Every Voice Counts: Partnering Literature and LiveScribe

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“Class, please open your novels to page 154,” Mrs. Johnson instructs.

Backpacks zip open, pages turn, and soon twenty-two pairs of sixth grade eyes look up, awaiting further instruction.

“Let’s talk about what’s going on in this part of the book. What do we think Steven, the main character, means when he says, ‘Being relieved is the only thing I regret?’”

Blank stares. One girl looks down again at the page, fervently studying the words, hoping to find the answer. Other students look around, hoping a classmate has the answer.

“Any ideas? Why would Steven regret feeling relief about his brother’s situation?”

The room is silent, and not a single hand goes up, an unusual occurrence for this class of students. Armed with the knowledge that every student had really read the material, Mrs. Johnson struggles, wondering why her students hesitated to respond and discuss questions about this novel.

EVERY VOICE COUNTS

Oftentimes, new sixth graders are unfamiliar with the literary discussion model used in secondary classrooms. Fresh out of elementary school, they may be hesitant to speak up in front of their peers or share their ideas. Some sixth graders find themselves unarmcd with the necessary skills and tools to go beyond literal interpretations of a text. To teach and facilitate higher-order thinking within class discussions, the teacher must implement techniques that move students beyond the “knowledge” and “comprehension” levels of Bloom’s Taxonomy. One strategy we have successfully used to encourage higher-level thinking is collaborative learning within small groups, using the Livescribe Smartpen.

Implementing technology in the classroom motivates students to focus their attention and stay on task. Technology, when approached with a constructivist philosophy, can also be effective when evaluating students through authentic assessment. This study focuses on using the Livescribe smart pen to collect data from student conversations in a constructivist classroom in order to monitor student progress as it occurs and to collect information to be analyzed at a later date.

TECHNOLOGY AND ASSESSMENT

Educators are embracing technology as a tool to make assessment more feasible and effective (Jonassen, Howland, Marra, & Crismond, 2008). While technology tools have the power to engage students in their learning, these tools also simultaneously offer the teacher an efficient way to collect assessment data: “Beyond the simple fact that technology can make assessment data easier to manage, it may also allow teachers to assess more frequently and provide more and better feedback to learners to improve their performance” (Jonassen et al., 2008, p. 219). When technology tools are used for formative assessment, they do not engulf the teacher with an overwhelming amount of information. Instead, technology tools
should be used to collect data with the goal of figuring out how well students understand the concept at hand. When selecting technology tools, teachers should keep in mind accessibility, flexibility, and user-friendliness, as well as the goals of assessment (Cambre & Hawkes, 2004). Successful technology tools also support an array of learners with diverse needs.

TECHNOLOGY AND COLLABORATION

A constructivist approach to learning is rooted in conversation and collaboration among students and teachers, students and their peers, and teachers and their colleagues. According to D. Jonassen et al. (2008), “Conversation should be encouraged because it is the most natural way of meaning making” (p. 5). Collaboration requires learners to work together in groups in order to negotiate a common understanding of a task and strategies to accomplish their goals. Utilizing technology pulls all of this together by allowing students to “engage in active learning, constructive learning, intentional learning, authentic learning, and cooperative learning” (Jonassen, Peck, & Wilson, 1999, p. 218).

TECHNOLOGY, AUTHENTIC ASSESSMENT, AND THE CONSTRUCTIVIST CLASSROOM

According to Cambre and Hawkes (2004), a constructivist classroom’s goal is to promote complex learning goals by emphasizing problem solving that mirrors real-life situations: “Constructivism promotes student-centered learning activities by encouraging students to take a role in setting the goals for learning. Learning is relevant and fixed on real-world problems” (p. 50). In this student-centered setting, the focus shifts from the teacher as transmitter of knowledge to students claiming agency of their own education (Jonassen & Wilson, 1999). Aligned with constructivism is authentic assessment, which is defined by Fischer and King (1995) as “an inclusive term for alternative assessment methods that examine students’ ability to solve problems or perform tasks that closely resemble authentic situations” (p. 3). Students are active participants in the learning process. Their knowledge and skills are frequently documented and monitored by the teacher. Authentic assessment, Fischer and King (1995) say, is also a “positive and dynamic” mode of evaluation: “It is a system that documents what students can do; promotes the collaboration of teacher, student, and parent in the learning process; and places the ownership of learning on the student” (p. 33). Technology tools can be used to foster collaboration and conversation among students, as well as provide the teacher with an efficient way to collect data to monitor student progress immediately or over time through authentic assessments. After gathering this information, teachers are then better able to inform their instructional decisions, which according to Sindelar (2011) is the goal of planning an effective curriculum.

