Increasingly, teachers are using data to identify and understand areas of student performance that need targeting for instructional interventions. Within the current accountability-oriented landscape, even first-year teachers must use assessment data to monitor and scaffold student learning (DeLuca & Bellara, 2013). Many teachers feel overwhelmed and uncertain when they are asked to review standardized test score data and make appropriate interpretations for use in the classroom (Mertler, 2001).

As a new classroom teacher, consider using a collaborative, team approach—called a data chat—for analyzing and using standardized test scores, end-of-course data, and classroom formative assessment data for diagnostic and instructional reasons. Collaborative data chat teams embody a focus on learning through inquiry and a commitment to continuous improvement (DuFour & Eaker, 1998). Learning through collaboration increases confidence with data analysis and interpretation (U.S. Department of Education, Office of Planning, Evaluation and Policy Development, 2008) and scaffolds your practice of data-driven decision-making.

A collaborative data chat organizes teachers into groups to communally reach competencies in data comprehension, interpretation, and use. The data chat has seven steps.
1. **Enlist the support of your building administrator.** Your principal has access to recent data at your grade level or content area and will support your efforts to meet with colleagues.

2. **Create a grade-level or content-area team.** Ask grade-level or content-area colleagues to join you in a team to collaboratively analyze the most recent data set for your grade or content. Use common planning times for this purpose.

3. **Incorporate state standards and local curriculum guides.** Review the state or common core standards and your school district’s curriculum guides. Analyze which standards and local curricula are being assessed within the data set.

4. **Analyze the strengths and weaknesses of the data set.** Use guiding questions to support your analysis, such as: How well did the whole class perform? Are there any subgroups who performed well or below standard? Who are the advanced, proficient, and underperforming students? Are there certain standards on which students consistently performed below grade level? Are there certain questions on which students underperformed? Use numeric, graphical, and narrative descriptions to demonstrate your analysis of the strength and weakness areas.

5. **Create both formative and summative assessments.** This step and the next one allow seasoned teachers on your team to mentor you and other new teachers as they share their exemplary practices in assessment and instruction. Use backward mapping, a technique that starts with the end in mind. Consider which assessment procedures you might create based on the strengths and weaknesses of the assessment data. Which daily assessments will address the areas of weakness? Which summative assessments? Are there assessments that will help proficient students to reach the advanced level?

6. **Create specific instructional strategies as interventions to address weaknesses.** Decide as a team how you will address weaknesses with instructional interventions. Consider how you might differentiate instruction for students. Instructional strategies can be correlated to state standards. Rely on experienced teachers to guide you with reliable instructional interventions, but also consider suggesting appropriate strategies you learned from your recent teacher preparation program.

7. **Write a final report for your building administrator.** The report will include names of team members; the type of data set; the specific assessment; when the assessment was given; strengths and weaknesses of student performance through numeric, graphical, and narrative representations; formative and summative assessments; and instructional strategies for interventions. Remain open to suggestions from your administrator. Use your findings to impact your instruction. Revisit your interventions in future team meetings, revising as new data becomes available. (Adapted from Piro & Hutchinson, 2014).

Learning how to use data for student growth may seem overwhelming in your first year as a teacher, but when you form a team with your colleagues for ongoing, collaborative data chats, you will learn to sustain your data-driven decision-making for accountability purposes. More importantly, your data chats will inform your own instructional practices in your new classroom. Simply connect with colleagues who have a similar commitment for using data for instructional interventions, review the seven steps, and initiate your own collaborative data chat.

**References**


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**Dr. Piro** is an Associate Professor in the Doctor of Education in Instructional Leadership program at Western Connecticut State University. She has been a social studies teacher, a dean, and a principal.
Voting is an example of professionalism that takes place outside school, but greatly affects what happens inside school. During the upcoming election season, teachers across the United States will have an opportunity to demonstrate their commitment to their profession by voting. You, as a citizen and teacher, can go to a polling place and vote for fellow citizens who will make decisions about educational issues at the local, state, and national levels.

