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*Using Reading and Writing to Enhance
Your Agriculture Classroom*

We Are All English Teachers

by Gaea Hock

I have always enjoyed reading. I remember going to the community library and filling a little red wagon full of books. I eagerly looked through the Scholastic book catalogs and circled all the books I wanted to order. Participating in the Pizza Hut Book It! program guaranteed my family would eat out at least once a month. I continued my love of books throughout high school and into college. As a parent of a toddler and infant, my reading these days include nursery rhymes, Sarah Boynton books, and Disney stories. Installing a love of reading in my children is important and will benefit them for years to come.

Writing on the other hand was not something I remember with as much joy. Luckily, I grew up with two English teachers for parents who helped instill in me the skills necessary to be an efficient writer. (My sisters are both much more eloquent writers.) I often tell my undergraduate researchers that the more they read, the better they will be able to write. These two skills go hand-in-hand.

As a high school teacher, I incorporated reading and writing activities to help my students develop those skills. Reflecting back on those years, I know I could have been more purposeful with the tasks.

As a college professor, I integrate reading and writing strategies into lectures and assignments. I learned that I need to make the tasks purposeful and fulfill multiple goals. Several writing tasks are focused on students developing their lesson

planning and reflection skills. Others are to encourage them to complete the required reading.

Each year, I tell the student teaching interns, “while we are not the English teacher, we are all English teachers.” If they give a writing assignment, they need to require correct spelling and grammar. Essay and short answer questions on exams should be answered in complete sentences. Prepared Public Speaking and Agriscience Fair manuscripts need to be well written with correct use of APA to cite sources. These are just a few of the many ways we can complement and support the refinement of reading and writing skills in our agriculture courses.

As you work to keep up with all the challenges the COVID-19 pandemic has presented, keep in mind how you can help establish foundational skills (reading and writing) to help students be successful no matter their career choice. One example is from my father. After he retired as superintendent of schools he taught college English at several area community colleges. I remember talking to him about how he would get the “John Deere boys” interested in reading and writing papers in his English Composition 1 class. He modified the reading assignments to include Successful Farming magazines and allowed them to write papers based on their interests. What we do in our classrooms will help students connect concepts to real-life applications.

In this issue, teachers and professionals share their strategies and best practices for in-

creasing reading and writing in the agriculture classroom. I hope you enjoy reading the articles and think about how you help develop these skills in your own students. While you may not be the English teacher, you can still be a teacher of literacy skills.

A few writing tips:

- Use “who” when referring to a person/people.
- You can eliminate the word “that” from most sentences.
- Use the synonym option in Word to diversify your vocabulary.

APA 7th edition is now available. Make sure you update your resources to reflect the update.



*Dr. Gaea Hock is an Associate Professor of Agricultural Education at Kansas State University and Editor of **The Agricultural Education Magazine**.*

Using Reading and Writing to Enhance Your Agriculture Classroom

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Want to Hear a Secret?

by Laura Hasselquist

The most uncomfortable three hours of my life happened in the Tokyo airport about eight years ago. During that brief window of time, I was as close to illiterate as I have ever been in my life. It was awful. The signage was in Japanese with an occasional picture thrown in. Between pictures, observing the crowds, and asking a few questions I was able to find my way around. It was stressful, time consuming and made me ask: how many of my students experience this on a daily basis? Not being able to fully engage with the world around you is a terribly isolating experience.

When we think about students who might need literacy support, we often think of our English Language Learners and students with IEPs, but do we ever stop and think about how we can support literacy skills of all our students? Agriculture is a unique discipline and our students need to be shown how to read, write, speak, and listen within the agricultural context. The skills needed to read *To Kill a Mockingbird* are very different from the ones needed to read the Briggs & Stratton engine manual. Helping our students understand how to approach texts and communicate in the agriculture industry is vital.

As a young teacher, I did not see myself as a teacher of literacy. In my mind, teaching literacy skills was the English department's job, besides I didn't have time to read novels or grade long essays! I was incredibly naïve. Literacy in agriculture is having students read lab directions, create beef breed pre-

sentations, practice their fruit sales pitch, and listen to guest speakers. The secret is that every teacher uses literacy in their classrooms. Being a teacher of literacy does not mean including *more* reading and writing activities, its about making the most out of what you already do.

Literacy is everyone's job. Students will enter your classroom knowing how to read and write, but what they won't know is *how to read and write in agriculture*. Taking the time to pull back the curtain and help them identify what they need to look for is a great investment. Whether that is focusing on vocabulary words, discussing what they already know about a topic before a reading, or using sentence stems to get started on a writing assignment, it will make a difference. Students struggle with reading sometimes because they may not have a good grasp of the vocabulary or know what they are reading for. How often have you read a page and then had to go back and reread it because you can't remember it? Students experience the same thing too, except instead of rereading it, they have blank stares when you ask questions. Why not give them a key question before they start reading? Little things make a big difference when it comes to improving teaching and learning.



Throughout this issue you will find simple ways to use reading and writing to enhance your classroom practice. It can be as simple as discussing vocabulary with your students or as complex as a Build Your Own Textbook approach. However you decide to approach it, you are headed in the right direction!



Laura Hasselquist is an assistant professor of agricultural education in the School of Education, Counseling, and Human Development at South Dakota State University.

Frontloading Literacy: Strategies to Boost Comprehension

by Kellie Claffin

I remember sitting in my classroom dumbfounded and a bit ashamed. How had I been teaching for five years before realizing that my students didn't understand everything they read? I mean, I utilized a ton of literacy strategies and really tried to focus on my students reading and writing in agriculture. However, it wasn't until a cold winter day in northeast Wisconsin, when I convinced my small forestry class to read an article during a lesson on logging history, that I recognized my students were really, really good at pretending they understood everything we were reading.

As we read through the article, me reading out loud and the students following along, we would stop throughout and discuss. Fortunately, my students were comfortable enough to admit they didn't know a few of the words during one of these discussions. A confession which made all the difference for the lesson and my teaching practice. I had been missing an important part of literacy - making sure my students were prepared before reading.

According to Learned et al. (2011), "When students do not have the knowledge necessary to comprehend a particular text, such knowledge needs to be built; one cannot activate what is not there, and one cannot strategize about things one does not know" (p. 181). To increase student comprehension, whether they are reading an article, following directions during a lab, or using an instruction manual for a piece of equipment, as educators we need to help

them make connections. Connections to previous knowledge help narrow the gap between what students know, what they need to know, and what needs to be reinforced. For example, before a science-based lab activity, it is obviously important to make sure students recognize the types of equipment (e.g. pipet, graduated cylinder, compound microscope) and terms (e.g. catalyst, gauge, meniscus) before starting the activity.

An emphasis on *frontloading* provides a unique approach that occurs before reading/learning and addresses the knowledge demands by making connections, activating and sharing current knowledge, and asking questions (Buehl, 2013).

Types of Connections Buehl (2013) shares three types of connections students can make when reading or engaging in lessons to increase comprehension: text-to-self, text-to-text, and text-to-world. These connections should be modeled and used to stimulate student discussion and reflection as it relates to the goal of the lessons. Below are descriptions of each of the three types of connections and example prompts.

- Text-to-self connections encourage students to consider their own personal experiences.
- How does this text relate to my life?
- How is this different from my life?
- Text-to-text connections challenge students to draw on other readings to reinforce their knowledge.

- What else have I read that can help me understand this?
- Have I read something like this before?
- Text-to-work connections allow students to recall ideas about the topic from other sources, classes, or experiences.
- What have I heard about this before?
- How does this relate to the real world?

Strategies

The frontloading strategies listed below can be utilized in a range of different courses as a way to encourage comprehension. These strategies were taken from Buehl's (2013) book *Classroom Strategies for Interactive Learning* (check it out!). You may have utilized several of these ideas before, however they are incredibly helpful to use specifically for frontloading to assist students in making connections and activate prior knowledge.

Brainstorming

What is it: Students think about associations with the topic or word. Employing different ways of presenting brainstorms can also provide a useful framework for students. Students could create a word map or a list of words. Additionally, students could think of a word for each letter of the alphabet or a related word or phrase (e.g. agriculture, horticulture, etc.).

Why is it important: Through brainstorming, students can recall prior knowledge and ideas from their own life.

Example: When I taught a middle school exploratory agriculture class, I had my students brainstorm words that were related to agriculture for each letter of the alphabet. After they completed the task, our class discussion focused on what they already knew about agriculture and examples from their own experience before we defined the term.

