# THE T/TAC TELEGRAM

## Overview of Evidence Based Practices (EBP) for Educators

Marie C. Ireland, M.Ed. CCC-SLP, VA Department of Education

Educators have been called to use "scientifically-based research" to guide their instructional practices by the federal No Child Left Behind Act of 2001 and other federal programs. Sifting through research to make determinations about appropriate methods requires a systematic approach to make the task more manageable. Educational and medical settings now frequently use evidence based practice (EBP) to guide their work and improve outcomes. More than just reading research articles, EBP is a continuous process that guides decision making for individual students. A 5-step model adapted from Sackett, Rosenberg, Muir Gray, Haynes, & Richardson (1996) outlines the following discrete steps: 1) ask the question, 2) search for evidence, 3) evaluate evidence, 4) make the decision, and 5) evaluate the outcomes. The individual needs of the student and the quality of the evidence are considered throughout the EBP process.

Seeking information by networking with colleagues, asking advice from experts or reading articles in books or journals are traditional ways of improving one's skills. Nail-Chiwetalu & Ratner (2006) remind us that, "[Educators'] skills grow with the application of currently available data, not simply personal educational and clinical experience" (p. 157). As professional educators, we must remember to step back from our own beliefs and opinions and rely on facts with evidence to support claims about what works.

Asking a well defined PICO question is the first step in EBP. There are four discrete parts to a PICO question: 1) Population, 2) Intervention, 3) Comparison, and 4) Outcome. Formulating this answerable question brings specific information to the forefront that will help narrow the search for evidence and clarify the intended outcomes. PICO questions provide a concise summary of the situation and intended outcomes that are used when judging evidence (i.e., comparing populations) and evaluating outcomes.

This carefully considered question makes the search for evidence much easier. Step two, **searching for evidence,** includes accessing peer-reviewed journals, agencies, and organizations dedicated to EBP. Resources such as the What Works Clearinghouse (*www.w-w-c.org*), the Access Center (*http://www.k8accesscenter.org/index.php*), and the National Reading Panel (*http://www.nationalreadingpanel.org*) are valuable resources. Documents that summarize research from many sources are timesavers for those seeking evidence on instruction. For example, *Teaching Children to Read*: *An Evidence-based Assessment of the Scientific Research Literature on Reading and its Implications for Reading Instruction,* the National Reading Panel's summary of

the available evidence on interventions and instruction supporting reading in five areas (vocabulary, fluency, phonemic awareness, comprehension, and phonics) pulls research from many areas of reading research. The National Research Council's publication, *Educating Children with Autism*, is another compilation of research and evidence that collates and summarizes research.

Regardless of the type of evidence, research articles, Web sites, or student data, educators should always evaluate the evidence, step 3. Publications such as the U.S. Department of Education's Identifying and Implementing Educational Practices Supported by Rigorous Evidence: A User Friendly Guide and LinguiSystems Guide to Evidence-Based Practices can assist educators in learning more about bias and judging levels of evidence. Considering the validity, methods, and statistical significance is one approach to judging evidence, however the practical significance (Is this change important?) should also be considered (Meline & Paradiso, 2003). Step 4, making the decision, is next. The individual needs of the child, evidence from the study, and careful review of the method are considered during this step. Throughout implementation, student data is collected. This data is critical for step 5, evaluating the outcomes. When evaluating outcomes, student data is used to determine if methods are effective or if a new question should be asked. It is vital that educators continue to search for evidence that can reinforce current practices or help redefine their PICO question.

Use of the EBP framework increases accountability, differentiates between good and bad information, and blends the best available evidence with input from families and professional expertise to provide students with effective interventions and instruction. Additional benefits for educators include a more efficient use of time and resources, enhanced professionalism, and increased parent, teacher, and student satisfaction (LinguiSystems, 2006).

***References:***
Dollaghan, C. (2004, April 13). Evidence-based practice: Myths and realities. *The ASHA Leader*, pp. 4-5, 12.

Economic and Social Research Council. (2003). *What works for children. Evidence guide: An introduction to finding, judging and using research findings on what works for children and young people*. Retrieved July 26, 2008, from *http://www.whatworksforchildren.org.uk/docs/tools/evguide%20June6%20colour.pdf*

Justice, L.M., & Fey, M.E. (2004, September 21). Evidence-based practice in schools: Integrating craft and theory with science and data. *The ASHA Leader*, pp. 4-5, 30-32.

LinguiSystems. (2006). *Guide to evidence-based practices*. Retrieved July 26, 2008, from *http://www.linguisystems.com/pdf/EBPguide.pdf*

Meline, T., & Paradiso, T. (2003). Evidence-based practice in schools: Evaluating research and reducing barriers. *Language, Speech, and Hearing Services in Schools, 34*(4), 273-283.

Nail-Chiwetalu, B., & Bernstein Ratner, N. (2006). Information literacy for speech-language pathologists: A key to evidence-based practice. *Language, Speech, and Hearing Services in Schools, 37*(3), 157-67.

National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

National Research Council, Committee on Educational Interventions for Children with Autism. (2001). *Educating children with autism*. Retrieved July 28, 2008, from *http://books.nap.edu/catalog.php?record_id=10017*

Sackett, D.L., Rosenberg, W.M.C., Muir Gray, J.A., Haynes, R.B., & Richardson, W.S. (1996). Evidence-based medicine: What it is and what it isn't. *British Medical Journal, 321*, 71-72.