Voting is a simple yet powerful act of professionalism whereby classroom teachers make their voices heard. Until teachers step out of their schools, step up as teacher leaders, and concern themselves with policies that affect education, true educational reform will never happen (Kajitani, 2015). As former U.S. Supreme Court Chief Justice Earl Warren stated in delivering the Brown v. Board of Education (1954) decision, “Education is perhaps the most important function of state and local governments.” Each vote matters. Take these steps to prepare for the election and cast your vote.

By Nathan Bond and Sam Perry
Register to vote. In most states, adults are required to register before they can cast a ballot. The deadline to register usually occurs six to eight weeks prior to an election. States vary in the documentation required to register. To learn election deadlines, see identification requirements, or register to vote, go to https://www.usvotefoundation.org/vote/eoddomestic.htm

Identify your local, state, and federal legislative candidates. Use the search functions on the websites of decision-making bodies to identify candidates. Legislators generally represent a specific region or area that is defined by street addresses or ZIP codes. Include local, state, and federal legislative bodies in the search, as each passes laws or policies that affect teachers and students (Bond & Pope, 2013). Use www.vote411.org to learn who is on your ballot and what their platforms are.

Learn the candidates’ positions on education. They communicate with voters by posting their positions on websites, emailing newsletters to subscribers, and disseminating current information through Twitter, Facebook, and other social media outlets. Study the issues by reading articles in newspapers and other publications, especially publications of educational organizations. Voters with specific questions or comments about a particular issue are welcome to contact candidates or their staff members via email or phone. It is important to identify yourself as a voter and a teacher in these exchanges and to develop a positive, ongoing, and trusting professional relationship with the legislator. The quality of the relationship will help later when advocating for a specific issue (Hess & Fennell, 2015).

Connect with other educators before voting. To support and refine their own thinking, wise teachers formally and informally seek out colleagues who are also interested in the role of politics on education, voting, and advocacy. Local, state, and national professional organizations often have specialists in these areas who distribute pertinent information about upcoming bills and education-related issues to teachers. Kappa Delta Pi’s Public Policy Committee, for example, provides information to members through the KDP Global online community and the organization’s homepage. When communica-
cating about political topics with legislators, colleagues, and people in professional organizations, teachers should use personal computers, email addresses, and phones rather than official school communication media in order to avoid possible conflicts of interest. Teachers are considered governmental employees, and state laws prohibit employees from using the government’s equipment for political purposes.

Vote. After completing these initial steps, either vote early via absentee ballot or in person on Election Day. The winning candidates will develop and pass laws and policies that affect classroom teachers and students.

Teachers are experts who know their students and school contexts well. Teachers have always led busy lives and worried about their students. If you do not stand up for students and voice your expert opinions, then who will (Dever, 2006)? As the late U.S. Senator Paul Wellstone (D–MN) stated, “If we don’t fight hard enough for the things we stand for, at some point we have to recognize that we don’t really stand for them” (Lofy, 2005, p. 7).

You may feel disengaged or even frustrated about the current state of education and politics at all levels of government. You may think that voting does not really matter. It does! The time has now come to turn your attention to politics and get involved (Berliner, 2013). Voting is a way to show that you care about your students and your profession.

References

Dr. Bond is a Professor of Curriculum and Instruction and the KDP faculty counselor at Texas State University. He currently serves on the KDP Public Policy Committee.

Dr. Perry is an Adjunct Professor of Education at the University of Richmond. He is a former school superintendent and public school lobbyist in Virginia. He currently serves on the KDP Public Policy Committee.
Students bring more than pencils, rulers, backpacks, and lunches to school; they also bring head lice, hunger, family and home problems, mental illness, food allergies, and a myriad of chronic health conditions. Trying to teach students with all of these issues is every teacher’s challenge. The school nurse can help!

