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Enhancing Structured Literacy™ Instruction with Educational Technology

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Abstract

Structured Literacy™ provides direct and explicit instruction to prepare students to decode words. The elements of the instruction include phonology, sound-symbol association, syllable instruction, morphology, syntax, and semantics. While traditionally presented in a one-to-one format, Structured Literacy™ Instruction is now entering small group instruction, and is not without some challenges. Managing word lists and flashcards that follow the lesson yet meet the individual needs of multiple students can be organizationally demanding. When working with a small group, it can be difficult to engage all students equally, as well as account for their various learning differences. The incorporation of educational and assistive technology can provide the educator with the ability to simultaneously engage students and account for differentiation of needs, while documenting progress. Furthermore, students benefit from instruction at their level and their pacing, and also learn strategies to enhance their use of technology for access.

Keywords: literacy, reading instruction, reading specialists

Introduction

Structured Literacy™ is the key to impact the gains in reading for students with learning disabilities. Based on neuroscience, this explicit linguistic instruction is essential for students with dyslexia. The lessons are systematic and cumulative, providing spiraling back of concepts for review while introducing new ones. Students are directly taught concepts and rules for sounds, syllables, and morphology. In addition to phonological awareness, students engage with fluency practice through oral reading and contextual reading to build comprehension skills. Lessons are diagnostic and prescriptive, with the teacher always assessing and adjusting the lessons to meet the students' needs. There is no direct scope and sequence, but rather a suggested path of skills that are adapted to meet each student's learning needs for decoding and encoding.

Reading has two components: The reading for the words, or decoding, and the understanding of what is being read, or comprehension. Students with learning differences may struggle with one area or both. Those who struggle with decoding often struggle with comprehension of print, as they work so hard to figure out what each individual word says that they cannot access the understanding of the text as a whole. For some students with dyslexia, the decoding skills may not be commensurate with their comprehension skills; thus, they are faced with the challenge of not being able to access and build on stronger comprehension of text. Structured Literacy™ provides the instruction to improve decoding and also continues to support the students' comprehension growth.

Traditionally presented in a one-to-one format, the push to get this vital instruction to those that need it has led to the Orton-Gillingham Academy embracing small group instruction with its Classroom Educator Certification. This move recognizes that not all educators and schools have the ability to build a schedule of one-to-one support. This shift to empower educators to provide Structured Literacy™ Instruction in small and large group settings maximizes delivery. Providing group instruction is effective for a broad range of learners while providing those with learning disabilities the systematic instruction that they need (Foorman & Torgesen, 2001).

Providing Structured Literacy™ Instruction in a small group can be challenging, however, due to the need to manage all the components in small groups, while also addressing differentiation. For new concepts and review of previously learned concepts, students read words and phrases aloud for practice and to demonstrate skill acquisition. Traditionally these words and phrases are written on flashcards and organized each lesson to provide a comprehensive review and individualized introduction to new patterns. Organizing flashcards and word lists for these words and phrases during group instruction can be difficult. There is a challenge to tracking each student's errors while keeping an active lesson and ensuring the differentiation of word choices. Providing individualized spelling reinforcement and assessment can be time-consuming. Fluency practice and contextual reading engagement are additional areas for time challenges and essential for providing at each student's level. Enter technology! Across the elements of Structured Literacy™ Instruction, technology-based tools can make planning easier for the educator and the learning more accessible for the student (Lindeblad et al., 2017). The tools for some

students are necessary assistive technologies while others provide the teacher ease of differentiation, recording of student reading and spelling for data tracking, and multiple means of engagement. Additionally, for some activities, multiple students can be working simultaneously on individualized tasks within a lesson component.

The Southport School, where I work, is an independent school for students with language-based learning disabilities (i.e., dyslexia, dysgraphia, ADHD). We have always embraced the tenets of Structured Literacy™ Instruction, and 5 years ago we brought an Orton-Gillingham (OG) Fellow on to the staff. The Southport School Tutorial classes, which focused on Structured Literacy, were small groups. As an Orton-Gillingham Classroom Educator certified teacher, who also is the Chief Technology Integrator, I have used my understanding of these areas to collaborate with the OG Fellow on ways to incorporate assistive and educational technology to enhance this instruction.

