

Beyond the Sticky Note and Venn Diagram: Comprehension Strategies for 21st-Century Schools

*If we teach today as we taught yesterday,
We rob our children of tomorrow.*
—(Dewey, 1944, p.167)

There is a vast difference between the ways students read, write, create, and think and the ways in which they are required to do so in traditional schools. When is the last time you saw a teenager packing sticky notes or filling in a Venn diagram outside of class? We are coming to know more and more about “out of school” literacies (Hull & Schultz, 2001), many of which involve new technologies and the ways in which we can integrate them in the school curriculum. Blended learning integrates into classrooms the 21st-century instructional models that include digital content.

Students engage in a variety of online activities that might include taking virtual field trips, reading digital books, learning from video games, and taking part in inquiry-based explorations (McLester, 2011). The true benefit of a blended model is that it is “student-centered” (Nolan, Preston, & Finkelstein, 2012, p. 44). Online space has the potential to empower students to become active participants in their learning process (Tucker & Umphrey, 2013).

However, for technology to be transformative, online space must be used for more than simply disseminating and collecting information.

Students must be active in their meaning-making processes (Tucker & Umphrey, 2013), and teachers must challenge students through assignments and methods. The purpose of this article is to demonstrate how to do just that and to explore why we should facilitate active meaning making and support reading comprehension virtually.

There has been a great deal of emphasis over the years on reading strategy instruction. We know the use of strategies is key to students being able to read well, and we want students to utilize comprehension-oriented cognitive reading strategies that include activating prior knowledge, making predictions, generating questions, constructing mental images, summarizing, and analyzing structures (Pressley, 2006). But how might we facilitate such active meaning making online?

A teacher who blends online work with in-class interactions needs resources to design lessons that begin in class and extend online. In this article, we present a variety of free or inexpensive resources that we have used to deepen student comprehension and support blended learning in an English I classroom. At our suburban school, approximately 1,500 students are issued a Chromebook and have access to iPads, both of which support the use of the types of applications mentioned previously.

For purposes of this article, “we” comprise an English teacher/literacy coach, a school instructional technology specialist, and an English/literacy professor who joined forces to experiment

with strategic teaching for 21st-century schools. In the sections that follow, we offer digital applications used to guide students as they summarized, visualized, and questioned complex text; in addition, we consider how the use of 21st-century strategies benefitted student comprehension.

Summarizing with Newspaper Generators

Although students are barraged with information in 140 characters or fewer outside of school, we

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have found they still have difficulty distilling information. Berke and Woodland (1995) indicate that “no greater challenge to the intellect and no more accurate test of understanding exist than the ability to contemplate an idea and then restate it briefly in your own words”

(p. 370). The process of summarizing challenges students to recap, limit, and organize ideas drawn from text. A summary reveals what students take away from a reading, offering teachers insight into their focus and knowledge of details as well as the relationships between them. The importance of summary is reflected in The College and Career Readiness Anchor Standards for Reading, which state that students must understand and be able to summarize key supporting details and ideas.

To simultaneously deepen student comprehension while practicing this explanatory text structure, we assigned students a scene from *Romeo and Juliet* to summarize in approximately 200–250 words, including at least one direct quote. Students then created a headline and newspaper article from their summary (see Fig. 1). Students used Chromebooks to access one of two websites that generate newspapers based on the text they input. Locsei’s newspaper gen-

erator (<http://www.homemade-gifts-made-easy.com/newspaper-generator.html>) is a free online generator students can use to upload writing and one image. The generator produces a full-size (8½ x 11) mock newspaper front page with text and image as a PDF. Alternatively, Fodey.com’s newspaper generator (<http://www.fodey.com/generators/newspaper/snippet.asp>) is part of an entire suite of entertaining generators that include talking tomatoes and clapperboards. The application may be a better choice for more reluctant writers as it allows for approximately 65 words. The finished product can be downloaded as a JPEG. When they’re finished, students can publish and share their newspapers, labeled by scene, to a class website.