Possible Sentences

What is it: After students are provided with a series of keywords and phrases, students rely on their prior knowledge to develop sentences using the words/phrases. You can provide guidance for this strategy by limiting the number of keywords to be used and/or how many sentences they should write. For example, you may ask students to write one sentence using at least three of the words/phrases provided.

Why is it important: This strategy allows students to investigate vocabulary and make predictions.

Example: For a lesson about habitats, my high school students created possible sentences with a vocabulary tic-tac-toe board. There were nine terms and students

were asked to write a sentence using three of the terms presented straight across, straight down, and diagonal. Our class discussion centered on defining terms, the connections between vocabulary words, as well as previous knowledge on habitats from other classes.

Anticipation Guides

What is it: Before sharing a reading (or video), students read a series of statements as identified by the teacher. For each statement, they select if they believe the statements to be true or false. After completing the reading, students then review and correct their answers if needed.

Why is it important: Not only does an anticipation guide encourage students to think of prior knowledge, it provokes interest and sets a purpose for the reading.

Example: I used an anticipation guide on the first day of class in my high school forestry class for an article on how the Forest Service saved baseball. Students were provided a list of statements, asked to check the ones they believed to be true, and then we read the article as a class. After completing the article, students revised their predictions on their handout as we discussed as a class.

As you incorporate these frontloading strategies to aid students in being prepared for learning, my most valuable piece of advice is to model the techniques for your students. When you ask them to make text-to-text connections, provide your own response. Before asking students to brainstorm using a specific technique, walk through an example show-

How the Forest Service Saved Baseball

Directions:

- Read the following statements concerning how the forest service saved baseball.
- Put a check next to each statement you believe to be true.
- Be prepared to support your views and share with other members of the class.

	1. Major League Baseball commissioned a \$500,000 investigation into finding out why bats were shattering.
	2. Under 500 bats shattered during 2008 MLB season.
	3. The United States Department of Agriculture was in charge of researching the cause.
	4. The type of wood in bats plays a major facture in the splitting of the wood bats.
	5. The cut of the grain did not play a major facture in the splitting of the wood bats.

casing your expectations, as well as the process. Additionally, talk to your students about the importance of making connections and drawing on prior knowledge before reading and why you are asking them to use the strategies. It will make the difference.

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Name: _____

HABITAT TIC TAC TOE

BIOME	COVER	ANNUAL
TERRESTRIAL	STRUCTURE	SIZE
SUCCESSION	LAYER	PATTERN

Sentence straight across:

Sentence straight down:

Sentence diagonal:

Literacy Strategies for Engaging Students

by Krista Pontius

Have you ever been told a story by someone and your response was, “HUH?” and then another person tells basically the same story, but emphasizes different phrases, uses more enlightened annunciation of speech and changes a few words, and suddenly the story makes perfect sense? Just like listening to a story from a confusing friend, our students frequently encounter text in our classrooms that feels distant and perplexing. As a result, our students simply do not understand what they are reading and therefore are not gaining an enriching educational experience. Unfortunately, students who struggle with reading, often mistakenly believe they are reading, when in fact, they are more often simply zoning out while looking at the words. As educators, our job is to be the friend who emphasizes different phrases and changes some of the words, therefore ensuring our students are not simply reading, but processing and synthesizing the text provided. One very successful method of accomplishing this task is by incorporating literacy strategies in our lesson plan-

ning. After leaving the National Agriscience Teacher Ambassador Academy in 2012, my quiver was full of literacy strategies, thanks to Dr. Laura Hasselquist, that I genuinely feel have transformed my effectiveness as an educator. Below are some of my favorite literacy strategies and how I have found success using them in my classroom:

Coding the Margins

When students read a passage, they markup the text with codes to help them comprehend the text. At the end of the page or reading selection, students meet with a partner (or in small groups) to talk about their reactions and understandings. It is helpful for students to compare their coding with a partner. The social interaction and discussion enhances understanding and provides an opportunity for reflective engage-

ment. You can choose what codes you prefer to use, here are the codes that I have found effective.

I already know this!
+ New Information
! WOW, this is interesting
? I don't understand

Directions

1. Give students an article to read.
2. Explain the symbols.
3. Follow with a class discussion.
4. Collect the articles and review to determine students' needs (Hasselquist).

Partner Highlighting has proven to be the most effective reading strategy in my classroom. This strategy gives students the opportunity to process the information individually and synthesize justification of significant ma-

Example:

Potato Chip Packaging Background

■ Rancidity occurs when the **lipids** or fats in particular foods undergo a chemical change when oxygen is added, also known as **oxidation**. Oxidation can cause some major sensory issues in food products including off-odors and off-flavors. Light, especially in the ultraviolet range, accelerates the oxidation process.

One way processors fight against oxidation is in how they package their product, many times using materials that exclude light, water vapor, and oxygen (all of which are known to speed up the process). When the products are packaged, the package is designed to both keep water vapor inside the bag in and the humidity on the outside out. **If the moisture level gets too high or too low, the product will spoil faster.** Since it would be too expensive for chips to be packaged in an oxygen-free environment, manufacturers have gotten creative. Usually, once the chips are in the snack bag, nitrogen is pumped into the package to push out the oxygen, and the bag is sealed.

Partner 1:

Partner 2:

terial in the reading with a partner.

Directions

1. Give students an article to read
2. Have them read it and highlight important information
3. Next, students need to get a partner who used a different color highlighter.
4. They need to exchange highlighters, but not papers
5. As a partner team, discuss what each person highlighted. If they didn't highlight the same sentences, they need to highlight it

in the new color. If both partners chose the same information, they need to place a star at the end of the sentence. (Hasselquist)

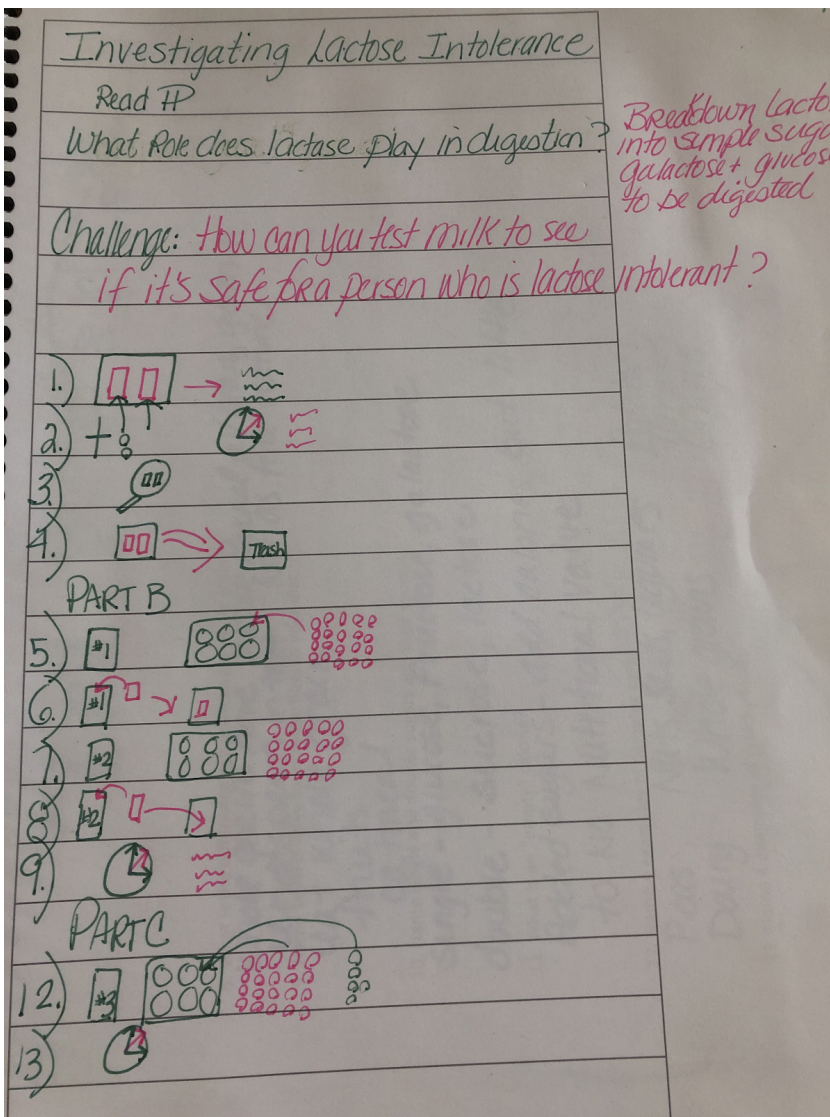
Directions Draw Out

As agricultural educators, many of our courses are full of engaging lab activities. Preparation of these activities takes a great deal of our time and resources. When these lab activities are not successful, due to students not comprehending the information, it is nothing short of discouraging. Using Directions Draw Out has helped my students to be

