assistive devices including graphic organizers and an individualized multiplication chart. She was successful on the her 4th grade state assessments in all subject areas, meeting expectations on the standard form of the math test and earning commended performance on the reading test for the second time. I hope to improve her reading fluency and comprehension skills this year so that she can successfully complete the standard reading exam in 6th grade.

Finally, Eric is a 10-year-old, male pacific islander that has been battling a brain tumor since 3rd grade. He lives with his father and brothers but receives his instruction at his grandmother’s home nearby the school campus. He receives just four hours of instruction per week as part of his homebound services. I provide his work direction but am not involved in the delivery of his lessons. As a result of his chemotherapy, Eric has a number of physical limitations and medical concerns including tremors, dysgraphia and reduced stamina. Prior to his cancer diagnosis and treatment, Eric was a general education student of average intelligence. Eric had surgery to remove the brain tumor from his cerebellum and follow-up radiation treatments, the last of which was May 2011. According to the Centre for Neuro Skills (2011) website, “the cerebellum is involved in the coordination of voluntary motor movement, balance and equilibrium, and muscle tone”. Slurred speech is another result of trauma to this region at the base of the brain, which explains his diminished ability to verbally communicate. Eric still requires extensive physical and occupational therapy each week as well as the use of a wheelchair for mobility. He is able to transfer out of his wheelchair with support but his atrophied leg muscles and impaired balance prevent him from walking at this time.

Eric recently completed a unit assessment on fiction, media literacy and proofreading and scored 60% on the modified test. His performance on the modified math assessment covering place value and the basic
operations was 69%. It seems that his limited access to instruction has caused him to plateau with late 3rd grade skills in all areas. Currently, he uses a Dana word processor with word-prediction software to complete short written assignments. Eric’s sentences are generally phrases and lack either a subject or predicate. He has demonstrated strong skills in the areas of context clues and character roles. The combination of his frequent tremors and poor motor control for handwriting necessitate a scribe for any paper and pencil work beyond circling an answer from a multiple-choice array. I have modified his worksheets by increasing the font and workspace so that he has room to mark his responses in this manner. He also uses a calculator to perform calculations due to his difficulty with written forms. Eric loves animals, including his two pet cats, and hopes to be a veterinarian one day. He is interested in science and enjoys reading. He has indicated a strong desire to regain his independence and longs for freedom from the negative side effects of his cancer treatment.

Environments

The majority of English Language Arts/Reading instruction for Miguel and Kayleena occurs in Room 203, the general education classroom. This is a cheery space, decorated in an apple theme, with three groupings of eight individual desks for cooperative learning. A number of bookshelves line the walls with a variety of books for students to borrow. There are also crates with floor pillows for students to use during “drop everything and read” time. The walls are decorated with posters for writing, reading, social studies and the Boys Town Social Skills, but the lone window is covered by closed blinds and a curtain as it opens only to the side of a portable classroom building. Students store their materials in baskets in the rear corner of the room so that the inside of all desks are empty and free of distractions and disorganized papers. Instruction is shared between Mrs. Gaytan and myself for 86 minutes each day in the subject area of English Language Arts/Reading. We cover vocabulary, writing, literature and reading comprehension skills on a weekly basis. Students visit the library for 40 minutes on Mondays. Students are able to use the three computers in the classroom for research and to take Accelerated Reader quizzes, as well as interact with the SMARTBoard. We also have a document camera versus the traditional overhead projector for transparencies. Our campus motto is “High Expectations
lead to High Achievement” and we expect our pupils to push themselves harder than they ever have. All students participated in the creation of our classroom mission statement:

We choose to have a great year! We will learn as much as we can by: staying focused during class, participating in every activity, asking for help when we don’t “get it”, and completing our homework everyday. Our classroom will be a safe and happy place because everyone will be respected, cared for, and valued. We will be ready for 6th grade!