The newspaper summaries demonstrate how students were able to construct meaning from a text despite possible language barriers by using note-taking, questioning, and research skills. Their comprehension of the text made it possible for them to participate in an act of reciprocal teaching as they posted the summaries—study aids written authentically in student-friendly language—to a central website. The summaries reveal that students were able to access the text with relative ease, which enabled the teacher to scaffold them to more critical thinking—a segue to their next assignment of constructing an argument as to whether *Romeo and Juliet* is truly a love story. Many students reported that if they had difficulty understanding a scene while writing, they would access the site rather than turn to prepackaged materials.

Other digital resources to foster précis include two iPad apps, Puppet Pals and Sock Puppets, which are free from iTunes. With Puppet Pals, students can open the apps and choose a stock character and a backdrop. Next, users select a background and then click the Record button to narrate. When the video is complete, it can be saved to the iPad for sharing. Students can also animate their own photos and add their own backdrops by purchasing the Director’s Pass for \$2.99. Sock Puppets functions in a similar way. Students choose their characters, backdrop, and

The Verona Gazette

28 MAY 2013

Montague and Capulet Feuding Continues!

By TIANNA MYERS



Reuters

International Moose Count Underway

By BOB O'BOBSTON

From ancient grudge break to new mutiny, where civil blood makes civil hands unclean. These words rang true yesterday evening as yet another feud broke out between the Montague and Capulet families. These two families, of similar social classes, have allegedly been ancient enemies ever since trading deals between the two went bad. The peaceful city of Verona has turned into a bloodbath for all of its citizens, even those not involved in the feud. The fight yesterday evening allegedly started after a servant from the Montague home bite his thumb at a servant from the Capulet home. The two men drew their swords and the vicious duel began. No one was killed but both men were badly injured. Officials even say that an innocent man was dragged into the commotion and badly injured as well. However, each family has a child that is of marrying age. The Capulets have a daughter named Juliet and the Montagues a son named Romeo. Hopefully this new generation of Montagues and Capulets can eliminate this vile fighting. There may even be a love interest between the Capulet and Montague children which could ultimately lead to not only tragic deaths in both families, but also the end of this ongoing feud and finally bring peace. This will inevitably leave Verona, Italy the safe place it once was.

The UN-sponsored International Moose Census got off to a flying start today with hopes for an increase in the worldwide moose population compared to last year's disappointing figures. Among the traditional early reporters were Egypt, returning figures of six moose, a twenty percent increase on 2011's figures of five, and Uruguay whose moose population remains stable at eleven.

According to Robbie McRobson, head of the UN Moose Preservation Council, worldwide moose numbers are expected to grow markedly on last year due to the traditional moose strongholds of Canada and the United States, with the larger developing moose ecologies also poised to make gains. The largest percentage increase in moose will likely come from China", says McRobson, "The Chinese government has invested heavily in moose infrastructure over the past decade, and their commitment to macrofauna is beginning to pay dividends". Since 2004 China has expanded moose pasture from 1.5 of arable land to nearly 3.648 and moose numbers are expected to rise to 60,000 making China a net moose exporter for the first time. This is good news for neighbouring Mongolia, a barren moose-wasteland whose

inhabitants nonetheless have an insatiable desire for the creatures. The increase in Beijing-Ulanbataar trade is anticipated to relieve pressure on the relatively strained Russian suppliers, but increase Mongolia's imbalance of trade with its larger neighbour.

Historically the only competitor to China in the far eastern moose markets has been Singapore but the tiny island nation is set to report a net loss, expecting a decrease of more than five percent on last year's 50,000 moose counted. The head of Singapore's Agency for Agriculture, Jing-Feng Lau, explained to an incredulous Singaporean parliament yesterday that bad weather had contributed to this season's poor showing, most notably when a cargo of 150 moose were swept out into the Indian ocean in a monsoon.