The school nurse may be the only healthcare professional that many students see regularly. However, most teachers are unclear about when to send a student to the school nurse. These tips will help you decide.

Health Emergencies = See the School Nurse Now!

- **Breathing Issues or Asthma:** Asthma is on the rise among our youth. A student with a known diagnosis of asthma who is having trouble breathing should always be sent to the nurse, or the nurse can be called to the area where the student is. Other breathing emergencies can occur in students with no known risks, so ALWAYS seek the help of the nurse if you are in doubt.
- **Allergic Reactions:** The number of children with food allergies is also increasing. Common allergens include peanuts, tree
Fever, Vomiting, and Diarrhea: Many students are contagious before they have symptoms. Although the school nurse should see a child with a suspected fever or one who is vomiting or has diarrhea, these are usually not emergencies. The best practice to avoid spreading flu viruses, colds, norovirus, and other stomach viruses is to have students wash their hands with soap and water for 20 seconds several times throughout the day. See the Centers for Disease Control and Prevention (CDC) website at www.cdc.gov for good resources on hand washing and cleaning surface areas.

Common Health Issues = Non-Emergencies That Need the School Nurse’s Involvement

Many things do not need the immediate attention of the school nurse, especially when more urgent needs arise. Minor headaches, stomach complaints, insect bites, hangnails, pinkeye, and skin rashes—while bothersome and sometimes mildly contagious—do not always require immediate action.

Now, About the Head Lice . . .

The latest recommendations for head lice do not require exclusion from school. The American Academy of Pediatrics (AAP), the CDC, and the National Association of School Nurses (NASN) all discourage no-nit policies in schools. Recent scientific evidence supports allowing students to be in school even with head lice. By the time lice are noticed, the student may have had them for a couple months. Head lice are rarely passed at school. The school nurse should be used as a resource in helping families get the proper diagnosis and treatment, along with the family’s physician, but not in the role of “The Head Lice Police.” For additional, current information about head lice, go to the Food Allergy Research and Education website at www.foodallergy.org.

Seizures: Many students who have seizure disorders attend school and are in regular education classrooms. These students must have a seizure action plan. Work with the school nurse and parents to create one. Templates can be found at the Epilepsy Foundation website, www.epilepsy.com. For students with seizures, call the school nurse immediately for any unusual activity, loss of consciousness, jerking movements, or other known signs of seizure.

These are just a few examples of when to get help NOW. As with all emergencies, the teacher must make a judgment call—sometimes calling 911 first is the best course of action, followed by notifying the school nurse for support care. Other health conditions that need immediate attention by the school nurse or other healthcare professional include students with diabetes who have signs of low or high blood sugar, students with major bleeding (especially if known to have hemophilia), broken bones, and head injuries.

Minor Health Issues = The School Nurse Should See These Students

• Nosebleeds: Apply pressure by pinching the nose, but do NOT have the student tilt his or her head back. This can cause stomach upset.
• Scrapes, Cuts, and Bruises: Many of these can be taken care of in the classroom if you have adhesive bandages, soap, and water. Cleaning minor cuts and scrapes with soap and water is sufficient. Many cuts don’t even need a bandage if there is no active bleeding.

Nuts, milk, eggs, soy, fish, and shellfish. If a child has a known food allergy that is life-threatening, he or she should have an epinephrine auto-injector at school and a food allergy management plan. Students who exhibit symptoms after eating ANY food (e.g., breathing difficulty, trouble swallowing, hives or other skin rashes, itching, nausea, or vomiting), should see the school nurse. Don’t wait to see how the student is feeling later! Allergic reactions can progress very quickly. Teachers and other staff members should be trained in the administration of epinephrine using an auto-injector. For more information on food allergies, go to the Food Allergy Research and Education website at www.foodallergy.org.