At times, my special education students receive pullout instruction for the re-teaching of concepts, instruction via modified materials, and oral administration of assessments. This occurs in Room 303, the shared 5th and 6th grade Inclusion pullout classroom, also known as the Rainforest Room. The walls of this u-shaped classroom are decorated with monkeys on vines and clusters of yellow bananas. The window has a drawing of a monkey with window chalk that welcomes the students along with my name and that of my 6th grade counterpart. My desk is covered with outdoor fabric that is black with bright green dots. We also have lined both entry halls with 12 feet of decorative wallpaper in a rainforest/jungle theme. This wall is not merely decoration however; as students meet their goals, be it from an IEP or an individual goal for a unit skill, they are able to write their name on a banana and staple it wherever they like amongst the leaves and trees. Students can earn the opportunity to lounge in beanbag chairs this semester and will be given the choice to complete their work there in the spring semester. Inside the room are sixteen student desks, eight facing the SMARTBoard side of the room and eight facing the whiteboard side. We also have a student computer station with three PCs and a kidney shaped table that is used for small groups and games. There are a number of math manipulatives and reference materials available as well as a set of high-interest/low-level readers. Unfortunately, the room is located in the sixth grade wing where students change classes based on a bell schedule every 43 minutes so noise can be an issue at times. It is also directly across from the restrooms and I often have to speak over the hand dryers.

Eric’s homebound instruction occurs in the eat-in kitchen of his grandmother’s home. He works at the six-chair dining table facing the pantry door, with the sliding glass door to the rear yard to his left. Eric sits in a high-back dining chair and the table is at just the right height for him to look at the papers and textbooks spread
across the wooden surface. This open concept home, decorated in a minimalist fashion, has wide entryways and few inner walls so wheelchair can be maneuvered with ease. From the kitchen you can see all the way into the living room from the dining area, which is where Dad sits during Eric’s “classes”. Homebound teacher Mr. McChesney meets with Eric every Tuesday and Thursday from 10 to noon. The environment is whisper-quiet despite the kitchen appliances and the young boy rarely loses focus during his lessons. He does however require frequent breaks from the cognitive and physical difficulty of attending to the learning activities. Eric is seen by related service providers on a consultative basis in an effort to ensure he has adequate assistive technology for the tasks assigned and to monitor his gradual progress.

**Tasks and their Connections to Brain Network Theories**

It is common practice in the English Language Arts/Reading classroom to support concepts such as main idea detail, compare and contrast, and cause and effect with nonlinguistic representations and graphic organizers. According to Gierach (2004), these visual models assist the brain’s recognition system in storing and retrieving information, allowing students with language disabilities another opportunity to learn. Rose & Meyer (2002) discuss the specialization within our brain’s recognition networks “to sense and assign meaning to patterns we see” (chap. 2) which are supported by the high-yield strategy (Marzano, Pickering, & Pollock, 2001) of using supplemental aids in the form of blank graphic organizers.

Educators have developed a number of test-taking strategies for use on end-of-year reading and writing assessments. On our campus we use a strategy called “ExPLORES” that serves as a checklist of the ways a careful reader will interact with a passage. The steps include thorough examination of images and captions, pre-reading the question stems, locating bolded or underlined vocabulary words and organizational subheadings, observing the author’s purpose, reading to remember, and eliminating wrong answers, and supporting choices with evidence from the text. Students tap into the strategic network of their brains in order to plan, execute, and monitor these actions while they read a challenging passage in order to prepare for the assessment of their comprehension skills (Rose & Meyer, 2002).
We also incorporate a number of cooperative learning and movement activities into our day so that students have an opportunity to engage in meaningful teamwork. Kinesthetic learners display an increase in their motivation and participation during these tasks and students that are less confident benefit from the requirement to work together and build connections with the world around them. Students are often able to choose their role within the group and therefore are working from their own strengths. Rose & Meyer (2002) discuss the specialization of the brain’s affective network in addressing the interaction and engagement aspects of learning such as connecting with subject matter and enjoying challenges by showing persistence when things get tough.

Finally, we utilize journaling as a means to enhance student’s abilities in the areas of syntax, construction, and written expression. Students maintain both a reading response journal where they take notes on their independent reading as well as a writing journal where they respond to teacher-provided prompts. Writing is a complex task that requires the organizational component of the strategic network, the emotion and expression of the affective network, and the role of the recognition network in letter formation for the physical task of writing. Reading and writing are interrelated and that is why Rose & Meyer (2002) insist, “attention to all three networks is critical for understanding individual needs and strengths and for determining individually appropriate teaching methods and materials” (chap. 2). The wide range of academic tasks in the English Language Arts/Reading classroom present a number of potential barriers for the students profiled above.