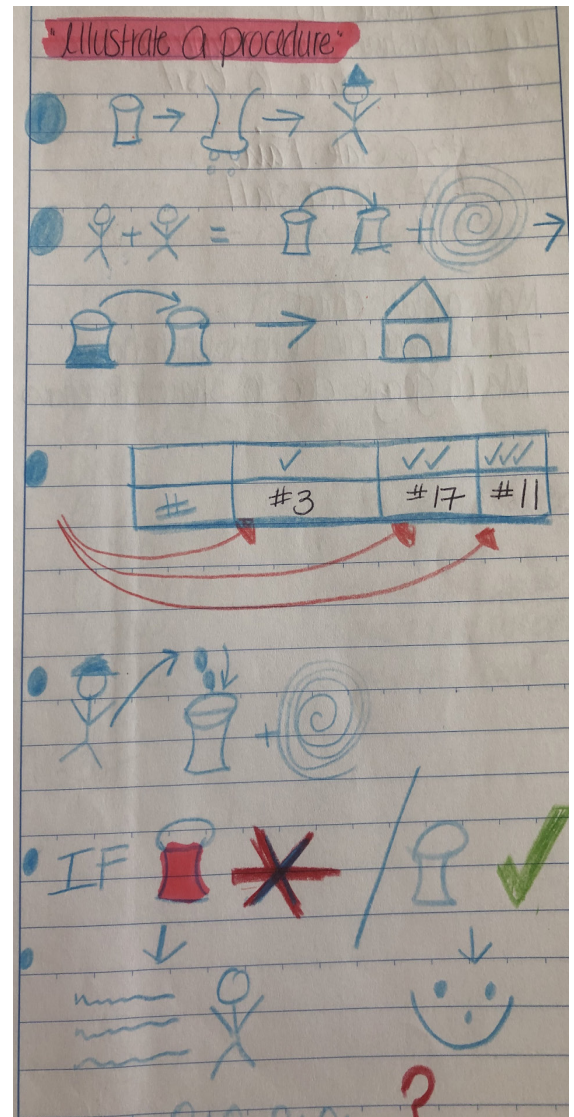
fully prepared for the laboratory activity, prior to gathering the materials! Here's how it works:

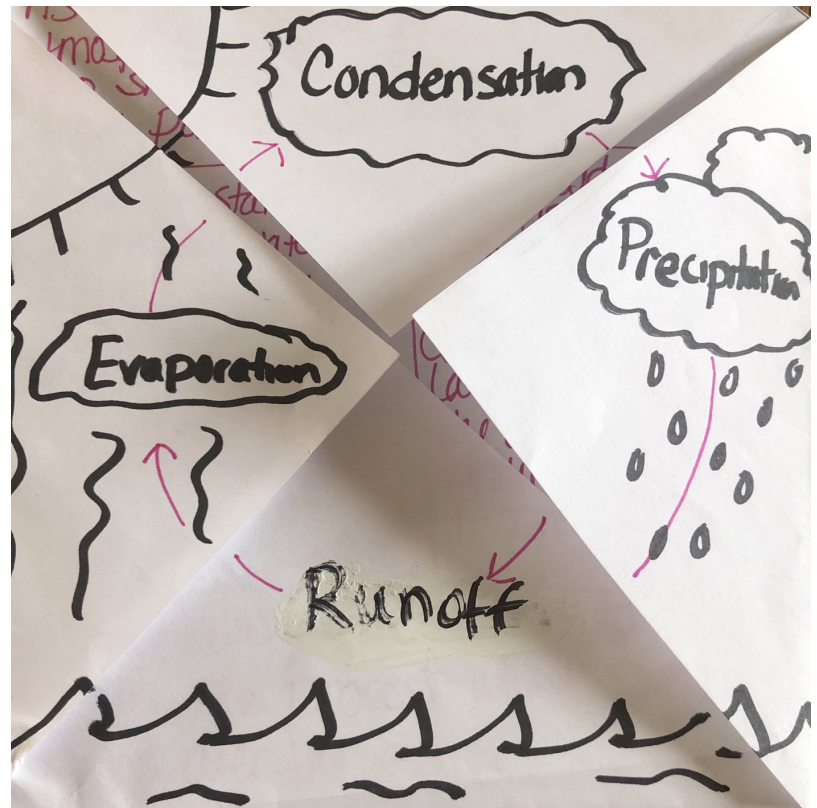
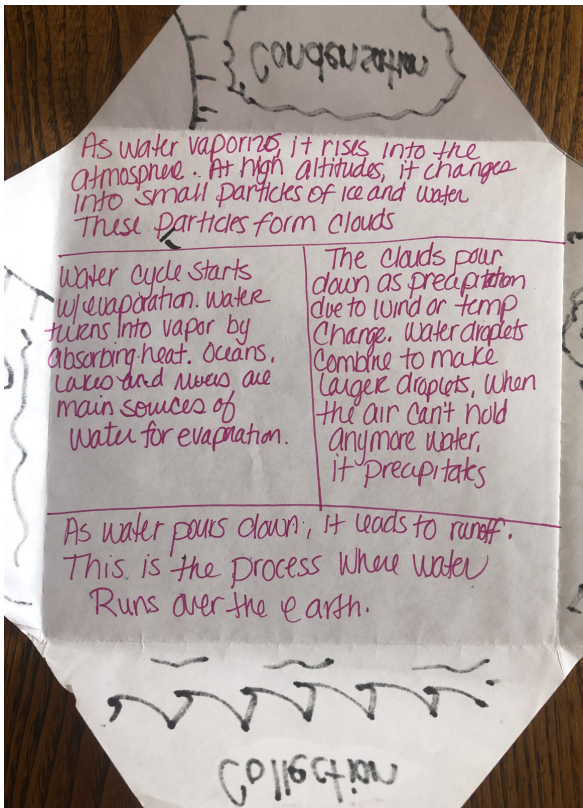
Directions

1. Give students the directions for the in-class activity.
2. The students are to draw each stop of the directions, they can use numbers, symbols, pictures, but no words.
3. With a partner, they should discuss their drawings, if they missed any key information, it should be added in a different color.



Breakdown Lactose into simple sugars Galactose + glucose to be digested





4. As a class, discuss each step of the directions to ensure the steps are properly covered (Hasselquist).

Foldables

Finally, the old saying that a picture is worth a thousand words gets new meaning when using foldables in a classroom. Foldables are a great way for learners to visualize and clarify concepts, particularly for visual learners. I strongly recommend picking up a copy of Dinah Zike’s *Notebook Foldables for Spirals, Binders, and Composition Books*. This is my go-to foldable resource! In the book, there are detailed instructions to find success with each foldable.

Directions for the Diamond foldable pictured:

1. Fold a square in half to form two crossing diagonal fold lines.
2. With the paper folded along

one of these fold lines, cut in from the fold along the perpendicular fold, stopping ½” from the point.

3. Place glue around the four outer edges of the foldable and glue it on a notebook page. After the glue has dried, cut along the inner fold lines to form four right triangle tabs. (Zike, 2008).

Improving literacy in our agricultural education classrooms is a win-win! We are winning as educators because our students becoming active participants in the content which makes our job much more enjoyable, but the most important winners are our students! We are no longer the confusing friend who is telling a story which makes no sense. Instead, our students are engaged and invested participants in the story we are telling, which ultimately takes their understand-

ing of the content to a new level!

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Reading Strategies from the CASE Files

by Jessie Lumpkins

Growing up in the 90s, there were two distinct types of kids: those with cable TV and those without. Growing up in an unincorporated town in rural northern middle Tennessee, you can guess which group I belonged to. We were too far from a city to have flashy, modern channels like Nickelodeon. Much of my entertainment came from the only hope us country kids had: PBS. On Saturday mornings before our parents were awake, my brother and I would watch Bob Ross turn a blank canvas to a masterpiece in only 30 minutes. Every weekday afternoon, Mr. Rogers would take us through his neighborhood. But the true shining star of this lineup was Reading Rainbow. LeVar Burton would cultivate my love of reading through virtual field trips and children-led review of popular books. Once I started school, I was surprised by classmates who complained about reading assignments; clearly, they didn't have the influence of my buddy LeVar. His gentle but engaging way of weaving the importance of reading into other skills and habits taught me that in life, reading isn't an option, but enjoying it can be.

