Plug in to Technology Education in Orlando

Charles Johnson, University of Northern Iowa

When it’s time to recharge my professional batteries, the best way I can think of to do this is to attend a well-planned conference, where I can go to educational sessions to find ideas I can incorporate back home, see the latest gadgetry and books the exhibitors have to offer, and be inspired by keynote speakers. This and more will be available at the 2003 ACTE Convention & Career Tech Expo being held in the new Orange County Convention Center on Universal Blvd in Orlando, Florida Thursday, December 11 through Sunday, December 14.

Here are some quick hints that may assist you in learning more about the conference:

• Go to www.acteonline.org to get all the details on the conference including a schedule, registration form, and hotel reservations. By the way, advance registration (before November 3) will save you about $80.00. Watch those dates!

• There are not specific division (e.g. Technology Education) hotels this year, so just pick the ACTE Hotel that you like best from those on the web site. There will be shuttle buses between the ACTE hotels and the convention center every 15-20 minutes. The housing form is online (www.acteonline.org) with the other convention information and can be found under Convention and Education.

• The Career Tech Expo is ACTE parlance for the exhibits and exhibitor workshops that are being provided. As you know, the Expo is a big hit every year. The Expo is open on Thursday from 11:45 a.m. to 4:00 p.m., on Friday from 9:30 a.m. to 4:00 p.m., and on Saturday from 9:30 a.m. to 2:00 p.m.

• There is a $14 one-way or $24 round-trip shuttle service from the airport to the convention center and ACTE hotels. Taxi cost is about $30.

If you are looking for sessions where you can get to know other professionals and get involved in the Technology Education Division, I have some special recommendations. On Thursday, plan to attend the New Professionals/First Timers Orientation Coffee at 8-9 a.m., the President’s Reception at 6-7 p.m., and the Region Networking Social at 8:30-11:30 p.m. On Friday, be sure to attend the Coffee with the Exhibitors at 9:30-11:00 a.m., the Award Winners Recognition & Reception at 4:30-6:00 p.m., and best of all, the Technology Education Division Reception from 7:30 to 9 p.m., where some great snacks will be served along with a cash bar. And on Saturday, please remember the Technology Education Division Business Meeting from 1:15-2:00 p.m.

These are just a few ideas, and there are certainly many more on the schedule.

Of special interest for those in Technology Education will be our own TED/NRS/NAITTE Opening General Session from 1:15-3 p.m. on Thursday. This is being jointly sponsored this year by our division, the New and Related Services Division, and NAITTE. Our keynoter will be Wayne Hodges, a futurist, who Joe Scarcella promises will be “dynamic and uplifting.” And just to remind you again, remember the Technology Education Division Reception on Friday.

There is lots more I have not covered, such as the large number of education sessions from which to choose, highly renowned general session keynote speakers such as Neil Howe and Fred Grandy, hands-on exhibitor workshops, and the Division Best Practices Forum. The list goes on and on. I suggest you look at all the information on the web (www.acteonline.org) and in the April issue of Techniques magazine if you have it, and then send in your registration early to save some money. This should be a great conference and I look forward to seeing you in Orlando.
communicating morale for the profession

morale, like technology, can be used for ill or well. it too can have positive or negative impacts when working toward an objective. in point, morale, with out mission and purpose, has little effect when taking action in a direction and often can become stifled due to the lack of harn essing of human potential positively. morale, for this post, was intended to be positive, as what we do in technology education does indeed make a positive difference for all humans.

morale in technology education is when technology educators have the confidence to believe their profession is the best discipline in education; their programs are the best in the region; their classes the best in their district; and that they themselves are the great teachers. morale is that quality that says, “technology education can and it will.” such synergy keeps working for its mission when others say it cannot be done.

as a division, i believe we have such synergy. during the last year we have successfully planned and orchestrated results. several task forces have been implemented to tackle some division concerns over the next two years:

- division organization structure
- ted strategic planning
- membership: strategic
- professional development
- ted publications and resource materials.

they success in technology education presents several challenges, and their involvement. it is hoped all members will contribute by providing additional insightful information. the division encourages everyone’s input.

to that end, the division must continue to strategically develop strategies for successfully bringing technology education to the forefront of education. as this is your division, it is important that each of us continue to strive toward moving our division’s agenda forward for the good of the cause. this year, we need to clearly define the deliverables for meeting these task force issues in the next two years, while having an open mind, with meaningful dialogue about what the division wants to accomplish with membership at the top of each of our agenda’s.

as the changing world of technology education presents several challenges, the division would like to invite you to participate on any of the task forces for long-term and significant impact on the future growth and direction of the division. i believe if we work together as a unified front, we can look forward to a promising future.

i look forward to working hard for you, with you, and for the profession.

best regards,

joseph a. scarcella, ph.d.

 Ted president

jscarcel@csusb.edu
The Technology Education Division (TED) of the Association for Career and Technical Education (ACTE) recognized some outstanding professionals at its last Annual Conference in Las Vegas.

Outstanding Technology Program Award
This award is presented each year at the ACTE-TED Opening General Session. Awardees are determined as a result of input received from their nomination form, self-evaluation, peer evaluation, and letters of support. Awards may be presented in three categories: (1) Junior High/Middle School, (2) Senior High Schools and (3) Collegiate Institutions with technology education teacher education programs.

The 2002 recipient was Northside High School Engineering Academy in Lafayette, Louisiana. Diane Spikes is the Technology Education Instructor.

Outstanding Researcher
Each year the Technology Education Division recognizes a non-funded outstanding paper at the professional level related to the elementary school, high school and/or university level.

A certificate, plaque and monetary award was presented to Terri E. Varnado of Virginia Polytechnic Institute and State University for her research, "Robots on the Palouse: Increasing Technology Awareness in At-Risk Fourth Grade Students."

Dr. Henry O’Lawrence of California State University, Long Beach was also recognized for his outstanding paper, "Factors Impacting Students’ Reasons for Choosing a Postsecondary Institutions in Pennsylvania."

Leadership and Service Awards
Awards were presented to recognize outstanding leadership and service to technology educational and the Division.

LEADERSHIP AWARD

JESSIE W. BURKE, JR.
Independence, MO

DISTINGUISHED LEADERSHIP - RETIRED

JERRY D. DRENNAN
Abilene Christian University

SERVICE AWARD

DOUG HAMMER
Kodiak College
Kodiak, Alaska

http://www.acteonline.org/about/division/div-tech.cfm
Given that technology educators are creative and possess strong technical skills, technology education’s inability to sell some of its best ideas is simply astounding. *The Tipping Point*, by Malcolm Gladwell, helps explain why. Gladwell, a staff writer for *The New Yorker* magazine, has been studying and writing about the nature of trends for years. Although Gladwell never specifically mentions technology education, his arguments provide food for thought that may prove useful to this audience.

Sometimes when data is rich yet comprehension is poor, understanding is gained through finding the right metaphor. In this book Gladwell has found an apt metaphor for helping readers understand how worthy ideas can languish, in our culture, while superficial ones sometimes flourish. After reading about a syphilis contagion in urban Baltimore in the early 1990s, Gladwell found the metaphor that became the thesis of the book. He proposes that social change is analogous to, or has some of the same characteristics as a medical epidemic.

Gladwell offers many vignettes that demonstrate this phenomenon. He writes about why crime dropped dramatically in New York City in the mid-1990s, and describes how an unknown novelist ended up as a best-selling author. He deconstructs why teenage smoking is so out of control, despite the general public’s full knowledge of its ill effects. He describes the rigorous, insightful research that made “Sesame Street” so good at teaching kids how to read and how “Blue’s Clues” was made even better. Gladwell compares the success of Paul Revere’s famous ride with the other unknown rider who set out from Boston at the same time, with the same message and analyzes why Revere achieved fame. There are many other well-researched stories that illustrate the key elements of what makes a trend tip into an epidemic. 

