

# Teaching For Success



Volume 17, Number 1,

## Cling to the Fundamentals

**Inside** (Click to Go!)

- Cling to the Fundamentals, p. 2
- Of Teaching, Resolutions, and Experimentation, p. 3, 8
- Teacher's Block—A Sure Sign to Take Action, p. 4
- Making Connections in Math Class, p. 5
- When Negative Energy Invades the Learning Space, p. 5
- Seven Fundamentals for a More Successful Term, p. 6
- A Fundamental Lost and Found, p. 7
- First Meeting Basics, p. 8

**ALL NEW**



TFS Critical  
Success Factors  
of Good Teaching:

- Leadership
- Management
- Instructional Design
- Communications
- Evaluation

TFS PIE-R<sup>3</sup>  
Instructional  
Model:

- Prepare
- Input
- Explore
- Retain
- Reconfirm
- Reflect

## Cling to the Fundamentals

Jack H. Shrawder  
Publisher/Editor, TFS  
jack@teachingforsuccess.com

**T**he unnerving events of the past several years have raised many pointed questions for teaching and learning as well as other facets of life: What is really going on here? What are the fundamentals?

Are we clinging to the right things? What do you perceive as the learning problems challenging you and your students? Are these the problems that need addressing? Are they problems to be solved, or are they simply problems of perception?

Consider a headline from the front page of *The Wall Street Journal* published on December 13, 2004. It reads, "As Math Skills Slip, U.S. Schools Seek Answers from Asia."

Condensed to its essence, the story reports on how students in Singapore and other Asian countries routinely outperform U.S. students on math tests. According to this piece, Singaporean students consistently rank among the highest in math proficiency in the world.

Investigations into why this is so reveal, amazingly, that the math textbooks in Singapore only cover one-third of the subjects covered in the United States—but they provide students with tools like visual bar graphs that paint pictures of the underlying mathematics involved in solving a problem. (It's a visual way to think on paper about an abstract problem.) These bar graphs can be produced with simple pencil and paper and don't require a computer. Also, Singaporean students learn by rote, a practice sometimes dismissed as old-fashioned in some U.S. education circles.



This finding was interesting, but what really caught my attention was the following statement: "Singapore's curriculum was developed over the past few decades by math experts hired by the Ministry of Education, *who continually interviewed math teachers to find out what works and where kids need help*" (my emphasis). This statement penetrated my awareness for two reasons. First, Teaching For Success is now beginning its 17th year of publication and service to higher education, and I founded this monthly on the premise that teaching and learning can be improved by finding out from faculty and other experts what works, and then *sharing what works* with faculty like yourself in the pages of *TFS* each month.

The second reason for my interest grew out of a breakfast conversation about success with a retired founder and CEO of a Silicon Valley electronics corporation who built a fortune for himself and others on two fundamental principles:

- ❑ Interview the most successful practitioners, find out what they are doing and how they are doing it, then teach those practices to others with less experience.
- ❑ Be solidly optimistic in your thinking; don't let the naysayers grind you down!


Therefore, one fundamental that *TFS* will stick to religiously throughout the coming years is to continue to publish what works from faculty who believe teaching and learning can be improved, and who are continually trying new solutions and reporting on what

they have learned. These faculty are the optimists in education; their spirit, enthusiasm, awareness, and hard work form the scaffolding upon which better learning in higher education is being built.

Which fundamentals will you be sticking with and which will be you be discarding this year? Chances are your choices will depend on your level of awareness.

Advances in awareness are being pioneered by those studying applications of Asian mind exploration and development concepts such as mindfulness. It may be that a more highly developed skill of awareness and mindfulness has enabled educators in Singapore to ascertain exactly where their students need help in learning mathematics and then provide the needed help as described in the aforementioned article.

Possessing a keen awareness of how best to help students learn is a key skill in teaching effectively. In describing this skill, you might be more comfortable with the more technical term, diagnostics. But whether you call it awareness or diagnostics, it means knowing when and how to intervene in the learning process and to how to provide the right kind of help at the right moment.