THE LIVESCRIIBE SMART PEN

The Livescribe smartpen is a hand-held device that records audio and anything the user writes or draws on special dot paper. Users can then tap anywhere on the paper that they have written on in order to hear the audio
associated with those notes. These notes can also be uploaded to a computer and converted into a pencast—a PDF document that plays back both audio and handwriting. According to the Livescribe website, the smartpen "provides a unique solution for student assessment because [it] captures a student's written and verbal work." This feature is beneficial for teachers because it allows them to "easily identify misconceptions and monitor student progress by capturing written and verbal work samples." Teachers can also collect data from the smartpen to create digital portfolios of student work. According to Livescribe, the smartpens "level the academic playing field" and can better accommodate English Language Learners and students with learning disabilities. This is because the smartpens reduce the anxiety triggered by note taking by simultaneously recording audio of important information that the student may have missed (Livescribe, 2012).

THE LIVESCRIBE PEN IN THE SIXTH GRADE CLASSROOM

During a four-week study of the young adult novel Drums, Girls, and Dangerous Pie by Jordan Sonnenblick, sixth graders discussed the novel and designed projects that demonstrated their understanding of what they read. This novel deals with themes of friendship, family, sacrifice, illness, and loss. While some of these topics are intense, the author approaches them
in a positive manner. The main character, Steven, is a lovable middle school boy whose thoughts are sincere and witty. At the start of the novel, Steven’s younger brother, Jeffrey, is diagnosed with leukemia. The novel follows the family on their struggle through fear, pain, denial, acceptance, emotional trauma, communication problems, and hope. The book ends with a message of encouragement and love. Reading Drums, Girls, and Dangerous Pie helped to introduce discussions of hardships in life, such as family discord and tensions, sickness, and loss/death. The book’s young adolescent narrator offers comic relief and a relatable way to approach difficult issues.

To motivate and engage students in discussions and analysis of the novel, we used learning stations facilitated by the Livescribe smartpen (See Appendix A). These learning centers employed Livescribe’s smartpens to involve every student in literature analysis discussions. The Livescribe centers allowed students to demonstrate comprehension, team collaboration skills, and the ability to analyze textual events and themes. Groups of five students of mixed ability levels rotated to different

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**Figure 2**

Livescribe Discussion Questions Example

*Q1* 

*Q2* 

*Q3* 

*Q4* 

*Q5* 

*Q6*

*Tap the center of the star for instructions.*

For digital (live) examples of the Livescribe figures included in this article, including voices, please visit http://www.shelbiewitte.com/livescribe-article-examples.html
stations every 10-15 minutes. Some of the most popular Livescribe centers were 1) vocabulary practice, (See Figure 1); 2) discussion questions (See Figure 2); 3) a cause and effect chart (See Figure 3); 4) a body map analyzing a character; and 5) a story map that had students identify and analyze tone, mood, conflicts, themes, and genres. Additionally, the teacher and student intern recorded the Socratic Circle Discussion (or Inside/Outside Circle Discussion) after the book was completed (See Figure 4).

While every student was technically required to speak into the smartpen, it was never necessary for the teacher to remind the class of that requirement. Each and every student was excited and engaged in the collaborative discussion at each station.

Students first listened to audio recordings of the instructions (pre-recorded by the teacher, accessed by touching the pen on a pre-drawn star on the dot paper) and followed along with written directions. Students then audio-recorded their answers, taking turns within their groups speaking into the pen to what their peers discussed. Students were asked to arrange their responses on the dot paper by drawing a dot, which would tie their group’s voices to that mark, in a pre-drawn square, which corresponded to their class period number.

At the end of the school day, the teacher uploaded the Livescribe pencasts, which contained student responses from all class periods in a one-page document (one-page per each station), to the computer. Livescribe pencasts are viewed as PDF documents with embedded audio. After uploading the pencasts, the teacher listened to samples from each period and from each station’s activity. While listening, the teacher took notes on the student work.

Students were also encouraged to be part of the review process. The teacher uploaded the pencasts to the class’s Edline webpage and showed students how to access and review the documents. Students could access the
pencasts from all class periods, and this enabled students to have a wider range of responses to review. Students wrote five things they learned from listening to another class’s responses on the pencasts for a homework assignment. In this way, students interacted with their peers’ work and reevaluated their own work. Students were more critical of their work than the teacher. They learned to work harder to record their best work for their peers to review.