According to Gladwell, the tipping point is that magic moment when an idea, trend of social behavior crosses a threshold and subsequently spreads with incredible speed through society. Just as a sick individual in a crowded store can start an epidemic of the flu, so too can a small, but precisely targeted push start a fashion trend or cause the popularity of a new restaurant to take off overnight or cause crime or drug use to taper off. In *The Tipping Point*, Gladwell shows how very minor adjustments in products and ideas can make them more likely to become immensely popular. He reveals how easy it is to cause group behavior to tip in a desired direction by making small changes in the immediate environment.

Through his study, Gladwell found that epidemics have three characteristics in common. First, the thing that spreads the epidemic is contagious. In the case of a product or idea, Gladwell refers to its “sticky” quality or ability to lodge in the cultural mindset. Second, small changes in the environment result in large effects on the spread of the epidemic. Third, at some identifiable point the trend “tips” and causes a dramatic change—an epidemic. Factors that lead to this tipping include key people or promoters and the contexts in which they operate, among other things.

In Gladwell’s terminology, stickiness is a characteristic of ideas that are memorable, catchy, and inescapably applicable to a particular situation. President Bush’s recent, “let’s roll” line was sticky. “Winston tastes good” was a sticky advertising slogan. In technology education there is no sticky phrase.

Describing how little things can lead to big effects, Gladwell relates the example of crime-ridden New York City. In the early 1990s, public officials identified small, reachable goals to reduce crime. For example, by refusing to let subway cars return to service each night without cleaning and by arresting gate jumpers in stations, officials saw subway crimes plummet by the mid-1990s. Similar small-scale efforts have reduced street crime in New York City from epidemic to manageable proportions. People once again feel safe on the streets and children ride bikes in neighborhoods where ten years ago gunfire was commonly heard, all due to identifying and achieving these small, inexpensive goals.

These effects can happen quickly, too. Gladwell reports that the subways became safe within months, and neighborhoods that formerly had been plagued with crack houses, prostitution and violent crime complexly turned around in less than five years. These effects are not just due to new policies, but resulted through the efforts of three kinds of people: mavens, connectors, and salesmen. The maven is what Gladwell calls a person who knows everything about some specialty area, whether it is subway cars, food, wood-working equipment or technology. Know any maven? Think of the technology educators who have encyclopedic knowledge about some area of technology. These people are mavens, according to Gladwell’s definition.

Connectors, however, are relatively rare in technology education. Connectors are connoisseurs of people. They maintain vast networks of appreciation for people with special tales, talents that mavens may never discover because their own specialties are so interesting. The connector’s specialty is linking one person’s talent with others who need it. True connectors play critical roles in linking individuals to create networks of capability.

The role played by salesmen is a familiar one. Salesmen, too, are relatively rare in technology education. At the state and national level, technology education desperately needs effective salesmen. At the local levels, where technology education programs are most effective, we typically

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find an effective salesperson at the helm.

Others have criticized the book for its relative simplicity. Writing for a website devoted to reviewing new books, a marketing executive from Boston said that:

"The book is really about systems dynamics, about how related phenomena build on each other in feedback loops (for example, adding food to the environment for growing species expands their populations). However, because the book never makes that connection to systems dynamics, the marketing challenged probably will not make that connection either. That's a problem because they will need the tools from these other resources [systems dynamics] to apply this book's thesis of pushing the tipping point."