**Recommended Tools**

Zabala (2005) identifies AT tools as “devices, strategies, training, accommodations, modifications – everything that is needed to help the student succeed” (p. 2). For the purposes of this case study, the AT will address student needs, as the environments are already well adapted for learning in regard to accessibility and arrangement. The three students present a broad range of needs, which impact English Language Arts/Reading instruction including difficulties in reading, listening, attention/focus, organizational skills, writing, and oral communication. Using the established IEPs and a resource packet published by the Georgia Project for Assistive Technology (Lee, 1998), the modifications, accommodative tools, and AT solutions for each learner
were developed and are displayed in the table below. Each item is supported by the data documented in the most recent FIE for each student and a discussion of the rationale for select items follows the table.

Table 1

Adjustments to Instruction in English Language Arts/Reading as a Response to Learning Barriers

<table>
<thead>
<tr>
<th>Student</th>
<th>Modifications</th>
<th>Accommodations</th>
<th>Assistive Technology Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miguel</td>
<td>Lower reading level materials, Simplify text, Peer/adult reading and spelling assistance, Shortened assignments, Student-created word list, Provide short summary of passage</td>
<td>Lexia instructional software to remediate basic reading skills, Oral administration of questions/answer stems, Extended time</td>
<td>E-text with text reader, Audio texts, Talking word processing with digital supports, Reading Pen/Pen Scanner, Colored overlay, Highlighter</td>
</tr>
<tr>
<td>Kayleena</td>
<td>Simplify text, Peer/adult reading assistance, Shortened assignments</td>
<td>Reduced copying/note-taking, Repeated review, Graphic organizers, Extended time</td>
<td>Organizational aids (color coding, assignment notebook), Writing templates</td>
</tr>
<tr>
<td>Eric</td>
<td>Adapted worksheets, Shortened assignments, Increased font size/white space, Oral diction for writing</td>
<td>Frequent breaks, Extended time, Scribe</td>
<td>Portable word processor with word prediction software, Voice dictation software</td>
</tr>
</tbody>
</table>

Discussion of Rationale for Tools

For many students with reading-based learning disabilities, printed materials raise barriers to access, and therefore to learning. A number of ATs have been developed to assist these learners in successfully participating in classroom activities that can also “sustain learning environments that are inviting, challenging,
and productive for ALL students, including those with the full range of abilities and special needs” (Zabala, 2005, p.2). These tools range in their level of sophistication, and price, and fall along a continuum of choices.

My recommendation for Eric includes a number of high-tech solutions for reading and writing difficulties as a result of his physical and cognitive impairments. Students that struggle with spelling and producing written work can benefit from word processors and word prediction programs that can reduce their time, effort and frustration. The software provides an on-screen list of words that match the starting letters the student has typed for use in the piece of writing (Roy, n.d.). This type of tool can assist Eric by helping him complete assignments more quickly so that he doesn’t mentally or physically tire as would voice dictation software such as *Dragon NaturallySpeaking*. According to the Wisconsin Assistive Technology Initiative manual (Rev. 2009), using fewer keystrokes to complete sentences could increase the quantity and quality of his writing (Nankee, Stindt, & Lees, chap. 5). The combination of his more traditional modifications and accommodations with the AT devices will allow him to access the general education curriculum and progress at a rate closer to that of his peers.

Miguel could benefit from the spelling assistance he would receive via talking word processing with digital supports as he is fairly accurate with consonant blends but has more difficulty with diphthongs and the schwa sound. His oral expression skills far exceed his command of written language and he struggles with organizing his thoughts and using proper mechanics. The built in reference tools and organizational components of the digital supports in some word processors would assist Miguel with his written expression (Swenson, Wirkus & Obukowitz, Rev. 2009, chap. 6). At his desk, Miguel could improve his comprehension by using reading pens or pen scanners. These AT tools scan and pronounce words or read lines of text. Some models provide dictionary and thesaurus support while pen scanners are capable of transferring text into Windows applications via a USB cable and can support text-to-speech technology (Cumley, Rev. 2009, chap. 7). Text-to-speech helps students improve comprehension, fluency, and accuracy and facilitates concentration, as students are able to immediately decode a word by hearing it. This software impacts vocabulary and word recognition and allows the reader to focus on meaning rather than pronunciation so that passages can be offered at an
instructional level that is slightly more challenging. One free screen reader that is accessible online is WebAnywhere which does not require any special installation as it is hosted on a University of Washington server. Students can listen to any text in the browser or on the computer screen (Cumley). Prior students with similar disabilities to Miguel have benefited from audio books available from our school library. The proliferation of audio technology and e-reader devices mean using this AT could be viewed as very mainstream. Audio texts can also be created in the classroom in the form of podcasts to be replayed as needed by struggling students (Cumley). With support, Miguel could learn to navigate these devices and draw on his strong listening comprehension to improve his reading skills.

