Recent Developments and Future Events: A Message from the President

William L. Heward, ABA International President

These are exciting and challenging times for behavior analysts. Our excitement is evoked by the many opportunities arising from society's increasing interest in evidence-based methods for changing behavior in virtually every arena in which behavior analysts work: education, clinical therapy, public health, organizational management, and preservation of the environment, to name a few. As exciting as the opportunities before us are, the challenges confronting our discipline are equally daunting: the need for more and better graduate training programs in behavior analysis, particularly at the doctoral level, the need for legislative support of and protection for behavior analysis practitioners, the need to protect consumers of behavior analysis services, dwindling resources for laboratories and training future scientists in the experimental analysis of behavior, to name a few.

One item in the job description of ABAI President is writing an article for the Newsletter informing the membership of recent developments and future plans of the Association. While this is a seemingly straightforward task to be sure, the amount and complexity of information that might be reported at this juncture exceeds both the page limits of the "President's Message" (lucky for you) and my ability to write clearly and concisely (not so lucky for you).

What I can report with assurance is that your elected leadership is keenly aware of the many forces pulling and pushing upon behavior analysis as a field and ABAI as a membership organization. ABAI's Executive Council has worked diligently during the past year to reach strategic decisions that will make optimal use of the organization's resources in advancing and promoting the science and practice of behavior analysis while achieving increased and improved services for the Association's members.

This article summarizes some key results of the recently conducted survey that sought member input on a variety of issues, reports several significant decisions made by Council at its annual fall meeting, briefly describes plans for ABAI's 2009 annual convention and other conferences, and announces a new accredited graduate program and the establishment of two new affiliated chapters and a special interest group.

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General Information

The *ABAI Newsletter* is ABAI's primary means of communicating with members about association activities, the activities of ABAI chapters and special interest groups, upcoming events, job positions in behavior analysis, and other items of interest to the behavioral community.

Subscriptions

All members of the Association for Behavior Analysis International receive the *ABAI Newsletter* as a part of their membership benefits. Institution and nonmember subscriptions may be obtained at a cost of $41/year. Single issues may be purchased for $15. (International prices $61/year, single $25).

Diversity Statement

The Association for Behavior Analysis International seeks to be an organization comprised of people of different ages, races, nationalities, ethnic groups, sexual orientations, health status, religions, abilities, and educational levels.

Submitting to the *ABAI Newsletter*

The Association for Behavior Analysis International publishes the *ABAI Newsletter* three times a year. The newsletter Editor is Maria E. Malott, Ph.D., Executive Director/Secretary Treasurer of ABA International. Publication dates and submission deadlines are as follows:

Mailing Date	Deadline for Submissions
January 30	December 15
July 30	June 15
October 30	September 15

Articles and Advertisements

All advertisements are accepted and published on the representation of the advertiser and its agency that they are authorized to publish the entire contents thereof and that, to the best of their knowledge and belief, all statements made therein are true. The advertiser and the agency agree to hold the publisher harmless from any and all claims arising out of advertising published. Publication of articles, announcements, or acceptance of advertisements in *The ABAI Newsletter* does not imply endorsement by ABAI. ABAI reserves the right to reject any advertisement or copy that ABAI, for any reason, deems unsuitable for publication in any association publication.

Articles and announcements must be submitted to the ABAI office for consideration. Articles should consist of information of general interest to the behavioral community, and should not be reports of empirical research or conceptual developments, as such articles are more appropriate to refereed journals. Announcements and other advertisements must be relevant to behavior analysis science and/or practice.

Classified advertisements may be submitted in hard copy or faxed, and will be entered at the ABAI office. The fee for classified ads is $100* for the first 25 lines and $4.00 for each additional line (approximately 50 characters/line). ABAI reserves the right to edit all copy.

Display advertisements should be submitted on camera-ready, laser-quality copy. The following table shows the prices and dimensions for display advertisements.

Display size	Cost*
Full page (7" wide x 10" deep)	$750
Half page (6½" wide x 4½" deep) or (3¼ wide x 9½" deep)	$500
Quarter page (3¼" wide x 4½" deep)	$300
Business Card	$165

Organizations with ten (10) or fewer employees receive a 10% discount on all advertisement prices.

* Prices are subject to change.

Continued from front cover

ABAI's Revised Mission Statement

At its annual fall meeting in Phoenix earlier this month, Council voted unanimously to revise the ABAI mission statement from "to develop, enhance, and support the growth and vitality of behavior analysis through research, education, and practice" to read as follows: *to contribute to the well-being of society by developing, enhancing, and supporting the growth and vitality of the science of behavior analysis through research, education, and practice.*

Although the change is slight in number of words, the revised statement reflects an important recognition that ABAI's mission should not be to develop and promote behavior analysis for the sake of behavior analysis per se, but to do so because behavior analysis offers humankind one of its best hopes to solve many of it problems. The revised mission statement also acknowledges ABAI's ethical responsibility to help protect the consumers of practices and technology derived from our science.

Member Survey

In late summer/early fall, ABAI conducted a major survey of members' and affiliate members' opinions on a variety of topics relevant to the science and practice of behavior analysis, such as professional credentialing, certification, licensure, legislation, continuing education, professional liability insurance, funding and support of basic research, and dissemination of behavioral science research. In an effort to assess the needs and preferences of behavior analysts across a diverse range of domains, all 16,502 individuals with viable e-mail addresses in the ABAI database received an invitation to complete the survey. 1,900 completed surveys were returned for an overall response rate of 12%. The survey data were analyzed with consulting support from the Carl Frost Center for Social Science Research and the report prepared for Council by the ABAI office. Some key results of the survey are highlighted below.

Demographics

- Education: Bachelors, 13%; master's, 45%; doctorate, 36%.
- Primary discipline: behavior analysis, 32%; psychology, 28%; education, 9%; special education, 9%.
- 48% (800) of respondents checked that they were a certified behavior analyst; 52% (872) respondents checked that they were not a certified behavior analyst.
- Residence: U.S., 82%; non-U.S., 18%.

Practice Issues

A significant majority of survey respondents indicated that the following practice-related items were "somewhat important" or "very important" for ABAI to support:

- Recognition of BACB-certified behavior analysts' right to practice, 84% (1,598).
- Diverse continuing education activities for practitioners, 78% (1,488).
- Licensing of doctoral-level behavior analysts, 77% (1,468).
- Licensing of master's level behavior analysts, 77% (1,453).
- Political action at the federal level to require insurance coverage for behavior analysts, 74% (1,411).
- Training and support for affiliated chapters' effort to influence legislation related to practitioner issues, 71% (1,355).
- Provision of liability insurance for behavior analysts, 69% (1,312).

A large majority of survey respondents also said they would benefit substantially (894, 47%) or moderately (549, 30%) from the licensure of behavior analysts (77%).

Science Issues

A significant majority of survey respondents indicated that the following science-related items were "somewhat important" or "very important" for ABAI to support:

- Dissemination of science, 91% (1,727).
- Provision of scientific conferences, 88% (1,669).
- Dissemination of information about funding opportunities, 80% (1,517).
- Provision of specialized research training, 79% (1,488).
- Creation of additional scientific publications, 68% (1,284).

Practice Board

In the fall of 2007, Council created a Practice Board "To meet the needs of ABAI members and members of its affiliated chapters providing behavior analytic services to various constituencies consistent with the scientific foundations of behavior analysis." The Practice Board replaced the Professional Affairs Board, as the new Board would serve its mission.

Members of the Practice Board are: Linda Hayes (Board Coordinator and Council member), Michael Dorsey, Michael Dougher (Council member), R. Douglas Greer, Maria Malott, Travis Thompson, and Michael Weinberg.

At Council's request, the Practice Board held a strategic planning meeting August 22-24. One outcome of that meeting was a report by the Practice Board titled, "Meeting Practitioner Needs While Promoting and Preserving the Science of Behavior Analysis," which proposed a more specific mission, a committee structure to accomplish the work of the Board, and several strategic initiatives. The report was distributed to Council members in early September. After reviewing and discussing the Practice Board's report, Council conveyed a series of questions to the Practice Board seeking clarification and/or additional information regarding various aspects of the report. The Board prepared written responses to those questions for Council's review at its fall meeting.

At that meeting Council voted unanimously to approve the Practice Board's proposal that it be empowered to support and endorse the licensure of behavior analyst practitioners. The specific motion passed reads as follows: "In order to promote the professional provision of evidence-based applied behavior analysis services and protect the public, ABAI encourages the licensure of Master's and doctoral trained behavior analysts. ABAI will support its constituencies in working with state and federal administrative and legislative bodies toward this end."

Council also approved at its fall meeting the Practice Board's proposed committee structure (Governmental Affairs Committee, Licensure Committee, Continuing Education Committee, and Committee for Research in Practice). Two of the committees are described briefly here and in more detail elsewhere in this issue.

Licensure Committee - The Licensure Committee will work in collaboration with other boards within ABAI and with other organizations and key individuals in the field to formulate the educational and practice requirements that would be recommended for states to include in licensure bills for behavior analysts. For more information about the Licensure Committee, see the article by the committee chair, Michael Weinberg.

Governmental Affairs Committee - The Governmental Affairs Committee (GAC) was established to serve as a resource to practicing Applied Behavior Analysts and to work to protect the integrity of the profession. The GAC will arrange public testimony at legislative hearings, communicate with stake holders and affiliated organizations, and hold an annual public Committee meeting. Through various advocacy efforts, the GAC will help to achieve legislation, funding, and programs on the state and federal levels in the support of practicing Applied Behavior Analysts. To learn more about the GAC, see the article by Michael Dorsey, Chair of the GAC.

Science Board

The previous issue of the Newsletter contained an update from the Science Board on the Board's creation, membership, mission, and goals in four broad categories: Research Support, Research Dissemination, Scientific Education, and Public Relations.

In the area of Research Support the Science Board has established a Task Force to study and make recommendations to the latest revision of the NIH Guide to the Care and Use of Animals in Laboratory Research. This Task Force (Karen Anderson, Mark Branch, Steve Dworkin [Chair], Tim Hackenberg, Chris Newland, and Ray Pitts) met in Atlanta prior to the SEABA meeting in October to discuss and begin drafting a set of recommendations for Council approval.

With respect to the dissemination of scientific knowledge, the Science Board has established a special track on Translational Science for the 2009 ABAI Convention. The objective of this track will be to highlight cutting-edge translational research in the form of generally accessible overviews of specific research domains that span the continuum from basic science to application. Featured events in this track will be a pair of sessions jointly sponsored by the Science and Practice Boards on behavioral momentum (with presentations by Tony Nevin, Bud Mace, and Jennifer McComas) and stimulus control in autism (Bill McIlvane, Mark Sundberg, and Robert Koegel).

At its fall meeting Council approved two proposals from the Science Board for activities to support Scientific Education: a science-based special topic

conference and a summer internship program for highly qualified undergraduate students interested in pursuing careers in behavior analysis science. Following the Fall Council meeting the Science Board convened in Phoenix under the leadership of Board Coordinator Tim Hackenberg to begin planning these activities and other initiatives. A full report of the Science Board's activities and future plans will appear in the next issue of the Newsletter.

Education Board

ABAI's Education Board will hold a strategic planning meeting in Chicago later this fall. The Education Board Coordinator, Charles Merbitz, will lead a working group of Board members, the Coordinators of both the Science and Practice Boards, and representatives of other ABAI standing committees to explore how the Education Board's work can complement and be supported by activities of the Practice and Science Boards.

A future issue of the Newsletter will include an update from the Education Board on its plans.

Accredited Programs, Chapters, and SIGs

At its fall meeting Council approved the recommendation of the Accreditation Committee's site visit team to award ABAI Accreditation for 5 years to the Master's Programs in Applied Behavior Analysis, Organizational Behavior Management, and ABA/OBM in the College of Psychology and Liberal Arts at Florida Institute of Technology. Council also approved the reports from site visit teams recommending that the Master of Science Program in Psychology (emphasis in Behavior Analysis) from the Department of Psychology and Child Development at California State University-Stanislaus and the Master's of Science in Behavior Analysis from the Department of Behavior Analysis at the University of North Texas be re-accredited for a 5-year period. Congratulations to the faculty at these three institutions of higher education for achieving and maintaining graduate programs in behavior analysis with curricula and quality training opportunities for students that meet ABAI's accreditation standards.

Applications to establish two new affiliated chapters (the Association for Advancement of Radical Behavior Analysis [Italy] and Oregon ABA) and a new SIG (the Behavioral Coaching and Counseling Special Interest Group) were also approved by Council. Congratulations to the founders and charter members of these new ABAI-affiliated groups of behavior analysts.

Conferences

ABAI's office staff, boards, and committees continue the never-ending cycles of work required to plan and produce conferences that members find professionally valuable and personally motivating.

2009 Annual Convention

ABAI's 35th Annual Convention to be held in Phoenix next May is shaping up to be the largest meeting of behavior analysts to date. When the submission deadline for the 2009 convention arrived at midnight October 15th, the ABAI office had received a record number of program proposals. The more than 1,600 papers, panels, symposia, and posters submitted by members will be supplemented by numerous workshops, invited addresses, special events, and sessions organized by the Science and Practice Boards.

One highlight of the 2009 convention is sure to be the Presidential Scholar Address by Lonnie G. Thompson, Distinguished University Professor in the School of Earth Sciences at The Ohio State University. One of the world's most renowned paleoclimatologists, Thompson has been described as an "ice hunter," and a "translator" who deciphers messages trapped in ice cores that tell the history of the world's climate. He has led more than 50 expeditions during the last 30 years, to remote ice caps in Peru, Bolivia, China, Antarctica, Russia, Kenya, and other regions. Thompson's findings have resulted in major revisions in the field of paleoclimatology by demonstrating how tropical regions have undergone significant climate variability, countering the earlier view that higher latitudes dominate climate change.

Figure 1. Lonnie G. Thompson

Thompson's research has been featured in hundreds of publications, including *National Geographic* and the *National Geographic Adventure* magazines, and is highlighted in *An Inconvenient Truth*, Al Gore's documentary film on global warming, for which Thompson was a consultant. One of *Time* magazine's 2008 "Heroes of the Environment," Thompson was identified in the magazine's October 6 issue as one of six scientists and innovators whose work is key to addressing global climate change. Thompson's many honors and awards include the Tyler World Prize for Environmental Achievement (2005), the environmental sciences equivalent of a Nobel Prize, and the U.S. National Medal of Science (2007), the highest honor the United States bestows on an American scientist. The story Thompson's data tell of the history of the Earth's climate and its implications for climactic change should be of great interest to ABAI's membership, as one of the most pressing issues facing humankind is whether we will change our behavior sufficiently enough to protect the environment.

Watch for more information on the 2009 convention in the next issue of the ABAI Newsletter and mark your calendar now for ABAI's 2010 annual meeting in San Antonio, Texas.

2009 International Convention

ABAI's Fifth International Conference will take place August 7-10 in Oslo, Norway. The submission deadline of December 10 is fast approaching. The call for papers and information about the conference hotel and travel to and within Norway, can be accessed at:
http://abainternational.org/oslo/index.aspx

2008 Education Conference

ABAI held its first Education Conference September 5-7 in Reston, Virginia. The single-track conference focused on evidence-based education practices. Each of the nine invited presenters addressed the current state of knowledge of evidence-based practices at the research, practice, and/or policy levels. At its fall meeting Council gladly accepted a generous proposal by the Wing Institute to fund the publication of a book of papers derived from the Education Conference presentations. ABAI and the Wing Institute will hold joint copyright to the book. To learn more about the Education Conference, see the article in this issue by ABAI Past President and Education Conference Coordinator, Janet Twyman.

2008 and 2009 Autism Conferences

ABAI's 2nd Autism Conference in Atlanta, Georgia, on February 8-10, 2008. ABAI's 3rd Autism Conference will be held in Jacksonville, Florida February 6-8, 2009. For a report on the 2008 event and information about the 2009 program, see the article on page xx of this issue by Maria Malott and Bill Heward.

Other Behavior Analysis Conferences

For a calendar and web links to conferences sponsored by ABAI Affiliated Chapters see Upcoming Conferences section of this issue.

We look forward to the development of new direction and the continued positive trend in behavior analysis and ABAI.

Future Developments and Opportunities

I am confident that ABAI will anticipate and respond positively to future opportunities to contribute to the well being of society by developing, enhancing, and supporting the growth and vitality of behavior analysis. My confidence stems from the knowledge that ABAI's members—you—expect nothing less and will respond as needed to ensure that your organization does so.

Visit ABAI's Chapters Webpages
http://www.abainternational.org/chapters.asp

Visit ABAI SIG Webpages
http://www.abainternational.org/Special_Interests/si.asp

ABAI's Commitment to Support Licensing of Applied Behavior Analysts

By Dr. Michael Weinberg

At its recent meeting, the ABAI Executive Council approved in principle to move forward with the Practice Board's proposal to pursue licensure for applied behavior analyst practitioners. The Practice Board and Council have carefully considered the future needs of the field and the profession, as well as the needs of the public for quality of services and protection and third party payment for behavior analysis services. The Licensure Committee of the Practice Board will be chaired by Michael Weinberg, Ph.D., BCBA. This Committee will begin by selecting members and will then begin work in collaboration with key individuals in the field, as well as other boards within the Association to formulate the educational and practice requirements that would be recommended for states to enact in licensure bills for applied behavior analysts and for the creation of applied behavior analyst licensure boards. Coordination with the Science Board, the Accreditation Board, various Special Interest Groups (such as the Practitioner Issues in Behavior Analysis SIG, Autism SIG, and others), as well as with outside organizations and individuals as appropriate, will be critical to this process. We will also continue to seek input from ABAI members, as needed, to ensure involvement and that the direction we move in will be based upon the needs and interests of members. This was the case in making the decision to pursue licensure; the recent strategic development survey that went out to members resulted in high rates of response and support for this initiative.