U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. (2003, December). *Identifying and implementing educational practices supported by rigorous evidence: A user friendly guide*. Retrieved July 27, 2008, from *http://www.ed.gov/rschstat/research/pubs/rigorousevid/rigorousevid.pdf*

# Applying EBP to the Education Setting

Dianne Koontz Lowman, Ed.D., Coordinator, Region 5 T/TAC @ JMU

Research-based education, scientifically-based practice, evidence-based practice, RCTs -- what do these terms have to do with individuals who work in the public school system?

As described in Marie Ireland's article in this newsletter, there are legal as well as practical reasons to use evidence-based practices (EBP) in your work with students with disabilities. However, it is important to take a moment to consider "What is EBP?" and to note that evidence-based practice actually came from the medical field. The levels of evidence listed below have their basis in medicine:

LEVELS OF EVIDENCE
(*LinguiSystems Guide to Evidence-Based Practice*, 2006):

- Level I: A meta-analysis of more than one randomized controlled trial (RCT). Considered the strongest evidence available because it is a systematic summary of all existing RCTs on a single topic.

- Level Ia: One well-designed randomized controlled trial (RCT).

- Level II: One well-designed controlled study without randomization.

- Level ILa: One well-designed quasi-experimental study such as a pretest-posttest study.

- Level III: One well-designed non-experimental study such as correlational, single subject, or case study.

- Level IV: Expert committee reports, consensus statements, clinical experience of respected authorities.

If one thinks about the medical field, it is easy to see why a Level Ia well-designed randomized controlled trial would be considered the "gold standard." If your child was going to be taking a medication, you would want to be sure that the medicine actually works and does no harm. In order to do that, a study that controls all possible variables that might influence change is important. You would want to make sure the medicine accounted for the change and not something else, such as time or diet. You also would want to know that the medicine is safe and would not impact your child's health years later.

In the educational field, it is hard to conduct Level Ia research that controls all variables and defines a perfectly matched control group. It is expensive and difficult to find large numbers of students whose needs are exactly the same. There are large national research centers, such as The Center on the Social and Emotional Foundations for Early Learning (CSEFEL), focused on carrying out, synthesizing, and disseminating research and evidence-based practices. Research briefs are usually available online to summarize available research for these large national initiatives. See *http://www.vanderbilt.edu/csefel/redesign/wwb.html* for examples of "What Works" research briefs.

In contrast to these large scale research efforts, smaller well-designed Level II pretest-posttest studies and Level III single subject studies are more practical to implement in the educational setting (Odom, Brantlinger, Gersten, Horner, Thompson, & Harris, 2005). In fact, much of the research conducted with students with significant disabilities is single subject research. In single subject or pretest-posttest research, a student or a group of students participate in a study that measures their performance before and after a strategy is implemented. Even though these types of studies are considering Level II and III, the methodology is systematic and sound in that each student serves as his/her own control (Council for Exceptional Children, n.d.; Horner, Carr, Halle, McGee, Odom & Wolery, 2005).

Therefore, it has become necessary in the education field to re-think what is meant by evidence-based practice. Are practices or interventions tested in Level I RCTs the only ones that should be used in schools? The following definition of evidence-based practice is a revision of Sackett, Straus, Richardson, Rosenberg, and Hayne's (2000) definition of evidence-based medicine:

Evidence-based practice is the conscientious, explicit, and judicious use of current best practice in making decisions about the education of individual students. The practice of evidence-based practice means integrating individual clinical expertise with the best available evidence from systematic research. The individual needs and values of the student and his/her family should also be considered. Therefore, EBP is a decision-making process that integrates the best available evidence (research), the teacher or therapists' individual clinical expertise, and the needs and values of the student and the family.

The individual clinical expertise (knowledge or wisdom) must be driven by taking data, evaluating that data, and making decisions based on the data. Without data, one cannot provide evidence-based interventions nor implement a program with fidelity. The National Center on Student Progress Monitoring (n.d.) emphasizes that monitoring student progress must be part of evidence-based practice. Effective EBP must include a way to assess students' academic performance and evaluate the effectiveness of instruction for an individual student or an entire class. Monitoring individual student progress enables schools to meet legal requirements of IDEA that require that progress toward annual goals be measured for each student and that parents be informed of their child's progress. The February/March 2007 issue of the *T/TAC Telegram* was devoted to data collection (*http://ttac.cisat.jmu.edu/newsletter/telegram.html*).

In summary, evidence-based practice (or intervention) in schools should incorporate the best available research, the clinical expertise of the professionals, the needs and values of the student and the family, and ongoing data to monitor the effectiveness of the intervention.

### References:

Council for Exceptional Children. (n.d.). *Evidence-based practice - Wanted, needed, and hard to get*. Retrieved August 7, 2008, from *http://www.cec.sped.org/AM/Template.cfm?Section=Home&CONTENTID=6515&TEMPLATE=/CM/ContentDisplay.cfm*

Horner, R H., Carr, E G., Halle, J, McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 165-179.

LinguiSystems. (2006). *Guide to evidence-based practice*. East Moline, UL: LinguiSystems.