Kayleena, on the other hand, could utilize a low-tech version of a graphic organizer with guidelines and adapted worksheets to assist her writing difficulties. These AT tools would to help her corral her writing and see what space she has to write as her written forms tend to be either large and jumbled or very small and tediously formed (Nankee, Stindt, & Lees, Rev. 2009). Another low-tech modification to traditional text materials is the use of auto-summarization in Microsoft Word to create summaries for a passage or even simply crossing out complex, unfamiliar vocabulary and replacing it with simpler wording (Cumley, Rev. 2009, chap. 7). In conjunction with her occupational therapy consultations, she should demonstrate measurable growth in her written expression.

Lesson Plan – adapted from CSCOPE © Texas Education Service Center Curriculum Collaborative

“Tell Me a Little About Yourself” - 2 Week Unit – Appreciating Literary Nonfiction & Drama

Synopsis:
Students explore literary nonfiction and compare a biography and its dramatic adaptation for literary language and devices used in both versions. Students engage in the writing process as they investigate and practice using literary techniques in personal narratives. Word Study continues the practice of using context clues to determine the meaning of unknown word and using dictionaries to find important information about words.

Performance Indicators & Related TEKS:

- Design a poster that represents the similarities and differences of a biography or autobiography and its dramatic adaptation. Include a written response that identifies the literary language and devices used and evaluate how they impact the reader. (5.Fig19D, 5.Fig19F; 5.5A; 5.7A; 5.8A; 5.11E; 5.18C)
- Using the writing process (draft in WJ, final copy on loose leaf) and effective written conventions, write a one-page personal narrative that conveys thoughts and feelings about a personal experience. (5.15A, 5.15B, 5.15C, 5.15D, 5.15E; 5.17A)
- Write multiple entries in RRJ including thoughts, connections, and/or strategies that deepen understanding of fictional texts, literary nonfiction, drama and media. Provide evidence from the text to support ideas. (5.Fig19A, 5.Fig19B, 5.Fig19C, 5.Fig19D, 5.Fig19E, 5.Fig19F; 5.9A; 5.18C)
- Record multiple entries in DOL/Word Study Notebook demonstrating word knowledge. (5.2A, 5.2B, 5.2E)

**Key Understandings & Academic Vocabulary:**

- Authors use literary techniques and elements to enrich the reader’s experience and understanding.
- Authors use writer’s craft to engage and sustain the reader’s interest and enhance understanding.
- Effective listening and speaking builds background knowledge and supports collaboration.
- Readers use strategies to support understanding of text.
- Readers use writing to communicate deeper understanding of texts.
- Readers create connections to make text personally relevant and useful.
- An extensive vocabulary enhances written and oral communication.

**Personal narrative**—an expressive literary piece written in first person that centers on a particular event in the author’s life and may contain vivid description as well as personal commentary and observations. The purpose of a personal narrative is to entertain, but can also be used to teach or inform.

**Cross-Curricular Unit Resources: Social Studies Focus with Harriet Tubman & the Underground Railroad**

“Time for Kids” Biographies: Harriet Tubman: A Woman of Courage
Reader’s Theater Dramatic Selection: [http://www2.scholastic.com/browse/article.jsp?id=3751241](http://www2.scholastic.com/browse/article.jsp?id=3751241)
Underground Railroad/Harriet Tubman Slide Presentation: Wilder Campus Folder/Torres/URR_HT.pdf
Guided Reading Level I, Grade Level Equivalent 1.9. Supports the teaching of the features of non-fiction text such as realistic illustrations, captions, maps and glossary. Use for independent reading or to support guided reading instruction. Use as a read aloud to support the study of the genre of biographies.