This initiative is important if we are to continue as a unified field and have one voice for behavior analysis – that voice being ABAI's– that supports the efforts and needs of practitioners and researchers/academicians alike. Seeking licensure for applied behavior analysts will promote credibility of the field and make efforts to seek funding for research, to create and maintain academic positions, and to provide for the needs of practitioners and the public using behavior analysis services (due to increased standards of practice, consumer protection, and potentially third party payment) more likely in the future.

Licensing allows consumers to discriminate those with identified competencies in a specific profession and offers protection to consumers who are harmed. Professional licensure is administered as a function of state laws by the state licensing boards of each individual profession. These boards are generally comprised of individuals who are licensed in the particular profession. State licensing boards can take action to settle disputes in many ways, including finding the professional not to be in violation of their professional standards, issuing a formal reprimand, or revoking their license. It should be mentioned that a licensure bill for "behavior specialists" was passed already this year in Pennsylvania, and a bill has also been passed for licensure of applied behavior analysts in Arizona.

The Licensure Committee will develop a Model Practice Act for licensing of applied behavior analysts that will include many necessary components, including education, supervision, and testing requirements as well as qualifications and accreditation for graduate schools to provide programs to prepare students to become licensed. Additional aspects that need to be considered are grandfathering in of those with other qualifications, such as having a BCBA currently at the time a state implements its licensing act and board, and other possible qualifications of candidates for licensure, such as having attended an ABAI-accredited graduate program, or equivalent. Additional considerations include portability of licensure to enable applied behavior analyst practitioners to move from one state to another and be able to transport their license to practice as an applied behavior analyst in the new state. This will be an important aspect to include in licensing legislation to ensure that applied behavior analysts are able to continue their professional practice when making the decision to relocate. Other important considerations include scope of practice for doctoral and master's prepared applied behavior analysts, and required hours of supervised or practicum experience. The Committee will also explore the idea of developing "Best Practice Guidelines" for specialty areas of intervention based on current research literature and evidence-based practice (e.g. for autism, developmental disabilities, ADHD, behavioral disorders, sex offenders, victims of sexual abuse/violence, and many others that could be considered).

Another area that needs to be visited will be ethical standards for licensed applied behavior analysts. The Practice Board will consider this as well as develop standards for continuing education for licensed

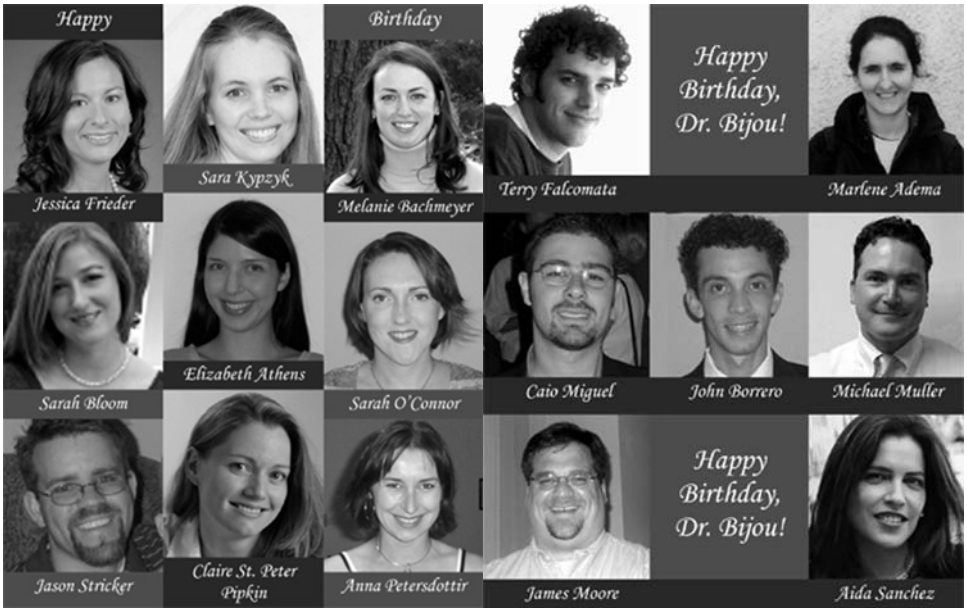
applied behavior analysts. ABAI will offer CE opportunities for licensed practitioners, and plans to authorize other organizations to offer continuing education for licensed applied behavior analysts via an ABAI CE approval system.

These are among the initial steps in developing the necessary infrastructure for licensure but will require working closely with the Governmental Action Committee to develop a coalition of supporters of licensing within each state. This may be best accomplished by working with state and regional ABAI chapters who can develop relationships with state legislators and promote and propose licensing legislation based upon the ABAI Practice Board's Model Licensing Act.

These are indeed very exciting times for the field of behavior analysis, with much that needs to be done in the coming months and years to accomplish these goals.

Sidney Bijou's 100th Birthday!

ABA International and the Society for the Advancement of Behavior Analysis are delighted to recognize the 100th Birthday of Dr. Sidney Bijou. A card was sent to Dr. Bijou on behalf of all Bijou Fellowship Awardees (see below).



Happy Birthday, Dr. Bijou!

Strategy for Governmental Affairs

By Dr. Michael Dorsey

The Governmental Affairs Committee (GAC) of the ABAI Practice Board was established to serve as a resource to practicing Applied Behavior Analysis Clinicians and to work to protect the integrity of the profession. As such, The GAC has adopted the following Mission Statement as a blueprint for the direction and activities it will undertake over the coming weeks and months:

Mission Statement

To represent the interests of practicing Applied Behavior Analysts in governmental matters at both the federal and state level. The Committee is composed of members of ABAI who recommend annual legislative priorities and review statutes and regulations on a federal and state level related to the practice of Applied Behavior Analysis. The Committee is vested in arranging public testimony at legislative hearings, communicating with stake holders and affiliated organizations, and planning an annual public Committee meeting. Through its advocacy efforts, the Committee will help to achieve significant legislation, funding, and programs on the state and federal levels in the support of practicing Applied Behavior Analysts.

Specific activities of the GAC recently approved by the ABAI Executive Council at its winter meeting include:

1. The first step was the affirmation by the ABAI Executive Council of the appointment by the Practice Board of Michael F. Dorsey, Ph.D., BCBA as Chair of the Governmental Affairs Committee.
2. The next step will be the appointment of eight members to the Governmental Affairs Committee. Names of potential candidates will be solicited from the membership of ABAI, the Council, the Practice Board, as well as other related ABAI Committees. An international member will be specifically recruited to explore how the Governmental Affairs Committee can be helpful to international members. Appropriate candidates should have experience related to governmental processes. The final list of names will be reviewed by the membership of the Practice Board for approval. This process is anticipated to take up to 30 days to complete.
3. The Governmental Affairs Committee will meet within 60 days of the formal creation of the committee in a "virtual meeting," conducted via the internet.
4. Following the formal creation of the Governmental Affairs Committee, the membership will identify and reach out to other advocacy organizations with similar goals to join and/or form alliances (and, in some cases, formal affiliation agreements). Examples include the Consortium for Citizens with Disabilities (CCD), Autism Speaks, the Association for Retarded Citizens (ARC) of the United States, etc.
5. The primary priority for the Governmental Affairs Committee will be the support of state and international affiliate chapters as well as ABAI Special Interest Groups, relative to legislative issues which impact their ability to practice. This activity will take several forms and will include:
   a. The reactivation of the original ABAI Professional Affairs Committee (to be chaired by Tom Zane) as a Sub-Committee of the Governmental Affairs Committee. This will create a nation-wide network to identify a contact person for each state and country affiliate chapter and special interest group;
   b. Provide training in Governmental Advocacy for all members, both at the annual ABAI conference as well as through a web based training network;
   c. Assist the state and international affiliate chapters as well as special interest groups in the creation of a process for the identification and prioritization of legislative priorities for their individual state, similar to that described above.
6. The Governmental Affairs Committee will create a mechanism for the identification of national issues which will/may impact practicing Applied Behavior Analysts. These will include issues (proposed bills, budget items, policy amendments, etc) impacting areas such as Education, Developmental Disabilities, Research, etc.
7. The Governmental Affairs Committee will create a process for the review and adoption, on an

annual basis, for a national Legislative agenda for ABAI. The process will follow the model described below:

a. A three tiered system that includes one "Priority Bill," three to five "Supported Bills," and an undefined number of "Endorsed Bills."

b. At an annual open meeting of the Governmental affairs Committee, held during the ABAI Conference, the members of the Governmental affairs Committee will meet to review and discuss bills submitted by members or stake holders that fall within the scope of our profession and, if enacted, may either enhance or detract from ability to practice;

c. The Governmental Affairs Committee will propose a slate of such bills, which will then be submitted to the membership of ABAI via electronic survey to vote

   i. The **Priority Bill** will be the center piece of our Legislative agenda. The Governmental affairs committee will notify the sponsoring agencies/legislators of the action taken in identifying the legislation as the Priority Bill for ABAI for the year. This will allow the use of the name of ABAI to be used in all correspondence, etc. related to this bill. Additionally members of the committee will be available to testify at hearings, submit written statements related to the bills, make phone contacts with appropriate legislators, and activate the phone/email alert system to prompt ABAI members to contact their legislators indicating the position of ABAI on this particular bill, etc.

   ii. Three to five **Supported Bills** will be treated in a similar manner to the Priority Bill, with the exception that committee members will not be available to testify on behalf of the bill(s).

   iii. An undetermined number of **Endorsed Bills** will be identified which the committee believes are important to the practice of Applied Behavior Analysis, but do not rise to the level of importance which justifies the expenditure of the time or resources focused on the Priority of Supported Bills. The single level of support for bills identified in this category will be to notify the sponsoring agencies/legislators of the action taken in identifying the legislation as an Endorsed Bill for ABAI for the year. This will allow the use of the name of ABAI to be used in all correspondence, etc. related to this bill.

8. The Governmental Affairs Committee will develop **Legislative Advocacy Tool Kit** to assist ABAI members in their advocacy efforts. Included in this Tool Kit will be:

A. An Overview of Legislative Advocacy

This will explain the basics of legislative advocacy, including an overview of the budget process and the legislative calendar; tips and instructions for communicating with your legislators; sample communications and testimony; and other useful information.

B. Providing Testimony

A step-by-step guide to providing verbal and/or written testimony at Legislative hearings. Includes tips and instructions on providing testimony, and sample testimony.

C. Guidelines for Communicating with Legislators in Good Times and Bad

A guide on the importance and best ways of communicating with your legislators on issues vital to your profession.

D. Top 10 Guidelines for Meeting with Policy Makers

E. Guidelines for How to Write a Letter to the Editor

F. Learn how the system works...and how you can make it work for you

The ABAI Practice Board will offer resources designed to help members understand the legislative system and how to navigate it. This will provide information about the services available to members and how to obtain them; access tips and instructions on influencing the system; view guidelines for interviewing potential service providers; and more.

G. Guide to Lawmaking

This document will include a glossary of legislative terms as well as guidelines for how you can participate in the legislative process.

9. The Governmental Affairs Committee will create a mechanism, both on the national and state levels, for the notification of "Governmental alerts."

a. An "e-mail tree" will be developed which will allow the committee to notify ABAI members (either at the national or individual state level) about governmental issues which require their action;

b. E-mails will be distributed soliciting members to write and/or call their local legislator, and to voice their position related to a particular governmental activity (i.e., pending legislation, changes in policy/practice of a governmental agency, budgetary issues, etc.).

10. As noted above, the Governmental Affairs Committee will coordinate an annual open meeting at the ABAI conference in which both the activities, plans, etc. of the Governmental Affairs Committee will be discussed, as well as the selection of the annual ABAI legislative agenda.

11. The Governmental Affairs Committee will coordinate a single track conference related to Governmental Affairs issues. Speakers both from ABAI, state/international affiliate chapters, and special interest groups, as well as other organizations such as Autism Speaks or the National Association for Developmental Disabilities will be included.

12. The Governmental Affairs Committee will conduct workshops in legislative advocacy at the ABAI annual conference. This meeting will be limited to the "designated" state affiliate chapter representatives and representatives of the special interest groups, and will provide specific training in the Legislative Tool Kit available on the Governmental Affairs Committee web site.

13. On rare occasions, and based first on prior consultation ABAI Council and legal staff, the Governmental Affairs Committee may recommend the development and filing of an amicus curiae brief in legal cases which have the potential to directly impact the ability of ABAI members to practice Applied Behavior Analysis;

14. The Governmental Affairs Committee will maintain a web page, as part of the Practice Board's web page, to inform and assist ABAI members with respect to governmental affairs. This web page will include:

a. A description of the Governmental Affairs Committee, its' members and activities;

b. A listing of the ABAI legislative agenda, with copies of all bills, the status of the various bills, and how members can become actively involved in the legislative process;

c. Links to the Legislative Advocacy Tools;

d. Links to other ABAI Boards, Sigs, State Chapters, etc.

e. A List-Serve for the discussion of governmental related topics among the identified state representatives;

f. Updates on new legislative agendas, court rulings, etc. which affect the practice of Applied Behavior Analysis.

It is the consensus of the members of the ABAI Practice Board that, while federal legislative issues that impact the practice of Applied Behavior Analysis are very important and will require the attention of the GAC, the vast majority of legislative issues that impact our field are at the state level. The costs in time and money to establish a permanent GAC/ABAI office in Washington DC was seen as an unwarranted expenditure of ABAI funds at this time. The Board recognizes the need to have a presence in Washington and will join with Disability Consortium Organizations. Following the formal creation of the Governmental Affairs Committee, the membership will identify and reach-out to other advocacy organizations with similar goals to join and/or form alliances (and, in some cases, formal affiliation agreements). Examples include the Consortium for Citizens with Disabilities (CCD), Autism Speaks, the Association for Retarded Citizens (ARC) of the United States, etc.

Concerning position statements, the Government Affairs Committee has been authorized by the ABAI Executive Council to "use judgment to pass ABAI Practice Board/GAC Position statements that are approved that the Practice Board, without need for Council or ABAI membership approval." In those cases when the Committee believes it necessary to have an ABAI Council approved position statement, the GAC will make the request and the Council, who will act upon the request in an expeditious manner. For matters that affect the core believe and foundations of the Association, a vote of the membership will continue to be required.

Interview with Ann Poppenga: Practicing Behavior Analyst Elected to Town School Board

By Dr. Michael Dorsey

Ann Poppenga is a Board Certified Behavior Analyst and 2003 graduate of the Simmons College program in Behavior Analysis. Ann has worked on the "south shore" of Boston for the past several years as a consultant to several local school districts, providing in-home direct ABA educational services to young children diagnosed with Autism, as well as serving as a Mentor for many students preparing to sit for the BCBA exam. Ann has become quite interested in local politics, serving as a "Town Meeting" member in her home town of Holbrook, Massachusetts. When the opportunity presented itself to move into an opening on the local School Board, she took the step to apply for the position. Below is an interview with Ann regarding this process and her hopes for the future of Special Education in her home town:

I decided to get involved with the school committee when a vacancy opened up due to a resignation. I felt compelled to get involved at this level as I believe my experience consulting to special education classrooms around the state would be valuable to a committee of officials charged with making fiscal decisions regarding the local schools. Specifically, I saw how my time on town meeting was useful in helping the town to understand the importance of creating quality in district special education programs. I spoke as a town meeting member in support of building an annex to the existing elementary school to house an intensive needs preschool classroom. Since that time this program has grown to three intensive needs classrooms and will be creating a new integrated kindergarten program next year. I would estimate at least 15-20 students are now in district at three years old as opposed to being serviced out of district and incurring more costs to the town. The biggest hurdle I see Holbrook facing (and other towns) is a deficit of revenues in business tax revenue (Holbrook is a very small town) that forces towns to rely on home owners to fund educational mandates namely FAPE. No one disagrees that students deserve access to FAPE, the problem is when towns don't create quality programs in district...the costs are higher and other areas of local education are cut (sports, clubs, transportation, buildings, safety) the list can go on and on.

I guess what my hope is that I can take the skills I have learned as a behavioral consultant, helping schools provide cost effective and educationally effective programs to keep students in district and realize the cost savings that can bring to a cash strapped educational system

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ABAI's Dissemination of Behavior Analysis in the Treatment of Autism

By Drs. Maria E. Malott and William L. Heward

ABA International continued the huge success of its first Autism Conference by hosting its second Autism Conference, much to the delight of those who enjoyed the event in 2007. The conference, *Issues and Recent Advancements in the Behavioral Treatment of Autism: Practical Strategies for Changing Behavior at Home and School*, took place February 8-10, 2008 in Atlanta, Georgia. The main themes of the conference were: home- and community-based interventions and curriculum and instruction in the classroom/school, which were of interest to professional behavior analysts, teachers of preschool and school-age children with ASD, adult service providers, in-home behavioral therapists, caregivers, teacher trainers, and students. The conference was attended by more than 700 people from 21 countries and from 17 states in the USA.

ABAI greatly appreciates the support provided by the Autism Special Interest Group; Autism Society of America; Applied Behavior Consultants, Inc.; the Center for Autism and Related Disorders; and the Parent Professional Partnership Special Interest Group. ABA International's Autism Special Interest Group brings together individuals who specialize in or have an interest in the application of behavior analysis to the education and treatment of autism. The Autism Society of America works to increase public awareness about the issues faced by people with autism and related disorders, advocate for appropriate services, and provide the latest information regarding treatment, education, research, and advocacy. Applied Behavior Consultants, Inc. is a human services agency that dedicates itself to the enhancement of the quality of life for people with developmental disabilities and learning disorders. The Center for Autism and Related Disorders develops individualized plans to effectively treat children with autism and related disorders. ABA International's Parent Professional Partnership Special Interest Group serves both parents of children with autism and related disabilities and interested professionals. The development, marketing, presentations, and assistance these groups contributed to the conference helped make the event such a great success.

