Developing Independent Student Thinking

Children enter this world, not as empty vessels to be filled, but with a brain capable of complex understanding and new discoveries. Our job as teachers is to find ways to reach children, facilitate their understanding by developing schema, and help them make connections between important ideas. As Robert Frost wrote: “I am not a teacher, but an awakener.”

We know that student learning is greatly enhanced when students are empowered to make decisions related to how they connect new content with as many characteristics with as many senses as appropriate.

Table 1: Developing Observation Skills in Self-Directed Learners

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>TEACHER-DRIVEN LEARNING</th>
<th>SCAFFOLDS TO</th>
<th>STUDENT-DRIVEN LEARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Users qualitative characteristics with as many senses as appropriate.</td>
<td>Teacher leads a discussion to introduce the class to pre-determined criteria (e.g., use 5 senses, make multiple entries) and appropriate tools to extend sensed criteria. Criteria are posted for reference. Teacher provides a pre-formatted recording sheet. Task students to think aloud.</td>
<td>Teacher models thinking process for quantities observations referring to posted criteria. Students complete a section of the pre-formatted worksheet and ask small groups of students to complete the rest. Students write their own qualitative observation using as many senses as appropriate and use tools to extend observations as appropriate, (e.g., hand lens, microscope, and telescope).</td>
<td>Students work in partners to select a pre-formatted worksheet or one of their own designs to record their observations. Students use a “think aloud” activity to complete their observations. Students check their observations against the posted criteria. Students write their own qualitative observations using as many senses as appropriate and use tools to extend observations as appropriate, (e.g., hand lens, microscope, and telescope). Students design their own recording format. Students may use posted criteria as a reference if they have not yet internalized the criteria.</td>
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<tr>
<td>2. Use appropriate tools to make quantitative measurements.</td>
<td>Teacher leads a discussion to introduce the class to pre-determined criteria (e.g., standard and non-standard measurement, use of known scales such as balances and pH/quantitative observations. Criteria are posted for reference. Teacher provides a pre-formatted recording sheet. Teacher models thinking process for quantities observations referring to posted criteria. Students perform tasks (e.g., use scales, and recording sheet for quantitative observations. Teacher completes a section of the pre-formatted worksheet and asks small groups of students to complete the rest. Students work in pairs to check their observations against the posted criteria and to clarify if they have recorded an inference rather than observation.</td>
<td>Students work in partners to select a pre-formatted worksheet or one of their own designs to record their observations. Students use a “think aloud” activity to complete their observations. Students select appropriate measurement tools and/or scales. Students check their observations against the posted criteria. Students write their own quantitative observations referring to posted criteria. Students may use posted criteria as a reference if they have not yet internalized the criteria.</td>
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<td>3. Based on fact, not inference.</td>
<td>Teacher leads a discussion to introduce the class to the difference between observation and inference. Teacher adds criteria to the original chart.</td>
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Hoping for Blossoms

BY KATHY DIRANNA

It's raining outside and I have time to be a practical philosopher. I look out at my garden and wonder if the bulbs I planted will blossom this spring. I wonder if, in the end, what we do in the garden matters when nature will just normally take her course. Similarly, I often wonder if our actions in education matter at all. Do we really help students become lifelong learners? Do we provide professional development experiences that enable teachers to become better at their practice?

Students move through the grades, teachers are often with us in in-services for only a limited time. Do we have any real impact in these short time frames? What is the end result of all this work we do? Even though it's pouring with rain, I think, “I wonder if the roses will come back from my garden and wonder if the bulbs I planted will grow.”

The email made more than my day — it was like a whole field of tulips opening up in the bright sun. We gathered outside and everyone was enthusiastic about this project. Something was spreading through us. The bulbs we planted back then multiplied exponentially and the result today is blooms all around and in places we least expect it.

Finally, the rain has stopped and the sun is now shining. I go outside and scan the ground — I see small sprouts breaking through the cold soil, tiny green buds hungry for more sun. For us gardeners, nothing beats the feeling of seeing success growing where you planted something only a while ago. Likewise, for us in the professional development world.

Here's to many blossoms of great teachers who strive daily to develop their students into thinkers with a never-ending love for learning. Here's to those teachers who put time, effort and talent to becoming the best that they can be. And here's to the professional development staff that keeps their eyes forward to the future of education.

NOTEBOOKS, CONTINUED FROM PAGE 1

learning through increased student decision-making and student-to-student interactions (Column B and C). In the last and final column, scaffolds are removed and responsibility for learning is shifted to the individual students. Examples from student work help to illustrate the continuum of the matrix. In Sample A, the teacher modeled how to complete a pre-formatted recording sheet. She drew the four quadrants, thought aloud about the senses, and decided to record observations for all but taste. She then drew pictures to remind her of what each sense was. She added the first instructional materials to share with other teachers as we developed instructional materials based on national standards.