This class term, practice developing an awareness of exactly what is transpiring in students' minds while they are learning and what roadblocks are causing them to stumble. Then, use your awareness to cling to good instructional fundamentals and create solutions that make a difference for your students. 

**A**lbert Einstein fundamentally changed the world, and it will never be the same. Celebrate the work of a great scientist; go to <http://cfa-www.harvard.edu/seuforum/einstein/>.



TFS Critical  
Success Factors  
of Good Teaching:

- Leadership
- Management
- Instructional Design
- Communications
- Evaluation

TFS PIE-R<sup>3</sup>  
Instructional  
Model:

- Prepare
- Input
- Explore
- Retain
- Reconfirm
- Reflect

## Of Teaching, Resolutions, and Experimentation

Brian R. Shmaefsky, Ph.D., TFS Partner Editor  
Biology & Environmental Sciences  
Kingwood College  
Kingwood, TX  
brian.shmaefsky@nhmccd.edu



**M**ost college instructors teach science because they have a passion for the subject. Graduate training in the sciences exposes the future scientist to practical problems that are solved with experimentation.

### Process Motivation

These graduate-level experiments are carefully designed from the initial hypothesis to the final conclusion gathered from the meticulously analyzed data. This process is an uplifting experience in spite of the tedium required to get to the end. The motivating force behind this endeavor is interest in the nature of the problem being investigated.

However, students in lower-level undergraduate science classes do not always see the full value of each topic covered in their courses. The first two years of the curriculum usually present a survey of the topics that somehow fit an underlying theme.

Much of the information presented in lecture and in the textbooks appears to have dropped out the sky. Even the rationale behind many of the experiments described in class seem to be out-of-the-blue ideas that led to successful findings.

### You could do it too

The brilliance of the foundational experiments presented in lower-division classes make the field

seem somewhat unattainable to novice students. A typical comment made by general biology students is something like, “I would have never been able to come up with that idea.” Little do the students know that the scientific method used to solve the big problems is merely an easily taught logical application of intellectual curiosity. Students can be made more comfortable with scientific content if they are shown that they could carry out the same ruminations as the great thinkers in science.

New Year’s resolutions and scientific experimentation have an important commonality: they are only successful if they are realistic, relevant, and simple. Understandably, this same theme applies to science teaching. With this common thread it’s possible to combine New Year’s resolutions, scientific experimentation, and science teaching into a successful pedagogical strategy: make a resolution to teach students how to apply scientific method using realistic, relevant, and simple examples.

### It’s in the media

Recent news stories about scientific findings are the best sources of relevant classroom material for this task. Almost every week there are articles about the everyday applications of science. Findings in astronomy, biology, chemistry, engineering, and physics are not only reported in the obvious places such as *Popular Science*, *Science News*, or *Scientific American*; these stories are also in *Newsweek*, *Time*, *US News and World Report*, as well as local newspapers. It is even better to have students themselves be the information resources, by asking them to bring in science news stories they found online or in periodicals.

A cursory glance at the educational research shows that analyzing pertinent periodical articles is effective in teaching adult students abstract ideas such as the

logical reasoning used in the scientific method. This strategy is regularly used in law schools and public policy programs. Ruth Jarman and Billy McClune at the Graduate School of Education, Queen’s University in Belfast, Ireland, cite the following rationale for using this instruction method at any academic level. Periodicals can be used to:

- ☐ Illustrate the relevance of science, particularly in relation to topical and local issues.
- ☐ Illustrate the nature of science, particularly in relation to science-in-the-making.
- ☐ Provide a context for developing general literacy, particularly in relation to skills and ideas associated with reading, research, and communication.
- ☐ Improve scientific literacy, particularly in relation to skills and ideas associated with critical thinking about science, “science for citizenship,” and lifelong learning.

### A Special Role for Newspapers

Other researchers claim additional benefits from using newspapers for teaching content application:

- ☐ It is an adult medium that students of all ability levels can comprehend.
- ☐ It deals with what’s happening here and now, providing motivation for reading and discussion.
- ☐ It makes learning engaging.
- ☐ It is extremely flexible and adaptable to a variety of topics throughout the course.
- ☐ It bridges the gap between the classroom and the real world.
- ☐ It helps reinforce reading habits that will last a lifetime.