Mrs. Prasser is a Registered Nurse who works in an elementary school in Crawfordsville, Indiana. Before taking that position, Leisa worked in public health at both the local and state levels. She has a background in public health preparedness and pediatrics and is President of the Indiana Association of School Nurses.
LEARNING STRATEGIES

Notetaking is an important writing process designed to assist conceptual understanding and memory of important concepts (Bui & Myerson, 2014). In many classrooms, notetaking is restricted to 1) telling students to fill out a teacher-produced graphic organizer as they read, watch, or listen, or 2) projecting an outline of key concepts for students to copy. These practices minimize the students’ cognitive engagement and ability to remember.

Note making implies students are actively deciding what is important to include, how to organize it, and what words to use for writing it down (Graham & Perin, 2007). Use these four strategies to capture the power of teaching students to MAKE notes.

Model the process: Deepen processing and engagement through physical manipulation of concepts. Have students collaboratively decide what words or phrases to put on note cards and work together to manipulate these cards into an organizational structure that makes sense to them. Encourage them to add cards as necessary for headings, details, or even arrows to highlight the relationship between concepts depicted on the cards. Once the students create their own graphic organizer by engaging in this process, let them pick up their pencils or use their phones to record their “made” notes.

Add picture power: For many students, a picture can be worth more than a thousand words. In an environment where brevity of words for conveying important concepts is desired, encouraging students to add a quick sketch to illustrate that content can make an enormous difference when they are later asked to recall or explain something from the notes they made.

By LeAnn A. Johnson
When you implement these four strategies to shift from telling students to working with them to MAKE notes in your classroom, you are only halfway to the goal of deep and meaningful understanding of the concepts you are teaching. To realize the full power of making notes, you must take one more step: Use the notes to accomplish a specific higher-order task. Designing tasks that require students to constructively use their notes prevents academic bulimia (binging on information) and purging (spitting it all out on a test and then forgetting it). Only when students are actively involved in manipulating, picturing, talking about, and reacting to new information and then applying or using it in meaningful ways will the full power of note making be realized.

References

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**Encourage emotional connections:**

Notes should not be restricted to simple outlines of facts to regurgitate at a later time. Brain research is demonstrating the importance of emotional connections on memory (Hinton, Miyamoto, & Della-Chiesa, 2008), so consider changing the focus of notes from key facts to emotional responses to key facts.

Compare the traditional notes taken on an article given to biology students about stem cell research and its potential impact on organ transplants with the three student examples resulting from a prompt to make notes about their reactions to the article (see Figure 1). Which do you think will lead to the greater engagement in and memory of the topic?
The most important equation that a teacher can know when discussing classroom management is 3 = 33. There are generally 36 weeks in a school year (taking out vacations). Spending the first three weeks of the school year teaching and PRACTICING the rules will lead to 33 weeks of being able to teach. To do this, teachers have to TRY these steps.

**T – TEACH** the rules like you would a subject such as math, science, or social studies. When teaching these subjects, teachers don’t just tell the students; the students generally do something or practice something to demonstrate that they have learned it. It is the same with classroom rules. Classroom rules and procedures should be taught with examples and non-examples: “How does ‘sitting up straight’ look? What does it not look like?” Practice the procedure or rule: “When you hear this chime, stop moving and talking and look at me.” Students then walk around the room and when the teacher sounds a chime, they stop, get quiet, and look. Then practice it again. Tell the students why they did the procedure correctly or incorrectly: “I like the way everyone stopped walking and talking. You all looked at me. Great work! Let’s try it again.”

**R – REINFORCE** the procedure or rule consistently by allowing extra time to practice during the first three weeks. For example, before an activity, remind the students of the procedure. If the class is lining up and your procedure is “be quiet, stand, push the chairs in, and line up,” then allow time so the procedure can be practiced if it is not done correctly the first time. Practice DOES NOT make perfect! Only PERFECT PRACTICE makes perfect!