Yet again the global demand for moose will be met largely by the US and Canada. The recession-hit States is taking comfort in its moose growth figures with gross production expected to break 700,000 and net exports to grow by 2. The worldwide dominance of Canada shows no signs of abating though with this year's moose population expected to match last year's record figures of one hundred million billion.

Europe's rise as an international moose power will slow slightly this year as a response to the European Union's move towards standardising the European moose. Stringent quality controls are holding back the development of the eastern european populations compared to last year when they contributed significantly to europe's strong growth figures. Norway, which is not an EU member but has observer status, strengthened in numbers relative to the Euro area with numbers of Norwegian moose, known locally as elk" expected to rise for the tenth consecutive year, particularly thanks to a strong showing in the last quarter.

As moose season reaches its close, researchers world wide are turning to

Figure 1.

props. Of course, all the characters are sock puppets, and backgrounds range from a messy bedroom to outer space. When the user presses the Record button, the sock puppets move as the speaker speaks. When the video is complete, the student may upload it to YouTube or save it to the app.

If iPads are not available, VoiceThread provides a means for students to summarize verbally. VoiceThread (<https://voicethread.com/>) is completely Web-based and free. Students need only a microphone and Internet access. After creating a VoiceThread account, students can upload a document, image, or video. By clicking the Comment button, users can narrate the image or document. When finished, students title the piece and click Share to allow others to view and comment. The company also offers a free iPad app.

Using online newspaper tools as a summary strategy provides a more authentic experience for student learning. The format is one they experience in everyday life while also emphasizing a 21st-century workplace skill.

Visualizing with Comic Book Apps

Reading is seeing, Wilhelm (2004) tells us. Ultimately, comprehending text relies on one's ability to create images, story worlds, and mental models while reading. As teachers, we must foster visualization, guiding students as they tap into and create visual experiences while transacting with text.

As we were reading *The Strange Case of Dr. Jekyll and Mr. Hyde* (Stevenson, 1991), we wanted students to “see” characters, plot, and settings, and we wanted to peek into their visual meaning-making processes. Using their imaginations, how would students picture people, places, and events? How could they share their mental pictures with others? We asked students to create six-panel comic strips featuring quotes from the novel, coupled with images, to represent their understandings of the text. The class had previously hypothesized that a major theme of the novel was the essential nature of man; with that context in mind, they debated the whether most

CONNECTIONS FROM READWRITETHINK

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ReadWriteThink.org offers dozens of online interactive tools and mobile apps that can be used to assist students with their 21st-century comprehension:

- Trading Cards (<http://www.readwritethink.org/classroom-resources/mobile-apps/trading-cards-30922.html>): Invigorate students' writing with an interactive tool that allows them to demonstrate their comprehension using a mobile app.
- Printing Press (<http://www.readwritethink.org/classroom-resources/student-interactives/printing-press-30036.html>): The interactive Printing Press is designed to assist students in creating newspapers, brochures, and flyers.
- K-W-L Creator—ReadWriteThink (<http://www.readwritethink.org/classroom-resources/student-interactives/creator-30846.html>): This tool allows students to create an online K-W-L chart. Saving capability makes it easy for them to start the chart before reading and then return to it to reflect on what they learned.
- Cube Creator (<http://www.readwritethink.org/classroom-resources/student-interactives/cube-creator-30850.html>): The interactive Cube Creator helps students identify and summarize key elements. It can be used as a prewriting or postreading activity.

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people, left to their own devices, would choose to fulfill personal desires rather than concern themselves with the general good of humankind.

Using a class set of iPads and a comic book creation app called ComicBook!, students brought their artistic talent and ideas to life. ComicBook! has a one-time \$1.99 download fee in iTunes per account and enables students to create multipanel comic strips with customizable speech bubbles, text, filters, and stamps. Students can upload images from other sites or create their own images to add to the panels. Students used the iPad camera and Skitch, a drawing and photo marking app, and a collage app called Pic Stitch to create the right images before uploading them to the comic panels. Both apps are free from iTunes. Once the images were uploaded, students could add filters to create the proper tone in sync with their vision. Students published finished comic strips on a Google site so that everyone could view their work (see Fig. 2).