The conference featured ten invited speakers who addressed a variety of topics relating to autism. Dr. Mary Beth Walsh emphasized the fact that children with autism are capable of much more than was once thought and addressed the critical role parents play in fostering their children's potential. Dr. Patricia Krantz described how scripts and script fading can be used to help children with autism learn to take part in everyday conversations with their parents, siblings, teachers, and peers. Dr. Andy Bondy outlined the Picture Exchange Communication System, how it can best be implemented at school, home, and in community settings, and how practitioners can avoid some common mistakes that may impede the results of the system. Dr. Ilene Schwartz reviewed research on what constitutes high quality primary school programs for students with ASD and described how educators and parents can work together to ensure that a quality education is received by all students with ASD. Dr. Cathy Watkins spoke of the validity of Direct Instruction programs in that they are scientifically based, empirically validated, and effective in addressing the needs of students ranging from those with severe disabilities to those that are identified as gifted. Dr. Gregory MacDuff described a variety of behavioral interventions that help adults with autism complete tasks in work, community, and residential settings. Dr. Gina Green presented potential answers of how parents and practitioners could gain confidence in recommendations that are said to be "evidence-based," and talked about what is the best available scientific evidence about various interventions for autism. Dr. James Partington described the multiple sources of reinforcers readily available to children, many of which do not require interaction and can be obtained with little effort on the child's part. Dr. Mary Jane Weiss presented an overview of well-documented instructional techniques, including discrete trial instruction, incidental teaching, and other naturalistic strategies. Dr. Laura Schreibman spoke of the need for an evaluation methodology that identifies which behavioral intervention will produce the best outcomes for a specific child. A brief article by each presenter is included in this issue of the *ABAI Newsletter* (see pages 14 – 43).

Also a part of the conference was a bookstore in which all invited presenters were available to sign their publications.

Figure 1. Invited presenters were on-site to sign their publications.

Conference attendees also enjoyed poster sessions on Friday and Saturday evenings. A total of 113 posters presented autism-related research and information under the following categories: experimental analysis of behavior, applied behavior analysis, education, service delivery, and theory.

Figure 2. Poster sessions were enjoyed by all.

ABA International is delighted to announce the availability of a DVD/Webcast package of the 2008 Autism Conference program. The DVD, which contains audio and slides of each of the invited speaker's presentations, is available to purchase through ABAI's store: apps.abainternational.org/store. Purchasers of the DVD/ Webcast package have the option of earning continuing education credits.

Figure 3. 2008 Autism Conference DVD

Evaluations of the 2008 Autism Conference were very positive and encouraged ABAI to offer another Autism Conference in 2009. ABAI's 3rd Autism Conference, *Research to Practice: Making Real Changes in the Lives of People with Autism will* be held Friday, February 6th through Sunday, February 8th, 2009, at the Hyatt Regency Jacksonville-Riverfront in Jacksonville, Florida. The 2009 Autism Conference Program Committee (members shown at end of this article) designed the program to be responsive to the challenges, interests, and needs faced by direct service practitioners (e.g., in-home behavioral therapists, teachers of preschool and school-age children with ASD) and parents/family members. The emphasis will be on pragmatic, research-based "how to" information that practitioners or parents can use to improve the lives of children with autism. In addition to the presentations by the invited speakers (see below), the single-track program will include three panel sessions to give attendees the opportunity to pose questions and raise issues of most concern to them. The three Expert Panel/Q&A Sessions will feature the following themes and participants:

- *Recent Developments in Behavioral Programming & Interventions* – Panelists: Peter Gerhardt. Lynn Koegel, Robert Koegel, Diane Sainato, and Bridget Taylor. *Moderator:* Mary Jane Weiss (Rutgers University)
- *Using Science to Guide Autism Treatment* – Panelists: Brian Iwata, Suzanne Letso, Sam Odom, Adrienne Perry, Susan Wilczynski (Executive Director, National Autism Center). *Moderator*: James Carr (Auburn University)
- *Current Status, Challenges, and Opportunities in Legislation of Behavior Analytic Autism Services: Observations and Recommendations from Professionals and Parent Advocates* - Panelists: Mandy Davani (Parent Advocate) Michael Dorsey (Vinfen Corporation and Gordon College), Kim Lucker (Consultant), Eric Prutsman (Attorney), Judith Ursetti (Parent Advocate, Autism Speaks). *Moderator:* Jack Scott (Florida Atlantic University).

Dr. William L. Heward
Opening Remarks and Introductions

Dr. Diane M. Sainato
Fostering Independent Performance Skills in Young Children with Autism

Dr. Bridget A. Taylor
Improving Joint Attention and Reciprocal Language Skills in Children with Autism

Dr. Lynn Kern Koegel and Dr. Robert L. Koegel
Pivotal Response Intervention

Dr. Peter F. Gerhardt
Applied Behavior Analysis and Adults with Autism: Applications to Promote Competence and Quality of Life

Dr. Adrienne M. Perry
Early Intensive Behavioral Intervention for Children with Autism: What Does the Research Tell Us?

Suzanne Letso
Defining, Designing, & Delivering ABA School Programs for Student with Autism Spectrum Disorders

Dr. Samuel L. Odom
'Now That We Know What to Do, How Do We Do It?
Implementation Science and Applied Behavior Analysis

Dr. Brian A. Iwata
Experimental Approach to Behavioral Assessment

An opening reception on Friday evening presents an opportunity for attendees to view poster presentations and exhibits of autism treatment providers while interacting with other attendees and invited presenters. We hope you will join us at ABA International's 3rd Autism Conference.

To learn more about the conference program, go to:
www.abainternational.org/autconf/index.asp
Registration can be completed at:
www.abainternational.org/autconf/convreg/index.asp

ABAI's 2009 Autism Conference Program Committee

James E. Carr, Ph.D., BCBA (Auburn University)
David Celiberti, Ph.D., BCBA (President, Association for Science in Autism Treatment & President, ABAI's Parent-Professional Partnership SIG)
William L. Heward, Ed.D., BCBA (Chair) (Ohio State University)
Marianne L. Jackson, Ph.D., BCBA (California State University, Fresno)
Linda A. LeBlanc, Ph.D., BCBA (Western Michigan University)
Jack Scott, Ph.D., BCBA (Florida Atlantic University)
Mary Jane Weiss, Ph.D., BCBA (Rutgers University & Past President, ABAI Autism SIG)
Susan M. Wilczynski, Ph.D., BCBA (Executive Director, National Autism Center)

ABAI Autism Conference Presentations

Because Our Kids Are Worth It: A Parent's Perspective on Behavioral Interventions at Home and School

By Dr. Mary Beth Walsh, Caldwell College

It is our job as parents to assure that our children learn how to be as independent as possible, as productive as possible, and to be well integrated into our families and communities. This is the job of all parents for all children—but for us parents of individuals with autism, we need to be much more attentive to the details and much more involved in the process. This is why I think of raising a child with autism as "Extreme Parenting."

All parents wean their babies off formula or breast milk and introduce solid foods, but most don't need a behavior analyst and a databased program to teach chewing and swallowing of chicken nuggets, like we did. All parents help their children learn to talk, but most don't have to explicitly and separately teach their child how to make the "m" sound and how to make the "ah" sound before they hear child say for the first time—"mama." Many parents worry about the quality of their children's education, but few need to start new schools just to provide a place where their child will actually learn. All parents know it's best to remain consistent with their children, but few pay for the occasional lapse like we do. Parenting your child with autism is simply an extreme version of parenting. All parents know that what they do has a huge impact on their children's lives, but few have the potential to have the impact that we do. We parents of children with autism have the opportunity, the obligation, and the responsibility to go to extremes to assure that our children learn as much as they are able to learn.

There are three key strategies to make sure that our children learn. The first is taking direct and frequent measurement of our children's progress in learning. The second is forging respectful and productive partnerships with professionals. And the third is being actively involved in our children's learning and making sure that the bar is always set high. Observing your child's progress in learning situations, and measuring that progress is the first important strategy we parents must employ to assure our children learn all they are capable of learning. If you're going to most effectively help your child with autism you must begin with your own education. The more we know about effectively helping our children acquire the skills whose very lack defines autism, the better it will be for our children in the long run. Learning the basics, and maybe for some of us, over time, the finer points of the science of applied behavior analysis, sets us parents up to be able to measure our children's progress. It helps us attend to their learning and watch for skill acquisition by collecting data.

It's also critical, if at all possible, to work directly with a qualified clinician who can give you immediate constructive feedback on how you interact with your child. It is critical to know how to effectively reinforce behaviors we want our children to acquire, and how to not reinforce behaviors that are dangerous or destructive. Knowing how to work effectively with your child empowers parents to expect more, to collect the direct and frequent measurement of our children's learning that documents their success or that allows for program correction if no progress is documented.

Data collection is not brain surgery or rocket science, and it is not just for professionals. Collecting data is the best way to make sure our children's time is not wasted. It's the best way to keep watch over your child's learning.

Typical kids learn to talk and run and chew and play with little or no effort, by them or us. Autism is different. Observing and measuring your child's progress is an essential part of their education. You must know if the little skills are being acquired, and if they are being used as building blocks in greater skills. Intuition isn't enough here.

Many professional organizations welcome parents as partners in advocacy for effective learning for individuals with autism, and many of these organizations will steer you in the right direction regarding the scientific validity of any proposed intervention or instructional method for our kids.

I know not all parents are comfortable embracing science as the criterion of autism interventions, and so I'd like to propose a minimum standard to guide us: we parents should all take the pledge that

medical professionals take—and promise to do no harm. The common parental obligation to protect our children from harm is not diminished by their diagnosis of autism, indeed it is made more binding on us.

Why do we measure our children's skill acquisition? BECAUSE WE BELIEVE THEY CAN LEARN. We believe our children are capable of learning, no matter how significant their autism. They are capable of acquiring skills. They are capable of progress.

This might sound obvious, but is really a revolutionary insight. Until behavior analysts began to work with our children, and document scientifically that their teaching led to our children's learning—no one really thought our kids could learn. Autism was seen as hopeless, and improvement unlikely. We parents owe the behavior analytic community for proving that our kids with autism are capable of learning.

But mostly, we owe our kids. We owe our kids faith in their ability—not faith based in wishes and hope, but faith based in the scientific demonstrations of the ability of individuals with autism that behavior analysts have documented time and time again in the past 40 years. If we believe what the research demonstrates, if we believe that our kids can learn—then we will measure their progress, then we will have recourse to direct and frequent measurement of their behaviors to show that they are capable and can learn and are learning. I have confidence in my child not just because I love him, but also because I know the research.

Establishing and maintaining fruitful parent professional partnerships is a critical task for ensuring that our children reach their full potential. This seems obvious when stated aloud, but when this sort of partnership occurs under the direction of an agency or school system, things can be very complicated.

There is a guiding principle which can help you navigate the various bureaucracies and individuals: stay focused on doing whatever's in the best interest of your child, and forging strong working relationships with others who are also committed to your child's best interest.

Forming functional parent professional partnerships may be complicated by the structure of the school system, your local administrative law, state interpretations of IDEA and NCLB, third party service providers, early intervention services, privately hired and trained therapists, and the myriad others we encounter. You as a parent can still seek out people who, like you, seem to have your child's best interest at heart. Work with them. Keep your child's best interest in sight as the goal, and ignore things that are peripheral. Fight when you have to, but be prepared to put the work into building up relationships again after the fight. It's not easy—but no one ever said being a parent would be easy. Hey, even for parents of kids who don't have autism, it's not always easy.

This third strategy follows from the other two. Parents have to be involved in order to take direct and frequent measurement. Parents have to be involved in order to forge productive relationships with the professional dedicated to our kids. And parents have to be involved in order to set the bar high for our kids.

Parental involvement with our kids' learning is critical because, in the first place, we have the power to reinforce or undermine just about everything our children learn from professionals and in more structured learning situations.

Parental involvement and expectations setting is critical for our children's future. We will still be there with our kids when the school services end at age 21. We parents must prepare our children with autism for life after school. We parents must always be thinking about the future.

Dr. Linda Meyer, Executive Director of The Center for Outreach Services to the Autism Community in New Jersey, better known as COSAC, has taught me this critical insight: teach to the next environment. So, if your child with autism is young, and may soon be included in a general education classroom, your job is to make sure he/she is prepared for that classroom. If your child with autism is older, and will remain in a separate classroom or school until graduation, then your job is to make sure that the child learns the skills needed to success in the NEXT environment. If your child with autism is not going to college, then it may not make sense to spend all of their high school years refining their academic skills. What's their next environment? Will they be employed? Then teach them the job skills needed to succeed. Will they need to know how to punch a time clock? How to sign their paychecks? How to deposit them? How to load or empty a dishwasher in your house or their group home? Then teach it now. You can't rely on school to do this—in many

places vocational training has virtually disappeared; everyone is preparing for college and the new information economy. But that won't be my son at age 21, and that won't be what we prepare him for. We need to prepare him for life, for a job, for taking care of himself, his clothes and his food, and we need to be working on those things now—when he's nine, and not wait until he's 14 or 18. It's hard to see the future for our kids, but as soon as you catch a glimpse of it—then work on preparing your child to succeed in that environment.

Dignity is the birthright of every human being. No matter how impaired, how involved, how severe, how—and I dislike this expression—how "low functioning" an individual is, every individual still deserves to be treated with dignity, and to have a sense of her or his own dignity. But this can prove elusive for some of our loved ones. For those we love who cannot communicate their needs yet, or use a bathroom independently yet, or dress themselves, or cross a street, or sit in a restaurant, dignity can seem far removed. For those who only ever receive help or support from others, and never have a chance to do things on their own or to give back to others, dignity can seem out of grasp. We parents can, and must, do something about this. Our loved one with autism can learn—they can become more independent than most ever thought, they are competent. It is up to us parents to make sure they are taught well. It is up to us parents to make sure they are taught functional skills. We parents know they have dignity. And it is up to all of us, parents and professionals together, to make sure that they learn the skills that will allow strangers to immediately recognize that dignity. Even when we are not there. Especially when we are not there. We know our kids can learn. It is our responsibility to make sure our kids can let others know this on their own. It is our job to teach our children to become their own best advocates.

Teaching the Social Dance: Using Script-Fading Procedures to Promote Conversation

By Dr. Patricia Krantz, Princeton Child Development Institute

In their book *The Social World of Children Learning to Talk* (1999), Hart and Risley described conversation as a social dance… that involves not just talking but also speaking and listening in partnership with another person ...Children who become adept as social partners and really enjoy conversing are likely to be invited to dance by other people (p. 194). The hard part is learning how to dance, how to regulate actions so that they correspond to the actions of a partner. Once children have learned how to dance, they can be freed to do what children seem to have been designed to do: explore and elaborate...so that they can advance...from ritual greetings to repartee (p. 199).

Scripts and script-fading procedures teach children with autism the social dance. Research on these procedures demonstrates how to teach the basic two-step and proceeds from there to the development of a platform for learning to tango. During the past fifteen years, investigators have used script-fading procedures to increase the social interaction of preschoolers with autism (Krantz & McClannahan, 1998), to promote peer conversation (Krantz & McClannahan, 1993), to enable severely language disabled children to converse with a familiar adult (Stevenson, Krantz, & McClannahan, 2000), to teach young children to make bids for joint attention (MacDuff, Ledo, Krantz, & McClannahan, 2007), and to shift stimulus control of conversation from adults' verbal prompts to relevant features of the environment (Brown, Krantz, McClannahan, & Poulson, in press, and Sarokoff, Taylor, & Poulson, 2001).

It is important to note that script-fading procedures are not procedures for teaching children to speak, but procedures for teaching them to interact—to engage in the give-and-take of conversation. Many parents and teachers know from experience that teaching children with autism to talk is no guarantee that they will engage in conversation. Youngsters who have acquired extensive spoken vocabularies and who have mastered the uses of adjectives and prepositions may never talk to parents about the events of the school day or initiate conversation with teachers about home activities. The goal of using scripts and script fading is to help children with autism learn to do more than say what adults prompt them to say; the goal is to teach them to engage in real conversation.

A script is an audiotaped or written word, phrase, or sentence. The audiotaped word "up" could be a script for a toddler; audiotaped sentences such as "I like trucks" and "Fire trucks are red" could be scripts for a preschooler with more language. A ten-year-old might read the typed scripts "I go swimming on

Thursdays" and "Jan is my swimming teacher." The written script "I'm learning to shave" might be appropriate for a teenager, and an adult who has not acquired reading skills could use the audiotaped script "I work at a hotel."

Scripts and script-fading procedures are useful to students who are more- and less-severely disabled, and to readers and nonreaders. Some important characteristics of scripts are that they can (and should) be individualized to take into account each young person's current language skills, his or her special interests, and the favorite conversation topics and special pursuits of family members and peers.

After a young person learns to imitate audiotaped scripts or to read written scripts, the scripts are faded by removing the last word, then the next-to-last word, and so on, until there are no words remaining. When faded, the audiotaped script "I like trucks" becomes "I like," then "I," and then a blank audiotape that has been erased. The written script "I'm learning to shave" is faded to "I'm learning to," "I'm learning," "I'm," and then a blank piece of paper. And eventually, the blank audiotape or blank piece of paper is also removed. At each step in the fading process, it is important to observe whether a child or teen continues to say the script or uses words that have not yet been faded to create a new phrase or sentence. For example, when the script "I like trucks" is faded to "I like," some children continue to say "I like trucks," but others may produce new statements, such as "I like cars" or even "I like donuts."

After many scripts have been presented and faded, most children do one or more of the following: (a) they continue to say the scripts, although the scripts are absent; (b) they combine parts of the scripts with other scripts, or with language that was modeled by their conversation partners, thereby producing novel statements; or (c) they display generative language by saying things that were neither scripted nor modeled by their current conversation partners, but that were previously learned, either via formal instruction or by observing others' conversation.

For children who are non-readers, scripts can be audiotaped on cards and played on magnetic card readers. A child places a card in a slot on the card reader and the card automatically runs through the machine to play the previously recorded script. Scripts may also be presented on small, button-activated recorders such as those used in toys.

For children who are readers, scripts are selected on the basis of each youngster's reading skills. As a child's reading repertoire expands, scripts are gradually lengthened from a one-word script such as "ball" to phrases and sentences.

Initially, when children begin to use scripts, it is useful to enlist the help of two adults. One adult serves as prompter and the other as conversation partner. It is important to separate these roles because in typical social interaction, conversation partners do not verbally prompt one another. Often, the two-to-one adult-child ratio is quite temporary; many children soon learn the relevant responses without the help of a prompter.