After 10 years in the classroom, I've been exposed to other ways to incorporate the love and enjoyment of reading into agriculture curriculum. As a Dupont Agriscience Ambassador, my eyes were opened to the idea of reading strategies as tools for better comprehension (and enjoyment) of the material. It was when I

In life, reading isn't an option, but enjoying it can be.

became CASE certified that I began to fill my own toolbox with strategies for all types of learning objectives. My students became accustomed to making sense of a new topic by reading in new and engaging ways. CASE empowered me to pass the love and skill of reading on to my students, just like Reading Rainbow did for me.

Each summer, hundreds of teachers from across the United States attend 8 to 10 day professional development trainings called Institutes or BriefCASEs through CASE (Curriculum for Agricultural Science Education). The focus of these trainings are course-specific curriculum in 11 different areas, including Plant Science, Agricultural Mechanics, Animal Science, and more. Teachers walk away with 180 days of inquiry-based, scaffolded instructional materials. A bonus to the trainings are the interwoven value-added strategies for reading, grouping, purchasing, and organization.

These strategies, particularly reading strategies, are introduced while teachers have on their "student hat," meaning they are immersed in the activity, project, or problem as if they were a student. By approaching the written purpose or procedure with these tools, teachers understand the effectiveness of the technique better because they experienced them firsthand. Some Institutes or BriefCASEs make an effort to introduce a new strategy for each

activity, allowing teachers to pick and choose which tactic would work best for their students. By the last day, teacher binders contain a jubilee of sticky notes throughout, reminding them of a strategy used during training that will translate best to their students.

Three questions you may ask if you're new to reading strategies:

What is being read? CASE curriculum is structured to have an introductory purpose for the activity, project, or problem (APPs). This provides an excellent introduction to the day, and allows for a myriad of reading options. Each APP also contains a procedure for how to complete it. On a day that involves a more complex procedure, the strategy could be applied there. However, it doesn't take being CASE certified to apply these techniques. If your lesson lacks a literacy component, considering finding a short article, news story, or passage from a relevant book or blog that applies to the topic. Technical manuals are also a form of literacy, and we know there is no shortage of those in an agriculture classroom.

Where should my students complete these strategies? Assuming the assignment is one that your students will keep, it's helpful to write the strategy in the margins of that paper or on a sticky note so it can be used later when reviewing for assessments.

How do I introduce a strate-

gy? Much of this depends on your style. A quick and simple explanation of the strategy is a great start. Prep students for success by providing a time limit, and offering reminders. For example, “Today we’re going to read the purpose of this lesson, and circle any words you have never seen before. You have one minute. Go! Ten seconds left, be wrapping up and get ready to share with your elbow partner.”

While the intense nature of CASE training means it takes days to dive fully into the subject matter, the best thing about reading strategies is they’re grab and go. Here are some favorites that are sure to elevate the level of rigor and relevance of any literacy piece in your curriculum.

Ice Cream Cone: draw an ice cream cone, then divide the reading into the main idea (the cone), and the supporting topics (the ice cream scoops). A small detail or fact can be the cherry on top.

“I like this strategy because it is a visual as well as it forces you to think about the big idea (cone) as well the supporting details (ice cream scoops). The picture of your ice cream cone will stick with you through the Activity, Project, or Problem. Who doesn’t want to think about ice cream?” - *Jamie Christensen, CASE Master Teacher and agriculture instructor at Midland High School, Iowa.*

Create a Tweet/Hashtag: Synthesize the reading into a tweet (tweets are limited to 140 characters) and create a hashtag that encompasses the nature of the reading. For example, “Photosynthesis is essential for plant life and all life on earth. #plantsgottaeat”

“I like the summarize with a hashtag reading strategy the most



because student have to synthesize a paragraph or more and drill down to the one goal of the lesson or lab. They are usually super creative, and bring a touch of reality in relation to hashtags used on social media.” - *Rachel Scior, CASE Master Teacher and agriculture instructor at Westfall High School, Ohio*

Draw Like Family Circus: Students draw a one panel cartoon or single image that represents the reading.

“I like the draw it like family circus (one single image) of what the passage means. It helps the students to visualize the APP. We do a partner share then explain 2-3 outloud.” - *Emily Muller, CASE Master Teacher and agriculture instructor at Winters Mill High School, Maryland.*

Key Words: Circle, highlight, or underline the 5 most important words (amount can vary). Conduct a class discussion on those words and why they are the most important. An alternate option of this strategy is highlighting only

the verbs in a passage, which can help with a lesson that deals with new hands-on techniques or skills, like grafting or grooming. Another option is asking students to select any word they could not define without looking them up.

“This technique encourages students to follow along and stay engaged. It especially improves understanding of the ‘why’ and ‘what’ of assignments.” - *Gina Stewart, CASE certified agriculture teacher at Stewarts Creek High School, Tennessee.*

Some other easy-to-implement ideas include:

Absent Student: Summarize as if you were explaining the reading to an absent classmate.

Silent Roundtable: Students discuss the reading for a set amount of time. The teacher stays silent to encourage student-led discussion.

Act It Out: For instructions or lab procedures, select a student to act out the steps as the class reads them.

Read It Like: One student reads the passage out loud in a theatrical way. Roles could include reading it like a news anchor, a famous person, or reading it as if they're speaking to a 5 year old or their grandmother.

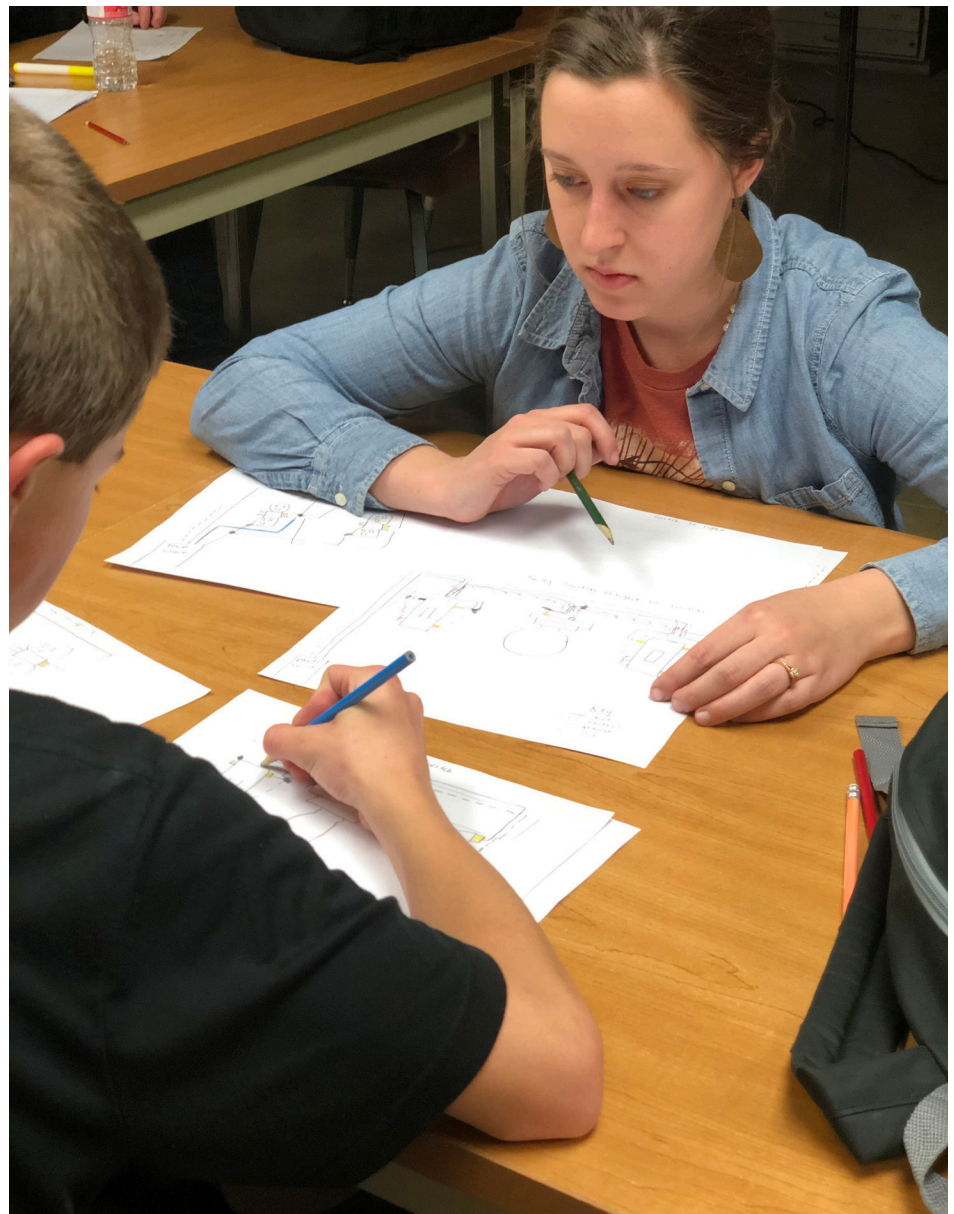
Divide and Conquer: Split up a large reading by assigning partners. One partner takes the first half of the passage, the other partner takes the second half. Once reading is completed, the partners summarize to each other.