*continued on page 8*





TFS Critical  
Success Factors  
of Good Teaching:

- Leadership
- Management
- Instructional Design
- Communications
- Evaluation

## Teacher's Block: A Sure Sign to Take Action

Michael Griffith, TFS Partner Author  
Communications Studies,  
Northampton Community College  
Bethlehem, PA  
mgiffith123@yahoo.com

**W**e've all heard of writer's block: it's what happens when a writer looks at a blank page and can go no further. He or she is out of ideas and has nothing new to write. Sometimes the pressure to create is too much; he or she simply cannot come up with something new to write about, and rehashing old themes and topics already explored is out of the question. So the only acceptable course of action is to try to forge ahead into the unknown.

Have you ever experienced a blanked-out, devoid-of-new-ideas feeling when you face the prospect of another class? If so, you've encountered a variation of the phenomenon that I call teacher's block. If you experience it, don't worry: there are plenty of ways of overcoming writer's block, and these same techniques apply to overcoming teacher's block.

### Make the Old New Again

Let's face it; going over the same material in the same order semester after semester can get boring. If it gets monotonous, you will likely transmit this attitude to your students. Your boredom will come through in many nonverbal ways as you lecture or discuss the material, and your students will pick up on this. Their enthusiasm and interest consequently can wane.

So buck up, accept your true feelings, and then challenge yourself to come up with new ways to present and process the course information. Maybe

you've fallen into a rut. Instead of presenting and summarizing textbook information for your students, why not have them summarize it for you and the rest of the class, either in a discussion session or in papers that are shared by the entire class once they are written?



Alfred Hitchcock explored fear in all of his films, but he did so in a new way with each one. Can you think of new ways to cover molecular biology, Pythagorean mathematics, or communication theory?

### Ask for New Ideas

New ideas are all around you. Plug in and get excited about new ways of instructing. Why not talk to a colleague who teaches a course similar to yours and ask how they would approach a certain topic in class? Their method might be radically different from yours but still achieve the results you're looking for. Share your methods with them, too. You'll be surprised how new your ideas will seem to someone who has never thought of them.

### Step Out of Your Instructional Comfort Zone

Most instructors teach in the manner they feel most comfortable with. But comfort can lead to tedium, and routine soon becomes a treadmill. Mix things up. If you always use copious PowerPoint slides when you teach, lecture using instructional stories

and include only one or two hard-hitting graphics. If you primarily lecture, try to open the floor to student discussion or form small learning groups.

If you have never featured group work in your classes, why not create assignments where students can work in groups? Take chances with innovative methods and don't be afraid to experiment. After all, it is only through new experiences that we fundamentally learn how to improve what we do.

### Branch Out to New Territory

Let's say you've taught acting for years, and you've fallen into a routine; the fun of teaching is gone. Try something really new: take an acting workshop yourself, audition for a role in your community theater, or make a plan over several years to write and direct your own play. Do whatever you can to rekindle that spark of enthusiasm for the topic you once had.

Teacher's block—we all seem to face it from time to time. It usually signals a need to begin a period of self-development and self-exploration that will heighten your awareness of who you are and why you are teaching.



### Your Ticket—to Better Teaching

**T**he latest Teaching For Success QuickCourse, "Harassment in Higher Education" is scheduled for release by late February. This self-study mini-course comes as a response to requests by institutions of higher education for a resource to help part-time faculty understand how harassment can unwittingly occur in the classroom and what communication and management factors it is important to know. For more information about this new QuickCourse, contact Jack Shrawder at 800-757-1183, or send an e-mail to jack@teachingforsuccess.com. This QC is on sale for a limited time at 40 percent off the regular price. Act now and save.