The National Center on Student Progress Monitoring. (n.d.). *What is progress monitoring?* Retrieved August 7, 2008, from www.studentprogress.org

Odom, S.L., Brantlinger, E., Gersten, R., Horner, R. H., Thompson, B., & Harris, K.R. (2005). Research in special education: Scientific methods and evidence-based practices. *Exceptional Children, 71*(2), 137-148.

Sackett, D.L., Straus, S.E., Richardson, W.S., Rosenberg, W., & Hayne, R.B. (2000). *Evidence-based medicine: How to practice and teach EBM*. Edinburg, NY: Churchill.

# Evidence Based Practices in Autism

Sally Chappel, M.Ed., Coordinator, Region 5 T/TAC @ JMU

Working with and supporting persons with autism spectrum disorders can be a challenging yet rewarding experience. Challenging in that the complexity of the disorder is mystical and unique to each person and rewarding in that when an intervention or strategy is applied that is matched to the individual's needs it can produce significant results. There are a number of interventions and strategies that are available. Some are evidence based practices or scientific based practices while others have no validity or have been determined to provide little success. Evidence based practice is using the current best evidence in making decisions about how to support or teach individuals. This practice is three-fold: Integrating one's expertise and experience with best available scientific evidence using input from the family and student (LinguiSystems, 2006). Scientifically based practices or scientific evidence refers to instructional methods and other interventions and treatments that have been subject to scrutiny and scientific validation. Identifying scientifically validated methods is the cornerstone of the No Child Left Behind Act of 2001 that emphasizes connecting education practices to scientifically based research (Simpson et al., 2005). When determining what interventions or strategies to use, follow the evidence based practice process as outlined in the lead article:

- First, define the question. What specific focus for the individual must be determined? Consider asking questions such as: Who is the person? What currently works? What does not work? What is the targeted deficit? What are the individual's strengths? Then ask what intervention, possible comparison intervention, and outcome should be achieved for this student. An example of a question may be, "Is the learning of social skills related to the work environment for a 16 year old young man with Asperger syndrome more effective in a small group setting or through the use of video modeling?" The outcome would be effective use of work place social skills.

- Next, search for the best available evidence. Try looking in journals, data bases and other sources. There are many locations to find this information.

- Then, critically evaluate the evidence. Does it answer the question about the individual? Is it appropriate and valid for the individual? Has it been systematically reviewed or researched? Are there potential risks associated with the practice? Evaluate the research by using strategies offered in other articles in this newsletter. Use a resource that addresses research specific to interventions and treatment options for person with autism spectrum disorders such as Richard Simpson's book titled, *Autism Spectrum Disorders: Interventions and Treatments for Children and Youth*. Each intervention that was reviewed is organized in one of five broad categories. These include (1) interpersonal relationship interventions and treatments, (2) skill-based interventions and treatments, (3) cognitive interventions and treatments, (4) physiological/biological/neurological interventions and treatments, and (5) other interventions and treatments. The interventions and treatments are grouped as (A) *scientifically based practices* that have significant and convincing empirical efficacy and support; (B) *promising practice* that appear to have efficacy and utility with this population even though it would require more scientific support to be considered scientifically based; (C) *practice for which there is limited supporting information* indicates that evidence is lacking to make an objective, scientific judgment; and (D) *not recommended* would be due to a lack of efficacy and/or may be potentially harmful (Simpson et al, 2005). Another resource to find interventions and strategies that are evidence based can be located on the Web at *www.asatonline.org*. Click on "Autism: What To Do Next."

- Next, implement the decision. Explain the findings and options to the family and student. Weigh the pros and cons. Determine the option based on information from your expertise, research surrounding the option(s), and input from the family and student.

- Finally, implement the decision and gather data to document the outcome. Review the question and make sure the data supports the answer. If it supports the outcome then the option was the best practice (LinguiSystems, 2006).

Trying to decide what to use can be both overwhelming and frustrating. Use your expertise and knowledge, scientific evidence, and the family and student's input to help find the right intervention or strategy for the person on the autism spectrum.

### References:

LinguiSystems. (2006). *Guide to evidence-based practice*. East Moline, IL: LinguiSystems.

Simpson, R., de Boer-Ott, S., Griswold, D., Myles, B., Byrd, S., Ganz, J., et al. (2005). *Autism spectrum disorders: Interventions and treatments for children and youth*. Thousand Oaks, CA: Corwin Press.

## Evidence-based Practice and Assistive Technology: How Do We Know AT Is Effective?

Carol A. Wiegle, M.A., Coordinator, Region 5 T/TAC @ JMU

With 23,000 devices listed in the data base maintained by AbleData (www.abledata.com) and 1,000 new devices added each year, how do we know if the assistive technology we have chosen for our student is effective? The use of evidence-based practice (EBP) in the selection and use of assistive technology (AT) can assist in answering this question.

Individual Education Program (IEP) and Assistive Technology teams may be aware of and use the framework process for considering AT. The most widely used frameworks that have been used to support the decision-making process for AT are:

- SETT: Student, Environment, Task, and Tool (*www.joyzabala.com*)
- QIAT: Quality Indicators of Assistive Technology (*www.qiat.org*)
- HAAT: Human, Activity, Assistive Technology (Cook & Hussey, 2002)
- *Education Tech Points: A Framework for Assistive Technology Planning* (Bowser & Reed, 2006).