When teaching first audiotaped scripts to non-readers, materials such as activity schedule and magnetic card reader are placed within the child's easy reach and the conversation partner is in close proximity. The adult who is the prompter stands behind the youngster and uses manual guidance to help him open his activity schedule or turn a page, remove an audio card and an attached photograph from his activity schedule, turn to the card reader, and run the card through the machine to play the audiotaped script. Manual prompts to the child's shoulders are used to guide him to approach and orient toward the conversation partner.

Prompters not only use manual guidance, but also deliver rewards from behind the child. Initially, correct responses are rewarded even if they are prompted; later, only correct, unprompted behavior is followed by rewards. Prompters should be as "invisible" as possible, because they are not participants in conversation.

As a youngster displays increasing competence, the adult begins to fade manual prompts by using graduated guidance and when children complete all of the component tasks with minimal guidance, the prompter uses spatial fading. But if an error occurs, the adult returns to the previous prompting procedure until the child makes several correct responses. Spatial fading is followed by shadowing and when the adult shadows and the youngster makes no errors, it is time to decrease proximity.

This most-to-least prompt-fading sequence enables a child to initiate social interaction by obtaining an audio card, running it through a card reader to play an audiotaped script, and then approaching and orienting toward a recipient of conversation and imitating a script. But if the learner makes an error,

the adult immediately returns to the prior prompting procedure. This helps to prevent additional errors and increases the likelihood that the child will receive rewards for her next responses.

Adult conversation partners model language that is at, or only slightly above the learner's language level, and that (one hopes) is of interest to the child. Initial scripts are based almost exclusively on children's observed preferences for various activities and materials, and these early scripts enable children to gain immediate access to preferred items or events; that is, the scripts function as mands, because this helps to make social interaction rewarding. The adult conversation partner does not give instructions or ask questions, because this quickly transforms the interaction from a conversation to a discrete-trial training session, with associated problems of prompt dependence. And although it's helpful to praise frequently during discrete-trial teaching, behavior-specific praise ("Good talking" or "Good, you looked") isn't representative of typical conversation.

Being a good conversation partner isn't as easy as one might imagine, but adults have as many opportunities to practice as the youngsters who are learning to use scripts. After some experience with the role of conversation partner, many parents and instructors perform it flawlessly, and the result is that children gradually learn to hold up their end of the conversation.

Script fading has enabled young people with autism to converse with their parents, teachers, and peers and to interact about academic, home-living, and community activities. After many scripts have been learned and faded, children often stop saying the scripts. Instead, they combine parts of the scripts with language modeled by their conversation partners; or they combine parts of the scripts with language they learned in other contexts; or they combine parts of certain scripts with parts of other scripts, or they say things we didn't teach and that we didn't know they had learned.

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A Clear Picture: The Use and Benefits of PECS

By Dr. Andy Bondy, Pyramid Educational Consultants, Inc.

The Picture Exchange Communication System (PECS) is an alternative/augmentative communication system that was developed about 20 years ago in a behaviorally oriented public school setting serving students with autism (Bondy & Frost, 1994; Frost & Bondy, 2002). It was developed and refined over the years by a behavior analyst (Bondy) and a speech/language pathologist (Frost) and relies upon the analysis of language provided by Skinner's seminal work, *Verbal Behavior* (1957). It begins by addressing the heart of verbal behavior- do something to someone else who in tern mediates access to reinforcement. The immediate goal is to teach functional communication skills. Of course, when children do not speak, we hope that speech will develop. We will return to the relationship between PECS use and speech after we clarify what PECS is all about.

The initial lessons teach users to exchange (pick up, reach, and put into the hand of a communicative partner) a single picture for an offered reinforcer. Discrimination skills are not a prerequisite, nor is the

presence of eye-contact or imitative skills. In fact, the only prerequisite is the clear identification of a powerful reinforcer.

Before briefly describing the various lessons within PECS, it should first be emphasized that functional communication skills cannot be effectively taught without using the teaching strategies developed within the broad field of behavior analysis. We organize the many factors that are necessary to create effective educational environments by a visual structure that we call The Pyramid Approach to Education (Bondy & Sulzer-Azaroff, 2002). The organizational system separates issues related to 'why' behavior occurs and changes as it does, 'what' should we teach, and 'how' can we arrange for effective lessons. Without a strong understanding of these principles and research-based practices, then progress with PECS is unlikely to occur.

The protocol used to teach PECS addresses a number of important issues. First, because an imitative repertoire is not a prerequisite, we can begin with spontaneous requests (mands within Skinner's nomenclature) and thus minimize the risk of prompt dependency. We begin with requests because of the power and availability of the reinforcers for this communication function. Later in the system, we will aim at teaching comments (tacts) which may be more difficult to acquire for some children who are relatively insensitive to social reinforcers, which maintain this type of communication. (For a complete description of the PECS protocol in terms of Skinner's analysis, please see Bondy, Tincani & Frost, 2004).

Within the first lesson, we use 2 teachers- one who controls the reinforcer- the communicative partner- and one who provides and eliminates the prompts. The exchange of a single picture without the use of any prompts is the goal of the first lesson and is often achieved within the first teaching session. The second phase focuses on expanding particular issues regarding generalization- increasing the number of items that can be requested, increasing the number of communicative partners and settings in which requesting will occur, and expanding the distance between the user and the partner as well as to the picture itself.

The third phase of training addresses issues associated with discrimination between pictures. We strongly suggest starting with two pictures that are distinct in terms of their association with reinforcement- that is, one item is a powerful reinforcer while the other item is non-reinforcing (a distracter). Once this simple discrimination is demonstrated, then conditional discrimination training is introduced.

The next step within the protocol is to teach users how to construct simple sentences. In essence, we maintain the same request function previously established by introducing an icon depicting "I want." This step is introduced here in anticipation of teaching other sentence starters with other functions. (It should be noted that other languages use different syntax and thus may require 'sentence enders' to serve the same function.) Once this simple sentence structure is acquired a number of steps can be taken.

While the primary goal of PECS may not involve the acquisition or expansion of speech, it is an important long-term goal. Once simple sentence structure can be used, we introduce several strategies that are aimed at increasing the likelihood of speech development and growth. For example, the communicative partner begins to introduce a pause between reading "I want" and naming the referent part of the sentence. By using this delayed prompt strategy, should the child vocalize, the item would be provided immediately plus the communicative partner would use differential reinforcement in an attempt to further strengthen vocalizations. These strategies appear to be successful as indicated by research showing a marked increase in vocalizations within this phase of PECS training (Carr & Felce, 2006; Ganz & Simpson, 2004; Tincani, Crozier, & Alazetta, 2006).

Another avenue that is introduced once simple sentence structure is used involves the use of attributes (tacts) to further specify the requested reinforcers. Users have been taught to use modifiers such as color, size, shape, texture, number, etc. to clarify which particular items is requested. Marckel, Neef, & Ferreri, (2006) observed that children with autism could use such descriptors to improvise requests in situations when a specific picture of a corresponding item was not available. Furthermore, since the skills of a 'speaker' are independent of the skills of a 'listener' (more commonly viewed as expressive vs. receptive skills) it is not necessary for a PECS user to demonstrate matching-to-sample skills with particular attributes prior to successful use within the requesting function.

The next phase of PECS teaches users to respond to the simple question, "What do you want?" It is important at this point to demonstrate that users can

continue to be spontaneous at times while responding to this question at other times.

Within the last phase of the PECS protocol, users are taught to comment (tact) about common items and events (and their various properties). Initially the focus in on responsive commenting to questions such as, "What do you see?" or "What do you hear?" Next, we attempt to eliminate such questions to promote spontaneous comments.

The initial reports about PECS were published in 1994. There has been a dramatic increase in publications regarding PECS internationally (involving about a dozen countries) during the past few years, with at least 18 publications since 2004. PECS has been identified as very popular within the United States (Stahmer, Collings, & Palinkas, 2005) and in the UK where its social validity with parents has been noted (Mills, & Wing, 2006). Research designs have included single-case methodology with multiple-baselines (Charlop-Christy, Carpenter, Le, LeBlanc, & Kelley, 2002) to large group designs (Howlin, Gordon, Pasco, Wade, & Charman, 2007; Yoder & Stone, 2006a, 2006b). While PECS was developed with children with autism, research has demonstrated its effectiveness with teenagers and adults, as well as with a number of other types of language related disabilities. Furthermore, various studies have noted positive side-effects, including improvement in speech, social interactions, and reductions in behavior management problems.

As with anything that becomes popular, many misconceptions and myths have arisen associated with the use of PECS. For example, some may say that the use of any picture is PECS, including the use of visual schedules. PECS may involve pictures but how they are used defines whether PECS is used. Schedules are useful for us when we are 'the listener' but PECS focuses on speaker skills. Some imply that PECS is only useful for those who have no speech. That suggests that the benefits of PECS are limited to alternative uses and ignores the issue of augmentative effects. A system is augmentative when its use helps in the production of another modality- whether that effect is between PECS and speech, sign and speech, PECS and sign, or whatever two modalities are involved. Skinner (1957) was adamant that verbal behavior is defined independently of the modality involved. He wrote, "In defining **verbal behavior** as behavior reinforced through the mediation of other persons, we do not, and cannot, specify any one form, mode, or medium. Any movement capable of affecting another organism may be verbal (p. 14)." Thus, PECS may often be helpful to individuals who have some speech but whose speech improves (in terms of repertoire size, complexity, initiation or understandability by others) when given access to PECS.

Some people seem to believe that PECS can only be used to request items, but as we've indicated it should be used to comment about things using any of the senses. Sentence structure should go beyond simple "I want…" constructions to promote vocabulary expansion via attributes and other modifiers. Some folks suggest that every time a person uses PECS to request something, that we must honor that request! While it is important to maintain a high rate of reinforcement for communication via PECS early in training, just as with users of speech or sign, users of PECS must learn that they cannot get everything they want when they want it! They must learn to cope with real world issues involves learning to wait, understanding what 'later' means or 'unavailable' and even learn to tolerate the occasional 'no!'

Of course the biggest fear associated with PECS (or any alternative/augmentative system) relates to concerns about the impact upon speech acquisition, development or inhibition. Within the broad field of AAC, there is over 40 years of research without any evidence that any system interferes with the development or continuation of speech. There is no evidence that any one modality- PECS, sign, voice-output-systems- is universally superior with regard to speech acquisition for children with autism. As noted, there have been several studies showing a positive correlation between PECS use and speech development. Of course, more research in this area is sorely needed. We need to continue to look at the best teaching strategies for all of the lessons within PECS as well as look at strategies that best promote the acquisition and expansion of speech for those using PECS. Our field is best known for its emphasis upon the analysis of the functional relations between behavior and environment rather than a focus upon the topography of responses. Continuing with that tradition will yield ongoing improvements in teaching strategies for those in need functional communication skills.

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Effective School-Based Programs for Children with Autism

By Dr. Ilene Schwartz, BCBA, University of Washington

Best Practices in Applying Indicators of Quality Programs

Providing intervention to young children with ASD is complex. There are issues to be considered around where instruction should occur, who should provide the instruction, what should be taught, and how it should be taught. In order to organize the myriad of issues and decisions that are involved in planning a high quality program, we have identified six characteristics that are common across these programs. These six program characteristics are listed below and described in detail in the following pages:

- Supports and Services are Individualized Based on Child Need
- Well Designed and Normalized Environments
- Appropriate Curricular Content across Domains
- Systematic Instruction and Data-Based Decision Making
- Functional Approaches to Problem Behavior
- Family Involvement and Support
- Supports and Services are Individualized Based on Child Need

Since Evelyn Deno and colleagues suggested a cascade of services in 1964 a goal of special education and school psychology has been to insure that services provided for young children have been individualized to support and keep the child in the least restrictive environment. That is, the child's program (the goals and objectives developed for an individual child) dictates the placement. It is clear that one type of program (e.g., inclusion, self-

contained) for children with ASD will not meet the needs of every child with ASD. It is up to the IFSP or IEP team to determine where the best placement for each individual child should be, what services and supports are necessary, what objectives need to addressed, and what instructional strategies will be most effective.

For young children with ASD, several aspects must be considered based on child preferences, learning characteristics, and family preferences: 1) where instruction will occur, 2) who will deliver the instruction, and 3) what general supports will be necessary for the child to maintain a level of engagement that is likely to be intense enough to lead to better outcomes. Individual child characteristics are a critical part of determining the components of an individualized program. The needs and the curriculum will be developed based on the individual assessment for each child and revised frequently based on data from progress monitoring. That is, not all children with ASD will need specialized instruction requiring very individualized supports for every curriculum area. However, the team should consider the individual learning characteristics when determining the best place for instruction to occur for a specific objective. Learning characteristics will also assist in determining the best way to structure learning opportunities. For some children, an environment in which few distractions are present will best facilitate some instruction. But for others, it may be necessary for instruction to occur in a setting in which distractions are present to help facilitate learning across environments.

It is clear the needs of all children with ASD will not be met in the same setting. In fact, it is likely that the needs of any one student will not be met in any one environment, suggesting that teams examining the best placement for a child consider more than one environment. For example, while it might be best to teach a child to expressively call his friends by name in a one-to-one setting using pictures, it is equally favorable to ensure the child has an opportunity to perform the same skill when he sees the friend in the lunch room. Likewise, the literature suggests we may see more robust results (i.e., quicker acquisition and increased generalization) and provide better outcomes for children if we teach them new skills in a variety of settings (e.g., general education, community, and self-contained) and with a variety of materials.

With the recent developments and controversies around discrete trial training, a more likely decision to be made when identifying individualized supports is who will be delivering the instruction. Much attention has been given to the research examining intensive one-to-one behavior intervention. As mention earlier, the literature is not clear if one-to-one behavior intervention alone is the best or provides the least restrictive environment for all students with ASD. In fact, there is some literature to suggest that responders to early intervention were those children who were able to benefit from group instruction where non-responders did not have those skills necessary to reference peers or work in a group (Sandall, et al., 2007). Providing all instruction one-to-one setting should not be the standard. Access to typically developing children and the opportunity to interact successfully with typically developing children every day is an important component of a high quality program for children with ASD. Determining what types and amounts of supports are necessary to facilitate this interaction is an important role for team members.

Appropriate Curricular Content across Domains

Given that ASD is a spectrum disorder, it makes sense that identifying appropriate curriculum for students with ASD must be individualized for each student. The literature provides us guidance to identifying curriculum for students with ASD along two continua: a) identifying which domains need specialized, systematic instruction and b) deciding to what level the child should be accessing the general education curriculum.

The literature, particularly the NRC report, is clear on the critical domains to consider when planning curriculum and instruction for children with ASD. These areas include: communication, social, cognitive, play/leisure, and adaptive behavior. All areas should be assessed and considered for specialized, systematic instruction. Yet for some children, specially designed instruction in all curriculum areas will not be necessary or beneficial. Some students will benefit educationally from accessing the same general education curriculum as their same aged peers with accommodations and some minor modifications, while others benefit from more major adaptations in the curriculum (functional skills). For example, when considering those students with ASD, but with few cognitive or adaptive behavior delays, it is likely that curriculum development and specialized, systematic instruction

will be necessary in the areas of communication and social, but not in other academic areas. However, some students may need specially designed instruction across all domains.

Given the recent legislation, No Child Left Behind, schools are mandated to show how all children "access the general education curriculum." Ryndak and Alper (2004) provide a framework to consider when deciding on appropriate curriculum that meets the needs of all children while meeting the mandate to access the general education curriculum. This model asks educational teams to consider: 1) identifying what typically developing children are learning (i.e., the general education curriculum), and 2) identifying the functional needs of the child. The first is typically done through examining the learning targets or state standards for the same age peers. The second is done through identifying targets through family assessments, environmental inventories, person-centered plans, and/or futures planning. By examining both avenues, the team is likely to provide opportunities for learning content same or similar to same age peers while considering the functional needs of the child and family.

Systematic Instruction and Data-Based Decision Making

The literature provides educational teams with many evidenced-based instructional strategies to teach young children with ASD. However, knowing the list of strategies is not sufficient. Systematic instruction is the process of identifying appropriate instructional procedures for teaching, matching them with what is being taught and where it is being taught, collecting ongoing evaluation data to monitor progress, and making decisions about instruction based on evaluation data.

To date, most of the systematic procedures validated for instruction of students with autism have been procedures that use Applied Behavior Analysis methods and principles. A range of strategies based on ABA principles have been empirically validated including: intense structured approaches or discrete trial training (Lovaas, 1987; McEachin, Smith, & Lovaas, 1993), naturalistic strategies (McGee, Almeida, Sulzer-Azaroff, & Feldman, 1992; McGee & et al., 1985), self-management (L. K. Koegel, Koegel, Hurley, & Frea, 1992; R. L. Koegel & Koegel, 1990), prompt fading, and modeling (Charlop & Milstein, 1989; Charlop, Schreibman, & Tryon, 1983; Ihrig & Wolchik, 1988). This is also true for the general education curriculum. Behavioral strategies often employed in general education include choice making (Foster-Johnson, Ferro, & Dunlap, 1994) and use of positive reinforcement during direction instruction (Stein & Davis, 2000).

Data collection and evaluating the data to make changes in the instructional procedures is a critical and necessary component of any program for children with ASD. Without data collection, the team is unable to 1) decide the appropriate strategy and conditions to provide instruction and 2) whether or not those instructional procedures are effective. Moreover, Drasgow and Yell (2000) found that schools using data to make decisions about instruction was a major factor in a successful due process hearing when the disagreement was about appropriate methodologies used for instruction.