Penny Shrawder Jack H. Shrawder  
Editors and Publishers

TFS PIE-R<sup>3</sup>  
Instructional  
Model:

- Prepare
- Input
- Explore
- Retain
- Reconfirm
- Reflect



TFS Critical  
Success Factors  
of Good Teaching:

- Leadership
- Management
- Instructional Design
- Communications
- Evaluation

TFS PIE-R<sup>3</sup>  
Instructional  
Model:

- Prepare
- Input
- Explore
- Retain
- Reconfirm
- Reflect

## Making Connections in Math Class

David Yopp, D.A.  
College of Southern Idaho  
Twin Falls, ID



**I**n most undergraduate math courses, students are bombarded with terminology from day one.

Take beginning algebra for example. In the first few weeks, students encounter mouthfuls like commutative law of multiplication, associative law of addition, inverse properties, reciprocal, and determinant. As the course progresses, the list of terms grows. This terminology is needed to communicate effectively with student; however, communication is blocked when students don't clearly understand basic terms.

For instance, a student might ask, "How did you go from step A to step B?"


"I used the commutative law," I might say.

If the phrase "commutative law" is understood, we continue along the mathematical learning path. If not, the discussion is forced into a cumbersome digression. Clearly these terms are important, but students often pay the terms little mind, rarely remember them, and almost never assign any significance to them.

That's why I take a dictionary to math class. I tell my students that mathematicians don't choose terms randomly, and if they look in the dictionary they will find that the words have roots in everyday language, roots that provide hints about their mathematical meaning.

Take the word commutative, as in the commutative law of multiplication. In math it means  $ab = ba$ . In *Webster's II New College Dictionary* it means "relating to, involving, or marked by substitution or exchange," or "independent of order." The root word commute means "to make substitution, exchange... to travel as a commuter."

After they read the dictionary definition of commutative, students can more easily understand its relationship with the mathematical law, as in: "we exchange the order of (a) and (b), or move them around." Looking at the dictionary definitions also gives students a chance to relate these mathematical ideas with their own lives.

For example, many of our students commute to school, so there's their connection. And, in the words of K. Patricia Cross, "learning is about making connections." 

## When Negative Energy Invades Your Space

Shelli Pentimall, Adjunct Professor, Communication  
Montgomery County Community College  
Blue Bell, PA  
mpentimall@yahoo.com




**W**e all know when it happens. A student enters class with that skeptical expression: one sharply raised eyebrow, lips curled in a smirk, and arms crossed defensively over the chest. This person doesn't need to say a word; in fact, he or she prefers it that way. Without saying a word, this student's mere presence and negative energy is enough to squelch any laughter and joy in the classroom and produce a haunting silence.

Every term, at least one student may bring her or his black cloud into your class, as you try to keep the mood light and infuse the environment with the support and trust conducive to a positive learning experience.

Your efforts, however, are usually no match for the strength of the negative energy this student brings to class. Somehow, with just a glare or an audible sigh, the entire mood of the class changes. The question arises... What can you do?

First, meet with the student privately in a nonthreatening way, and try to understand the reasons for such an attitude. Simply taking time to communicate with this student may alleviate some of the tension. Of course, there is no guarantee that this student will dismantle defensive barriers and change personas. But, any attempt to reach out to this person may be seen as a sign of interest and respect and it will likely be reciprocated.

In addition, the following tips may also help to repolarize the negativity radiated by this person:

- ☐ Remind yourself that you have other students who are willing to learn, and that's where your attention should be focused. Succumbing to the constant challenge of this one student may backfire, and the negativity may spread to others.
- ☐ Working in small groups may help all the students feel more comfortable sharing ideas, and it will keep the energy level up. Perhaps one person in the group may be able to reach out to a quiet, defensive student in a way that you cannot.
- ☐ Be inclusive; encourage every student equally in class, but remember you cannot force a student to learn or even to want to learn. 