The multi-step evidence-based practice model, described in other articles in this newsletter, is a universal tool and a process used to guide decision-making for individual students. Those involved in the consideration of assistive technology should be aware of the similarities between these processes. Both processes start with the student and guide the teacher or team to ask a systematic series of questions to determine the exact outcome or expectation. For AT, the process centers on the functional task(s) the student needs to master and in the setting or environment the student needs to use this skill.

Evidence-based practice expands the decision-making process and seeks to guide the teacher or team in taking that information and searching for evidence. External evidence gathering involves published outcomes and research. In AT, this information may be very limited due to the number of devices and the wide and varied abilities of the special education population. The U.S. Office of Special Education Programs (OSEP) has funded the National Assistive Technology Institute which is charged with conducting AT research, translating research into practice, and providing resources to improve the delivery of services (http://natri.uky.edu). The

Consortium for Assistive Technology Outcomes Research (CATOR) was established in 2001 to advance the field of assistive technology outcomes measurement and to conduct research to improve the field's ability to measure the impact of AT (*http://www.atoutcomes.com*).

The teacher and/or team may need to use other means to gather evidence. Edyburn (2003) describes a "framework for understanding the use of evidence to inform decision-making about the impact of assistive technology" where three phases (exploratory, descriptive and empirical) are used. Koester, DiGiovine, Craik, & Kneebone (2007) discuss tools for gathering individual evidence for making decisions about AT. The Boston Public Schools Access Technology Center's *Tools and Strategies to Support Access to Standards-Based Learning for Diverse Learners* is a document that provides categorized lists of no tech, low tech, mid tech, and high tech tools and strategies. Their Student Access Map (SAM) is a valuable resource for gathering data for AT decisions (*http://boston.k12.ma.us/teach/technology/access.asp*). TechMatrix is a powerful tool for finding educational and assistive technology products for students with special needs; their Web site provides comparisons in a variety of areas of AT (*http://www.techmatrix.org*).

After external evidence is reviewed, one of the most critical issues for the teacher or team is the implementation process and collection of data to document the outcome. A comprehensive system for data collection and analysis is essential to answer the question: Is this AT effective for this student? The Assistive Technology Online Training Project (*http://atto. buffalo.edu/registered/ATBasics/Foundation/Assessment/stepthree.php*) offers online tutorials and information about data collection and AT. This data collection process often confuses or overwhelms service providers. However, by adopting a comprehensive system for making informed decisions, the team will become comfortable with the process, knowledgeable and articulate in their ability to make recommendations and, most importantly, provide the student with effective AT.

### References:

Boston Public Schools, Access Technology Center. *Tools and strategies to support access to standards-based learning for diverse learners*. Boston, MA: Author.

Bowser, G. & Reed, P. (2006). *Education tech points: A framework for assistive technology planning*. Winchester, OR: Coalition for Assistive Technology in Oregon.

Cook, A.M., & Hussey, S.M. (2002). *Assistive technologies: Principles and practice* (2nd ed.). St Louis, MO: Mosby.

Edyburn, D.L. (2003). Assistive technology and evidence-based practice. *ConnSense Bulletin. Available online: http://www.connsensebulletin.com/edyatevidence.html*

LinguiSystems. (2006). *Guide to evidence-based practice*. Retrieved July 28, 2008, from:  *http://www.linguisystems.com/pdf.EBPguide.pdf*.

Hill, K. (2003). What every school professional should know about evidence-based practice. *Proceedings of the Technology and Persons with Disabilities Conference*, California State University Northridge Center on Disabilities. *Retrieved July 28, 2008, from: http://www.csun.edu/cod/conf/2003/proceedings/265.htm*

Hill, K., & Romich, B. (2002). *AAC evidence-based clinical practice:  A model for success. Retrieved July 25, 2008, from: http://aacinstitute.org/Resources/Press/EBPpaper/html*

Koester, H., DiGiovine, C., Craik, S., & Kneebone, M. (2007, December). Gathering and applying evidence in computer access services. *Australian Rehabilitation & Assistive Technology Association News*. Retrieved, July 28, 2008, from: *http://www.e-bility.com/arata/resources_publications.php*

Reed, P., & Hill, K. (2008). *Assistive technology works: Making evidence-based decisions. Speaker perspective*. Retrieved July 28, 2008, from: *http://www.fctd.info/webboard/displayPerspective.php?id=301*

# Helping Your Students to Evaluate Web Sites

Debbie Yancey, M.Ed., Coordinator, Region 5 T/TAC @ JMU

**The** Internet has changed life as we know it in many ways. Ways that make life simpler, yet more complex at the same time. While we can find many interesting articles and information on almost any topic with the click of a mouse, it's important for us to teach our students to use caution and be very informed about the Web sites they visit.

One Web site that gives teachers a tool to help their students evaluate Internet sites is *http://www.2learn.ca/kids/backpack/backpack.html*

This site is divided by topic and grade level and allows students the opportunity to explore many different areas, including Web Tracks, Web Page Builder, Calculator, Citation Checker, National Atlas, Calendar and NetCheck. The NetCheck link is interactive, allowing students to answer very specific questions about Web pages they are checking for authenticity, quality, and usefulness. The questions grow in complexity as grade levels increase and helps students become more familiar with checking Web sites before using the information presented.