Functional Approaches to Problem Behavior

Children with ASD who exhibit problem behaviors are more likely to be excluded and isolated from child care, preschool, and other early school settings. Given the nature of ASD (deficits in communication and social skills) many children who are diagnosed with autism also exhibit challenging behavior. A lot of attention has been given over the last decade to the use of positive behavior supports to manage behavior for children who exhibit problem behavior. Positive behavior support is an approach to intervention that evolved from a call from advocates and the field to eliminate the use of highly punitive interventions to control behavior and to adopt a more preventative approach towards challenging behavior (Horner, Dunlap, Koegel, Carr, Sailor, Anderson, Albin, & O'Neill, 1990). PBS is grounded in the concept that all behavior is communicative and serves a purpose (O'Neill, Horner, Albin, Sprague, Storey, & Newton, 1997) and to successfully design an intervention that is effective, it is necessary to identify the purpose (i.e., function) of the behavior. The use of functional behavior assessment (FBA) to identify the purpose of the behavior is critical to better matching an intervention that will serve the purpose and teach the child a new skill to replace the existing problem behavior (Carr & Durand, 1985; Wacker et al, 1990). For example, if a child drops to the floor when asked to wash his hands, the teacher allows him to go to snack table without washing his hands, then the child escapes having to wash his hands. Subsequently, the student may, when asked to wash his hands, again drop to the floor and tantrum. When planning an

intervention, we could teach the child to request for help – reducing problem behavior.

Family Involvement and Support

Research has demonstrated that family participation in a child's school program has a positive impact on a child's. Children with autism provide more of a challenge often exhibiting difficulties generalizing skills from one environment to another or from the presence of one person to another making skill acquisition difficult. Research has shown that for children with special needs, parent participation leads to a number of positive outcomes including greater generalization and maintenance gains, and more continuity in intervention programs. Given the importance of parent participation and these unique learning and behavioral needs of children with autism, it is critical that schools partner with families to provide the best learning opportunities for children with autism.

These six program characteristics do not describe comprehensive programs for students with ASD, but rather they are a tool that teams can use to assist in the planning process. Parents and providers can use these recommendations as a starting place for planning and evaluating school programs for children with ASD. As in planning every program for children with disabilities, it is essential to consider individual needs and strengths of a child and the priorities of the family in this planning process. A program that uses these recommendations as guidelines would be well on the way to designing programs that are effective, meet the needs of children and families, and are legally defensible according to IDEA.

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From DT to DI: Using Direct Instruction to Teach Students with ASD

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What is Direct Instruction?

The term direct instruction is used in various ways in the literature. It is sometimes used to refer to any form of instruction involving direct interactions between teachers and students. It is also used to refer to set of effective teaching procedures identified by Rosenshine and Stevens (1986) that includes review, statement of goals, presentation of new material, opportunities for guided practice systematic corrections and feedback, and independent practice. The term has recently been used to refer to any type of structured teaching method.

It is easy to confuse the term direct instruction (not capitalized), which is a set of teaching practices, and *Direct Instruction*, which is a research-based, integrated system of curriculum design and effective instructional delivery based on over 30 years of development.

The Association for Science in Autism Treatment defines *Direct Instruction* as "A systematic approach to teaching and maintaining basic academic skills. It involves the use of carefully designed curriculum with detailed sequences of instruction…. Students are taught individually or in small groups that are made up of students with similar academic skills. Instructors follow a script for presenting materials, requiring frequent responses from students, minimizing errors, and giving positive reinforcement (such as praise) for correct responding."

Direct Instruction is best represented by the commercially available programs developed by Siegfried Engelmann and his colleagues, most of which are published by Science Research Associates (SRA) (see www.sra4kids.com for a list Direct Instruction programs). The reader is referred to *Introduction to Direct Instruction (*Marchand-Martella, Slocum, and Martella, 2004) for detailed information about Direct Instruction programs in various content areas.

Research Summary

The Individuals with Disabilities Education Improvement Act of 2004 emphasizes the use of instructional methods that are research based. Direct Instruction programs are research-based but, more importantly, they are research-validated as effective with students with diverse learning needs, including students in special education and general education.

Numerous experiments that focused on how students learn most effectively shaped the many technical details of *Direct Instruction* programs (MacIver and Kemper, 2002). Controlled research studies provide empirical support for the specific instructional design principles and the instructional methods that provide the foundation for DI programs (Engelmann and Carnine, 1991; Becker and Carnine, 1980).

The first widespread dissemination and research on Direct Instruction was Project Follow Through, a federal compensatory education program authorized by the Elementary and Secondary Education Act of 1965. Follow Through operated as a longitudinal research project to answer the question: What works to teach children who are at risk for academic failure? A national evaluation compared the performance of children in over 20 different instructional models representing a broad range of educational practices. The Direct Instruction model produced the highest level of positive impact on

measures of basic skills, cognitive conceptual skills, and self-concept (Watkins, 1988).

A follow up study by Gersten, Becker, Heiry, and White (1984) provided evidence that Direct Instruction can meet the needs of all learners and is clearly effective with students who have a higher probability of failure. Students who entered the study with low IQ scores gained nearly as much each year in reading and math as other students in the Direct Instruction model—more than one year of achievement per year of instruction on the Wide Range Achievement Test.

More recently, the positive effects of Direct Instruction have been noted by the American Federation of Teachers (1999), the Center for Research on the Education of Students Placed at Risk (Borman, Hewes, Overman, Brown, 2002), and the American Institutes of Research (Herman, et. al, 2002), which identified Direct Instruction as one of only three school reform programs to have a "strong" record of evidence of positive effects on student achievement.

Although direct instruction has been shown to be an effective teaching method for a variety of academic areas in both general and special education settings, there has not been controlled research on its application specifically to individuals with autism spectrum disorders. However, Direct Instruction contains a number of components that it seems reasonable to expect would be effective and beneficial.

Features of Direct Instruction

General Case Programming. Difficulty generalizing information and skills is a commonly noted characteristic of ASD (Sundberg and Partington, 1998). Therefore, it is particularly important that programs be specifically designed to teach generalizable skills and strategies. Identification of generalizable strategies that students can use to solve a wide variety of problems is the foundation of Direct Instruction.

Engelmann and Becker (1978) called this "general case programming" because the goal is to teach the general case rather than a set of discrete specific instances. A general case programming strategy is one that uses the smallest number of examples (stimuli) to produce the largest possible amount of learning. General case programming has been shown to enhance generalization, even with individuals with severe disabilities (e.g., Horner and Albin, 1988).

General case programming also refers to the design of instruction that clearly communicates one and only one meaning. This emphasis on bringing responding under the control of specific, relevant stimuli (Becker, Engelmann, & Thomas, 1975; Becker and Carnine, 1980; Horner, Bellamy, and Colvin, 1983) is a particularly important aspect of teaching children with autism spectrum disorders who often respond under inappropriate stimulus conditions.

Track Organization. The content of many instructional programs is organized in units or modules, where skills and strategies are introduced, practiced, and tested within a specified period of time. Information in one unit is seldom integrated into subsequent units, resulting in predictable difficulty with skill maintenance. In contrast, Direct Instruction programs are organized in "tracks." Tracks are sequences of activities that introduce a skill, then develop and expand the skill across multiple lessons.

There are numerous advantages to designing programs in tracks. Student attention is better maintained because they do not work on a single skill for an extended period of time; instead lessons are made up of relatively short exercises that address a variety of skills. Difficult tasks are interspersed among easier ones. Newly introduced tasks are mixed in with well-practiced ones. Each lesson includes a variety of skills, formats, and difficulty levels.

The unique track design of Direct Instruction programs may be particularly advantageous for students with autism spectrum disorder because it provides natural variation in the presentation of tasks within a lesson.

Researchers in both autism and DI have addressed the composition of instructional sessions in terms of variety and type of tasks presented. Dunlap and Koegel (1980) compared a constant task condition in which a single task was presented throughout a session, to a varied task condition, in which the same task was interspersed with a variety of other tasks. The varied task session produced improved and stable levels of correct responding as compared to constant task sessions.

Similarly, interspersing instructional trials on known or maintenance behaviors with trials on acquisition

tasks results in more responsiveness and fewer behavior problems (Horner, Day, Sprague, O'Brien & Heathfield, 1991). These results are consistent with Engelmann's recommendation that maintenance tasks should be presented during instructional sessions in which new acquisition tasks are being taught. Direct Instruction programs carefully control task variation. About 10 - 15% of the material in each lesson consists of new learning or acquisition tasks. The remaining 85 - 90% of the tasks involve activities that provide review, practice, expansion, and application of previously learned information (S. Engelmann, personal communication, December 27, 2007).

Scripted Presentation. One key distinction between Direct Instruction and other instructional programs is the explicit nature of instruction. Precise implementation is accomplished in DI programs through the use of scripts. How the teacher presents examples is explicitly stated. What the teacher says and does is specified. The instructions are not general, rather the exact words to use when presenting each task are provided. The teacher's other behaviors, pointing, signaling for a response, etc. are precisely specified. The programs indicate where children are likely to make mistakes and precisely what the teacher should do to correct each error. Such attention to detail in the design of the program is essential for children with exceptional learning needs, because details make the difference between academic success and failure.

Scripts support the needs of students with ASD for consistency and predictability. Direct Instruction curricula may also benefit to children with ASD in that the scripted instruction allows for individuals other than certificated teachers to teach academic skills. *Well-trained* paraprofessionals and parents can deliver the programs and provide children with extra practice if necessary. The scripts also ensure consistency across all individuals who provide instruction to the child.

Formats. Exercises of a particular type are formatted or "patterned." Patterned exercises are easier to teach and easier for children to follow. By learning how to present one exercise of a particular type, the teacher knows how to present similar exercises that appear in subsequent lessons. Formats are designed to be clear and concise to help students focus on the important aspects of examples. These patterned formats help students to be successful. Formats change as students become proficient. Initially formats include a great deal of structure and support for students' use of skill. However, the support that is so critical during initial instruction must be gradually reduced until students are using the skill independently. As students move through lessons, formats shift in a number of important ways: 1) from overt to covert responding, 2) from simple to complex contexts, 3) from prompted to unprompted formats, 4) from massed to distributed practice, 5) from immediate to delayed feedback. These instructional programming strategies facilitate the transition from teacher directed instruction to generalized and independent application of strategies and skills.

Pacing. Direct Instruction programs may be appropriate for children with ASD because they are fast-paced and can keep the child actively engaged, rather than allowing them the opportunity to focus their attention elsewhere. Lessons are characterized by a rapid and constant interchange between teacher and students. The teacher presents tasks quickly and moves quickly from activity to activity. This allows little "down time." A quick pace is needed to present the many trials required for children to master critical skills and concepts. Academic learning time is maximized resulting in more learning and fewer behavior problems.

Research with both general education students and students with autism support the use of rapid pacing. For example, Carnine (1976) recorded off-task behavior, correct responding, and participation during beginning reading instruction for low-achieving first-grade children during two different rates of teacher presentation. Results showed that fast presentation was accompanied by a lower rate of off-task behavior and an increase in correct responding and participation.

Engelmann and Becker (1978) found that when teachers maintained a fast rate (12 responses per minute), students responded correctly about 80 percent of the time and were off-task only 10 percent of the time. However, when the rate was only four responses per minute, accurate responding dropped to 30 percent and off-task behavior increased to 70 percent of the time.

Similar studies have been conducted with children with autism. Koegel, Dunlap, and Dyer (1980) compared rapid pacing and slow pacing during instructional sessions with low-functioning autistic children. They found that short intertrial intervals

(faster pacing) produced higher levels of correct responding and improving trends in acquisition than longer intervals between trials.

Similarly Dunlap, Dyer, and Koegel (1983), found that short intertrial intervals produced higher levels of correct responding and lower levels of self-stimulatory behavior in children with autism. These studies support the use of fast-paced instruction to promote responding and appropriate behavior of children with ASD.

Summary

Direct Instruction programs provide clear directions on how to structure active student involvement and frequent responding. Instructional formats ensure predictable teaching routines. Controlled teacher wording enhances student understanding. Content analysis guarantees that priority topics are taught. Careful sequencing of skills maintains high rates of student success as content becomes increasingly complex. Correction procedures ensure that students acquire critical content. Continuous progress monitoring and adjustments based on assessment information ensure adequate practice and skill mastery. Finally, Direct Instruction programs are specifically designed to foster generalization. Direct Instruction may provide an effective and practical option for teaching students with autism spectrum disorders.

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Using ABA to Improve the Lives of Adults with Autism in Work, Community, and Residential Settings

By Dr. Gregory MacDuff, Princeton Child Development Institute

Although most adults with autism remained in institutions during the 1960s and 1970s, those decades saw the initial development of community-based programs for children with autism, and when these youngsters began to arrive at adulthood, the demand for noninstitutional programs for adults increased. Parents and professionals who had observed young people's progress during childhood and adolescence worked to develop new options for adults, but their efforts were often hampered by a shortage of empirical evidence.

In this climate, in 1987, the Princeton Child Development Institute opened the Adult Life-Skills Program. The parameters of the new program were (and are) very similar to those of the preschool and school (McClannahan & Krantz 1993, 2001). Staff members receive ongoing hands-on training and regular performance evaluation. Learners' intervention programs are regularly reviewed by both internal and external evaluators to assess (a) completeness of documentation, (b) achievement of favorable behavior change, (c) appropriateness of intervention activities, (d) presence of written consent, and (e) amount of interobserver agreement on behavioral measures. In addition, many different consumer groups are annually invited to evaluate program operation and outcome. But perhaps the most important dimension of accountability is the presence of group contingencies that link outcomes of all program participants. Thus, staff members are recognized as successful when the data show that they have acquired relevant intervention repertoires and that adults with autism are acquiring new skills; trainers efforts are rewarded when evaluation data demonstrate that staff members display relevant intervention repertoires and that learners are achieving relevant goals; and the trainers' mentors (program administrators) are deemed successful when all of these things are true and when consumer satisfaction ratings meet established criteria. These evaluation procedures are identical to those used in the preschool and school and in PCDI's residential programs.

Key benefits are derived from a continuum of services for toddlers, preschoolers, school-age children, and adults with autism. Intervention on behalf of today's toddlers and preschoolers may enhance outcomes for tomorrow's adults, and data on adult's contemporary repertoires may lead to significant revisions of the curriculum for young children.

Our data and experience suggest that unidimensional program models (e.g., only supported employment) may not be in the best interests of adults with autism. Some people, upon completing their schooling, move directly to supported employment and remain in full- or part-time positions; others may lose several jobs before retaining one; and still others may need to leave employment because of health or behavior problems. In sheltered workshops or day-training centers, competent young people may never have opportunities to enter the workforce; in programs devoted to supported employment, workers who experience job loss may be deprived of services. The diversity of skills and skill deficits characteristic of people with autism seems to recommend a multifaceted service model.

"Evidence-Based Practice:" Improvement or Illusion?

By Dr. Gina Green, BCBA, San Diego State University

Several years ago the field of medicine began to recognize that many medical practitioners were not using treatments for some common conditions that research had shown to be the most effective. That led to concerted efforts to disseminate the best

available evidence about treatment effectiveness to medical practitioners and to train practicing physicians to use research evidence and scientific methods to guide their everyday decision-making. Eventually other professions began to follow medicine's lead, until evidence-based practice (EBP) became a significant social movement that continues to pick up steam today. Mandates to base practices on research evidence are even appearing in some laws and regulations, including federal education laws in the United States.

At first blush, the EBP movement would appear hold great promise for improving services to people with autism spectrum disorders (ASD). During the 50+ years since autism was first described, hundreds of treatments have been said to be beneficial for people who have that diagnosis. ("Treatment" is used here to mean any intervention, therapy, procedure, or program that may affect the behavior and/or biology of people with ASD). Many of those treatments have been very popular, and large amounts of money, time, and effort have been invested in them. Relatively few, however, have been evaluated in the types of studies that are required to produce credible evidence about treatment effects; that is, controlled experiments in which a treatment is systematically compared to no treatment or another treatment, study participants are selected and assessed carefully, good and bad effects are measured directly and objectively, multiple researchers repeat the experiments and get similar results, and reports of the studies are published in peer-reviewed scientific journals. Some treatments for ASD that have been claimed to be very effective have proved ineffective or harmful when they were evaluated in scientific studies, yet they remain in widespread use, supplanting treatments with proven benefits. It would seem that encouraging or requiring practitioners to use evidence-based methods would reduce harms and wastefulness and result in better outcomes for people with ASD, not to mention large cost savings. That would be the case if "evidence-based" always meant that the methods had proved effective in controlled scientific studies. But that term is now being used to market many practices that have not been evaluated scientifically; in fact, it seems that virtually every practice that is being promoted for people with ASD these days is claimed to be "evidence-based." This means that in order to make fully informed decisions, it is necessary for consumers, practitioners, and funding agencies to know how to distinguish reliable from unreliable evidence, and treatments that have proved effective in sound scientific studies from those that are based on other types of evidence.

There are a number of protocols for developing evidence-based treatment guidelines. The strongest have several key features: (a) procedures for assembling teams of expert reviewers and methodologists to develop the guidelines; (b) criteria for identifying credible scientific studies published in peer-reviewed professional journals; (c) standards for evaluating the scientific merit of every identified study (i.e., the adequacy of the research design, measurement methods, participant selection and assessment methods, treatment delivery, data analysis methods); (d) procedures for training reviewers to evaluate studies; (e) cross-checks on reviewers' evaluations by other independent reviewers; (f) procedures for compiling the evaluations of all studies on a particular treatment to determine the strength of the evidence for or against that treatment; (g) procedures for developing practice guidelines based on the scientific evidence, supplemented by expert clinical judgment; (h) peer review of the guidelines. Those protocols define the most credible evidence as the results of controlled experiments in which direct, objective, accurate, and reliable methods were used to measure the effects of a treatment and the extent to which the treatment was delivered as it was intended, with replications by multiple investigators. Treatments for which there is strong scientific evidence of effectiveness are recommended. Those for which there is weaker evidence may be identified as "promising" or "emerging" and worthy of further research, while those for which there is clear evidence of ineffectiveness or negative effects and treatments that have not been evaluated adequately are not recommended. A well-developed protocol with many of the features just listed was used to develop Clinical Practice Guidelines for Young Children with Autism for the New York Department of Health Early Intervention Program in 1999.