TFS Critical  
Success Factors  
of Good Teaching:

- Leadership
- Management
- Instructional Design
- Communications
- Evaluation

TFS PIE-R<sup>3</sup>  
Instructional  
Model:

- Prepare
- Input
- Explore
- Retain
- Reconfirm
- Reflect

## Seven Fundamentals For a More Successful Term

Thomas M. Powers  
Adjunct Instructor of English  
Montgomery County Community College  
Blue Bell, PA  
tpowers@mc3.edu

Since higher education is essential to your students' future success, any classroom that uses communal learning properly will ensure that students develop polished speaking and teamwork skills. As an instructor of English, I place great emphasis on the art of communication and group learning in my classroom. The following tips will go a long way toward helping you create an effective learning environment.

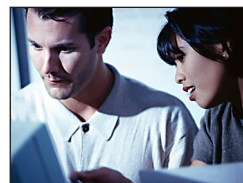
### 1. Hold Class in the Round

The concept of a teacher pontificating from a podium while students sit in rows, feeling disconnected, is an outmoded model. Students need to be integrated in the learning process, so, on the first day of a new semester, a teacher should immediately configure the classroom in a circle, with him- or herself even sitting at a student desk. Thus, no student is lost in a back row; all students are now equal, in a curved front row building an inclusive learning community.

### 2. Make Time for Introductions

Remember how nervous you may have felt as a student entering a new classroom. In order to ease the transition into a new course, arrange your students in pairs so they can introduce each another to the class. For example, give your students 15 minutes to find out five facts about their partner. Then have them

present these findings to the class. As a bonus, I allow each student pair to ask me a question about myself, with the proviso that the question is appropriate in subject and tone. This shows my students that I'm authentically involved in the learning process.



### 3. Prepare a Class Contact Sheet

It's frustrating to teach material when students are absent. As a solution, I ask students who feel comfortable doing so to place their names, telephone numbers, and e-mail addresses on a class contact sheet; then, each class member receives a copy. If they are absent they are urged to contact other class members on the list in order to learn what they missed in class. Of course, if none of the students can clearly explain the missed work, students may e-mail me or speak to me the following class to receive help. In addition, the class contact list allows the students to form study groups and, in some cases, good friendships.

### 4. Question of the Day

Here's an excellent way to start a class, especially those early morning classes. It's called the "question of the day." At the beginning of each week, I ask the students to pose a tasteful "question of the day" that can be quickly answered as we go around the circle. Some of these questions have been, "If you could become an animal, what would it be?" or, "If you were on a deserted island, what two objects would you want to possess?" The answers add a jovial air to the class and increase my students' energy levels and enthusiasm.

### 5. Use Interactive SMART Board Presentations

Because the modern student is visually sophisticated


as a result of the proliferation of TV and the Internet, utilizing SMART Board technology in classroom instruction is a necessity. For my grammar reviews, I place sentence examples on the whiteboard. Then, I have the students correct the errors in the sentences with the SMART Board's colored, electronic pens. This strategy thereby directly engages the students in the group educational experience, and it doubly addresses the needs of students who are either visual or kinesthetic learners.

### 6. Small Group Learning

For class discussions, I often like to break the class into several groups to debate interesting questions in a 15- to 20-minute session. In order to avoid continually placing the students in the same groups, I assign them numbers from one to four; then I direct like-numbered students to form groups. More importantly, I pick the spokesperson for each group, so that all students have equal opportunities to exercise leadership skills.

### 7. Throw a Party

Instead of simply collecting final assignments on the last day of your classes, we should have parties that celebrate the hard work our students have done. I ask for a student volunteer to be in charge and generate a list that includes beverages, utensils, napkins, and plenty of delicious treats. I am always amazed at the variety of homemade food that is spread across the table during these parties,

Finally, at term's end, I ask my students to express their closing thoughts. I end by wishing them well in their future endeavors. Integrating these seven strategies into my methodology has made teaching English a joyful and satisfying experience for me, and I hope they will for you, too! 



TFS Critical  
Success Factors  
of Good Teaching:

- Leadership
- Management
- Instructional Design
- Communications
- Evaluation

TFS PIE-R<sup>3</sup>  
Instructional  
Model:

- Prepare
- Input
- Explore
- Retain
- Reconfirm
- Reflect

## A Fundamental Lost and Found

Ted Rachofsky  
Austin Community College  
Austin, Texas  
tedrach@austin.cc.tx.us

**V**alencia, Spain, is the home of the orange, site of a Mediterranean beach, and the place to eat paella. Considering these tourist attractions, I realized that finding a room could be tricky, especially since our train would arrive at eight in the evening.