(Taken from the WWW July 30, 2001 at http://shop.barnesandnoble.com)

This criticism is probably appropriate for sophisticated marketers, but for most technology educators, the book will be relevant and meaningful. The good news for technology educators is that The Tipping Point is about change and how certain kinds of people make change happen. The bad news is that, despite all of our collective skills and capabilities, we are probably not the type of people who inspire change. As a group we tend to possess the skills of the maven, an essential, but incomplete ingredient for fostering change. This book may enable technology educators to look more clearly at the topic of marketing, recognize the sort of people who have the needed personal characteristics for handling different aspects of influence, and structure the core ideas of our profession into a message suitable for a mass market (or perhaps for targeted market consumption). It is not the only book we can use to help market the core ideas of the profession, but it represents and interesting and accessible starting point.

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**The Tipping Point**

(continued from previous page)

**A Silver State of Mind**

**TSA Celebrates 25 Years of Technology Opportunities for Students**

It is time to celebrate. The Technology Student Association is now 25 years young. Twenty-five down, and many more to go.

Celebrating for this year and part of next, TSA just kicked off its 25th anniversary celebration, not soon forgetting its earliest years as the American Industrial Arts Student Association. Just as technology so quickly transformed, so has TSA evolved in its challenging technology education choices. And TSA has only just begun.

"TSA’s 25th anniversary isn’t about looking to our past, it’s about moving ahead into the next 25 years,” said Rosanne T. White, Ed.D., National TSA’s executive director. “TSA believes that when our students are provided the resources, direction and opportunities they need, they can accomplish great things. We are proud to celebrate our first quarter century of educating students to be qualified prospective employees in a technological society. As is the case each year, our goal and conference theme this year is ‘Unveiling The Potential In You.’”

The newly launched 25th Anniversary Fund has been created to allow financially challenged schools with interested students to start up a new TSA chapter. Prospective teacher advisors will apply for a grant from National TSA. Money awarded from the fund will cover a new chapter’s national and state Chapter Affiliation Program fees for one year. Grant funds will be awarded to schools that aspire to have TSA chapters and not those with existing chapters.

Donations ranging from $25 and higher will comprise the fund. Donors will receive one anniversary recognition pin for each $25 donation. Donors will be recognized at the national TSA conference that occurs following their donation, either the 2003 or 2004 national conference. National TSA will provide a receipt for this tax-deductible contribution.

To learn more about the fund and how to help honor TSA’s 25 years of teaching technology education to our students, use this link: http://www.tsaweb.org/conferences_programs/25_fund.html.

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**TED Program-at-a-Glance**

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<tr>
<th>Date</th>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>W, Dec. 10</td>
<td>1:00-5:00 p.m.</td>
<td>TED Policy Committee Meeting &amp; Committee Chair Reports (open to division membership)</td>
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<td>Th, Dec. 11</td>
<td>7:00-8:30 a.m.</td>
<td>TED Standing Committee Session</td>
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<td>Th, Dec. 11</td>
<td>7:00-8:30 a.m.</td>
<td>NAITTE First Executive Board &amp; Business Meeting</td>
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<td>Th Dec. 11</td>
<td>8:00-9:30 a.m.</td>
<td>NAITTE Research Comm. &amp; JITE Editorial Board Meeting</td>
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<tr>
<td>Th, Dec. 11</td>
<td>1:15-3:00 p.m.</td>
<td>TED/NRS/NAITTE Opening General Session</td>
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<td><em>Technology in the Future: Surviving and Thriving Through Disruptive Innovation</em></td>
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<td>F, Dec. 12</td>
<td>7:00-8:30 a.m.</td>
<td>NAITTE Breakfast &amp; Business Meeting</td>
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<td>F, Dec. 12</td>
<td>5:00-6:00 p.m.</td>
<td>Epsilon Pi Tau Exemplary Initiation</td>
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<td>F, Dec. 12</td>
<td>6:00-7:30 p.m.</td>
<td>TED/ITEA/TSA/NAITTE Liaison Meeting (by invitation)</td>
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<td>F, Dec. 12</td>
<td>7:30-9:00 p.m.</td>
<td>TED Reception</td>
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<td>S, Dec. 13</td>
<td>7:00-8:30 a.m.</td>
<td>NAITTE Second Executive Board &amp; Business Meeting</td>
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<td>S, Dec. 13</td>
<td>1:15-2:00 p.m.</td>
<td>TED Business Meeting</td>
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All of TSA’s new and revised events are designed to increase opportunities for students to pursue their interests and develop their technological literacy. Indeed, this new edition of High School Technology Activities, The Official TSA Competitive Events Guide offers straightforward and exciting activities that will capture students’ imaginations and challenges them to do their best.