I progressed from teaching in the classroom, to working as a science coordinator at a district, to now working at a regional science center in the area of elementary science. Ialso write science curriculum and instructional materials for teachers who teach grades K-2.

It was great to see you are still promoting excellence in science education. Just wanted to say “thanks” for a great start when I was a first year teacher. The methods and ideas stuck with me.

Regards,
Annette Venegas, M.Ed.
Educational Science Specialist
Instructional Programs & Services
Education Service Center, Region 20
San Antonio, TX

The email made more than my day — it was like a whole field of tulips opening up in the bright sun. Something we did in professional development helped a teacher discover a new way of thinking and a new way of teaching. In turn, she was able to “spread the news” to others. The bulbs we planted back then multiplied exponentially and the result today is blooms all around and in places we least expect it.

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NOTEBOOKS, CONTINUED ON PAGE 4
As a fifth grade teacher, I decided to become part of the K-12 Alliance, not because I was a science buff, but rather, I was quite the opposite. I never considered myself “good” at science and so, as a teacher, I thought joining the Alliance would be a great way to learn more about science and become more excited about teaching it.

As a fifth grade teacher, it was interesting, but it never really sparked my interest. Sure, I loved doing the experiments, I just had a hard time connecting them to all the “big” scientific words and what they meant. It was time to change that way of thinking.

At first, the science part was difficult because I was a little timid and I didn’t have all the “background” knowledge the other teachers had. I worked hard to learn the concepts, and the K-12 Alliance staff was very supportive. As my knowledge of science grew, so did my confidence.

But the K-12 Alliance turned out to be more than just science; it was a whole new way of looking at lesson planning. As I observed, I decided that the best lessons were the ones that tell a complete story from beginning to end. Teaching big, board concepts this way makes sense to students.

My fifth grade colleagues delegated me with teaching the hardest unit, fifth grade Matter. Before when I taught science, I followed the textbook time-line, but now, I decided to create a unit for Matter that would help students in their learning process. I thought, “How can I teach Matter to students by telling a story?”

It took some time to create a timeline for my Matter unit – which included all the state standards – but I did it.

I have taught this Matter unit on three separate occasions. The results? Very successful. Of course, I am always thinking how I can improve on it, but that is what we learn in the K-12 Alliance. There are always new questions that come up and need to be answered.

The K-12 Alliance affected my teaching across the board. As a fifth grade teacher, I teach all subjects, so learning how to effectively plan a lesson has helped throughout my curriculum.

For example, when we received a new math textbook, we were given a new timeline for teaching various math concepts. The first year was rough, then over the summer I thought how I could incorporate the K-12 Alliance techniques to teach math by “telling a story.”

After creating the units, I saw that my story had good results; students could grasp the concepts and there was a better path to follow that made more sense than textbook timelines. Naturally, I mapped out all the other trimesters and shared my Fellow colleagues’ “ideas” too, were very excited to use the new guidelines!

Now, every time I think about creating a lesson, I think about being a storyteller. This way of lesson planning makes me excited about creating new lessons. Not only does it help my students, but it also helps me see material, and concepts differently.

Today, I have a feeling of great accomplishments when I teach a lesson. I know I am getting my point across and that my students are really absorbing the lessons. It’s no secret. I am a better teacher because of the K-12 Alliance.

I try to incorporate science into different areas of the fifth grade curriculum. Students get to do many “hands on” experiments, as well as explore science

**A GOOD STORY, CONTINUED ON PAGE 4**

**LEADERSHIP**

**TEACHING & LEARNING**

**COLLABORATION**

**Why Relationships Matter**

**BY JODY SHERRIFF**

**A GOOD STORY, WELL TOLD**

**BY DANA HAYES**

**From Speech to Paper**

**BY JO TOPPS**

W hat do rocks, a double-bubble map and 20 second graders have in common? Hint: it’s a two-part answer that is blazing educational trails in Southern California classrooms.

Teachers at Rosewood Park School (RPS) in the Montebello Unified School District are completing the third year of a unique approach to teaching English Lan-

guage Development (ELD) during science instruction. Funded through a CPEC/ITQ grant, this endeavor has enabled primary teachers at RPS to develop science lessons that are both inquiry-based and tailored to the language development needs of their students. Teachers at RPS have used the K-12 Alliance’s Teaching Learning Collaborative (TLC) process to not only design science lessons in a 5E format, but to also analyze the effectiveness of their lessons by looking at student work and then revising lessons based on that evidence. The results: surprises and successes!