What are some roadblocks to implementation?

"I'm already short on time. I don't have room to add more to class." A strategy may only take a few moments to implement. Should time allow, you can spend more or less time sharing results either as a class, partners, or in small groups. Strategies are the appetizer, and the lesson is the entrée!

"My students don't like reading." Many students say they don't like reading when the true issue could be a reading deficiency. No teacher wants to embarrass a student by putting their potential area of weakness on display. A survey at the beginning of the year asking for reading comfort level can give teachers a baseline for where each student is at regarding reading. For example, "Please rate your comfort regarding reading in front of the class on a scale from 1-5." From there, their skills can only improve by reading each day in their ag class.

"I don't even like to read." We can reframe our thinking to make reading another one of those life skills we pride ourselves on teaching as agriculture educators. Whether they come back to tell you or not, your students will

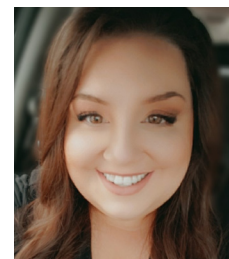


make their way in the world a little easier because their ag teacher showed them how reading will always be a part of their daily lives.

If you were a PBS kid like me, you know Mr. Burton would end each book recommendation with the same phrase. As you consider incorporating literacy strategies into your classroom, I'll echo his famous sentiment:

"But you don't have to take my word for it..."

Article photos provided by Gaea Hock, Kansas State University.



Jessie Lumpkins is the NAAE Program Manager for CASE Operations. Before working in this position, she spent ten years in the agriculture classroom working to promote diverse populations in agriculture education and FFA.

Reading for Reflection – The NAAE Virtual Book Club Experience

by Sarah Warren

Membership within the National Association of Agricultural Educators (NAAE) includes numerous benefits for the Ag Ed community. When life is not halted by a worldwide pandemic, we offer many opportunities to travel around the country, attending professional development programs and connecting with other agriculture teachers. Our programs are tailored to specific stages in the Ag Teacher Life Cycle, delivering content that is relevant and trending within education. NAAE professional development programs aim to incorporate teaching methods, pedagogy, STEM techniques and literary strategies in each workshop. As we are currently unable to gather in person, NAAE has been trying to facilitate more of our high caliber professional development sessions in a virtual format. This has been a transition for facilitators and educators alike, however we are not entering this territory completely unprepared; our organization has been offering virtual professional development and community engagement opportunities for several years.

Since 2014, the NAAE has hosted a professional book club each summer through the Communities of Practice platform. Each year the featured book aims to expand the educator's knowledge – about themselves, about their students, and about techniques that can better engage their audience. Some of the popular titles selected for the book club have included “Teach Like a Pirate,” by Dave Burgess; “Make Learning

Magical,” by Tisha Richmond; and “Marching Off the Map,” by Tim Elmore. These books are written by teachers and educational professionals, about topics such as finding passion in your career, gamifying your content, and examining research that helps us better understand our students.

The Communities of Practice Virtual Book Club group houses all information and materials needed to interact with fellow participants and respond to questions or activities. The only additional material needed is the book itself - you can purchase a hard copy from an author's website, rent it through the local library or download it to a phone or an e-reader when available. Participants have the opportunity to interact via Zoom calls, where they can have live discussions and meet their colleagues “face to face” over the course of the book club. Additionally, a Facebook group has recently been created to provide yet another avenue to connect and share ideas, resources, and encouragement. Utilizing these various platforms, everyone gets the chance to fully immerse in the virtual learning environment. Assignments and discussions are asynchronous and self-directed to work around the busy ag teacher's summer schedule.

As with all of our professional development programs, the Virtual Book Club is based upon sound educational research and theory. Evidence shows that book clubs promote a sense of comradery and a stronger support network when facilitated amongst teach-

ers (Blanton et al., 2019). Much of our work as educators revolves around Kolb's Experiential Learning Model, which is a familiar concept in the Career and Technical Education world. Kolb's cyclical theory (Kolb, 1984) offers a great framework for understanding the effectiveness of a professional book club. Participants begin the NAAE book club at the “Concrete Experience” phase of Kolb's cycle. They are bringing their classroom experiences with them as they encounter new ideas in the book. Participants are guided into the “Reflective Observation” phase through assignments and discussions. The book club is a place to reflect on the concepts presented in the weekly reading as well as the participants' classroom experiences. The assignments encourage participants to move their reflections from their mind to a written format, which allows them to organize their thoughts and fully process their learning.

The primary objective of each assignment is to create a space for authentic reflection - upon the weekly reading as well as the participant as an educator. It is a welcoming environment for everyone to bring in further discussion questions about new concepts they may be encountering or implementing for the first time in their career. Participants are encouraged to interact with one another's responses to the assignments by commenting on posts to ask for further information or resource exchange. This dialogue bolsters thoughtful reflection and allows the educator to gather new ideas and information they can

take back to their classrooms.

Throughout the book club we reinforce the concept of a “professional learning network,” also known as a “knowledge community” (Blanton et al., 2019). Participants are given opportunities to share social media accounts, connect with colleagues who share an interest, or find supportive friends as they work through an area of growth. It is via this collaboration and connection that participants access the “Abstract Conceptualization” phase – the educator makes conclusions about themselves, their teaching practices and their students, thus gaining new knowledge from their book club experience.

Some assignments include introspective questions or tasks to develop their learning network, while others strategically offer a bridge to the final phase of Kolb’s cycle – “Active Experimentation.” Educators are asked to create or revise lesson plans based on strategies they have learned in the book club. They receive feedback from their peers and then return to the classroom with renewed energy and fresh ideas to engage their students. The book club spans two months on average, but the lessons learned impact the rest of the educator’s career.

The NAAE Virtual Book Club has seen registration rates in excess of 100-150 participants in recent years, with increasing engagement in the Communities of Practice group. After the Spring 2020 Virtual Book Club focusing on Tim Elmore’s “Marching Off the Map,” participants were asked to provide anonymous feedback on the book club’s activities. They had the following to say: *“I liked that there were activi-*

ties and questions to answer after each chapter to hone in on how I’ll actually apply these methods.”

“It gave me a chance to meet teachers from across the country and gain ideas from them. It is also nice to hear the problems we have [...] it’s not just me, it’s all over.”

“I think as a teacher [the book club] made me step back and look at my teaching and also my students...[it] gave me some insight as to what I was doing well or needed to improve.”

Educators are reporting the value of reflecting on their practices and the companionship that comes with sharing this journey. Books allow us to bridge gaps between the known and the unknown, between one teacher’s struggle and another’s solution. Often participants will ask if they can share the resources NAAE creates for the book club with their school district or peers, which is always answered with a resounding “yes!” We believe in the value of reflective reading for professional growth because we have seen it work for teachers all across the country.

If this has you interested in creating a professional book club in your school, we have noticed a few things through the years that might maximize your impact. **Selecting the book is perhaps the most important task to consider.** The facilitator should seek suggestions from other professional book clubs or the participants themselves for a good read on a topic that is relevant to the group. To increase authenticity, pick a book that is written by a former educator dealing with an issue or idea that many of the potential participants can relate to or need help with.

Find a book that is interesting to read so that your participants will not become disengaged. Striking a balance between interesting and informative will set your book club on a path to success.

The second most important aspect to **keep in focus is the quality of the discussions.** Design assignments and questions with reflection in mind that encourage participants to go deeper in dialogue with themselves and one another. Too often educators do not take valuable time to evaluate where they have been and where they want to go in their classrooms. By reading education-oriented books, the participant can learn about teaching methods and strategies that are inspiring and innovative but may seem unattainable at first glance. Taking the time to dissect this information with your colleagues can shed light on your current teaching philosophy while creating new content of your own that fits your particular audience. Doing this important work in isolation can feel overwhelming, but allowing others to provide genuine feedback and contribute their own ideas to yours eases the burden of reinventing yourself.