The Big Picture
The 2002-2004 edition of TSA High School Technology Activities includes five new events that help develop technological literacy through math, science, and technology. These exciting events cover the following areas:
- agriculture and biotechnology
- computer animation of engineering or architectural subjects
- engineering design
- medical technologies
- membership recruitment (marketing)

The Details
Advances in technology have had tremendous impact in agriculture and biotechnology. Agriculture is easy, but just what is biotechnology? As defined in the Standards for Technological Literacy, biotechnology is “any technique that uses living organisms (or parts of organisms) to make products, improve plants or animals, or to develop microorganisms for specific uses.” Agricultural and related biotechnologies are being applied to solve difficult problems such as world hunger through increasing crop yields and developing disease-resistant plants. Critical areas such as the wise use of our planet’s resources and the safe use of genetic engineering are being advanced through appropriate applications of technology. The new high school Agriculture and Biotechnology Design event allows TSA students to explore technology’s impact in the farmer’s field, under the microscope, or in an artificial ecosystem. As a participant in this event, TSA students choose a contemporary agriculture or biotechnology problem on which to conduct research, document their efforts, and create a display. A model or prototype of the student’s solution may be included in the display.

Students who tinker with CAD will be pleased to know that TSA’s computer-aided design events took a big step forward with the addition of a whole new animation component. The previous two-dimensional and three-dimensional categories have been grouped in Computer-Aided Design, 2D/3D, in which participants develop computer-generated graphics in one of two categories, Architectural 2D or Engineering 3D.

In Computer-Aided Design, Animation, TSA students will be asked to develop animated representations of engineering or architectural subjects. Both of these intense, on-site events showcase students’ skills in taking a design project from start to finish.

Engineering Design, which replaces the TSA/NEDC event, requires students to work as part of a design team on a solution that incorporates the application of scientific and mathematical principles, that demonstrates application in areas of technology, and that assesses the impact of the solution on society and the environment. Each student team can choose its own topic, which can range from everyday challenges we all face to problems faced by special populations. Through use of a model/prototype, display, and design notebook, the student team explains how it has solved the problem and how the solution impacts society and the environment. When students make it to the finalist stage, the students of each team demonstrate the problem and solution in a timed presentation.

Advances in medical technology have vastly improved the length and quality of human life. Every day offers promise of new hope for those suffering debilitating illness or injury. The new Medical Technology event asks students to conduct research on a contemporary medical technology problem, document their work, and create a display. Again, there is plenty of flexibility in choosing a topic. Choose one that is meaningful to students or someone close to students, or that students find especially intriguing. The student’s solution can be the result of his or her own research or a re-creation or simulation of research performed by the scientific community. Each student’s entry may include a model or prototype as part of the display, and students can choose to work alone or as part of a team.

Knowledge and interest in TSA activities at all levels is key to the continued strength and growth of the organization. In Membership Recruitment Challenge, students work as a team to design and produce promotional materials (i.e., brochures, mailers, posters) and devise a membership plan to help start new chapters. A plan is one thing; implementation is another. This event wants students to put their plans into action and prove that it is a good one! This is the only team event in which team members do not have to be from the same chapter, but from the same state.

Students can get the details about these and all of TSA’s events in High School Technology Activities, The Official TSA Competitive Events Guide, available to advisors and students through National TSA by phone at 703/860-9000 or online at tsaweb.org. The website offers brief descriptions of all TSA competitive events and information about other activities as well.