The evidence about many popular treatments for ASD falls short of the standards used in the best EBP protocols. Examples include: personal accounts and testimonials of people who say they have ASD or their family members; studies that used indirect or subjective methods to evaluate treatment effects (e.g., questionnaires, checklists, and rating scales completed by parents or other caregivers); uncontrolled, descriptive studies (i.e., those with no

control group or condition); assessment reports with no direct testing of treatment methods; studies conducted by the developers or principal promoters of a treatment, their students or close colleagues, with no replications by independent researchers; studies that did not include people with ASD; theories, interpretations, and opinions that have not been tested in controlled studies; and reports that have not been peer reviewed (such as self-published articles, books and journals, many conference presentations, marketing materials, and the like). The effectiveness of treatments that are backed up mainly or exclusively by these forms of evidence is most accurately described as "unknown." Calling them "evidence-based" creates the illusion that they have the same status as treatments that have been evaluated in multiple controlled experiments.

For behavior analytic practitioners and researchers, the EBP movement poses particular challenges as well as great opportunities. One of the challenges is to make sure that behavior analytic practices are supported by bona fide scientific evidence as defined in good EBP protocols. The principles of behavior analysis are natural laws of behavior that were discovered through careful experimental analyses conducted by many scientists. But it does not follow that every method or technique that is said to be based on those principles is effective, nor that every practice that is said to be behavior analytic is "evidence-based." There are only a few principles of behavior, but there are many ways to interpret and apply them. Whether any given application is effective is a question that must be addressed in controlled experiments using objective measurement methods. Many behavior analytic techniques and programs that are being promoted for people with ASD have not been evaluated carefully, so there are many questions that need to be addressed by both basic and applied researchers. Another challenge for practitioners of behavior analysis working in ASD is keeping abreast of research on non-behavior analytic interventions in order to comply with ethical mandates to use and recommend methods that have proved most effective in scientific studies. For instance, many interventions for ASD that are described as "biomedical" and "sensory" have not been tested scientifically, or have proved ineffective or harmful in scientific studies. Therefore, practitioners credentialed by the Behavior Analyst Certification Board (BACB) who use or endorse those interventions are not in compliance with the BACB Guidelines for Responsible Conduct.

For the field of behavior analysis, a major challenge is posed by the fact that many EBP protocols limit the definition of scientific research to studies using between-groups research designs with participants assigned randomly to treatment and control groups, where treatment effectiveness is determined by comparing the average scores of those groups statistically (randomized clinical trials). Behavior analytic research methods and many findings from behavior analytic studies are excluded entirely, or minimized. On the other hand, as the evidence from between-groups studies of early intensive behavior analytic intervention for ASD has mounted, so has pressure on funding sources and developers of EBP guidelines to acknowledge the evidence from within-subject, single-case design studies of other behavior analytic interventions. Therefore, the EBP movement may afford an unprecedented opportunity to gain wider acceptance of behavior analytic research methods and findings by professionals from other disciplines and the general public. Behavior analysts must act promptly but wisely to take advantage of this opportunity. Tactics might include developing standards and criteria for evaluating behavior analytic studies that parallel those used to evaluate between-groups studies and are consistent with the science of behavior analysis, working to get behavior analytic research methods included in EBP protocols, and revising EBP guidelines that have excluded behavior analytic research. Some efforts along these lines are underway, but much work remains to be done.

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Developing Active Learner Participation by Children with Autism: Capturing the Motivational Variables

By Dr. James W. Partington, BCBA, Behavior Analysts, Inc.

The field of behavior analysis has been instrumental in helping parents and professionals identify effective methods for teaching skills to others particularly children with special needs. It is possible to break down complicated tasks into very small units of behavior and then develop each of the sub skills however, what we really want is for these children to be able to learn from their everyday interactions with others who have not been highly trained nor use precisely defined teaching procedures.

To become a good learner, a child needs to develop many basic skills (Partington, 2006). He must learn to respond to words spoken by others (receptive language/listener skills) and use words to be able to ask for items or activities, label items he sees and hears, and talk about items and activities when the people and items associated with those items and activities are no longer present. He must also learn to sit and attend to a teacher's instructions, matching objects, imitate motor movements and vocalizations, participate in group instruction, and engage in a variety of social interaction skills.

One of the most challenging aspects of attempting to teach a child with a diagnosis of Autism Spectrum Disorder involves getting him to actively participate in learning activities for a sufficient amount of time to be able to acquire the skills that are being taught

(Sterling, et al., 1997). But why should a child do anything for a parent or instructor? The answer is not because they should do it, nor because we are an authority figure (parent or teacher), nor because we are bigger and smarter than them. The answer to this question requires an understanding of motivational factors involved in the teaching process.

Motivation

In our culture, it is not uncommon to attribute motivation as being an internal characteristic of an individual while also acknowledging that behavior can also be influenced by external sources (e.g., reinforcers). Our language about motivation often includes words such as "intrinsic reinforcers" and "extrinsic reinforcers." These words are used in an attempt to describe why a person is performing an activity in a certain manner (i.e., highly active vs. low energy/little effort). People often describe a child as being "unmotivated" or "highly-motivated" as if the "motivation" was an internal characteristic or state of the child. Unfortunately this cursory analysis is not helpful to us in getting a child to actively participate in learning activities.

In actuality, when we refer to someone as being "motivated", we are identifying some specific aspects of the person's behavior that we have observed. For example, we would say that a child is highly motivated to learn to play the guitar if he spontaneously picks it up many times each day, does so as soon as his chores are done, strums it for a long time, and keeps practicing in spite of making mistakes. Thus, it is our observations of the characteristics of the person's behavior that leads us to label the child as being "motivated" or "unmotivated".

Our understanding of why people behave in certain ways is made possible by analyzing changes in behavior as a function of the interaction between behavior and its consequences (Skinner, 1953). This analysis is extremely helpful for our understanding of the variables that influence the characteristics of a person's responding.

Reinforcement

In order to understand how consequences are related to motivation, the concept of reinforcement must be clearly understood. Reinforcement is a process in which there is 1. a change in the environment, 2. that follows a certain behavior, and 3. results in an increased probability that the specific behavior will occur more often in the future under similar circumstances. The environmental change that occurs following the behavior and increases the future probability of that behavior is called a reinforcer. If it doesn't increase the behavior, it isn't a reinforcer.

When attempting to determine why a particular item or activity may or may not have a strengthening or reinforcing effect upon a behavior, it is important to realize that any environmental change that follows a behavior may have a reinforcing effect. When attempting to motivate a child to participate in a learning activity, we will often try to ensure that we have something that we can control that can be used to reinforce his behavior. Reinforcing a child's compliance behaviors during a teaching situation increases the child's participation in learning activities.

Types of Reinforcers. There are different types of reinforcers that are available for a parent or other instructor to use. Some reinforcers do not require any experience or learning by the child to have their reinforcing effect (e.g., edible items and drinks), while other items and activities only acquire their reinforcing effect through a learning process (i.e., conditioned reinforcers such as praise, smiles and most enjoyable activities). Another type of reinforcer that is based upon the removal or termination of an unpleasant situation is referred to as escape motivated reinforcers.

Automatic or Self-Produced Reinforcement. Any item or activity can serve as a reinforcer. A child's own behavior may produce changes in a variety of ambient environmental stimuli that may directly reinforce the child's behavior. Any of the five sensory systems can produce this effect. For example, some children will find enjoyment smelling people's hair, watching wood chips fall from their hands, hearing repetitive sound patterns, putting objects in their mouth, or twirling, bouncing, or touching items that vary in texture or temperature.

Use of Reinforcement During Instruction. When a parent of instructor attempts to get a child to participate in a learning activity, it is necessary to ensure that the potential reinforcer is actually wanted by the learner at that time. Once it has been established that the child desires the item or activity we control, it is necessary to ensure only an appropriate amount of responses and an appropriate level of difficulty of responding be required of the child prior to obtaining the reinforcer. It is important to create a balance between the

momentary value of a reinforcer and the response effort being required to earn it.

Establishing Social Reinforcers. One of the outcomes that we wish to occur when we conduct teaching sessions is that the praise statements and actions of the parent or instructor become powerful conditioned reinforcers. As the child gives the desired response, the parent or instructor's posture changes, smiles, says words of praise in an excited tone of voice, and reaches for and brings the desired item closer to the child. Each of these previously non-reinforcing stimuli can take on reinforcing properties because they occur immediately before the actual reinforcer is delivered.

Attention to Facial Expressions. Why should the changes in our face serve as reinforcers? The answer lies with the association between the facial changes and the fact that actual reinforcers usually follow those facial changes. The basic issue is that when the child is looking at our face, he can see any changes in our expression that are immediately followed by an actual reinforcer.

Motivation During Teaching Activities. In a structured teaching session the child usually sits at a specific location at a table and the instructor sits at a nearby position. The teaching materials and reinforcers are also usually present. The instructor requests a child to engage in a certain behavior and then provides praise and other items or activities that "reinforce" the child's responses. If an instructor is careful to ensure that they maintain the child success at these table tasks and reinforcers are delivered effectively, the instructor will often find the child eager to join him at the table because this learning situation provides the child with an opportunity to gain access to better reinforcers than the ones the child can get when away from the table.

Escape Motivated Responding. Sometimes, a child's behavior may indicate that staying away from the table tasks is a better option than going to the table; the child protests going to the table and readily leaves the table at the first opportunity. In such situations, the child has often learned that after a certain passage of time, the child will be able to get away from the table tasks. The child is sometimes told to "go play," but "playing" may not really be the actual reinforcer. In reality, the actual reinforcer is that the instructor's requests for the child to do certain tasks are now ended. Life is better without having to interact with the instructor. Although completion of tasks within a session such that the reinforcer involves escaping from the demands of an instructor may be an effective way to develop some skills, we would rather create a situation in which the reinforcement values of interactions with the parent or instructor are better than the reinforcers that don't include interactions with people.

Ideally, social reinforcement for good learner participation is the most desired outcome of an intervention. If a child's participation behaviors are reinforced by social reinforcers that are used with typically developing children, the child with Autism Spectrum Disorder is more likely to be able to learn from interacting with most adults.

Establishing Social Activity Reinforcers. For some children, the process of establishing conditioned "social" reinforcers will begin by pairing praise and changes of voice and facial expressions with the delivery of highly motivating food items or toys. A better choice, when possible, is to develop "social" reinforcers by pairing that form of feedback with activities that involve the parent or instructor as a critical part of the existing reinforcer. For example, a child may enjoy looking at a book, but if the parent can make the activity enjoyable to the child if they read the story or highlight some of the pictures with a fun interaction (e.g., seeing a picture of a bear the parent makes a "grrr" sound with a funny action that the child enjoys), the book with the parent interaction may become more enjoyable than merely having the book.

Motivational Variables Related to Spontaneous Language. The reinforcement value of the attention from and actions of the adult is critical for numerous reasons in addition to making it possible for a greater number of adults to be effective teachers of new skills. One important consideration involves the reinforcement of spontaneous language other than a child's requests for items (i.e., mands). Most expressive language other than requests for reinforcers are typically maintained by social reinforcement. For example, consider a child who has been taught to label dogs during structured teaching sessions to earn raisins as a reinforcer. Why should this same child spontaneously label a dog he sees through the window when an adult is present....but not raisins. However, the child may be more likely to spontaneously say "dog" (i.e., label) if the adult's reactions have been established as reinforcers.

It is important to note that even if the adult's actions are actual reinforcers, the adult's behavior may

unintentionally turn into a consequence that decreases the child's tendency to spontaneously label items. When a child who has not received many reinforcers for spontaneously labeling items, it is important that the overall experience (i.e., consequences) be one of reinforcement.

When a child spontaneously labels the dog, it would be ideal to have the reinforcement equivalent to "bringing out the marching band." However, if after the spontaneous labeling the adult attempts to teach the child new skills by asking the child questions about the dog such as: What color is the dog? What does the dog say? The result may be that the child is less likely to spontaneous label items in the future.

Natural Environment Training. While parents and instructors help a child during eating, dressing, toileting and bathing activities, they have an opportunity to teach him a wide variety of new skills (e.g., imitation, labeling items). Unfortunately, there is often a learning history with respect to having learned that the instructor will require certain actions be performed prior to ending a structured session at a table but the expectations are different away from the table. The combined effect of the differences in the expectations to respond along with the absence of the stimuli associated with that expectation (i.e., tone of voice, position of instructor) and with the absence of the specific reinforcer, is that the child may be less cooperative in participating in the attempts to teach skills during daily activities.

However, there are several strategies that instructors can use to help encourage more active student participation during less structured teaching situations. It is important to start establishing a history of reinforcement for responding to instructions outside of the structured sessions. Even when not sitting at a table, the adult will ask the child to do something, and that the cooperation in doing these responses will result in reinforcement.

Probably one of the most important considerations related to the child's cooperation involves the child's overall history of interactions with the adult. If the sum of all the child's interactions with the adult have resulted in the sight and actions of the adult as conditioned reinforcers, the child will be more likely to approach the adult, spontaneous use of his existing skills and follow instructions even when the adult doesn't have a specific item that is often used as a reinforcer.

In most natural environment instruction, we want the reinforcement value of the interaction with the adult to be greater than the reinforcement value of the reinforcers that are available to the child without being required to respond to the adult. Although a parent or instructor can physically prompt a child to participate in the less-structured teaching activities (i.e., escape motivation), it is much easier to teach skills if the learner the child wants to be with the adult and do what they ask of him.

When we provide intervention to teach skills to a child, we want to ensure that our overall interactions with him results in his wanting to interact with us and attending to changes in our faces, words, and actions because these forms of feedback have become conditioned reinforcers. Hopefully, our presence and actions will result in the child "running to us" rather than "from us."

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Comprehensive ABA Programming: Matching Learner Needs with Instructional Strategies

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Introduction

Parents and educators of children with autism spectrum disorders are faced with a wide array of choices of instructional approaches. Most approaches are not empirically validated and are sorely lacking in evidence of their effectiveness. ABA strategies have been empirically validated to a much greater extent than any other treatment approach. A vast amount of evidence regarding the effectiveness of ABA has been accrued. However, within ABA, there is variability in the amount of

evidence that exists for particular strategies. At times, clinical practice trends result in the widespread application of techniques that are not fully verified.

In this article, we will review the techniques within ABA that have the strongest data base, as well as some of the clinical trends that are very promising. Strategies for informing consumers and adding to scientific understanding will be explored.

Discrete Trial Teaching

Historically, within ABA, Discrete Trial Training (DTT) has been a primary instructional approach. Discrete trial training (DTT) uses repetition and sequenced instruction to build skills in students with autism (Lovaas, 1981; Lovaas, Koegel, Simmons, & Long, 1973; Smith, 1993). It has been successful in teaching a wide variety of skills in a structured, formalized context. DTT provides a very large number of learning opportunities, which most certainly contributes to its success as a teaching methodology. Elements of its effective use include errorless learning procedures (e.g., Etzel & LeBlanc, 1979; Lancioni & Smeets, 1986; Terrace, 1963; Touchette & Howard, 1984) and task variation and interspersal (e.g., Dunlap, 1984; Mace, Hock, Lalli, West, Belfiore, Pinter, & Brown, 1988; Winterling, Dunlap, & O'Neill, 1987; Zarcone, Iwata, Hughes, & Vollmer, 1993). These strategies diverge from some historical applications of DTI, which often utilized blocks of identical target trials and procedures which allowed for repeated errors. In addition, in clinical application, DTT has changed in other important ways, including the use of a naturalistic tone of instruction, the integration of strategies to promote generalization, and the shortening of inter-trial intervals.

Discrete trial instruction is still very useful for teaching skills to children with autism, and its utility has not been eliminated with the emphasis on more naturalistic approaches. DTT is well suited to teaching skills requiring repetition, to teaching skills that are not intrinsically motivating, and to building solid repertoires of receptive and expressive language skills (e.g. Sundberg & Partington, 1998; 1999).

Naturalistic Teaching

Over the past 25 years, there has been a strong focus in ABA on the development of naturalistic teaching methodologies to meet the needs of learners with autism. Incidental teaching emphasizes getting an elaborated response from the individual, following their expression of interest in an item or a topic (Hart & Risley, 1982). Incidental teaching has been demonstrated to be an effective approach for increasing initiation skills and for building a wide variety of language and conversation skills (e.g., Farmer-Dougan, 1994; McGee, Krantz, & McClannahan, 1985; 1986). Importantly, incidental teaching procedures have been shown to have substantial generalization advantages, compared to discrete trial teaching (McGee, Krantz, & McClannahan, 1985). These are significant advantages, as the strength of DTT is in building responsivity, and relative weaknesses include failure to build initiation skills or generalization in the absence of additional training.

In incidental teaching, the teacher arranges the environment to create interest on the part of the learner. The teaching interaction begins with the learner initiating a request or a conversation about a particular item or topic. The teacher prompts an elaboration of that initiation, and more elaborate communication from the learner results in gaining access to the desired item (Fenske, Krantz, & McClannahan, 2001). One of the most substantial advantages of an incidental approach over a DTT approach is that the learner leads the teaching interaction. The learner's interests control the beginning and the flow of the instruction (Fenske, Krantz, & McClannahan, 2001). Incidental teaching builds spontaneity, increases initiation, and shapes the complexity and sophistication of communicative responses.

Other naturalistic ABA approaches have also emphasized learner interests. Pivotal Response Training (PRT) and Natural Language Paradigm (NLP) emphasize the use of intrinsically motivating materials, teaching in natural contexts, and using the child's interests to guide instruction in language (e. g., Koegel, Koegel, & Surrat, 1992; Koegel, O'Dell, & Koegel, 1987; Laski, Charlop, & Schreibman, 1988). PRT Natural Environment Training (NET; Sundberg & Partington, 1998), similar to NLP and PRT, focuses on the use of intrinsically motivating materials and on following the child's lead in language instruction. NET also adds, however, the use of Skinner's Verbal Behavior language classification system to guide language instruction (Skinner, 1957). The use of this classification system is a newer clinical direction, and has been combined with both naturalistic strategies (as in NET) and with more formal instruction, such as DTT. The use of the system is popular, as it helps

to ensure comprehensive attention to the functions of language in curricular assessment and in programming. This comprehensive focus is important, given that the verbal operants identified by Skinner have been shown to have functional independence, supporting the need to program for all of them (Lerman et al., 2005). In comparison to the methods previously reviewed, there is less abundant literature on NET and on the use of the VB classification system to build language skills in this population. However, the use of the VB system has excellent theoretical embeddedness and clinical relevance. In addition, many elements of NET (e.g., initiation training, naturalistic teaching strategies) are well-established.