Before students use NetCheck, teachers must instruct them on how to determine authenticity, quality, and usefulness of information by giving examples of quality Web sites and Web sites that are not necessarily reliable. The hotlink Recommended Web Resources on NetCheck, *http://www.2learn.ca/nkh/nkhSRevaluate.html*, gives teachers information on how to teach students to answer questions about the Web sites they are using.

Sample questions from the K-3 grade level NetCheck page that students answer include:

- What kind of place is this?
- What is the title of the page?
- Who is the organization, company, university, or person that sponsors it?
- How do you know if this source is one you can trust?
- Is this a valuable Web site that is useful for you to visit?
- What does this site make you think about? Write or draw your answer.
- Would you like other people to visit this site? Why or why not?

The NetCheck link is divided into grades K-3, 4-6, 7-9, and 10-12. After answering the questions, students are invited to view their NetCheck page to judge the Web page for reliability. This resource is printable so teachers have a list of sites their students are visiting and using in their classrooms, important information to file as students grow in their abilities to research and use Web information in their learning.

---

# UNIVERSAL DESIGN FOR LEARNING GUIDELINES

The Center for Applied Special Technology (CAST) released Version 1 of *UDL Guidelines* in April, 2008. These Guidelines are intended to assist curriculum designers, including teachers, publishers, and others, to design curricula that will meet the needs of all learners.

According to CAST, Universal Design for Learning calls for:

- Multiple means of representation, to give learners various ways of acquiring information and knowledge,

- Multiple means of expression, to provide learners alternatives for demonstrating what they know, and

- Multiple means of engagement, to tap into learners' interests, offer appropriate challenges, and increase motivation.

Additionally, CAST has released a one-page graphic organizer that illustrates the relationship among the Guidelines. To access this graphic organizer, go to *http://cast.org/publications/UDLguidelines/version1.html* and use the hotlink for the graphic organizer.

---

# RESEARCH BASED: COMPLEMENTING OR COMPETING?

Gina Massengill, M.Ed., Coordinator, Region 5 T/TAC @ JMU

As schools engage in the exploring and planning phase of implementing research based methods in the classroom, they are often faced with the task of aligning current and new initiatives. In the alignment of initiatives, educators must ask the question: Do these initiatives compete with one another or do they complement one another?

Following is a practical example of how two initiatives that COMPLEMENT one another can be aligned for maximum student outcomes: The Strategic Instruction Model (SIM), a research-validated intervention receiving the gold standard, and the Nine Instructional Categories from the research-based work of Robert J. Marzano. Using Marzano's 2003 book, *What Works in Schools: Translating Research into Action* as a starting point, this matrix represents a comprehensive look at SIM and its alignment with the Marzano behaviors.

***Resources:***

Biancarosa, G., & Snow, C.E. (2004). *Reading Next – A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.

Clapper, A.T., Bremer, C., & Kachgal, M. (2002). *Never too late: Approaches to reading instruction for secondary students with disabilities* (NCSET Research to Practice Brief, March 2002, Vol. 1, Issue 1). Minneapolis, MN: National Center on Secondary Education and Transition. Retrieved July 31, 2008, from *http://wwwncset.org/publications/viewdesc.asp?id=274*

Kamil, M.L. (2002). *Adolescents and literacy: Reading for the 21st century*. Washington, DC: Alliance for Excellent Education.

University of Kansas Center for Research on Learning. *http://www.kucrl.org/sim/*

***References:***

Marzano, R.J. (2003). *What works in schools: Translating research into action*. Alexandria, VA: Association for Supervision and Curriculum Development.

Schwartz, L. (2006). *Marzano's nine instructional categories divided into specific behaviors and aligned with SIM*. El Paso, TX: El Paso Independent School District.

# Marzano's Nine Instructional Categories Divided into Specific Behaviors and Aligned with SIM

| General Instructional Category | Specific Behaviors | SIM Strategy/Routine |
|---|---|---|
| 1. Identifying similarities and differences *(45 percentile gain)* | assigning in-class homework tasks that involve comparison and classification. assigning in-class homework tasks that involve metaphors and analogies | Concept Mastery Routine Concept Comparison Routine Unit Organizer Routine (Unit Relationships) "Rationale for Strategy Use" discussions comparing past practices to new learning "Cue-Do-Review" processes in comparing how the routines help learning |
| 2. Summarizing and note taking *(34 percentile gain)* | asking students to generate verbal summaries asking students to generate written summaries asking students to take notes asking students to revise their notes, correcting errors and adding information | Paraphrasing Strategy ORDER Routine FRAMING Routine TOWER (idea diagram) (Theme Writing Strategy) Taking Notes Together Survey Routine Multipass Organizer routines Question Exploration Routine |
| 3. Reinforcing effort and providing recognition *(29 percentile gain)* | recognizing and celebrating progress toward learning goals throughout a unit recognizing and reinforcing the importance of effort recognizing and celebrating progress toward learning goals at the end of a unit | Unit Organizer Routine Verbal Practice stage of strategy instruction Controlled Practice and Feedback stage of strategy instruction Elaborated feedback process Making commitments to learn and to generalize in strategy instruction Success formulas in strategy instruction Possible Selves Use of strategy progress charts Cue-Do-Review process in routines Co-construction of Content Enhancement devices |
| 4. Homework and practice *(28 percentile gain)* | providing specific feedback on all assigned homework