Therefore, that morning we called ahead and reserved a room at what was billed as “Valencia’s oldest and best-known hostel.” Twelve hours later we walked into Hostal El Rincon, and the last available room was waiting for us. I then asked the desk clerk, “Where can I buy a bottle of wine at this hour?” The clerk replied, “Wait a minute,” and went into the back room, reappearing seconds later. “Here’s a bottle someone gave me. I don’t drink. Please take it.”

“How much?” I asked.

“No, it’s a gift.”

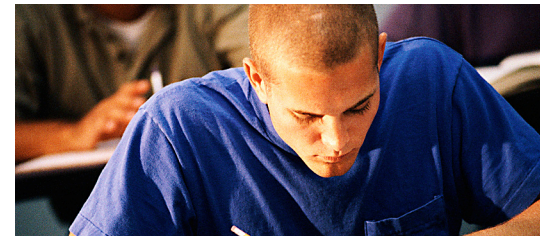
“Gracias,” I said.

Planning ahead and organizing sure made that evening go smoothly. It reminded me of my early years as a math teacher. I used to write down everything I was going to say and then organize copious notes into a tight one-hour script. Even my “spontaneous” jokes were planned.

Then I analyzed each homework problem. If I thought one was difficult or tricky, I’d work it out, making notes so that I could use the most concise language to clear up any confusion. Those first few years were filled with time-consuming preparation and organization, but it paid off, and all my classes went smoothly.

As the years passed, my spontaneity and student interaction increased. I wound up teaching the same or similar courses, using the same or similar books, year after year. I had it made. I was covering the material from beginning to end in an orderly, logical way. I relied on past experience and knowledge and eventually began teaching by the seat of my pants.

In fact, one year I actually taught without preparation or organizing at all. Then came the end-of-semester student evaluations. Almost every student had written the same word: “unorganized.”



**I**’ve discovered that clearing up common misunderstandings is a perfect way to end class.

This couldn’t be true, I thought. Mathematics by its very nature is logical and organized. How could I present logical material in an illogical way? I dismissed the students’ responses and kept teaching the same way. The next semester I received similar student comments. Change was mandatory.

Therefore, I decided to talk to a colleague named Connie.

“I never have enough time to cover everything. Then at the end of class, I have to rush through material so I can catch up to where I’m supposed to be.” I said.

“It’s all organization,” Connie answered.


“Oh,” I said sheepishly.

She continued, “There’s really only three secrets to being organized: planning, planning, and more planning. I arrive at class with an outline of concepts I’m planning to cover, problems I’m going to use that apply the concepts, and problems I assign in class to evaluate how well I’ve taught the concept. My outline is my road map, so I don’t run into uncharted waters or get lost going around the block.”

Of course, Connie was right. She was talking about the road map I used when I first started teaching. Now, because of experience, instead of a road map detailing every inch of the territory, I only needed a larger, more general one.

I tried it. Sure, I get lost, and I have accidents, but they add excitement to the journey, because I quickly get back on the main road. In other words, with a general outline of what I’m going to do in class, I almost always cover the material in a relaxed and methodical way, while continuing to be a spontaneous, interactive, and interesting teacher.

Because of my efficiency, I have time at the end of class to break students into small problem-solving groups. It’s beneficial for them because of the individual attention they get from their classmates and from me. It’s beneficial for me because I find out exactly where students get lost.

Clearing up common misunderstandings is a perfect way to end class, and I’ve also noticed that the word “unorganized” has disappeared from my evaluations. 

At last, The “Solutionary” is now available from TFS, call Jack Shrawder, 800-757-1183 or e-mail [jack@teachingforsuccess.com](mailto:jack@teachingforsuccess.com) for more information.