Additionally, **gamifying the book club experience increases motivation and maintains interest.** Putting forth the creative effort to make the participants’ time together enjoyable adds tremendous value and leaves a lasting impression. During the “Teach Like a Pirate” study, participants are called “pirates” and “crew members,” and they earn gems for their treasure chest each time they complete an adventure (assignment). Using the book’s theme and pulling in relevant content (such as TED Talks or addi-

tional reading material) enhances the participant's experience and helps them to stay focused on the routine of reading, reflecting and engaging in discussion.

Quality professional development programs are crucial to the continued success of an educator. Emphasizing reflection through a professional book club allows teachers to take ownership of their personal growth, expand their worldview, and engage in community with their professional learning network. Teach-

ing reflective reading skills is crucial for our students, but let us not forget the importance of reflection in our own lives as well.

Citations:

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THEME ARTICLE

by Tracy Chase and Kayle Lauck

Getting your students to write, and write well is hard. As I looked out into a class of middle school agriculture students, I got their attention by saying, "Alright class, today we are going to start researching agriscience fair topics," and the eye rolling and moaning began. Before I threw that comment out to the class, I knew I had to have organized and designed the steps for the process, or it would be just as painful for me as it would be for them. Throughout this article, I aim to include information about effective forms of integration and enhancement of reading and writing in the agriculture classroom. The design for the curriculum focuses on collaboration, reading and writing strategies, and overall student involvement. The goal is to make the process less painful for the instructor and the students. Lastly, a student who has

Writing for Agriscience

worked diligently throughout this process will provide personal tips from her perspective when working on a research-based project. Here is what helped me get started on this journey seven years ago.

At the time this journey began, my school district shifted to a team-teaching model along with project based learning within the middle and high school. Team teaching allows for collaboration, planning with a purpose, and essentially creates cross curricular development for the students. In the process of planning, I revisited the scientific method and how it encompasses such a large scope of learning standards. The National AFNR Career Cluster Content Standards are integrated and aligned into the FFA Agriscience fair for easy use within the classroom. By having the standards aligned and a large amount of cross curricular content covered,

this seemed like a perfect stepping stone into the agriscience fair. Due to the size of my school, the English and math teachers instruct both the middle and high school classes. I felt confident teaching my students about the various areas of research, but having other staff members to add insight and knowledge to the projects was invaluable. Team members with different strengths allow for a fresh set of eyes and mind when aiming to help students with their projects. Along with the staff being on board, I included the parents very early on in the process. Reaching out to parents opens up a door to my classroom, and provides engagement in the agriculture program and their child's potential.

"I remember being incredibly excited to start my first day of class in the agriculture classroom," began Kayle Lauck, currently a senior starting her sixth agriscience

fair project at McCook Central. “My first year enrolled in agriculture classes was also the first year of our school participating in the FFA Agriscience Fair. My class got to be one of the first to try this new program, and we were pretty nervous considering the path the semester now held for us. We were to come up with an original idea for a project that would solve a problem for the agricultural world - that was a pretty scary expectation for a classroom full of 7th grade students! Nevertheless, our agricultural educators, in conjunction with help from our math and English departments, gave us one of the most beneficial and rewarding experiences that could come out of a classroom. My math teacher helped me learn how to appropriately translate data into graphs that would be understandable to an audience and my English teachers would help me along every step of preparing the final paper.”

“In one project’s timeline, I learned how to apply the scientific method to a problem I saw within the agricultural community, how to convert data into graphs and tables, as well as how to structure a scientific paper that was outlined at a level so advanced college students could use it. This was all possible because of the help and support I received from the many educators who coordinated their time and lesson plans to support our projects.”

After working with the staff, I moved into project strategies that I hoped would work for all age levels. I attended many reading and writing strategy workshops and the tools I obtained from these included graphic organizers, chunking methods, and modeling by example. I started by giving

the students a main idea or theme they found interesting and from there the concept map was filled through brainstorming. I strongly encouraged students to choose a topic that peaked their interest and it became easier to research and build on ideas. Concept maps help the visual learner take in the whole picture of the project; it allows for clarifying ideas and represents the relationships between concepts. When looking at students’ maps it gives me insight on their thought process and the possible misconceptions formed. Every student will respond differently, but fostering their ideas and creativity will only allow for better projects in the end.

“As the years progressed, I grew a passion for this program,” says Kayle Lauck. “Each summer, I would brainstorm ideas that I thought could bring about change or discovery within the agricultural community. When completion of an agriscience fair project became optional as I entered high school, I threw myself wholeheartedly into my projects. I wanted to use my opportunity to complete more of these projects to construct change.”

I saw Kayle progress from the early stages of research and development into a higher order of thinking student over time. She was able to find a topic that truly interested her and she worked hard to develop testing strategies. I believe that with the team teaching method helped her and other students learn in multiple ways and areas.

“While the students over the years have always had to be the ones to complete the projects, their degree of success could never have been possible without the amazing educators that backed them,”

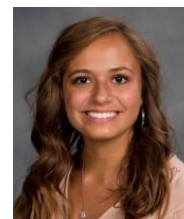
offers Lauck. “From the support that is constantly offered to each student to the constructive criticism that fine-tuned the projects and papers to perfection to hours of work and effort that went unseen, our educators were the ones that made these projects possible.

“If a school wishes to implement a program such as this in their own curriculum, I couldn’t imagine a better school to imitate than the one I have had the privilege of attending. Structure, good communication, and passion from the students and educators are the key components that I have seen that have fostered success in our school district.”

Remember to reach out to staff and build a team teaching approach; more eyes on the paper and continuity will lead to more success in the end. Also apply concept maps students can look at to visualize the main ideas of the project. Lastly, include the parents in both the planning and testing process in order to create rapport and build a strong agricultural program.



Tracy Chase is an agriculture and science instructor along with FFA advisor at McCook Central Schools in Salem, SD.



Kayle Lauck is a senior completing her sixth agriscience fair project at McCook Central High School in Salem, SD.

by John Hadenfeldt

Many, many years ago, more than I'll admit in this article, I can remember sitting in my eighth-grade social studies class as I was ushered into a new era of my education. One hundred percent note taking. That's it. Take notes every single day in class until the test. We were expected to copy notes from the overhead projector following the teacher's exact hierarchy. We were even made to hand in our notebooks periodically so he could check that we were copying word for word, and then the books were graded. As a student, you suffer through this type of "learning" and just try to get by and pass. As a teacher, I know how little learning actually takes place.

Flash forward to 2012 and I was fortunate enough to attend the National Agriscience Teacher Ambassador's Academy in Maryland. At this amazing professional development, I was introduced to a new and innovative way to teach students to use their notebook as more than a repository for helping to memorize facts only to regurgitate them later. Similar to using different methods in the classroom lesson, interactive notebooks have helped me put a new spin on an old educational tool. Thinking back to my college days where I would spend the "dead week" at the end of each semester pouring over my notes from the previous weeks of class before taking the final, I can only imagine what those studying sessions would have looked like had I the knowledge of using interactive notebooks.

After my time with NATAA,

Interactive Notebooks

I began to implement interactive notebooks in my Agriscience classes. In my classroom, I use simple spiral bound notebooks that I pick up on back to school sales at various stores. Usually, I can purchase them for around \$.20-\$.25. At that price, \$10 goes a very long way and I can usually make sure that at least every student has a notebook for my classes. Some will choose their own route and that is fine, as long as they have a way for the pages to stay organized. Every teacher has that one kid who is always borrowing a piece of paper to take notes, I can't help but wonder what happens to that loose sheet once class is over. Having the notebooks eliminates that as anything we do and record never leaves the students' notebooks. I start each semester by having my students automatically mark off the first couple of pages and put table of contents at the top. As we progress through the weeks, I always have them number the upper corner of each page and have them go back to the table of contents and mark the subject and page. This already begins an organization process for the student and provides a clean and easy way for them to reference something we did in class instead of having to flip through each page to find something they need to remember. Whenever we begin a lesson, I will have them mark the title or question for the day on their table of contents and the corresponding page.