assigning homework for the purpose of students practicing skills and procedures that have been the focus of instruction | Verbal Practice stage of strategy instruction Controlled Practice and Feedback stage of strategy instruction Advanced Practice stage of strategy instruction Generalization stage of strategy instruction Co-construction of organizer graphics "E" step in FRAMING Routine Extension activity in concept routines Assignment Completion Strategy Quality Assignment Routine Question Exploration Routine |
| 5. Nonlinguistic representations *(27 percentile gain)* | asking students to generate mental images representing content asking students to draw pictures or pictographs representing content asking students to construct graphic organizers representing content asking students to act out content asking students to make physical models of content asking students to make revisions in their mental images, pictures, pictographs, graphic organizers and physical models | LINCS and LINCing pictures ORDER Routine Idea Diagram (Theme Writing Strategy) Paragraph Writing diagram Recall Enhancement Routine Visual Imagery Strategy Organizer routines Graphic organizers Question Exploration Guides Concept graphic organizers Paired Associates Strategy Mnemonics |
| 6. Cooperative Learning *(27 percentile gain)* | organizing students in cooperative groups organizing students in ability groups when appropriate | Collaborative Problem Solving Community Building Series Cooperative Thinking Strategies Co-constructing the "So What" statements in the FRAMING Routine Individual, group and cooperative practices in Controlled Practice stage of strategies |

| | | |
|---|---|---|
| 7. Setting objectives and providing feedback<br><br>*(23 percentile gain)* | setting specific learning goals at the beginning of a unit<br>asking students to set their own learning goals at the beginning of a unit<br>providing feedback on learning goals throughout the unit<br>asking students to keep track of their progress on learning goals<br>providing summative feedback at the end of a unit<br>asking students to assess themselves at the end of a unit | Organizer routines<br>Advance organizers in every strategy instructional stage<br>Learning strategy progress charts<br>Self-test in LINCS Vocabulary Strategy<br><u>Pretest and Make Commitments</u> stage of strategy instruction<br>Explicit feedback in <u>Controlled Practice and Feedback and Advanced Practice</u> stage of strategy instruction.<br><u>Posttest and Make Commitments</u> stage of strategy instruction<br>Cue-Do-Review Process<br>Idea Diagram for pre-writing feedback (Theme Writing Strategy) |
| 8. Generating and testing hypothesis<br><br>*(23 percentile gain)* | engaging students in projects that involve generating and testing hypotheses through problem-solving tasks<br>engaging students in projects that involve generating and testing hypotheses through decision-making tasks<br>engaging students in projects that involve generating and testing hypotheses through investigation tasks<br>engaging students in projects that involve generating and testing hypotheses through experimental-inquiry tasks<br>engaging students in projects that involve generating and testing hypotheses through systems-analysis tasks<br>engaging students in projects that involve generating and testing hypotheses through invention tasks | <u>Describe</u> stage of all strategy instruction<br>Self-test step in LINCS Vocabulary Strategy<br>Self-Questioning Strategy<br>Recall Enhancement Routine<br>Completion of any of the graphic organizers that the student completes in a group or independently. |
| 9. Questions, cues and advance organizers<br><br>*(22 percentile gain)* | Prior to presenting new content, asking questions that help students recall what they might already know about the content<br>Prior to presenting new content, providing students with direct links with what they have studied previously<br>Prior to presenting new content, providing ways for students to organize or think about the content | Organizer routines<br>FRAMING Routine<br>Survey Routine<br>Multipass<br>Cue-Do-Review Process<br>Advance organizers in every strategy instructional stage<br>Question Exploration Routine |

Chart reproduced (without SIM alignment) from pp 82-83 of Robert J. Marzano (2003) *What Works in Schools: Translating Research into Action.*
*Some SIM alignment from Virginia Content Literacy Continuum (CLC) Demonstration Sites, 2006*

# Check out the plus in ESS *plus*

The Virginia Department of Education (VDOE) and the Training and Technical Assistance Centers (T/TACs) have created the **SOL Enhanced Scope and Sequence PLUS (ESS+)**. This resource has been developed to provide teachers across Virginia with differentiated lessons to deliver SOL-based content instruction to a diverse population of learners, including students with disabilities and/or limited English proficiency. Curricular and instructional information is available for Mathematics, English, History/Social Science and Science.

**To search for lessons to meet your needs:**
- ◆ Go to T/TAC Online: www.ttaconline.org and click on your region on the Virginia map
- ◆ Click on SOL Enhanced (at the top)
- ◆ Click on Search SOL+ Lessons (left margin)
- ◆ At Option 1- choose a subject area and choose a grade/course - click Go
- ◆ Click on any SOL standard and click Submit (at bottom of page)
- ◆ Choose from the lessons listed for the standard
- ◆ Click on Word or PDF format to download lesson

**The lesson plans and activities are not only aligned with the SOL, they feature strategies to facilitate differentiated instruction in the following areas:**

- • Technology use
- • Multisensory options
- • Community connections
- • Small group learning
- • Vocabulary strategies
- • Student organization of content

# Conferences & Trainings:

## September

**19th Feeding Children with Disabilities:**
**A Four-Part Series Days 1, 3, and 4**
**Wingate Inn, Lynchburg, VA**
*Day 2 will be held at the Amherst Co. Library, Madison Heights, VA*

Day One (9/19) - A Basic Overview of Feeding and Oral Motor Skills.