The students' creations revealed a deep understanding of the complexity of human nature. As one student wrote: "We are all Jekylls trying to control our Hydes." Students were able to distill key scenes and text to develop an argument that supported their evaluation. They were also able to use visual methods to portray that argument, which required a deeper level of cognitive development as they made choices in shading and graphic representation to display their understandings.

If iPads are unavailable or to explore other apps that can be used to foster visualization, students may create comics with Web-based applications such as Make Beliefs Comix (<http://www.makebeliefscomix.com/>) or Pixton (<http://www.pixton.com/>). Make Beliefs Comix is simple to use and draws from stock characters and scenes. Students can select how many panels they will use, the backgrounds, and the characters they want to place. After adding speech bubbles and titles, they may print or email the completed comics to others. There is no account to create, but an email address is required to share content with others.

Students must create an account or use a Google account to sign in to Pixton. The basic Pixton for Fun account is free, while the Pixton for Schools account may be purchased in the Edmodo app store. Students can use Pixton customizable characters or upload original images for their comics with the free Pixton+ account. It allows customization in a nearly endless array of character modifications that range from hair color to skin color to costuming and more. When comics are complete, students may share them via a link.

Visualizing with comic book apps is particularly effective for teachers who wish to differentiate instruction as they encourage us to honor the multiple modalities of learning that students bring to the classroom by interweaving technology, visual arts, and literacy.



Figure 2.

Questioning through Google Docs

Too often, it is the teacher's questions that get answered—or go unanswered. Instead, students must ultimately be the ones who are wondering, inquiring about, and interrogating text. Tovani (2000) reminds us that readers who ask questions assume responsibility for learning and improve comprehension by interacting with text, by motivating themselves to read, by clarifying information within the text, and by inferring beyond the literal meaning. Our students had lots of questions while reading *Romeo and Juliet*, and we were determined to create a virtual space where they could address questions and seek answers.

Act III SCENE IV. A street.

ROMEO

Go to; I say you shall.

Nurse

This afternoon, sir? well, she shall be there.

ROMEO

And stay, good nurse, behind the abbey wall:
Within this hour my man shall be with thee
And bring thee cords made like a tackled stair;
Which to the high top-gallant of my joy
Must be my convoy in the secret night.
Farewell; be trusty, and I'll quit thy pains:
Farewell; commend me to thy mistress.

Nurse

Now God in heaven bless thee! Hark you, sir.

ROMEO

What say'st thou, my dear nurse?

Nurse

Is your man secret? Did you ne'er hear say,
Two may keep counsel, putting one away?

ROMEO

I warrant thee, my man's as true as steel.

NURSE

Well, sir; my mistress is the sweetest lady--Lord,
Lord! when 'twas a little prating thing--O, there
is a nobleman in town, one Paris, that would fain
lay knife aboard; but she, good soul, had as lief
see a toad, a very toad, as see him. I anger her
sometimes and tell her that Paris is the properer
man; but, I'll warrant you, when I say so, she looks
as pale as any clout in the versal world. Doth not
rosemary and Romeo begin both with a letter?

ROMEO

Ay, nurse; what of that? both with an R.

Nurse

Ah, mocker! that's the dog's name; R is for
the--No; I know it begins with some other
letter--and she hath the prettiest sententious of
it, of you and rosemary, that it would do you good
to hear it.

ROMEO

Commend me to thy lady.

Comment [1]: 10004137:
The Nurse prefers Paris for Juliet rather than Romeo, but I like how she helps Romeo anyway because she knows that he makes Juliet happy.