Using Technology to Enhance Structured Literacy Instruction Phonological Awareness

Phonological Awareness is the key area to build a foundation for further skill instruction. Twenty-something years ago, after I was trained in the Wilson Reading System, a reading program based on the OG philosophy, one of my favorite tools was their magnetic letter tiles and boards. However, managing this with several students presented challenges: Tiles might get lost or mixed up, and often there were not enough letters to go beyond basic words. The Sound Literacy app is an iOS app that is a powerful digital version of those magnetic boards that takes it up a notch. Letters replicate and the tiles cover skills from basic sound manipulation to advance roots, prefixes, and suffixes. This tool is to be used in instruction so best on a teacher's device. The Sound Literacy app allows the teacher to customize the tile sets to match the needs of a particular student.

When working in small groups, reviewing concepts for reading and introducing new ones, differentiation for each individual learner is essential. With these concepts, one student may need to work with single-syllable words, while another can manage multi-syllabic ones. The words, phrases, and sentences can be varied for the complexity of meaning as well. Making flashcards for students can be an effective means of delivering a reading intervention in a one-to-one setting; however, managing flashcards can be challenging when working with groups. Teachers spend countless hours making new cards to meet individualized student needs. Sorting and storing these flashcards can be an organizational nightmare given time and space constraints.

Educational technology has been a game-changer for presenting individualized words within a concept with a group of students. A straightforward shift was to make a table in a document or slide presentation with a row for each student to read. Each row was then color-coded to the selected student's color and words inputted to match the student's level of work within the area of focus. By utilizing a document or a slideshow program, a table can be shared with student devices or projected, and students can read the words in their assigned colors rather than presenting one word at a time via flashcard. Color-coded tables

can be used for phrases, sentences, and paragraphs as well, making it easier for the tutor to differentiate and not have to manage piles of cards. Additionally, the tutor can print out the table and mark errors for data tracking instead of trying to sort flashcards into relevant accuracy piles for each student in a group drill.

To further engagement and student sample collection, the tables can be exported as a PDF or with a screenshot and brought into Classkick. Classkick is a whiteboard-style educational technology tool that provides a blank canvas for building activities through text, voice, drawing, and images (see Figure 1). With the table being added to a Classkick slide, students are able to record themselves reading their assigned words. This eliminates the downtime for having one student reading at a time, helps those who don't like reading in front of others, and keeps the recording for review later or for sharing with parents. Classkick activities are shared to students via a code, so the tutor could also make different lessons for individual students or groups of students to be completed simultaneously.

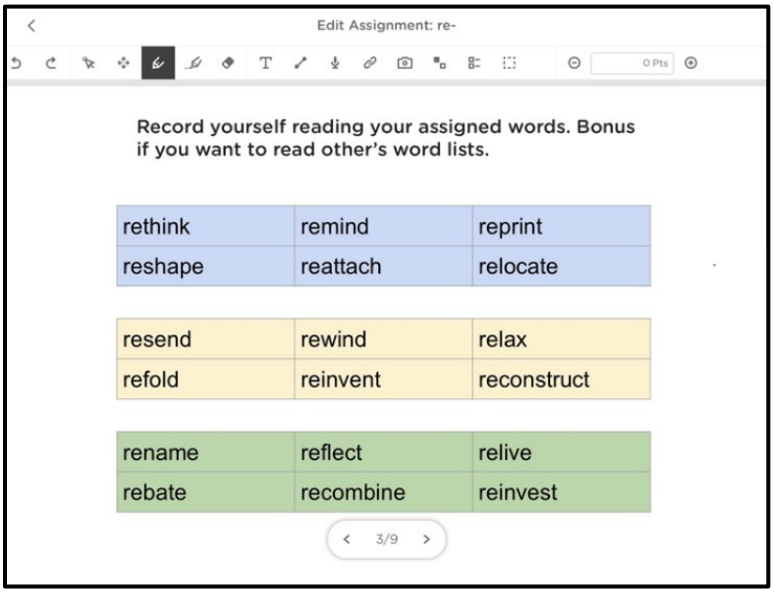

Figure 1: Example of colored coded tables made in a document, brought into Classkick.