The Technology Student Association (TSA) is a national non-profit organization devoted exclusively to the needs of elementary, middle and high school students with a dedicated interest in technology. Assisting TSA’s student members is a strong support system of educators, alumni, parents and business leaders who believe in the importance of a technologically literate society.
In March 2003, the International Technology Education Association’s Technology for All Americans Project (ITEA-TfAAP) released *Advancing Excellence in Technological Literacy (AETL)*. This document consists of three separate but interrelated sets of technology standards for student assessment, professional development of teachers, and program enhancement. *AETL* is based on *STL*. *AETL* is intended to help implement *Standards for Technological Literacy (STL)* (ITEA, 2000) in educational systems, in part by asserting that technology education is inherently valuable to students who will live in a technologically rich world and thus, must be considered a core subject that teaches technological literacy.

### Student Assessment Standards

Student assessment should be based on *STL*. The standards further emphasize the need for teachers to plan assessment with a clearly identified purpose, base assessment on research-based assessment principles, and conduct assessment in a manner that reflects the practical nature of technology. This practical emphasis is vital to the study of technology, as such a contextual, hands-on approach helps ensure that student understanding of technology is being assessed. Understanding implies a synthesis between knowledge and abilities that results in the capacity to apply learning to novel and diverse situations, such as those students might experience outside of the educational environment. Finally, the standards address the need for data collection to impact student learning, teaching, and overall program revision.

The student assessment standards are intended to be used by teachers who assess students on technology in any K–12 classroom, not just within technology education laboratory-classrooms.

### Professional Development Standards

Teachers benefit by receiving professional development that is consistent with how they will be expected to teach their own students in the K–12 classroom; accordingly, the standards require that professional development be consistent with the content prescribed in *STL*. Professional development should also educate teachers about how students learn technology, so that instruction can be planned and executed effectively. Teachers should become prepared to design and evaluate technology curricula and programs to maximize the effectiveness of teacher involvement in program enhancement. Similarly, the instructional strategies provided by professional development should enable teachers to enhance technology teaching, student learning, and student assessment. Further, teachers should be prepared to design and manage learning environments that promote technological literacy for all students.

The professional development standards acknowledge the roles of both teachers and the providers of professional development, in that teachers must be responsible for their own continued professional growth while providers must plan, implement, and evaluate the pre-service and in-service education of teachers.

### Program Standards

As with the student assessment and professional development standards, the program standards first address the need for consistency with *STL*. The standards go on to stipulate that program implementation, evaluation, and learning environments facilitate technological literacy for all students. And, finally, management of programs for the study of technology must be provided by designated personnel at all levels of the educational system.

The program standards describe two necessary levels of coordination for programs for the study of technology: 1) The technology program, which incorporates everything that affects the study of technology in Grades K–12 implemented across grade levels as a core subject of inherent value, and 2) the cross-curricular technology program, which manages all of the aspects of the study of technology across both grade levels and disciplines. Therefore, the technology program is one subject-specific component of the cross-curricular technology program, the other components being other content areas in the overall school curriculum.

In keeping with the necessity to coordinate the study of technology across disciplines as well as grade levels, two sets of audience-specific guidelines follow each standard: 1) Guidelines for Teachers, and 2) Guidelines for Administrators. It is recognized that in some cases, administration of programs for the study of technology will be performed by individual teachers, and in such cases, the teacher, in effect, becomes the administrator.

### Summary

Hundreds of educators and experts in the fields of technology, mathematics, science, engineering, and other disciplines contributed to *AETL* over the span of more than two years. The effort was jointly funded by the National Science Foundation and the National Aeronautics and Space Administration. While ITEA is committed to advancing the technological literacy of all students, this vision will only be achieved by a massive, coordinated effort that involves educators, policymakers, and the community at large.

To receive copies of *AETL*, *STL*, or the Executive Summaries of *AETL* or *STL*, please contact:

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### References


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