The teacher notes served two purposes. The teacher could go back to the notes and the pencasts to determine which topics and skills students needed to review and which topics and skills students understood well. The teacher also listened for individual students or groups who may have struggled to understand or complete the assignment. An added benefit was that the pencasts showed which students needed reminders to stay on task.

In this unit, students were introduced to a new technology tool and asked to study material and produce work that demonstrated understanding. Listening and interacting with the Livescribe pen allowed students to work within a new media format and challenged them to think critically, not only to figure out how to use the pen, but also how to respond logically and coherently to the various tasks associated with it. The Livescribe pen challenged students to focus their attention in auditory, visual, and kinesthetic ways.

**Figure 4**
Livescribe Socratic Circle Discussion Assessment

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**DGDP Inside/Outside Discussion**

1. **Theme of DGDP?**
   - Responses:

2. **Major Events that Helped Steven Grow**
   - Responses:

3. **Steven and Jeffrey’s Relationship**
   - Responses:

4. **Alper Family Support System**
   - Responses:

5. **Steven Making Changes**
   - Responses:

6. **Steven’s Issues vs. Jeffrey’s?**

7. **Jeffrey as Narrator?**

8. **Building Tower**
REFERENCES


Appendix A

Livescribe!Center!Activity!

DISCUSSION!

Instructions:++

At this center, you will listen to questions and then discuss them as a group. To listen to a question, tap the pen on the dot next to the "Q." After your group has talked about the question, listen for the short answer in the bubble that corresponds with your period number. To record your answer, turn on the pen. Tap the record button, draw a small dot in the correct bubble, and begin speaking. When you are finished speaking, tap the stop button. Try to keep each audio recording to 15 seconds or less.

+ Q1!

- Q2!
Livescribe Center Activity!

**CHARACTER BODY MAP**

Instructions: At this center, your group will talk about character traits. Look at the Character Body Map drawing. With your group, talk about the character. What are his/her thoughts? Goals? Challenges faced in the story? Audio record a short answer in the box that corresponds with the body part. To record your answer, turn on the pen. Tap the record button, draw a small dot in the correct box, and begin speaking. When you are finished speaking, tap the stop button. Try to keep each audio recording to 10 seconds or less.

- **Head: Thoughts**
  - "I think...!"

- **Heart: Desires/Goals**
  - "I desire...!" "I want...!"

- **Arms: Achievements**
  - "I have accomplished...!"

- **Gut: Personal Beliefs/Values**
  - "I believe...!"

- **Legs: Obstacles/Challenge**
  - "I faced! or I overcame...!"

- **Feet: Geographic Location**
  - "I am from...!"
Livescribe! Center! Activity!

**Plot Diagram:**

Instructions: At this center, your group will think about the events in the text you are reading. Look at the Plot Diagram. With your group, talk about which parts of the story signify the exposition, rising action, climax, falling action, and resolution. Audio. Record! A short answer! in the box that corresponds with your period number. To record your answer, turn on the pen. Tap the record button, draw a small dot in the correct box, and begin speaking. When you are finished speaking, tap the stop button. Try to keep each audio recording to 10 seconds or less.

Exposition: +
The beginning; characters, setting, main conflict (problem).

Rising Action: +
How the conflict begins to develop; a building/increase of interest and suspense.

Climax: +
Turning point of the story, usually the most exciting or suspenseful part; the main character faces the conflict and changes/in some way.

Falling Action: +
Loose ends of the plot are tied up; the conflict(s) are resolved.

Resolution: +
The story comes to an end.
**Livescribe Center Activity!**

**VENN DIAGRAM!**

Instructions: At this center, your group will think about how the main character’s world compares to your world. Look at the Venn Diagram. In the left circle, you will talk about things that describe your world and are DIFFERENT from the main character(s). In the right circle, you will talk about things that describe the main character’s world and are DIFFERENT from yours. Where the circles intersect (or cross over each other), you will talk about how both your world and the main character’s world are SIMILAR. Audio: Record a short answer in each part of the Venn Diagram. To record your answer, turn on the pen. Tap the record button, draw a small dot! anywhere in the circle you are speaking about, and begin speaking. When you are finished speaking, tap the stop button. Try to keep each audio recording to 10 seconds or less.