**Y – Starting a new YEAR** in the classroom requires classroom management planning. Occasionally, teachers state that due to testing constraints or curriculum pacing, they don’t have time to follow this process. Consider the fact that a teacher who doesn’t teach the rules and procedures, and allow time for students to practice them, will spend 36 weeks in the school year reminding students to follow the rules. This takes more time than teaching it correctly the first time!

Creating rules and procedures is easy—getting students to follow them is another matter. Remembering 3 = 33 will help the process flow smoothly and create a more orderly classroom both at the beginning and at the end of the school year!

*Dr. Kovarik* has experience as an elementary teacher, a guidance counselor, a primary specialist, and a school administrator. She currently teaches online courses and speaks to teacher groups. She coauthored *The ABC’s of Classroom Management, 2nd Edition*, which is highly recommended for all new teachers.
By Catherine Pangan

Dear Dr. P.,

I am looking for unique ways to connect with the parents of my students to help them feel a part of the classroom at the beginning of the year. Do you have any suggestions to get the relationship off on the right foot?

Thank you,

Positive Parent PR

Dear Positive,

What a good time to ask such an important question. Establishing the parent–teacher relationship builds the community in the classroom in deep ways. For some creative ideas, I went straight to “seasoned” parents of preschool through middle school students to see what resonated with them.

Photos and Videos: “We had a third-grade teacher who shared one picture or video a DAY through email. It kept us engaged, informed, and excited to check our inboxes. At the end of the year, we had a whole scrapbook full of photos that our daughter loves to flip through. It exceeded our wildest expectations.” You may want to try a private Google photo link as an easy way to share. Many schools and districts are also using Vidigami for photo sharing. For students who may not have computers at home, print a quick picture and send it home.

Does this take extra time? YES. However, think of it as short-term loss for long-term gain. The parents will feel connected as you make learning visible—and, in turn, you will build powerful relationships. Make sure you have photo release statements for group photos.

Weekly Newsletters With Student Quotes: One mother of a middle schooler shared an anecdote about her son’s language arts teacher. The teacher sent detailed (and humorous) newsletters home every Friday, peppered with quotes by the students. Every day at 10 minutes before the end of the block, she captured students’ thoughts as they narrated about the class time. She shared news about the day, and the students wove in thoughts about their lives and the class. The parent stated, “It was a perfect blend of academic and personal observations that captured the day of my middle schooler. I was so grateful for the time she took to compile the class vibe for the day!”

Quick, Positive Texts: “My daughter’s preschool teacher sent a text or two during the week. It made my day! It made me feel like she really understood my daughter.” The emphasis here is positive. Texting also helps with parents who might not email as frequently.

Home Visits: Are you ready to take connecting with parents up a notch? Consider home visits, which are becoming more prevalent in many districts. Before school starts, teachers meet with the students and parents at the child’s home. These visits forge very strong relationships, especially with students starting in a new school. Interested in learning more? Check out the Home Visit Project: http://www.teachervisits.org

Enjoy your new class community and let us know how your creative connecting goes!

Dr. P.

Dr. Pangan, a former elementary teacher and current Professor at Butler University (Indianapolis), loves to help build and support strong, healthy schools. Please send your question for Dr. P. to cpangan@butler.edu.
TECHNICALLY SPEAKING

Introducing TIM!

By Mindy Keller-Kyriakides

TECHNOLOGY
The Technology Integration Matrix (TIM) seems overwhelming at first, so many teachers pass it by for simpler models. Once understood, though, TIM is a powerful way to evaluate what you are doing with technology in the classroom and where you might improve. It offers you, through the level definitions, a step-by-step way to deepen your integration of technology and strengthen student learning.