TFS Critical  
Success Factors  
of Good Teaching:

- Leadership
- Management
- Instructional Design
- Communications
- Evaluation

TFS PIE-R<sup>3</sup>  
Instructional  
Model:

- Prepare
- Input
- Explore
- Retain
- Reconfirm
- Reflect

## First Meeting Basics

Steven McNamara, TFS Partner Author  
Montgomery County Community College  
Blue Bell, PA


The first semester meeting of a day or night class is both an exciting and challenging occasion for students and teachers. The instructor has planned, perhaps to the smallest detail, what he or she wants to accomplish during the very first meeting with students. Instructors are well aware of the axiom that first impressions are lasting ones; it's important to get off to the right start. How do you ensure that what you say about class routines and policies really register with students?

Certainly having a comprehensive syllabus is a necessity. Quizzing the students after they have been assigned to read the syllabus may even be a good idea. There are, however, many important class policy points that are only orally communicated to the students. Many veteran teachers might agree that if valuable class policy information is not written down in some way, even the most eloquent monologue will not be retained for long.

One solution is to put it on paper and share what you've said at that very first class meeting. The trick is how to accomplish this in both an effective and interesting way. One method is to codify points in a casual and conversational way in a letter from a past hypothetical student. Distribute this letter to students as they enter the classroom for the first time. I ask students to read the letter before I officially begin class. Now, I am assured that I have covered every point I want to stress. Experience has taught me

that no matter how well I prepare my opening class remarks, there are usually one or more necessary points I neglect to mention and only remember after students have left.

### Action Step

Prepare a course-fact letter, written as if you were a past student, to distribute to your students at the initial class meeting. 

## Of Teaching, Resolutions, and Experimentation

*continued from page 3*

- ☐ They are a cost-effective way to educate.
- ☐ They contain practical vocabulary and are the best models of clear, concise writing.
- ☐ It's an effective way to analyze the critical components of the scientific method in everyday life.

### Newspaper-based Learning Activities

So, what does a typical classroom activity using newspapers look like?

First, have the students look for stories relevant to the topic being covered on a particular day or week. This keeps students on task with the syllabus and cues them about what is going on that week in class. Second, have the students individually or in a group critique the accuracy of the information and proper use of terminology compared to what was covered in class or in the textbook. An Internet search can also be done to validate the information.


Third, have them point out any elements of

scientific method reported in the article. If the proper scientific method is not evident, then have the students propose possible experiments that could have been done to support the conclusions. Also, ask the students to propose experiments for other applications of the information given in the article.

Assessment of student learning is easily done by providing brief, news-style information on regular tests. For example, ask students to design an experiment for the following information given in these abbreviated news briefs:

- ☐ "A study shows that drinking moderate amounts of coffee during the day reduces the chance of developing adult diabetes."
- ☐ "Spider silk is shown to have tensile strength stronger and more durable than steel."
- ☐ "Astronomers believe that the presence of methane on distant planets is an indicator of past or present life."
- ☐ "Geologists have discovered that microorganisms may be responsible for major mineral deposits in geological formations."

The briefs can serve as the basis for questions asking the students to determine the facts needed to understand the stories' claims, or students can be asked to develop an experiment to determine the truth of the claim. Students' answers can be used as essay or multiple-choice feedback on the tests.

So, this year make the realistic resolution to improve comprehension by using news stories to improve student understanding of scientific method. 

**Teaching For Success®**

Eight issues per year, August through April (except December) by Pentonics Publishing, PO Box 8379, South Lake Tahoe, CA 96158-1379. Sold as annual

subscriptions only; eight issues. Editions: Electronic or Black and White Master with Site License. Go to [teachingforsuccess.com](http://teachingforsuccess.com) for the latest rate information. Pentonics Publishing E-mail: [jack@teachingforsuccess.com](mailto:jack@teachingforsuccess.com); Phone: 800-757-1183.

Publisher, Jack H. Shrawder. Note: Photos unless specifically identified are of models. Penny Shrawder's original watercolor paintings can be seen at [Ovationart.com](http://Ovationart.com)