Day Two (10/17) - There's More to Eating Than Taste: Gaining A Better Understanding of Behaviors Associated with Sensory-based Feeding Disorders.

Day Three (2/13/09) – Planning for Students with Complex Health Care Needs and Students Who Receive Tube Feedings in Schools.

Day Four (3/20/09) – Putting the "FUNC" Back in Functional: Understanding the Role that Gross Motor Skills Play in Oral Motor Skill Development.

Contact: Susan Bowman, Event Planner Region 5 T/TAC at JMU | 540.568.8843 | *bowmansp@jmu.edu*
*http://ttac.cisat.jmu.edu/training/index.html#september*

**20th Virginia Council for Learning Disabilities**
**Fall Symposium Collaboration: Partners in**
**Learning for Student Success**
**George Washington Hotel in Winchester, VA**
Contact: Suzan Quezenberry
804-754-8448 | *ssquezenberry@comcast.net*
*http://www.vcld.org/*

**25th-26th Autism and the SCERTS® Model with**
**Dr. Barry Prizant**
**Tysons Westpark Hotel, Tysons Corner, Virginia**
*At SCERTS® Model seminars, professionals and parents will learn how to: enhance spontaneous language and communication, and relationships in everyday social activities; prevent problem behaviors and promote learning by supporting emotional regulation throughout the day; promote parent-professional collaboration in developing an educational program that is functional and meaningful for a child and family*
Contact: Kelly Dickson | 401-467-7008
*kelly@ccseminars.com* | *http://ccseminars.com/*

## September continued

**29th – 30th STAR Training Program: Strategies for**
**Teaching Based on Autism Research**
**Hospitality House, Fredericksburg, Virginia**
*Presenters: Joel Arick and Sheila McGee; Participants will learn the techniques of discrete trial training, pivotal response training and teaching functional routines. Participants will receive examples of the STAR Autism Program lesson plans at each instructional level in order to practice their skills in implementing the program.*
Contact: Crystal Beard at *cbeard@cityschools.com;*
phone 540-372-1127
*http://www.cityschools.com/Testindex.html*

## October

**3rd-4th Putting the Pieces Together. Virginia Council for**
**Exceptional Children 49th Annual Conference**
**Fredericksburg Hospitality House, Fredericksburg**
For more information and to register, visit
http://www.virginiacec.org/2008conference.htm

**9th-10th VCASE Fall Conference: Linking Leadership**
**and Learning: What Works!**
**Doubletree Hotel, Charlottesville, VA**
*VCASE is proud to announce that Dr. Marcia Tate will be the Keynote speaker at the October Policy Institute. Dr. Tate is the author of the best-sellers: (1) Worksheets Don't Grow Dendrites: 20 Instructional Strategies that Engage the Brain, (2) Sit & Get Won't Grow Dendrites: 20 Professional Learning Strategies that Engage the Adult Brain, and (3) Reading and Language Arts Worksheets Don't Grow Dendrites: 20 Literacy Strategies that Engage the Brain.*
Contact: *http://www.vcase.org/*

**10th Autism Spectrum Symposium**
**George Washington University, Washington DC**
*This day-long symposium aims to provide academic, student affairs, and rehabilitation professionals with a framework for understanding students with autism spectrum diagnoses and to share best practices when working with these students. The brochure and the registration form can be found on the GWU Disability Support Services web site listed below.*

Contact: GWU Office of Disability Support Services
*dss@gwu.edu* | 202-994-8250
*http://gwired.gwu.edu/dss/*
*AutismSpectrumSymposiumOctober2008*

**9th-11th Capitalizing on Middle Schools. VA Middle**
**School Association 2008 Fall Conference**
**Greater Richmond Convention Center & Omni**
**Richmond Hotel, Richmond, VA**
Keynote speaker: Dr. Harry Wong
Info at http://www.vmsa.org

**10th Autism Spectrum Symposium | Washington, DC**
*This day-long symposium aims to provide academic, student affairs, and rehabilitation professionals with a framework for understanding students with autism spectrum diagnoses and to share best practices when working with these students. It will be held at the George Washington University in Washington, DC. The brochure and the registration form can be found on the GWU Disability Support Services web site.*
For more Info call: 202.994.8250 or visit:
gwired.gwu.edu/dss
AutismSpectrumSymposiumOctober2008

**20th Collaborating for Student Success: The Inclusive School**
**The Inn at Virginia Tech & Skelton Conference Center,**
**Blacksburg, VA**
Featuring Dr. Richard Villa. Information at
http://www.ttac.vt.edu

**21st Insight 2008: Topics in Autism**
**Sheraton Park South, Richmond, VA**
*Key Note Presenter: Kim Peek, the inspiration for the movie "Rain Man"; Conference topics: Creating Visuals for the Classroom – Barbara Bloomfield; Transition Programming in the High School Years; Video Modeling Theory and Practice; Ziggurat Model: An Overview*
*Program and Registration at: http://www.vcu.edu/ttac/autism/insight.shtml*
For information, call or contact Cheryl Bishop, Office Manager VCU T/TAC *cebishop@vcu.edu* or 804-828-6947