Possible Topics to Compare and Contrast:

- Family/Friend/People Interactions
- Beliefs and Values
- Culture—Food, Music, Religion, Clothing, Language
- Setting—Climate, Location, Natural and Man-Made Surroundings
- Time Period
- Men vs. Women’s Role in Society
- Laws and Consequences
- Problems and Conflicts
- Education and School Systems
- Attitudes about People Who are Different
Livescribe! Center! Activity!

CHOOSING! CHIPS

Instructions:

With your group, you will be discussing the text you are reading in class. Take turns choosing a chip out of one of the small bags! Read the question on the chip aloud, and then say your answer and discuss it with your group. Then, the next person chooses a chip. Continue to do this until it is time to rotate to the next center.

Livescribe! Center! Activity!

VOCABULARY

Instructions:

At this center, you will demonstrate your understanding of vocabulary words from the text.

1.) Look at the underlined vocabulary words, and talk with your group about their definitions.
2.) When you are ready, audio-record each definition (in your own words) in the corresponding box.
3.) Next, for each word, come up with an original sentence that demonstrates its meaning. (Do not reuse examples from the book or other groups).
4.) Then, audio-record your original sentence in the corresponding box.

*To record your responses, turn on the pen. Tap the record button, draw a small dot in the correct box, and begin speaking. When you are finished speaking, tap the stop button. Try to keep each audio recording to 10 seconds or less!
Livescribe!Center!Activity!

Author’s!Purpose!Graphic!Organizer!

Instructions: At this slo center, your group will discuss the author’s purpose for writing. Look at the Graphic Organizer. With your group, discuss the items/ questions below. When you are ready, audio record a short answer in the various boxes that correspond with the author’s tone, attitude, purpose, etc. To record your answer, turn on the pen. Tap the record button, draw a small dot in the correct box, and begin speaking. When you are finished speaking, tap the stop button. Try to keep each audio recording to 10 seconds or less.

Mouth: Tone+
How does the author feel about the subject/topic? Use the tone words handout to choose the best word(s). Explain your answer.

Heart: Attitude+
What is the author’s attitude towards the topic? Does the author approve or disapprove? How do you know? Explain.

Right Arm: General Purpose+
What is the author’s general purpose for writing the text?

Left Arm: Specific Purpose+
What is the author’s specific purpose for writing the text?
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<th>POSITIVE TONE WORDS</th>
<th>NEUTRAL</th>
<th>NEGATIVE TONE WORDS</th>
</tr>
</thead>
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<td>commanding</td>
<td>angry</td>
</tr>
<tr>
<td>adoring</td>
<td>direct</td>
<td>hostile</td>
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<tr>
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<td>unbiased</td>
<td>annoyed</td>
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</table>
Livescribe!Center!Activity!

EVALUATING!NONFICTION!

Instructions:

At this Center, your group will be identifying the details and sources the author(s) include in the text. Talk about these with your group. Then, when you are ready, audio record your answers in the corresponding boxes. Each group will record and draw dots in their own table.

(This is a table) ![Table]

- In the DETAIL column, tap “record,” draw a dot, and speak about the detail. (A detail is a reason or fact that supports the topic.)
- In the SOURCE NAME column, tap “record,” draw a dot, and say the name of the source (for instance, “George Washington” or “Time Magazine”).
- In the SOURCE TYPE column, tap “record,” draw a dot, and say the type of the source (for instance, “interview” or “magazine”).
- In the RELEVANT TO TOPIC? WHY column, tap “record,” draw a dot, and talk about why or why not the detail is relevant (important, applicable, appropriate) to the text. In other words, is this detail the best choice for the author to include? How does it make the text stronger and more effective (understandable, believable, etc.)?
Livescribe!Center!Activity!

CAUSE!AND!EFFECT!

Instructions:+

At this center, you will be evaluating the causes and effects of events in the story. Cause and effect happens in every story, and in everyday life. A cause is something that makes something else happen; it is the event that happens first. An effect is what happens as a result of the cause; it's what happens second.!!

For example, a cause might be: "Sally studied hard for a test," and the effect would be: "Sally earned an A' on her test." +

Look at the Cause and Effect Chart. Tap the dot to listen to the cause for each number. Think about what the effect of that cause is. When you are ready, audio record yourself explaining that effect in the appropriate box.!!!

To record your answer, turn on the pen. Tap the record button, draw a small dot in the correct box, and begin speaking. When you are finished speaking, tap the stop button. Try to keep each audio recording to 45 seconds or less.!