DTT and naturalistic methods target different deficits within autism spectrum disorders, and each methodology has distinct advantages and unique applications. DTT is efficient and effective in teaching a wide variety of skills, but there is almost always a need for generalization training procedures. Additionally, while responsivity improves dramatically within DTT, initiation skills, requesting, and conversation may be best taught through more naturalistic approaches.

Social Skills

An area that has received increased emphasis in ABA in recent years is social skills. A wide variety of strategies are in common clinical use for remediating social skill deficits. Many of these strategies were developed outside of ABA (e.g., social stories; Gray, 1993; 1994) and most are employed as part of a package of interventions to address social difficulties (Weiss, 2007). Others have more embeddedness within the discipline of ABA, such as rule cards, social scripts, and video modeling. Rule cards assist students in following the social rules that are associated with a particular activity (e. g., Weiss & Harris, 2001). While there is not a body of literature on the use of rule cards, they are related to a variety of visual prompting strategies and behavioral rehearsal techniques (e.g., Cooper, Heron, & Heward, 2007; Snell & Brown, 2000). Scripts can be in the form of sentences, words, or pictures, and they can be applied to a variety of circumstances (e.g., Snell & Janney, 2000). A number of studies document the effectiveness of scripts in facilitating social initiation and social interaction in individuals with autism (e.g., Krantz & McClannahan, 1993, 1998). video modeling has been used increasingly to build a variety of skills, including functional academic skills, community-relevant skills, conversational exchanges, and play skills (e. g., Charlop & Milstein, 1989; Haring, Kennedy, Adams, & Pitts-Conway, 1987; Sherer et al., 2001; Snell & Brown, 2000; Taylor, 2001; Weiss & Harris, 2001). Unanswered questions in social skills applications that have fueled recent clinical innovation and promising research include: the extent to which ABA strategies can be used to address core social deficits in autism, the ways in which procedures can be combined to increase the effectiveness of intervention, and the analysis of the contribution that each method makes to a packaged approach.

Rate-Building and Fluency

Fluency has been defined as responding accurately, quickly, and without hesitation (Binder, 1996; Dougherty & Johnston, 1996). While fluency has been a goal of Precision Teaching, a field within the discipline of ABA instruction that has existed for many years and served many populations (e.g. Lindsley, 1992), it has only recently been focused on as relevant for learners with autism spectrum disorders (Fabrizio & Moors, 2003).

Rate-building may be well-suited to addressing the skill deficits of learners with autism. For example, many learners on the autism spectrum exhibit motor dysfluencies. They may still perform the task laboriously, inefficiently, or slowly, despite having met accuracy criteria. Some individuals with ASD's demonstrate long latencies to respond to instructions or to social initiations/bids. Such lags in response times can lead to missed opportunities, especially in social contexts (Weiss, 2001; 2005).

Fluency has been associated with a number of outcomes of learning, which are said to represent true mastery (Binder, 1996; Fabrizio & Moors, 2003; Haughton, 1980; Johnson & Layng, 1996). Johnson & Layng (1996) emphasized the outcomes of Stability (capacity to engage in behavior in face of distraction); Endurance (capacity to engage in behavior for extended periods); Application (ability to generalize skills); and Retention (ability to maintain skills).

There is debate within the field about whether fluency is a product of rate building (Doughty, Chase, & O'Shields, 2004). There are several potentially confounding variables that may actually be responsible for the effects. These include practice, as well as rate of reinforcement. Practice itself has been clearly shown to facilitate learning

(Samuels, 2002). The type and amount of practice opportunities offered to learners definitely effects mastery (Ericsson, Krampe, & Tesch-Romer, 1993). Furthermore, when learners are exposed to immediate feedback and repetitive trials, both their accuracy and speed improve. It is possible that the high reinforcement rates used in rate-building are responsible for the positive effects. Given that the mechanisms of effect are not fully understood, it may be that some of the benefits of rate-building can be achieved without a full implementation of this approach. It may be that sensitizing staff to fluency building procedures (Binder, 1996) and tracking latency as a qualitative aspect of response may result in similar learner outcomes.

Future Research Directions

Research is needed in a number of areas. More research on teaching skills naturalistically, and on the advantages of using a naturalistic approach, would be helpful. In the social skills arena, component analyses of package interventions would help to elucidate the primary mechanisms of change. Furthermore, research on strategies to remedy central deficits in ASD's, such as joint attention and perspective taking, might greatly augment our ability to impact these elusive targets of instruction.

In the area of verbal behavior, more research is needed in replicating the functional independence of verbal operants, and in identifying instructional approaches that may aid transfer across operants. In addition, examining the changes in the demonstration of verbal behavior (i.e., emergence of specific operants) over time of intervention might contribute to the development of a useful measure of progress in children with ASD's. Finally, examining the transfer of skills to the natural environment is a critical need.

Within rate-building to fluency, there is a need to examine the differential impact of overlearning vs. rate-building. It would also be interesting to see comparative studies of rate-building vs. other ABA teaching approaches, particularly with respect to the outcomes of learning frequently cited as a result of building skills to fluency (i.e., stability, endurance, application, and retention.) In addition, there is a need to empirically investigate the utility of teaching component skills to increase composite skills. It would also be interesting to explore how rate-building can be used to build social skills. In particular, the utility of rate-building for addressing problems in latency to respond should be explored.

Clinical Recommendations

In clinical practice, we must maintain our commitment to the use of empirically validated procedures. In particular, we must remain vigilant about the intensive application of ABA intervention, and beware of diluted approaches. When exploring the relevance and impact of newer procedures, we must remain accountable by ensuring that we use procedures that are documented to be effective at the level of the individual. Furthermore, we should contribute to the existing data bases on such procedures by systematically evaluating the effectiveness of such procedures, and by sharing the results of such applications in professional forums.

Summary

The use of a broad array of behavior analytic instructional methods will result in more comprehensive programming and improved learner outcomes for children with ASD's (Fabrizio & Moors, 2003; Fenske, Krantz, & McClannahan, 2001; Weiss, 2001; 2005). Specific advantages to utilizing each of the instructional approaches discussed are substantial. DTT remains an excellent means of building a wide variety of skills. Naturalistic instructional approaches of all kinds are better suited (than DTI) to increasing skills in initiating, conversing and relating to others. Strategies that build rate of response may make responses more available in natural settings.

Perhaps the greatest service we can provide to our consumers is to accurately represent the state of knowledge within our field. As ABA professionals, we need to acknowledge the power of empirically validated strategies. As responsible clinicians, however, we want to be open to expanding the array of strategies we use to meet the needs of learners we encounter. In this context, we must exercise caution. We can demonstrate our commitment to empirical validation by contributing to the data base that exists for such procedures. In addition, we can help consumers sort through the hype to understand the elements of effective intervention, the methods for evaluating the success of intervention, and strategies for separating the wheat from the chaff.

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One Size Does Not Fit All: Developing Individualized Treatment Protocols for Children with Autism

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One of the most vexing issues facing those involved in treatment research and treatment implementation for children with autism is the often-reported variability in treatment outcome. Thus while many children improve substantially others show minimal or no improvement. This is true despite the fact that behavioral interventions enjoy substantial empirical support for their effectiveness (e.g., Eikeseth, Smith, Jahr, & Eldevik, 2007; National Research Council, 2001; Sallows & Graupner, 2005). Because of this heterogeneity in outcome, it is the case that the current challenge for behavior analysts is not answering the question of which behavioral

intervention is "best" because addressing this question is ultimately likely to do little to solve the problem. Rather, behavior analysts in the area of autism treatment should focus their energies on better understanding the variables affecting treatment outcome and thereby developing strategies allowing us to determine which specific behavioral intervention is best for a given child. In essence, what we need is a strategy, or set of strategies, allowing us to tailor our treatment regimen to the individualized needs of the child and family (Schreibman, 2005).

Developing strategies for individualizing treatments has several important advantages. First, such individualization should allow us to reduce the heterogeneity in treatment response. Second, this should result in an overall increase in the number of children who improve substantially. Third, a technology of individualizing treatment should allow us to be "right" the first time and thus take full advantage of early intervention.

The renowned variability in treatment response even to our most effective treatment strategies suggests the operation of other variables that work to affect outcome. There are several types of such variables that are likely involved. These include child variables (e.g., specific child characteristics and behaviors), parent and family variables (e.g., stress, depression, support), cultural variables (e.g., expectations and treatment acceptability), treatment/target behavior interactions (e.g., some target behaviors may be best approached via a certain type of treatment), and the relatively new area of neurophysiological variables (e.g., certain brain structures or activity patterns may relate to treatment response).

Our laboratory has been focusing on the individualization of treatment for a number of years and what follows is a brief description of four studies in this endeavor. All of these studies have involved child variables as moderators of treatment outcome and serve as examples of the experimental focus on developing a technology for matching treatment to child.

One study (Sherer & Schreibman, 2005) looked at a pattern of child behaviors that predicted outcome with a specific behavioral intervention, Pivotal Response Training (PRT; Koegel, Schreibman, Good, Cerniglia, Murphy, & Koegel, 1989). PRT is a naturalistic behavioral intervention developed in response to identified limitations of more highly-structured, discrete-trial training. (These limitations related mostly to problems with generalization, spontaneity, prompt dependency, and difficulty of implementation.) (e.g., Schreibman, 1988, 2005). PRT is play-based, child directed, conducted within a naturalistic set of interactions, and involves enhancing child motivation and responsivity of multiple cues in the learning situation (see Koegel, et al., 1989 for a complete description).

In this study we looked at the treatment outcome of children with autism who had received PRT during several years of our research. After identifying those children who showed the most positive outcome and those who showed the least positive outcome, we looked at pretreatment videos of the children in a structured laboratory observation to determine any behaviors that discriminated between these groups of participants. In this assessment the child was in a large room with age-appropriate toys and an adult (usually the parent). We scored these observations for various behaviors and identified five specific behaviors that seemed to differentiate the treatment "responders" from the "nonresponders." We found that compared to treatment nonresponders, treatment responders were those who exhibited more interaction with toys, more social approach behavior, less social avoidance, more verbal stereotypic behavior and less nonverbal stereotypic behavior. We followed this with a prospective study wherein we selected new children with autism aged 4-6 years (matched on IQ, language age, and severity of autism), who either matched the "responder" or the "nonresponder" profile. We then provided them with an intense course (6 months) of PRT. Our dependent measures included measures of language, social behavior, and play. We predicted that those children matching the "responder" profile would show significant positive response to treatment while those matching the "nonresponders" would not. A multiple baseline design across participants confirmed our prediction. Those children matching the "responder" profile made major gains on all dependent measures while those matching the "nonresponder" did not. (In fact, due to the lack of response to treatment, we discontinued the intervention for these children for ethical reasons).

The results of this study led to additional questions. First, was the Sherer and Schreibman (2005) profile predictive of response to *any* treatment or was it specific to PRT? Second, how important were each of the individual profile behaviors in the prediction of effectiveness? Third, what can we do about the

majority of children who fall between "responders" and "nonresponders?"

To address these questions, we conducted a preliminary study (Schreibman, Stahmer, Cestone, & Dufek, submitted) wherein we identified young (age 24-47 mo.) children with autism who matched the Sherer and Schreibman (2005) nonresponders profile *except* for one of the individual profile behaviors. Three of the children matched the nonresponder profile except they engaged in *higher toy contact* than those children in the original study and three matched the nonresponder profile except they were *less avoidant*. These children were then provided with three weeks of intensive PRT treatment within a multiple baseline across participants design. Dependent measures included cued and spontaneous communicative vocalizations. In general, we found that these children responded at a level above that of the nonresponders in the original study but below that of the responders in that study. It was apparent that those children with higher toy contact did respond at a higher level to PRT than those who were less avoidant suggesting that avoidance was not as important as an individual predictor.

To address the issue of specificity of the profile to PRT, the children were also provided with a three-week course of discrete trial training (DTT), a more highly structured behavioral intervention (Maurice, Green, & Luce, 1996). Our preliminary results suggest that the variability in response to DTT supports the specificity of the original profile to PRT. Further research is needed to replicate these findings and to assess the potential role of other individual profile behaviors.

We conducted another investigation looking at the role of peer social avoidance in predicting the effectiveness of an inclusive classroom program on the acquisition of language skills in toddlers with autism (Ingersoll, Schreibman, & Stahmer, 2001). Six children with autism and three typically developing children (all aged 26-41 mo.) participated. In a pretreatment assessment three of the children with autism were found to be highly avoidant of peers and three were minimally or nonavoidant. The children then participated for six months in an integrated toddler classroom. Dependent measures included subsequent levels of peer avoidance and language use. Results indicated that the children who were initially assessed as high peer avoiders a) remained highly peer avoidant after six months and made minimal language gains during this period. In contrast, the children who were initially assessed as low peer avoidant remained so and exhibited substantial gains in language use. These results suggest that peer social avoidance may be a predictor of improvement (at least in language) in an integrated educational setting for young children. Such information may be useful in that it suggests that either highly avoidant children may not be good candidates for such inclusive environments or such children may require intervention to reduce peer avoidance before being placed in such settings.

As noted above, one of the major advantages of individualizing treatments for children with autism is to take best advantage of early intervention. Thus if we can determine which form of intervention is best for a specific very young child, we can be "right" the first time and make the most of the early intervention window. In a large project now in its final stages we are looking at the relative effectiveness of two forms of communication training (PRT and the Picture Exchange Communication System, PECS) for very young (24-48 mo.) children with autism. Both of these communication systems are naturalistic interventions based on principles derived from applied behavior analysis. PRT (Koegel, et al., 1989) is vocally based whereas PECS (Bondy & Frost, 2001) is visually based. With PECS the child uses picture icons to communicate with a communicative partner. Discrimination and use of single icons is followed by "sentence strips" wherein the child expresses desires, uses adjectives, comments on the environment, etc. Both PECS and PRT are commonly used with this population but which intervention is used with any individual child is typically based upon other factors besides specific matching of child with intervention. We are interested in two main questions: Is one of these treatment protocols better in terms of teaching communication skills to young, minimally verbal or nonverbal children with autism? What are the pretreatment behavioral characteristics associated with responsivity to each of the two strategies?

Participants include 39 children with autism (mean age: 29.21 months) who came into treatment with fewer than 10 functional words. The children were matched on early word use (no words at intake versus some words), developmental level, and chronological age. They were then randomly assigned to either PRT or PECS training. The children received 258 hours of treatment distributed over 23 weeks and follow-up assessments were

conducted after three months. While our dependent measures include a number of standardized and behavioral assessments, covering language, social, cognitive, play, joint attention, and imitation behaviors, many of these have not been analyzed to date. For presentation here we can discuss the results from the MacArthur Communicative Developmental Inventory (CDI; Fenson, et al., 1993) as these data have been analyzed. The CDI is a standardized parent report measure of early language competence that has been widely used in research with typical and atypical children up to 30 months. We used the CDI Words and Gestures protocol which contains a vocabulary checklist of 346 words frequently found in children's early vocabularies. The parent indicates which words they believe the child can comprehends and which words they believe the child comprehends and says. For our study we have analyzed raw scores for words produced on this vocabulary checklist as our measure of spoken words. PECS participants were assessed in terms of which phase of the PECS protocol they had mastered at the end of treatment and follow-up.

Our preliminary results suggest that there was no significant overall difference between the conditions on children's acquisition of spoken words. However we have found that with those children who entered treatment with some words (i.e., 1 to 10 functional words) both PRT and PECS were very effective in teaching spoken words. However, those children who entered treatment with no functional words were much less likely to gain speech. We also have found that for those children who entered treatment with no words, PECS was effective in teaching them many more words they could use functionally (with the icons) than with PRT suggesting that for young children entering treatment with no functional words, PECS might be a promising place to begin. Thus, it looks as if one child characteristic, word use, may be helpful in making a decision as to which communication strategy to employ. However a caveat must be introduced here in that analyses of other dependent measures must be completed before major conclusions can be drawn in this area.

These four studies are offered as beginning stages in a directed line of research aimed at understanding moderating variables that affect treatment outcome for behavioral interventions for children with autism. Our hope is that identifying strategies allowing us to tailor treatment to individual children with autism will produce an overall higher level of significant positive treatment outcome for this population.

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ABAI's Dissemination of Behavior Analysis in Education

By Drs. Maria E. Malott and Janet S. Twyman

Behavior analysis has done and can continue to do so much for improving education and bringing evidence-based practices to the realms of regular and special education. In response to the comments that called for the Association of Behavior Analysis to disseminate and network on the topic of education, ABA International conducted its first Education Conference that took place September 5 – 7, 2008 in Reston, Virginia. The conference was titled *Evidence-Based Practice, Scientifically Based Instruction, and Educational Effectiveness*. The conference was well received and registration totaled nearly 250, with attendees coming from 10 countries and 33 states in the USA.