**Selected Lessons & Activities demonstrating AT Tools:**

**Day 2**

**Mini Reading Lesson – 30 Mins: Monitoring comprehension with questions, analyzing biographies**

<table>
<thead>
<tr>
<th>Review the four types of questions students ask: literal, interpretive, evaluative, and universal questions, giving examples</th>
<th>Explain that readers ask questions before, during, and after reading in order to monitor their own comprehension.</th>
<th>With the students, generate 1-2 questions for each of the four types of questions.</th>
<th>Working in groups, students read the Time for Kids biography &amp; answer the questions in their RRJ, and record new questions on sticky notes.</th>
<th>Students share their new questions and the category they belong under with whole class.</th>
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</thead>
</table>

**Biography**

**Writing Journal – 30 Mins: Thesis statement within a personal narrative (autobiography)**

| Think Aloud about how to choose an | Tell story about trying to hide lima beans in | Ask: What is the “point” of my story? What do I | The thesis: What NOT to do when | Model writing a thesis that encompasses the | Students review their ideas & choose one that has a point. | Modified text: Scholastic Easy Reader |
### Day 4

**Mini Reading Lesson – 40 Mins: Online Interactive on Underground Railroad – effect of historical events**

<table>
<thead>
<tr>
<th>Students identify literary language and sensory details in biographies.</th>
<th>Read selected excerpts aloud with fluency. Students close their eyes, listen carefully, and visualize what is happening (5 senses).</th>
<th>Use SMARTtools to highlight or underline words and phrases that helped them get a mental image.</th>
<th>Ask: How did the language the author used affect how you feel about each of the excerpts?</th>
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Accommodated text: Audio option with scrolling e-text

**Writing Journal – 25 Mins: Personal Narrative**

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<tr>
<th>Students use the events/ideas on their sequential graphic organizer to draft the beginning of their personal narratives.</th>
<th>Remind students to be sure what they are writing supports their thesis.</th>
<th>Tell students to choose their words carefully in order to create images in their readers’ minds.</th>
</tr>
</thead>
</table>

AT Tool: sequential graphic organizer, portable word processor w/word prediction software & talking word processor w/digital supports

**Independent Reading – 20 Mins: Students identify sensory details in biographies, recording quotations in the RRJ, and explain how the language used affects them as a reader.**

### Day 6

**Reading Lesson – 60 Mins: Web Quest in Computer Lab – effect of historical event on literary nonfiction**

<table>
<thead>
<tr>
<th>Students explain the effect of a historical event or movement on the theme of a biography.</th>
<th>Students complete Web Quest and answer questions on worksheet in RRJ.</th>
<th>Ask: What historical events could have affected the person in this biography?</th>
<th>Ask: How might the theme have been different if the person lived in a different time?</th>
</tr>
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AT Tool: screen reader for e-text

**Writing Journal – 25 Mins: Editing personal narrative**

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<tr>
<th>Students learn that authors use writer’s craft to engage &amp; sustain the reader’s interest and</th>
<th>Read the Slave narrative to class. Discuss its theme, imagery &amp; use of</th>
<th>What is revision? How do authors revise and what do they</th>
<th>Model revising for focus, organization, and coherence.</th>
<th>Review rules for capitalization &amp; punctuation.</th>
</tr>
</thead>
</table>

**AT Tool:** Use of portable word processor with word prediction software & talking word processor with digital supports vs. WJ

**Independent Reading – 25 Mins:** Continue reading yesterday’s biography & answer “How does asking questions help you as a reader? What types of questions seem to be the easiest/hardest to answer?” in RRJ.
enhance understanding. good mechanics. look for?