A year ago, the second grade RPS TLC team of Salvador Samiento, Roberta Molerdez, Rebecca Tranches, and Lupe Ricca developed an Earth science lesson that helped students learn how to compare the physical properties of different rocks. Their design lesson attempt focused on the mechanics of the 5E, managing the hands-on materials and paying attention to the oral language of their students.

The team created sentence frames aligned with science thinking processes, language functions and their students’ English language proficiency. By the third year the team was confident their students were ready to write in science.

Working together, the team redesigned their lesson on comparing the physical properties of rocks. The 5E and predicting the oral language had become a regular way of thinking about planning any curriculum. Materials management was now a breeze. Predicting the oral language forms students would use...

**FROM SPEECH TO PAPER, CONTINUED ON PAGE 4**

MARCH 2010 3
I was very excited when I received my copy of The Choreography of Presenting: 7 Essential Abilities of Effective Presenters by Kendall Zoller and Claudette Landry. I read the book and eventually used the strategies with groups with great success! In a nutshell, this book is a must have for anyone whose job includes presenting for peers, colleagues or any audience delivering professional development workshops, trainings and presentations. Zoller and Landry describe complex communication patterns and group reactions with a straightforward simplicity and eloquence that makes it understandable and doable.

I found the framework of the 7 Essential Abilities extends and deepens Goleman’s model of Social Intelligence by providing specific verbal and nonverbal patterns that engage the brain and support our social awareness and synchronicity. Throughout the lessons by research and clearly explaining the choreography that is common to all effective presenters. The book begins with an overview of the 7 Essential Abilities then, each chapter provides the research supporting that ability as well as detailed descriptions of several verbal and nonverbal patterns. The skills are brought to life with delightful and relevant examples from real-life experiences to illustrate their powerful influence on participant learning. Also included are exercises to help readers perfect the skills.

In the chapter on Creativity, the authors share stories of presenters who have credibility as well as those who had it and suddenly lost it. The authors wittingly explain that they do “not to suggest that credibility will be established by simply implementing specific nonverbal patterns without having any actual expertise in a discipline.”

Outstanding presentations require both content expertise as well as expertise in these seven abilities. Having both will significantly improve your game. Kendall and Claudette tell us there is no magic to being an effective presenter; rather it is a weaving of your content expertise in an academic discipline with the conscious, deliberate, and systematic use of the patterns described in this book “that increase congruence between your intentions and audience perceptions.”

This book teaches how to ameliorate the craft of presenting. I’ve seen Kendall present this work for more than 15 years and each time I learn something new or see a way to be more flexible and expansive with skills I already have. The same is true as I read this book.

Notice or master presenter will both find skills in this book that will bring enlightenment and an even higher level of expertise. Whether it is learning how to expand your RIFF to reach diverse audiences, broaden your perceptual acuity to see patterns you have always looked at but never recognized, or recover when things go awry, this book will satisfy your hunger for improvement.

Once you have read The Choreography of Presenting: 7 Essential Abilities of Effective Presenters, you will forever change the way you present to your audience. Kendall and Claudette tell us there is no magic to being an effective presenter; rather it is a weaving of your content expertise in an academic discipline with the conscious, deliberate, and systematic use of the patterns described in this book “that increase congruence between your intentions and audience perceptions.”

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NOTEBOOKS… CONTINUED FROM PAGE 2

Using Notebooks as a Tool to Develop Self-Motivated Learners

As this school year comes to a close, we call attention to two resources for implementing notebooks into your everyday classroom practices. The first book, Science Notebooks: Writing about Inquiry, is written by two classroom teachers, Brian Campbell and Lori Fulton, of the Clark County School District in Las Vegas. The other book, Using Science Notebooks in Elementary Classrooms, is written by Michael Keenetsch and is based on his work integrating science and language for English learners right here in California’s Imperial Valley.

Both books take up the topic of scaffolding, the use of notebooks for students and provide specific examples of scaffolds that move students away from teacher dependence toward self-directed learning. Read, digest and enjoy!!

A GOOD STORY, CONTINUED FROM PAGE 3

with technology and projects. I have also created a few science enrichment activities. I look forward to this year’s Summer Institutes and my third year in the K-12 Alliance so I can bring more science into the classroom. Although I am no expert, I am more confident with my knowledge in science and lesson planning – and I want more! ELD/Content Integration: I realized that I have always been learning about science. I love giving thought-provoking questions to students. I love that there are times when you can just be thinkers and experiment. I love the look on their faces when I tell them to just try and test it out. Most of all, I love when they get so excited to figure out the answers themselves through investigation. They really feel a sense of autonomy and pride. And this is any teacher’s dream!

Dana Hayes is a fifth grade teacher in the Temecula Unified School District.