Think of TIM like a rubric in its presentation of characteristics and levels of integration. Within each of the five characteristics, there are subcategories: what students can do and are allowed to do, what the teacher does, and what technology tools the school has made available in the classroom environment. These three subcategories work together to reflect the whole learning experience. Here is a breakdown:

**Active: Students engage with the technology.**
- **Students**: how actively students are using the technology to facilitate their learning
- **Teacher**: the degree of choice you offer students in the use of technology as well as your regulation of their learning activities
- **Environment**: the degree to which the classroom allows for self-directed learning and simultaneous access to online resources

**Collaborative: Students use technology to collaborate.**
- **Students**: how students use technology to collaborate
- **Teacher**: the extent to which you provide technological opportunities for students to meaningfully collaborate with others
- **Environment**: how well classroom seating, tool access, and networking structures allow for collaboration using technology

**Constructive: Students use technology to facilitate their own learning.**
- **Students**: how students use technology to purposefully construct and share what they’ve learned
- **Teacher**: the degree to which you design and offer opportunities for students to use technology in building their own understanding
- **Environment**: the ways in which students access tools and the variety and quantity of available resources to all students for their learning

**Authentic: Students use technology for meaningful, real-world learning.**
- **Students**: how students use technology for meaningful, real-world learning
- **Teacher**: the extent to which your lessons facilitate and encourage the use of technology for learning beyond your classroom
- **Environment**: the degree of access and variety of rich online resources available to all students simultaneously, both in and out of school

**Goal-Directed: Students use technology to self-direct, self-monitor, and self-evaluate.**
- **Students**: how students understand and use technology for meta-cognitive purposes
- **Teacher**: the extent to which you offer students opportunities to use technology to examine their goals, reflect on learning, and self-evaluate
- **Environment**: the degree of access and variety of tools available to all students simultaneously

Like a rubric, there are levels moving from Entry (teacher-centered/passive use of technology/school only) to Transformation (student-centered/active/real world).

Unlike an evaluation rubric, though, you’re not grading yourself, but understanding your current level of technology use for the purpose of moving forward. You might be Entry level in one category, but Infusion in another! TIM’s a nice guy once you get to know him. Let him help you figure out what you need to do.

To learn more, see The Technology Integration Matrix from the Florida Center for Instructional Technology: http://fcit.usf.edu/matrix/matrix.php

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**Mrs. Keller-Kyriakides**

taught high school English for 10 years. Today she is an online course developer and facilitator with Five-Star Technology Solutions. She loves helping teachers successfully integrate technology.
The process of developing language skills is difficult, but the challenge increases considerably when students are faced with mathematics word problems that combine both unknown math and a new language. Nonetheless, teachers who work with English language learners (ELLs) can strive to provide a meaningful learning experience that supports their students’ development of both mathematical and language skills.

Once students understand basic mathematics definitions, they can progress toward competence in more complex content (Wilson, 2009). Incorporate these five strategies to coach ELLs to vocabulary proficiency in the domains of the mathematics Common Core State Standards (CCSS).

1. **Graphic Organizers:** Vocabulary building can easily become part of a math lesson by incorporating graphic organizers, such as the Frayer Model (New York City Department of Education [NYC DOE], n.d.). Students can use the Frayer Model to define a lesson’s key math terms, describe facts about the terms, and provide examples and non-examples. Kovarik (2010) stressed the importance of students understanding what a mathematical term does not mean as well as what it does mean. Printing the organizers on colored paper is an efficient way for students to sort, access, and review the vocabulary terms later (Roberts & Truxaw, 2013).

2. **Text Preview and Review:** Wilson (2009) supported the use of textbooks in math classes for “the opportunity for self-paced repetition” (p. 46). Prior to a lesson discussion, students can look through the chapter and create a list of important vocabulary words or questions. After the lesson, students and parents can use the textbook at home to review vocabulary words and discuss the text, in their native language if necessary.

3. **Vocabulary Words with Illustrations:** A challenge highlighted by Wolf, Wang, Blood,
noted by the NYC DOE (n.d.), “ELLs need ample opportunities to speak English and authentic reasons to use academic language” (p. 2).