The "interactive" part comes from the way the notebooks are used. Again, not simply just a place for a student to endlessly

copy down information. Like diversifying our lessons, they can be used a variety of ways within the lesson to help better encode that information into the student's mind while also being a tool they can use while studying. For example, in today's classroom, many teachers use the idea of bell ringers or sponge activities to transition into the day's lesson. Having a routine where students know to come in, see the question or task on the board and appropriately begin to complete it in their notebooks can be a useful habit. From there, one can use that bell ringer to begin the lesson. The student would then write the subject and the page number in their table of contents, and know exactly where to go if they want to look back. During the lesson, you can ask your students to complete tasks in their own way in the notebooks. Various tools can be used to achieve this.

In my classroom, I have baskets set out at each table. Within each basket are the tools that I want the students to use when making their interactive notebooks. My baskets contain: colored pencils, crayons, highlighters, notecards, post-it notes, and glue sticks. Depending on the lesson, these tools are available for them to use whenever they need it. I don't want my student's notebooks to just be full of written words. I want to see colors, and diagrams. Charts, and figures. Graphs from data, and key words that are easy to find.

Here are a few examples of what you might see in my student's notebooks:

- Student drawn illustrations of flower parts and leaf parts that are colored with pencils and used for studying. Generally, I will use the same diagram in my lesson that they will see on the quiz.
- Post it notes containing a question that I want my students to come up with about a lesson or video they are reading to share with the class. After we go through and answer the questions, the post it note stays on that day's page.
- Using highlighters to mark key concepts or new words introduced specifically in that lesson. Have a color scheme your students can follow so they know what each color references when they look back. For example, yellow equals a new key term, or green means this information is on the quiz.
- Glue a diagram (example: the wholesale cuts of meat) in the notebook. After we go through the parts within the lesson, I'll have my students cut the worksheet out and glue it into their notebooks. Over the course of the semester, my students will have many diagrams in their notebook. Depending on your final evaluation tool, these can really help with semester exams.
- Answering a prediction or opinion question to start the day as a bell ringer. Then have the student leave space to come back and see if their answer has changed based on the information from the lesson. This will be the first thing on that day's activity page.
- Daily class activities, such as group work or answering

questions from a lesson. The students will write down the questions and answers from the activity as another tool for them to use in studying and retention.

- Completion of a reading strategy assignment from that day's reading.
- Graphs, charts, or data from an experiment or activity.

Any number of activities like this and more can be used to make the notebooks a fun tool the student likes to use in their class. Some of the best notebook examples I have seen from colleagues are colorful illustrations full of all sorts of pieces within them for a student to use. Variation from class to class and even year to year will make them enjoyable and useful.

One question that might be asked from a teacher or administrator is, "how do you make sure that the student is using their notebook and completing tasks?" This can be done in many fun ways. I've seen some teachers that keep a notebook right along with their students. That way they know the structure that should be there. They collect their student notebooks at the end of the grading period or every couple of weeks and make a comparison. Another way, and the one that I use, is to mark daily completion grades. The way that I do this is actually marking in the student's notebooks with stamps. It may sound funny, but even a senior in high school loves getting a smiling cow stamp in their notebook. When the student completes the task I've assigned as part of the lesson, I will come by and check their work. If everything is complete they get the random stamp for the day. You can

find pads and fairly cheap stamps at any craft store with enough diversity for the many classes an ag teacher has. Grades can be recorded daily or when the notebook is handed in to check their work.

In my opinion, interactive notebooks should be as diverse as the students and teachers who are using them. The fun part about them is the student has the freedom to be an individual, whether that be how they answer your questions or when they put their artistic touch to the pages. They should also be useful, so the more a student can be organized while using them, the easier it will be to use that repository of information in a useful way. With the teacher as their guide, they can be learning more skills and lessons beyond the topic of the day. I would encourage anyone that is looking for a new and unique way to keep a student interested in class to implement them. The more we can get a student to personalize their own education, the better.



John Hadenfeldt came from a rural farming background and got his Agriculture Education degree from the University of Nebraska in 2002. Since beginning his teaching career he has focused on science based curriculum that supports the ever changing world of agriculture, getting dual endorsed in biology. He will be beginning his 19th year in education this fall at Centura Public School in Cairo, NE.

BYOT: Build Your Own Textbook

by Jessica Grundy

Based on the simple premise that doing is learning, the idea of Build-Your-Own-Textbook is a hands-on course guide, with the process of inquiry at its core. Designed to emphasize critical thinking skills, depth of knowledge awareness, problem solving dexterity, and fluency of communication all with the added benefit of enhancing students' literacy skills. After attending the National Agriscience Teacher Ambassador Academy, I took the knowledge and skills I gained along with my current teaching style to develop and implemented an interactive inquiry-based textbook. Students fondly refer to it as a "graphic organizer on steroids." It is a student-driven textbook, written by students for students (themselves). The best part of student-created textbooks is watching each student create a project they are proud to share with others.

Students are invested in their own acquisition of knowledge while learning at their own level and speed.

Each one is unique and reflects the individual student personality. The best part is students take ownership in their learning. Student created textbooks is an idea that is easily adapted to all facets of agricultural education in all disciplines and specialties. It is versatile for diverse geographical locations, cultures, languages, in developed and developing countries.

Student created textbooks are visually rich. They encourage students to become proficient with informational-text learning though the interactive methods without necessarily relying on technology. It allows for continuation of curriculum even if technology fails. Inquiry textbooks specifically allows for connotative and denotative vocabulary

learning. When using connotative writing students learn to use a wide array or both positive and negative emotions around the vocabulary word or content idea. Denotative is a straight forward approach to their learning. Students summarize and create their own definition to be added to their textbook. They are relevant as a tool for review and retention. The review is hands-on and promotes higher test scores. Students are invested in their own acquisition of knowledge while learning at their own level and speed.

The student created textbooks are modified curriculum that meets each students' individual learning styles and needs. It helps close the learning gaps within the classroom. This allows each student, regardless of learning level, to customize his or her learning, and experience success within the classroom. Higher-level learners can use their customized notebooks to dive deeper into topics, while lower-level learners are also accommodated and able to understand the concepts presented. This allows us to celebrate student diversity within the classroom. The students take ownership in learning and take pride in workmanship of their individual books. Students are limited only by creativity, effort and imagination. Students' efforts, enthusiasm, and engagement are measurable throughout their inquiry textbooks.

The best part of the textbook



is they are easily modified and updated. Inquiry textbooks create various practical applications through their use. They simply teach students methods and processes. The greatest application is the cross-curricular of math, science, and English. They help support English language arts six-traits of writing and encourage a variety of writing genres. The books become a user-friendly dictionary students take pride in. Inquiry textbooks link active problem solving between agricultural education and math. It is method of helping students think about math in a different way. It's understanding the concepts behind the skills and using math in authentic, purposeful ways rather than by remembering and using procedures.

The methods and concepts of a student created textbook have been implemented by my former student teacher into her classroom in Italy. It has been a huge success to teach cross curricula of Science and English. Over the course of the past year I have assisted the math department in our district in implementing the concept of inquiry-based textbooks that align with the math common core. The cross-curricula of math in the real world has been shown and demonstrated in both agriculture and math classes. Students refer back to their textbooks to show and demonstrate these concepts in their math class.

The Five Essential Features of Inquiry outlined by the Inquiry and the National Science Education Standards is followed to help make these textbooks a success. They include:

- Learners are engaged through questioning

- Learners give priority to evidence, which allows them to develop and evaluate explanations
- Learners formulate explanations from evidence to address proposed questions
- Learners connect explanations to real life application
- Learners communicate and justify their proposed explanations

The inquiry textbooks develop a classroom routine that becomes second nature to the students. Students are given a purpose in learning.

How do you get started using this in your classroom? Do not eat the entire elephant at one time. Select one class and one unit to get started and don't overthink it. It shouldn't be something to add stress to your teacher plate, but a resource that can help you reduce the time it takes to grade. To get started have every student bring a composition notebook to create their textbook. Although I have a master book for my reference we build the student books together. It is important that student understand that this method of note taking they are not writing everything down. Students will summarize, illustrate, build foldables, use color coding, and create manipulatives that will stay right in their textbooks.

To be successful, the textbook must include key components. Every topic, unit, or lab must have a title that is logged into the student's table of content. Each start with a challenge question that grab the student's attention and offer a task throughout the unit. Every day the students are allowed an

opportunity for a self-test or self-reflection. The inquiry books use color-coding to modify and differentiate instruction, while providing myself with a visual gauge on student achievement. Color-coding encourages organizational skills and de-stressing effects. Coloring generates stillness, creativity, and fine motor skills. The color-coded system helps me, as a teacher, to see what students know, learn, and want to further study. It's a nice way to develop curriculum that stimulates student interest. This color-coded system also helps students associate each color with a particular piece of knowledge, which is an important part of reaching every student within the classroom. Although differentiating instruction and accommodating all student learning levels can at times seem daunting, it is an essential part of developing an inclusive environment for all students. As we build their textbooks together I am able to interact with my students to check for understanding. Over the years my students have enjoyed this method of learning and will not leave their textbooks behind. They are proud of the end product they created.