Fluency

Assessing fluency has always been a task with its own challenges. Traditionally, this has been done as a one-to-one task, with the student reading aloud and the teacher with a clipboard, a copy of the text, and a stopwatch, trying to keep a running record. One difficulty is trying to accurately document errors made. Another is keeping examples of the student's reading for future review. A final challenge is what the other students are doing while the teacher is working with one student.

Fluency Tutor from TextHelp works within the Chrome environment, allowing educators to assign passages, and have students record and be provided feedback. An alternative that is web-based and can work on multiple platforms is Flipgrid, a video-based learning tool. The benefits of this educational technology positively impacted fluency for students at The Southport School (TSS). Through the use of

Flipgrid, students could simultaneously record themselves in privacy. As the teacher, I could review the recording as many times as needed and share with parents at conferencing. An unintended benefit was that students could hear themselves reading. At TSS, we found that when students listened to themselves reading aloud, they were better able to identify their own strengths and weaknesses. This led to significant improvements in fluency. Teachers reported that during informal assessments, they documented fewer errors and better prosody. In my classroom, students would review a passage as a class, then record themselves once a week for three consecutive weeks. They practiced during the week and then reviewed each previous recording to identify how they had improved as well as areas to continue working on, using a rubric. Additional tools that record audio to capture student reading include Classkick and Apple Pages and Keynote.

Spelling

When doing spelling practice, some students need words repeated due to auditory processing, working memory, attention, or other learning differences. Classkick can provide some solutions. With this educational technology tool, an educator can record themselves reading a word on each slide, and the student then can type or write the word on those slides. Students are able to listen to the word as many times as needed and work through the task at their own pace. The teacher, on their own device and in real time, can see each student's work as they progress. In doing so, the teacher can provide immediate feedback, as well as determine various stopping points as needed for individual students. This benefits slower processors who may be only able to complete 7 words, while another student could complete 15. Different sets can be made to differentiate words, and all students can be working on the task at the same time. One consideration is that if a student has word prediction available on their device, it is important to ensure that it is turned off before completing a spelling task. In true Structured Literacy™, handwritten words would be the ideal modality; however, given the co-morbidity of other disabilities such as dysgraphia, typing is the more accessible format for students to participate in encoding activities.

Contextual Reading

Contextual reading is also a key component of Structured Literacy™ Instruction. However, students' decoding levels may not be commensurate with their comprehension and interest levels. Educational technology tools such as Newsela, Freckle, and Rewordify can provide content sources for reading that can meet students' interests, while differentiating wording and vocabulary to meet decoding needs. Reading passages can be modified to meet each student's needs while allowing for all to participate in the discussion, because the essence of the article stays the same.

While not directly part of a linguistic lesson, having students read independently continues to support decoding skills, comprehension, and building vocabulary. Students who struggle with reading text often avoid any task of reading. Presenting this task for pleasure in auditory format can foster a joy of reading through an accessible format. This is not cheating (Wood, Moxley, Tighe, & Wagner, 2018)! When the goal is reading for understanding, material should be presented in a way that fosters accessibility. For those working to build decoding skills, traditional or eye reading is a challenge, while ear reading or the use of audiobooks or text-to-speech can open the door to the information, stories, and adventures. Think

of the growth of audiobooks and podcasts; the world is embracing the engagement of our ears (Deniz et al., 2019). For those with print disabilities, two resources available are Learning Ally and Bookshare. Both have accessible texts that are available at low or no cost when documentation of a print disability is provided. Both work on a laptop or Chromebook browser. Learning Ally has its own iOS app, and Bookshare relies on third-party apps such as Voice Dream Reader or Dolphin Easy Reader. Voice Dream additionally has a scanner app allows the user to scan paper, and using optical character recognition, makes the paper accessible. The document can be exported to the Voice Dream Reader app to be read at another time or for repeated readings.

Summary

The growth of the implementation of Structured Literacy™ Instruction in schools is encouraging. Through the use of educational technology, educators can address some of the challenges related to utilizing this practice with small groups, easily address differentiation, and also gain documented examples of student work to demonstrate growth. Additionally, students can learn how educational technology can be an effective tool for access and engagement.

Declarations

This content is solely the responsibility of the author(s) and does not necessarily represent the official views of ATIA. No financial disclosures and no non-financial disclosures were reported by the author(s) of this paper.

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