4. Mnemonics and Memory Techniques:
Teaching vocabulary creates background knowledge for students that is then stored in their permanent memory (Kovarik, 2010). An effective indirect teaching strategy is to use mnemonics, or learning techniques to support memorization, that aid in vocabulary retention.

5. Partner Talk: Having students discuss with a partner how they arrive at math answers will foster students’ vocabulary retention and expand their problem-solving abilities. As

Math can be a difficult subject for students. It can be especially difficult for ELLs because they struggle with both mathematical concepts and the vocabulary involved. By following these five strategies, teachers will help their students succeed and become math literate.

References
6 Tips for Engaging Students in Science

By Cynthia C. M. Deaton and Camden Johnson

Inquiry-based instruction is an exciting way to engage students in the content and practices of science. By teaching science through inquiry, educators invoke a child’s natural spirit of curiosity and give students ownership in learning science. Inquiry-based science lessons also provide students with opportunities to engage in science and engineering practices encouraged by the Next Generation Science Standards (NGSS Lead States, 2013).

1. Implement the 5E Model. The 5E Instructional Model (Bybee et al., 2006) supports you in planning for inquiry instruction. The five steps of the 5E Instructional Model encourage student engagement and interest in science. By using this model, you will:

   • **Engage** students in science by gauging their current knowledge of a topic,
   • **Allow** students to **explore** science content through research and investigations,
   • **Encourage** students to **explain** content as you address any misconceptions that arise

As well as provide any additional explanations and content,

• **Elaborate** on students’ understanding by facilitating students’ application of their new knowledge, and

• **Evaluate** students throughout the lesson to ensure that they truly understand the concepts being addressed in the lesson.

2. **Use children’s literature to introduce topics.** A fun book can engage students in science content while enhancing literacy skills. For example, *Science Verse* (Scieszka & Smith, 2004) is a book of poems with content ranging from evolution to matter. Using a book like this at the beginning of a lesson encourages student interest and curiosity about the topic. It can also help you fulfill common core standards.

3. **Integrate your favorite subjects.** One way you can feel more confident in teaching inquiry-based science is through the integration of other subject areas. Build on your strengths in teaching mathematics, social studies, English language arts, literacy, or art by integrating content and related process skills that align
with science topics. For example, you can easily integrate social studies standards related to sustainability and civic ideals and practices (National Council for the Social Studies, 2010) during science activities on ecosystems and how humans impact the environment (Deaton & Mathews, 2012).

4. **Identify student-centered resources.** Science curriculum resources with student-centered activities can be refined to fit into the explore phase of the SE model. For example, Project Learning Tree (2013) activities encourage student-centered instruction and allow students to explore science concepts. These activities also correlate to the Common Core State Standards for English language arts and mathematics.

5. **Research common misconceptions.** To effectively plan lessons that do not reiterate or present misinformation, research common misconceptions about science topics and address those misconceptions. For example, dispel the misconception that all metals are attracted to magnets by providing students with both metals that are and those that are not attracted to magnets during an investigation on magnetism. In addition to learning that wood and glass are not attracted to magnets, students would also see that certain metals are not.

6. **Seek support from someone who loves science.** While some teachers may not easily see the “science” in everything, there are some who do and thoroughly enjoy teaching and learning science. By sharing your ideas with these individuals, you can get feedback about whether your activity clearly and appropriately addresses a specific science standard. Plus, their enthusiasm for learning and teaching science just might rub off on you a little!

Having a toolkit of resources to support your planning can greatly strengthen your ability to facilitate inquiry. Once you see how engaged students are during inquiry-based lessons, you will become excited about teaching science. You will be surprised at the passion you and your students develop for inquiry-based science.