We also wanted to gather insight into students' interactions with the text: How and what did they question as they read? Where did they search for the answers to these questions, if at all? We wanted to find a tool that would help students investigate their own reading strategies without getting in the way of the reading. Because our school district adopted Google Apps for education, each student has access to a Gmail account, which includes a suite of tools in his or her Google Drive. The Google Documents tool is a word-processing application that makes it possible to comment collaboratively. Recently, Google has built in the Research tool for searching and citing within a document without having to open a tab. The various tools make interacting with the text seamless.

We began by discussing how students make sense of what they read. In an effort to foster metacomprehension, we first questioned them about their meaning-making processes. Do they underline? Do they look up words they are unfamiliar with? Do they make notes in the margins? We then extended the discussion online, utilizing Google Docs for students to create what we called a digital conversation with the text. They copied and pasted text from their selected scene into a Google document. Next, they chronicled their internal conversation with the text¹. If they were unsure of the meaning of a word, they could not only look up the definition, they could also view an image. Each student was challenged to ask two questions, make five comments, and research two aspects of a chosen scene. When their work was completed, students posted and published the conversation to a Google website (see Fig. 3).

1. To access the Research tool, open a Google document and go to Tools>Research. The Research box will open on the right of the screen, and users can search everything within the document, e.g., images, scholar, quotes, and the dictionary. Students may also cite the sources in MLA, APA, or Chicago style by tapping below the source and choosing between the options to cite as a footnote or to insert the citation within the text. To access the Comment feature, highlight the text and then click on Insert>Comment.

Figure 3.

Students reported that their digital conversations prompted a deeper understanding of the text. First, the act of engaging in online questioning required them to slow down and read for meaning, an unintended benefit. They also reported that doing so encouraged them to research aspects of the text they otherwise would have skipped over, possibly losing meaning in the process. In an age when we are increasingly able to find online versions of texts, transferring text to Google Docs allows students to utilize a built-in research tool that provides them with in-depth information with just the click of a button. Because students were able to find such references easily and assimilate them as part of their understanding of the text, we saw them asking more analytical questions about character motivations and ongoing themes.

One example involves a student who was working with Act 3, Scene 5. She commented, “The Nurse prefers Paris for Juliet rather than Romeo, but I like how she helps Romeo anyway because she knows that he makes Juliet happy.” The student’s comment shows she understood the nurse’s motivation—to see Juliet content with her life. This strategy made it possible for students to clear roadblocks from their minds, thereby opening a path for deeper thinking. They also self-reported that the effort was worth their time and would be a strategy they wanted to use in the future.

Applications such as Stixy or Lino can help visual learners question text. Both Stixy (<http://www.stixy.com/>) and Lino (<http://en.linoit.com/>) can be used to create boards for posting messages, images, documents, and lists. Teachers can paste in quotes from a text and ask students to post questions. Both sites require each user to set up an account, but there is no charge (and Lino also has an iPad app). Another option for students is ifaketext (<http://ifaketext.com/>), which they can use to create a question-and-answer conversation. They can then save the conversation as an image for sharing.

Thinglink (www.thinglink.com) makes it possible for visually oriented students to link to a

website, upload an image, or import images from Flickr. They can then bookmark exact points on the image and key in notes at these hot spots. Students can use this app by taking a screen shot of the text they are annotating. They can then upload that text as an image and click where they want to add their ideas. They can link to other websites or add their own ideas as pop-up notes. Thinglink is free and Web-based. Finished Thinglink work can be shared via a link or embedded directly in a blog.

Questioning is an important strategy we can foster in students to ensure the continuation of participatory democracy. As our culture becomes more digitized, it is essential that we teach students ways of both asking questions and seeking answers that are compatible with their lifestyles as digital natives.

As John Dewey (1944) reminds us, we cannot teach students in the same ways we were taught. Long gone are the days of Venn diagrams and sticky notes. Students must be equipped to predict, visualize, and question with tools that enable them to make sense quickly and digitally. Technology is readily available, making it possible for teachers to see their students make meaning of what they are reading. Technology is no longer supplementary in the language arts classroom; it is now essential to ensure understanding.

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