AT Tool: Use of portable word processor with word prediction software & talking word processing with digital supports

Day 7 & 8

Mini Reading Lesson – Dramatic adaptation of Harriet Tubman biography

<table>
<thead>
<tr>
<th>Students analyze the similarities and differences between a dramatic adaptation and a literary nonfiction text.</th>
<th>Explain to students that they will be reading and performing a short play about Harriet Tubman.</th>
<th>Ask: How do you think the biography will be the same as the play? How do you think it will be different?</th>
<th>Students choose roles and read the play. At scene breaks, the class discusses and takes notes on any connections noticed.</th>
<th>Ask: What literary elements and techniques did the biography have? What are the similarities and differences between the biography and the play (dramatic adaptation)?</th>
</tr>
</thead>
</table>

AT Tool: reading pen

Writing Journal – Compare/Contrast Drama to Book using T Charts & Venn Diagrams

<table>
<thead>
<tr>
<th>Display a T-chart with the title of the play on the left &amp; the title of the biography on the right.</th>
<th>Discuss how a T-chart displays differences.</th>
<th>Introduce a Venn Diagram for displaying similarities plus differences.</th>
<th>Distribute blank graphic organizers to each student, alternating the type provided.</th>
<th>Use responses from the Reading Lesson discussion to populate the organizers.</th>
</tr>
</thead>
</table>

AT Tool: writing template/ruled graphic organizers, talking word processing with digital supports

Evaluation Rubrics:

**POSTER:** Design a poster that represents the similarities and differences of a biography or autobiography and its dramatic adaptation. Include a written response that identifies the literary language and devices used and evaluate how they impact the reader. 12 points maximum

**Similarities and Differences**

4 Student insightfully makes inferences while analyzing the similarities and differences between an original text and its dramatic adaptation supported with text evidence.

3 Student generally makes inferences while analyzing the similarities and differences between an original text and its dramatic adaptation; however, minor discrepancies appear.

2 Student minimally makes inferences while analyzing the similarities and differences; however, major or numerous discrepancies appear.

1 Student cannot make inferences while analyzing the similarities and differences between an original text and its dramatic adaptation.

0 Student does attempt the task.

**Evaluate Sensory Details**

4 Student identifies and evaluates the impact of sensory details, imagery, and figurative language in literary text and the literary language and devices used in biographies and autobiographies; including how authors present major events in a person’s life.

3 Student generally identifies and evaluates the impact of sensory details and literary devices; however, there are minor flaws.
2 Student minimallyidentifies and evaluates the impact of sensory details and literary devices; however, there are major flaws.

1 Student cannot identify or evaluate the impact of sensory details and literary devices.

0 Student does attempt the task.

Connections

4 Student synthesizes and makes logical connections between ideas within a text and across two or three texts representing similar or different genres.

3 Student synthesizes and makes logical connections between ideas within a text and across two or three texts representing similar or different genres; however, there are minor inconsistencies.

2 Student minimally synthesizes and makes logical connections between ideas within a text and across two or three texts representing similar or different genres; however, there are significant inconsistencies.

1 Student cannot synthesize or make logical connections between ideas within and across two or three texts representing similar or different genres.

0 Student does attempt the task.

**PERSONAL NARRATIVE**: Using the writing process and effective written conventions, write a one-page personal narrative that conveys thoughts and feelings about a personal experience. 4 points maximum

4 Student writes a 1-page personal narrative that conveys thoughts and feelings about a personal experience.

3 Student writes a 1-page personal narrative that conveys thoughts and feelings about a personal experience; however, there may be occasional gaps.

2 Student minimally writes a personal narrative that conveys thoughts and feelings about a personal experience; however, there are significant gaps. The narrative may not be long enough to score higher.

1 Student cannot write a personal narrative that conveys thoughts and feelings about a personal experience.

0 Student does attempt the task.

Reflection

The selection and implementation process for AT should include an implementation and evaluation plan to be used across environments. This critical step allows service providers to consider the support they need in order to effectively support the student and can establish a timeframe for considering changes to the recommendation (Zabala & Bowser, 2005). It is important to note that the AT devices and tools will not eliminate the effects of a student’s learning difficulties but will instead “level the educational playing field” so those students have equal access to concepts and activities as compared to non-disabled peers without requiring them to be excluded or separated from the larger group. Another consideration is the need for training for both the student and support staff in using any high-tech AT solutions. Furthermore, AT should be combined with other types of support including research-evidenced teaching practices, instructional intervention programs and special educators with a repertoire of reading methods.
When I consider the effectiveness of the technology tools for each student, it is possible to evaluate each by adapting a simple rubric created by Shannon Arcano (2009). The guide considers the degree of inclusiveness for the student using AT, its role in academic success, and the student’s independent use of AT.