Article photo provided by KaCee James, Jayhawk-Linn High School.



Jessica Grundy is the ag educator at Wayne High School in Bicknell, UT.

Book Recommendations from the Profession

I put out a call for book recommendations. Below is a list of books recommended by other agricultural educators for my fellow bibliophiles. This list is by no means exhaustive.

Another good place to look is a quick search on Goodreads. There is an entire section just for agriculture books. (There were 3,649 books listed when I wrote this article.)

<https://www.goodreads.com/shelf/show/agriculture>

Books:

- A Land Remembered by Patrick D. Smith
- A Sand County Almanac by Aldo Leopold
- All Creatures Great and Small by James Herriot
- American Nations: A History of the Eleven Rival Regional Cultures of North America by Collin Woodward
- Beyond Beef: The Rise and Fall of the Cattle Culture by Jeremy Rifkin
- But I am Not a Reading Teacher: Literacy Strategies for Career and Technical Educators by Sandra Adams and Gwendolyn Leininger
- Classroom Strategies for Interactive Learning by Doug Buehl
- Dirt to Soil: One Family's Journey into Regenerative Agriculture by Gabe Brown
- Educated: A Memoir by Tara Westover
- Fast Food Nation: The Dark Side of the All-American Meal by Eric Schlosser
- Fat Land: How Americans Became the Fattest People in the World by Greg Critser
- Financial Literacy for Teens by Chad Foster
- Forty Chances: Finding Hope in a Hungry World by Howard G. Buffet
- Guns, Germs, and Steel: The Fates of Human Societies by Jared M. Diamond
- Habitudes by Tim Elmore
- How to Keep Bees and Sell Honey – Walter T. Kelley
- Juggling Elephants: An Easier Way to Get Your Most Important Things Done – Now! by Jones Loflin
- My First Ladies: Twenty-Five Years as the White House Chief Floral Designer by Nancy Clarke
- Ogallala Blue: Water and Life on the Great Plains by William Ashworth
- Sweetheart of Prosper County by Jill S. Alexander
- The 21 Irrefutable Laws of Leadership by John C. Maxwell
- The Food Explorer: The True Adventures of the Globe-Trotting Botanist Who Transformed What America Eats by Daniel Stone
- The Hot Zone: The Terrifying True Story of the Origins of the Ebola Virus by Richard Preston
- The Jungle by Upton Sinclair
- The Man Who Fed the World: Nobel Peace Prize Laureate Norman Borlaug and His Battle to End World Hunger by Leon Hesser
- The McDonaldization of Society – George Ritzer
- The Meat You Eat by Ken Midkiff
- The New One Minute Manager by Ken Blanchard and Spencer Johnson
- The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl by Timothy Egan
- Whale Done!: The Power of Positive Relationships by Ken Blanchard, Thad Lacinak, Chuck Tompkins, and Jim Ballard

Thank you to the following people who answered my plea for book recommendations!

- Zachary Callaghan
- Laura Hasselquist
- Heath Hornecker
- Jennifer Jackson
- Jacob Lang
- Susan Metzger
- Tom Paulsen
- Grady Roberts
- Haley Rosson
- Ellen Trahan
- Stacy Vincent
- Troy White
- Shannon Washburn
- Corineah Williams
- Melissa Zerr

Putting the “Soft Skills” in the SAE Experience

by Anthony Meals

Each semester we take students in our program to various businesses for career exposure. At each business, I ask the same question, “What can I be doing in the classroom to prepare students for a job at your company?” The answer each time was essentially the same and it disturbed me, “Bring us students who have a sense of responsibility, work ethic, and personal discipline.” The answer disturbed me not because I thought it was wrong, but because I felt those qualities were not intentionally being practiced and honed in my classroom.

Responsibility, work ethic, and personal discipline are not the typical skills I am directly trying to teach in my animal science or agricultural mechanics classes. My focus was centered on the traditional ‘hard skills’ such as; welding, identifying parts of a digestive tract, or identifying breeds of livestock. Last year during our trip to National FFA Convention I struck up a conversation with one of our trip sponsors, Dr. Sally Olson, who was an animal welfare auditor for our local veterinary medical college. When I raised my concerns about what I felt was not being accomplished

in the classroom; she shared how at the college they helped students gain those skills through a structured audit program that helped maintain personal accountability while also providing a high level of animal care. Over the course of the trip we developed a similar audit program for students in the Animal Science class.

Formerly, students volunteered to care for the animals. Care was spotty at best and lacked follow through. Accountability was lax, mostly from my failure in not having a structured system. Having no authentic accountability system was missing



a critical opportunity in helping hold my students responsible, while cultivating a sense of work ethic and personal discipline. The audit system we developed helps simulate an authentic workplace environment that instills and creates safe spaces to practice 'soft skills' by providing opportunities for teachable moments.

The system is designed based off sample audit forms provided by Dr. Olson and modified to fit our program's needs. At the start of the following semester in our Animal Welfare Unit, students learned about the basics of animal welfare and practiced developing a Standard Operation of Procedures (SOP) to care for their assigned animal species. Those SOPs were grouped into daily, weekly, and monthly tasks that were placed on monthly care logs that could be signed by each student caregiver. Each day care logs are checked for completion. If they are either not signed or a task was signed to indicate completion, but was not completed, then a note is written on that date by the instructor or student aide. Monthly care logs sheets are graded as a Foundational SAE assignment at the conclusion of each month.

In addition, to the daily signing of the care logs, students experience three audits to assess the care of their animals. The first audit checks conducted are a self-audit. During this audit students complete a quality control/assurance form on themselves and the care of their animal. They are asked to be honest in their assessments and make self-recommendations for any improvements that could be made in their quality of care. Next, students are then asked to act upon their identified improve-



ments for the next few weeks. After, students have been given the opportunity to implement improvements, they experience the next audit, which are peer-audits. These audits are performed by a peer in their class who will honestly assess the condition of their peers' animal's health, the cage/pen, accuracy/completion of care logs, and overall condition of the animal's feed storage area. These audits are completed for a grade and quality assurance auditors (students) are provided a scaled rubric by which to assess their

peers. Audit scores are posted atop care log reports and improvement recommendations are given to caregivers. Again, students are given an opportunity to make suggested improvements before the final audit of the semester.

Finally, the last audit performed is an unannounced audit. Dr. Olson comes once a semester after peer audits are completed and she provides at least a week for students to implement peer recommendations. Prior to the final audit, I am not informed when

she will arrive so as to simulate an authentic workplace quality assurance audit. This audit is used as a portion of the semester final grade in the Animal Science class.

What is powerful about an authentic assessment system based on SOPs and quality assurance standards is the ease of transferability of the framework into other aspects of our program. Currently, our greenhouse manager is developing a set of SOPs that can be provided to future managers and be used as training instruments for current Horticulture students during spring sale season. Copies of SOPs will be readily available for reference and we will develop care logs for greenhouse maintenance and plant care. Afterwards, we will build a similar system for our shop with the assistance of our Advanced Agricultural Mechanics students.

Through the use of SOPs and care logs in our daily vocabulary and routine we have started to see strong qualitative evidence suggesting that students are beginning to make gains in the areas of personal responsibility and discipline. Students have started coming in before school to complete animal chores or take time after school to make sure pen cleaning has occurred. Finally, student actions towards animal care has changed for example, from simply checking that food is available to measuring out a specific amount of feed based on the animal's weight to keep it within an optimal, healthy range.

Our next step is developing a quantitative assessment that could track student perceptions towards their level of responsibility, work ethic, and discipline that would be used as a pre/post assessment. Though there is still room for



improvement within the audit system, the work-place simulated framework has allowed us to have a starting point in addressing area employers' needs for the development of 'soft skills' in our students.



Anthony Meals is the agricultural education teacher at Blue Valley High School, Randolph, KS.



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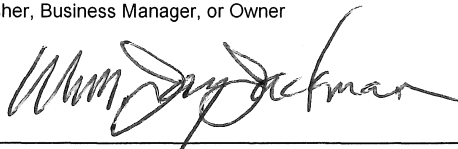
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