**References**


**Resources**


Example SE Lesson Plans: www.cfep.uci.edu/cspi/lessons.php

Next Generation Science Standards: www.nextgenscience.org


As immigration into the United States has increased, so has the number of students having a limited or interrupted formal education (SLIFE). In urban areas, “about 10% of all ELLs are students with interrupted formal education” (Lee, 2012, p. 66). SLIFE are ELLs who immigrate from areas with inadequate educational infrastructures, or those who have had limited educational opportunities (DeCapua & Marshall, 2015). They come from cultures that are entirely different from the community and school culture they enter. Additionally, they have often dealt with traumatic experiences that have left them feeling isolated (Advocates for Children of New York, 2010).

Due to the absence or interruption of their formal learning experiences, SLIFE often do not yet have an “understanding of basic concepts, content knowledge . . . critical thinking skills, and may not . . . read or write in their home language” (DeCapua, Smathers, & Tang, 2007, p. 40). DeCapua and Marshall (2010a) stated that characteristically SLIFE:

- rely on oral transmission of information rather than reading,
- learn best when the information they learn can be immediately applied to help them rather
than being used as a building block for future information, and
• often come from cultures where group relationships are more important than individualism.

SLIFE frequently require strategies that give them extra support throughout the learning process. Try these seven supporting strategies with your students.

1. **Teach classroom procedures.** SLIFE may arrive at school not knowing how to put a header on a paper or ask a question in class. Teaching and practicing classroom procedures when students arrive allows them to focus on academics rather than the associated expectations and procedures (DeCapua & Marshall, 2010b).

2. **Break assignments into tasks.** Ultimately, students will complete the same assignment, but they will be less overwhelmed if teachers deconstruct assignments into small tasks. DeCapua and Marshall (2010a) found that “focusing directly on academic tasks” helps “students develop their critical thinking skills” (p. 54).

3. **Pick “poetic devices.”** DeCapua and Marshall (2010b) stated that rhymes, songs, acrostics, and mnemonic devices help SLIFE retain information. Acronyms like FOIL (First, Outer, Inner, Last) teach both vocabulary and how to approach a factoring problem in mathematics.

4. **Use cooperative groupings.** Assign defined roles in pair or group work so that SLIFE will have individual responsibilities, but will be able to learn “directly from another person” (DeCapua & Marshall, 2010b, p. 165).

5. **Incorporate multimodal instruction.** Combine “oral and written modes so that they are integrated” to support learning (Decapua & Marshall, 2015, p. 50). When giving directions for a task, provide the steps orally as they are displayed on the board, screen, or the student’s paper in written format. That helps SLIFE “learn to derive meaning from print” (DeCapua & Marshall, 2010a, p. 54).

6. **Modify the curriculum.** Barillas-Chón (2010) recommended incorporating histories and perspectives from “different indigenous groups” (p. 318). For example, when studying The Joy Luck Club, I also had students read excerpts from books written by authors who shared the same cultural background as my students; students compared those excerpts to the novel we were studying. Additionally, Bang (2011) proposed that teachers provide “visual aids, simplify vocabulary, [and] adjust or supplement assignments . . . to guide student work, and offer a wide range of learning materials” (p. 14). For instance, the vocabulary in a statement such as the unification measures established an equitable salary structure might be simplified as people joined together to create a fair salary plan.

7. **Keep learning connected to reality.** Connect content to the practical realities of students’ lives (DeCapua & Marshall, 2010b). Bang (2011) provided an example of this: “One math teacher asked students to keep a journal of everything they did at home and how long it took,” then students “examined the percentage of time spent on various activities” (p. 17).

Applying these seven strategies with SLIFE will eliminate many obstacles in their pathways to academic success. Adding these strategies as steps in lesson planning and teaching can support all students as they strive for a more opportunistic future.

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**References**


DeCapua, A., & Marshall, H. W. (2010a). *Serving ELLs with limited or interrupted education: A challenge for the English Learner Academic Achievement Specialist*. She has taught various levels of ELLs—from newcomers to reclassified ELLs who are transitioning out of the English Learner Development program. She recently earned her Master of Arts in TESOL (Teaching English to Speakers of Other Languages).