Table 2

AT Evaluation Rubric

<table>
<thead>
<tr>
<th>How successful was the assistive technology?</th>
<th>Excellent</th>
<th>Good</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-The use of the assistive technology allowed the student to be included in the class.</td>
<td>-The use of assistive technology allowed the student to be included in the class only some of the time.</td>
<td>-The use of assistive technology did not allow the student to be included in the class.</td>
</tr>
<tr>
<td></td>
<td>-The student understood the academic skill/concept through its use.</td>
<td>-It was unclear if the student understood all academic skills and concepts as a result of the AT.</td>
<td>-The student did not understand the academic skills and concepts.</td>
</tr>
<tr>
<td></td>
<td>-The student was able to attend and complete task independently.</td>
<td>-The student was able to attend only part of the time, and needed assistance using the AT.</td>
<td>-The student needed constant guidance throughout the task.</td>
</tr>
</tbody>
</table>

In their article SETTing up staff and supporters to promote student achievement (2005), Zabala and Bowser discuss the formation of an implementation and evaluation plan to be used across environments that includes (p. 3):

• specific changes expected in the student’s work
• minimum criteria that will indicate successful use
• when the student is expected to use the device
• what cues will be provided to help the student succeed
• strategies for helping the student become independent in his use of the device
• type of data to be collected, schedule for collecting and analyzing the data

These steps are important especially when a trial period is adopted when a consensus cannot be reached during the committee meeting. The data will guide decisions on how use of the AT impacts student achievement and whether a less-technical and more cost-effective alternative should be considered. As I review the table of supports for my students, I realize they could prove to be overly cumbersome for the student to use in different
classes throughout the day as he/she progresses through the grade levels. A number of the items are also expensive and apt to become obsolete as newer generations of computer operating systems are released. I struggled to determine if any of the technologies had overlapping uses and could be eliminated from the plan.

This unit bundles student expectations that address the understanding and analysis of literary techniques used in drama and literary nonfiction. Genre study connects reading and writing to allow students to become better writers and strategic readers who approach text meaningfully and purposefully, while optimizing understanding and communication. Students are immersed in a variety of literary works to comprehend text they read and communicate authentically about their reading and writing. Literature such as dramatic text, autobiographies, and biographies provide a way for the reader to infer what is not specifically stated, connect the information to previous knowledge, and combine the ideas together to make logical sense while providing text evidence to support understanding. Students continue to identify and select comprehension strategies before, during, and after reading and continue to use literary features to make inferences, summarize/paraphrase, and create new perspectives. Dramatic adaptations of text are compared and contrasted with their original texts representing the same story. Students use the writing process and the conventions of written language to write about important personal experiences. As students compose text to express their ideas and feelings, they become more thorough writers by learning from the text structure and applying the writer’s craft: strategies that lead to depth, voice, and focus. Sensory language is identified in text and explored in writing to create an experience that appeals to the senses. Word study is inclusive of genre-specific vocabulary, literary terms, and appropriate vocabulary from the literature. The thematic unit allows students to synthesize critical thinking skills and higher order reading comprehension strategies as well as practice the personal narrative style of writing and an oral presentation.

These concepts will challenge all students in the classroom and the materials are adapted as necessary for accessibility. Rose and Meyer (2002) discuss the importance of considering the appropriateness for particular tasks and content yet educators rarely consider “the inherent communicative strengths and weaknesses of speech, text, and images”, the traditional media, used in lessons (chap. 3). The writers further
state how “each medium poses barriers for some students, while offering particular opportunities to others. None works optimally for every student or for every situation, which means that several media options should be available” (chap. 3). The sample lesson plan takes these understandings of how the profiled students’ individual brains interact with traditional media and introduces AT tools and teaching techniques to address the potential barriers as recommended by the authors and should therefore be effective if implemented as written. A critical component for success with these lesson plans is adequate support from the classroom teachers and easy access to supplemental aids and technology. The unit and its lessons should prove to make an engaging and demanding couple of weeks at the start of our new grading cycle next week.
References


Nankee, C., Stindt, K., & Lees, P. (Rev. 2009). Assistive Technology for Writing, including Motor Aspects of