**21th Supervising Paraprofessionals in Educational**
**Settings: Effective Strategies for Administrators**
**and Teachers | The Inn at Virginia Tech & Skelton**
**Conference Center, Blacksburg, VA**
Featuring Dr. Kent Gerlach. Information at: http://www.ttac.vt.edu or contact Diann Eaton at dweaton@vt.edu

## October continued

**24th-25th Organization for Autism Research (OAR):**
**6th Annual Applied Autism Research and Intervention**
**Conference | Westin Arlington Gateway, Arlington, VA**
Speakers: Dr. Ami Klin, Dr. Joanne Gerenser and
Dr. Roy Richard Grinker
Contact: 703-243-9710 or 866-366-9710
Email: *conference@researchautism.org*
Website: *http://www.researchautism.org/news/conference/index.asp*

**27th Augmentive and Alternative Communication and**
**Floortime™ for Students with Significant Cognitive**
**Disabilities and Autism Spectrum Disorders**
**Hilton Norfolk Airport Hotel, Norfolk, VA**
*Presenter: Mira Shah; Attendees will learn how to implement Floortime™ strategies in the classroom and provide students using Augmentive and Alternative Communication (AAC) with opportunities for novel interactions with their peers and classroom staff while also building a strong foundation for expressive language development.*
Contact Jean Bondy at *jbondy@odu.edu* or 757-683-4333
Website: *http://www.ttac.odu.edu/Conferences_2008/Mira_Shah.pdf*

**27th-30th Division for Early Childhood of the Council for**
**Exceptional Children Annual Conference**
**Hilton Minneapolis, Minneapolis, Minnesota**
Visit www.dec-sped.org/conference for information

## November

**3rd-4th PECS Basic Training | Norfolk, Virginia**
*This intense two-day training is designed to teach participants the theory behind The Picture Exchange Communication System and the protocols on how to appropriately implement the six phases of PECS.. Workshop Venue: Not yet available. Presenter(s): Anne Hoffman, M.Ed. Cost: $395.00 per attendee- group discounts available.* Contact information: 1.888.732.7462, or
*www.pecs.com/index.php*

**13th-14th TechKnowledgy: Special Topics in**
**Assistive Technology**
**Greater Richmond Convention Center, Richmond, VA**
Visit www.vcu.edu/ttac for information

## Save the Date:

**Reading Academy for Teachers of**
**Special Education Students**
Roanoke: June 23-26, 2009 at the Roanoke Higher Education Center

**George Mason University**
**The Helen A. Kellar Institute for**
**Human disAbilities**
**4400 University Drive**
**MS 1F2**
**Fairfax, VA 22030**
**703.993.4496**
*http://ttac.gmu.edu*

**VDOE**
*Region IV T/TAC*
*George Mason University*
*Contact Information*

**Michael Behrmann, Ed.D.**
Principal Investigator
mbehrman@gmu.edu

**Lynn Wiley, Ph.D.**
Director of T/TAC@GMU
hwiley@gmu.edu

**Kay Klein, M.Ed.**
Assistant Director of T/TAC@GMU
mklei1@gmu.edu

**Nancy Anderson, M.Ed.**
Special Education Polices and
Procedures Coordinator
nanders7@gmu.edu

**Bonnie Bell Carter, Ph.D.**
Secondary Education & Mild/Moderate
Disabilities Coordinator
bcarter6@gmu.edu

**Karen Berlin, M.Ed.**
Autism & Severe Disabilities Coordinator
kberlin@gmu.edu

**Sheryl Fahey, M.Ed.**
Early Childhood Coordinator
sfahey@gmu.edu

**Judith Fontana, Ph.D.**
Curriculum & Instruction
Projects Coordinator, IST, SIM
jfontan1@gmu.edu

**Kris Ganley, M.Ed.**
Early Childhood Coordinator, Autism
kganley@gmu.edu

**SooJin Jang, M.Ed.**
Assistive Technology Coordinator
sjang6@gmu.edu

**Estela Landeros, M.Ed.**
Assistive Technology Coordinator
elandero@gmu.edu

**Diane Loomis, Ph.D.**
Transition & Curriculum Coordinator
dloomis@gmu.edu

**Nikki Miller, Ed.D.**
Curriculum & Instruction Coordinator
nmiller7@gmu.edu

**Seunghun Ok, M.Ed.**
T/TAC Online Coordinator
sok@gmu.edu

**Dionne Paul-Wiggins**
T/TAC Events Coordinator
dpaulwig@gmu.edu

**Jackie Petersen, MLS**
T/TAC Librarian
jpetersk@gmu.edu

**Sandra Price**
Administrative Office Support
spricec@gmu.edu

**Jeff Richards**
Graphic/Web Designer
Jricharc@gmu.edu

**Judy Stockton, M.A.**
Curriculum & Mild/Moderate
Disabilities Coordinator
jstockt1@gmu.edu

**Clare Talbert, M.Ed.**
T/TAC Online Coordinator
ctalber1@gmu.edu

# Helen A.
# Kellar
# Institute
*for Human disAbilities*

*Improving the lives and productivity of persons with disabilities*

**T/TAC**
**George Mason University**
4400 University Drive, MS 1F2
Fairfax, VA 22030
201407