The program highlighted the findings of a superb group of speakers who focused on an assortment of topics related to evidence-based education. The program included ten invited presentations. (See Figure 1) Dr. Janet S. Twyman introduced the event and welcomed the audience in her opening remarks. Dr. Ronnie Detrich's presentation noted that recent federal policy placed evidence-based interventions in the middle of education policy, and though Detrich noted that this was encouraging, he addressed the many issues that must still be resolved. Dr. Lynn Okagaki's presentation was given by her colleague Dr. Elizabeth Albro who presented the perspectives on the future of education research in a period in which historical and cultural influences have converged to turn attention to the effectiveness of education in our country. Dr. Timothy Slocum described several prominent sources of evidence-based practice recommendations with special attention to standards used and how this influences practice recommendations. Dr. Hill M. Walker reviewed the source and rationale for developments using randomized control group (RCT) designs and presented information on the appropriate use of RCTs in their various forms. Dr. Susan M. Wilczynski gave a description of the advantages and disadvantages of single subject research design and spoke of the importance of including single subject research design when establishing evidence-based practice guidelines. Dr. David Tilly presented Response to Intervention (RTI) as a framework for implementing and supporting evidence-based practices; and Dr. Amanda VanDerHeyden discussed how to plan and implement RTI within schools in ways that promote the capacity of schools, and how to use data to improve every day instruction and schooling decisions. Dr. William L. Heward identified several reasons why ABA is ideally suited to help improve education, reviewed a somewhat longer list of reasons that work against the widespread adoption of behavioral approaches in education, including several of behavior analysts' own making; and suggested some actions that educators, practitioners, and researchers could take to enhance and further ABA's contributions to effective education. Dr. Anthony Biglan addressed overlooked factors in the promotion of evidence-based practice which included a review of the evidence about teachers' psychological well being and its relationship to educational effectiveness. Themes in evidence-based practice were discussed by Dr. Robert Horner and participants were offered a model for guiding future research, future implementation efforts, and future evaluation models that target the implementation of evidence-based practices in schools. (This issue of the *ABAI Newsletter* includes articles by presenters addressing the content of the material.)

Figure 1. 2008 Education Conference participants (from L to R) back row: William L. Heward, Ronnie Detrich, Hill M. Walker, Anthony Biglan, Robert H. Horner, W. David Tilly III, and Timothy A. Slocum; front row: Janet S. Twyman (Master of Ceremonies), Maria E. Malott (ABAI Executive Director), Amanda M. VanDerHeyden, and Susan M. Wilczynski.

The conference poster session was well attended and thoroughly enjoyed by all. Posters showcased best practices and programs demonstrating evidence-

based education and reviewed the evidence base of various practices and standards. Posters were grouped into several categories that all addressed education topics including autism; clinical, family, and behavioral medicine; developmental disabilities; and teaching behavior analysis; among others. The presentation of 74 posters was made at the evening poster session to an engaged and appreciative audience.

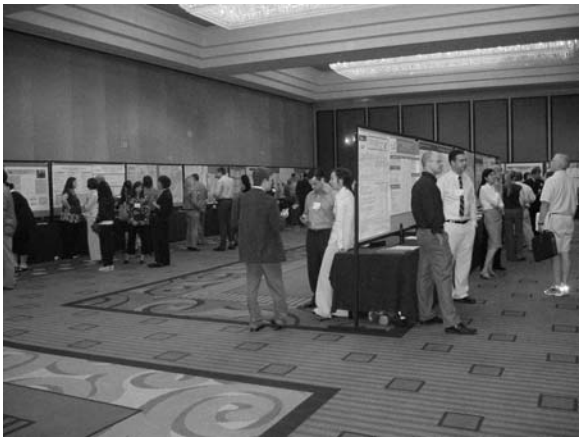


Figure 2. Poster session at ABAI's Education Conference.

We received outstanding evaluations in reference to the presenters and the event. The conference was evaluated very highly by the participants across all categories; including the conference overall, the program quality, staff, location, and services. We are greatly encouraged by their responses and requests to continue doing specialized conferences in education in years to come.

We are thankful for all those who sponsored this event, including Applied Behavior Consultants, Inc.; PLEA Agency; SEEK Education; and The Wing Institute. Applied Behavior Consultants employs about 300 persons doing Applied Behavior Analysis—primarily with children with autism—throughout California; PLEA Agency has a mission to help individuals and families facing behavioral and developmental challenges through Programs for Living, Education, and Advocacy; SEEK Education's mission is to enable children with developmental disabilities, special needs, and learning disorders to reach a self-sufficient, independent, and improved quality of life; and The Wing Institute promotes evidence-based education policies and practices to address serious challenges facing education today. Without the contributions of these organizations, ABA International would not have been able to provide its members with an event of this caliber and quality.

The Association for Behavior Analysis International is also pleased to be able to offer the 2008 Education Conference DVD/Webcast package. The package includes coverage of the conference and allows those who were not able to attend the conference to view the presentations. An added bonus to the DVD/Webcast package is that the purchaser may use the package to earn BACB continuing education (CE) credits in the comfort of their own home. The package is available for purchase through the ABAI store at https://apps.abainternational.org/store/. Future events will offer DVD/Webcast packages as well, and ABAI is excited to continue to supply this opportunity.

Figure 3. ABAI 2008 Education DVD.

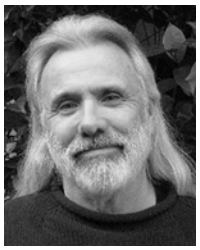
ABA International was pleased to host this important event, and thanks its presenters and all those who attended. The presentations given at the event were extremely timely and important to the field of education, and should have a significant impact on the way professionals think about issues of evidence and education.

ABAI Education Conference Presentations

Opening Remarks & Introduction
By Dr. Janet S. Twyman, BCBA (Headsprout)

Dr. Janet S. Twyman is the Vice-President of Instructional Development at Headsprout, where she is a major contributor to the development of Headsprout's Generative Learning Technology and the effort to build that technology into highly effective educational programs. Dr. Twyman developed the research methods and systems that led to Headsprout's ground breaking scientific formative evaluation model of program development, coordinating all elements of instructional design, scripting, graphic creation, animation, sound engineering, story development and writing, software engineering, and usability testing within the research model. She earned her Ph.D. from Columbia University Teachers College and holds certification as an elementary and special education teacher and as a principal/school administrator. Formerly the Executive Director of the Fred S. Keller School and an adjunct associate professor at Columbia University Teachers College, Dr. Twyman has been a long-time advocate and investigator of research-based instruction and systems design. While at the Keller School and Columbia University, she conducted research and taught courses focusing on effective instruction, technology and education, teacher development, and systems approaches to effective education. She has published and presented widely on verbal behavior, instructional design, systems approaches, and on topics of broader conceptual interest. She serves on the board of numerous organizations including the Association for Behavior Analysis International, as Chair of the Graduate Program Accreditation Processes, Applied Representative, and most currently as President.

Evidence-Based Education: Can We Get There from Here?
By Dr. Ronnie Detrich, The Wing Institute



In the last decade the term "evidence-based" has become ubiquitous in education. This is largely a result of the emphasis on scientifically based instruction in No Child Left Behind (2001); however, it is also the result of a growing movement that began in medicine (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000) and has spread to other disciplines in recent years. Education and related disciplines have been part of the discussion about evidence-based practices since the mid-1990s when the Society for the Study of School Psychology and various divisions within the American Psychological Association (APA) began developing mechanisms for validating interventions as evidence-based (Chambless et al., 1996; Kratochwill & Stoiber, 2000). In spite of the decade long emphasis on evidence-based education, as is often the case when there is rapid spread of a new term, there is still a great deal of confusion about what is meant by "evidence-based."

Ultimately, the evidence-based practice movement is not about science but rather it is a consumer protection movement. It is essentially a public policy that emphasizes the benefits to consumers that can be gained with scientifically based interventions. This distinction has been a source of confusion as the evidence-based movement has progressed. Evidence-based practice is more than identifying effective practices through research. Evidence-based practice in medicine has been defined as "the integration of best research evidence with clinical expertise and patient values" (Sackett et al., 2000). APA has adopted a very similar statement as its definition (2005). The evidence-based practice movement is an effort to assure that scientific knowledge informs the practitioner's decisions about interventions; however, it does not minimize the decision-making responsibility of the individual practitioner. Scientific knowledge functions as a filter in the selection of interventions but clinical expertise and client values also inform the ultimate form of the intervention.

Restricting the discussion, for the moment, to the research evidence, there is no consensus within

education about how to best define evidence (Drake, Latimer, Leff, McHugo, & Burns, 2004). Clearly, what counts as evidence is an important matter for behavior analysis. In most of the existing standards for validating interventions as evidence-based, randomized clinical trials have been defined as the "gold standard." The Institute for Education Science (IES) has clearly established a preference for randomized trials in the standard for the What Works Clearinghouse (What Works Clearinghouse, 2006) and has yet to establish standards for including single subject research in their systematic reviews of the literature. This leaves behavior analysis in a very difficult position given our reliance on single subject designs; we must either expand our research methods to include randomized trials or influence those who establish standards to assure that single subject designs are incorporated into systems for validating interventions as evidence based. Failure to do either of the above choices will likely result in behavior analysis becoming marginalized and consumers would become less likely to benefit from our interventions. Based on current standards, our research is often being left out of the evidence base.

Validating an intervention as evidence-based is more than publishing research demonstrating effectiveness. It requires a systematic review of all published research with a particular intervention or of all interventions in a specific area such as reading or adaptive social behavior. The literature is reviewed against a specific set of standards and any study that does not meet the standards is eliminated from the database. Once the final database is established, studies are reviewed to establish the strength of evidence for each study. It is likely that some studies are better designed and experimentally controlled than others. Once each article has been assigned a strength of evidence rating, the standards can be used to make statements about the evidence-base for a particular intervention. For example, in the What Works Clearinghouse (WWC) standards, there are three levels of rating. If there are two randomized clinical trials supporting an intervention and there are no contradictory studies, then the intervention will be validated as meeting evidence standards. If quasi-experimental designs are used, then the best rating an intervention can receive is meeting evidence standards with reservations regardless of the number of studies that have been reviewed. Even though WWC does consider single subject designs a form of quasi-experimental designs, it has not developed standards for reviewing them and as a consequence, single subject studies are not part of the review process.

One of the major obstacles to a successful evidence-based practice movement is the research to practice gap (Shriver & Watson, 2005), which has been a persistent problem across many disciplines. In addition to identifying the best available evidence for a particular problem, it is necessary to implement the intervention with sufficiently integrity so that the intervention is likely to be effective, and then to evaluate the extent to which the intervention is effective. Detrich, Keyworth, and States (2007) have proposed a roadmap for moving from efficacy research through progress monitoring as a means of assuring that appropriate evidence-based interventions are being selected, implemented with integrity, and the effects are evaluated with an individual consumer. The remainder of this paper will focus on the four components of the roadmap and evaluate the status of behavior analysis with each component.

The first question addressed in the roadmap is "What works?" At this point, the goal of research is to demonstrate a causal relationship. This type of research has been described as efficacy research (Chorpita, 2003). To make the strongest statement possible, it is often necessary to conduct the research under highly controlled conditions with well-trained implementers to minimize the effects of confounding variables. Behavior analysis conducts efficacy research very well. Our single subject methods permit us to make powerful demonstrations of causal relations between independent and dependent variables. This is the most common type of published research and is often reported to be a major contributor to the research to practice gap. Practitioners often view interventions established under efficacy conditions to be difficult to replicate in typical service settings because of a lack of resources, qualified personnel, and personal biases.

Once an intervention has been identified through efficacy research the question then becomes "When does it work?" At this stage of research, typically considered to be effectiveness research (Chorpita, 2003), the primary question shifts to which populations are likely to benefit from an intervention, what conditions are necessary for the intervention to be effective, and what is required to effectively implement the intervention. The primary concern with this type of research is the robustness of the intervention when implemented under less controlled conditions than were present during

efficacy research, i.e., will this intervention be effective when implemented in typical service settings? Efficacy and effectiveness research are not mutually exclusive types of research but rather fall on a continuum in which highly controlled, laboratory-based efficacy research falls on one end and research in typical service settings with minimum supervision and guidance from researchers at the other. Some of the questions addressed by effectiveness research could be characterized as questions about external validity. Often these types of questions are best answered by group designs that are well suited for answering actuarial types of questions. In general, behavior analysis has not paid much attention to concerns about external validity. In part, this is the result of our basic epistemology, which places great emphasis on discovering general laws of behavior that apply to all behaving organisms.

Separate from the process of identifying evidence-based interventions is the process of implementing the intervention. The third component of the roadmap is implementation. In this phase, we are concerned with how to make an intervention work in typical service settings. Several scholars (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Schoenwald & Hoagwood, 2001) have commented on the process of implementation and have suggested that there are specific systems variables that are separate from the intervention that must be considered if implementation is to be successful. Failure to attend to these variables will likely compromise the ultimate effectiveness of the intervention. Behavior analysts working in education, with some notable exceptions (Sugai & Horner, 2005), have not written extensively about these systems variables; however, there is much to be learned about systems level implementation from our behavioral colleagues working in organizational behavior management.

Regardless of the strength of evidence for an intervention and the type of research (efficacy or effectiveness) that established the evidence base, no intervention will be effective for everyone. It is necessary to monitor progress to assure that a given individual is benefiting. Progress monitoring is the final component of the roadmap. Behavior analysis has made significant contributions to the science of progress monitoring. In fact, some have argued that the greatest contribution of behavioral approaches is the emphasis on the collection of behavioral data in natural settings (Johnson & Bolstad, 1973). At this level, the power of single subject designs is well recognized and frequently utilized. The response to intervention movement is fundamentally a progress monitoring approach to evaluating the impact of instruction on individual students.

The evidence-based practice movement presents many challenges for behavior analysts and in some instances will require a change in some of our behaviors, most notably adding randomized clinical trials to our methods for evaluating the effectiveness of interventions. In other instances, behavior analysis serves as a model for how practitioners should behave in an evidence-based world. Some have wondered why behavior analysts should become involved in the evidence-based movement because by definition, behavior analysis is evidence-based. Perhaps the best reason for doing so is that Kazdin (2000) reviewed the literature for interventions that were used to address problems of children with mental health issues and found over 500 named interventions. Of those interventions, less than 10% had been evaluated with any experimental research. A large majority of the reviewed interventions were behavioral or cognitive-behavioral. The individuals and families that we serve have a reasonable expectation that they are receiving services that are most likely to be effective. By requiring professionals to select from interventions that have a scientific basis, we are giving our consumers the greatest chance of benefit. This meets the socially important dimension of behavior analysis as outlined by Baer, Wolf, and Risley (1968).

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Solution Driven Research

By Dr. Lynn Okagaki, Institute of Education Sciences

Presented by Dr. Elizabeth Albro, Associate Commissioner for Teaching and Learning, National Center for Education Research Institute of Education Sciences, Washington DC

In the last 60 years, there have been a number of occasions in which historical and cultural influences have converged to turn attention to the effectiveness of education in our country. Today we are in one such period. What are the implications for education researchers? What are the questions to which education practitioners, leaders, and policy makers seek answers? The over-arching priority of the Institute of Education Sciences is research that contributes to improving student outcomes. Through the National Center for Education Research and the National Center for Special Education Research, the Institute supports research to develop and evaluate education interventions, to develop and validate measurement instruments, and to gain fundamental understanding of the processes that underlie variations in the effectiveness of education programs, practices, policies, and approaches. This talk presents the Institute's perspectives on the future of education research.

Welcome to the New ABAI Chapters and SIGs

Association for the Advancement of Radical Behavior Analysis (ABA of Italy)

Oregon ABA

Behavioral Coaching and Counseling SIG

Sources of Evidence-Based Education Recommendations

By Dr. Timothy A. Slocum, Utah State University

Evidence-based education has been defined as "the integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction" (Whitehurst, 2002). This suggests that in a system of evidence-based education, educators would make decisions based on the accumulated results of relevant scientific research along with their professional experience. It is a strong statement that research results should play a much more central role in education than they have previously and it raises numerous questions about how to build a stronger bridge between empirical evidence and educational practice. One of the key issues in strengthening this bridge is how research results are to be evaluated, summarized, and made available to educational professionals. As the Coalition for Evidence-Based Policy has written, "If practitioners have the tools to identify evidence-based interventions, they may be able to spark major improvements in their schools and, collectively, in American education." (Coalition for Evidence-Based Policy, 2003, pg. iii).

In the past, supporters of particular educational practices have often abused the phrase "research tells us…" by following it with all manner of opinions and beliefs that have little or no support from legitimate scientific research. Such statements might be paired with a citation of opinion papers or low-quality research motivated and designed for advocacy than for actual science. The problem for educator is to sort through this 'research', to judge the rigor (internal validity) of the individual studies, judge the relevance of the participants, intervention, measures, and contexts to a particular practice situation (external validity or generalizability), and to evaluate the larger body of evidence to decide whether the practice has sufficient quality and quantity of research support to warrant implementation. This is a demanding task, even for those with extensive training and experience in research design and interpretation. It is not reasonable to suppose that many educational practitioners have the technical expertise and time to undertake such a task.

A second strategy for making the "best available empirical evidence" accessible to educators is to produce systematic reviews of literature that bring methodological rigor to the process of distilling the research literature and identifying effective practices. This approach is a key component of the movement for evidence-based practice in education. Slavin observed, "A key requirement for evidence-based policy is the existence of scientifically valid and readily interpretable syntheses of research on practical, replicable education programs. Educational policy cannot support the adoption of proven programs if there is no agreement on what they are" (2008, pg. 5). However, the process of planning and conducting systematic reviews of research literature is not a simple, non-controversial process. In addition, the stakes are high; the legitimacy and success of the entire evidence-based education movement depends on the effectiveness of the systematic review process. Reviewers must specify methods by which relevant literature is reviewed, consistent and appropriate standards for scientific quality are applied to individual studies, results are summarized across studies in a meaningful and valid manner, and clear statements about the level of empirical support for the practice are made.

Numerous organizations have begun to produce systematic reviews of educational practices offered as a basis for evidence-based practice, and the number of such organizations is quickly growing. These organizations vary in their funding sources, topics covered, systems for producing reviews, methodological standards for reviews, and other dimensions. Diversity of funding sources and focal topics demonstrate the widespread commitment to the supporting evidence-based practices in education across funding sources and organizations concerned with various facets of education. Diversity in systems and methods for producing reviews entails both strengths and weaknesses. It can be a strength in that research on educational practice is highly diverse and some variation is necessary to produce reviews that are relevant to each topic. For example, the research base on general education reading programs is very different than that on teaching language skills to children with autism – it would make sense that review standards should take these differences into account. In addition, systematic evidence-based practice reviews are a new form of literature review and some amount of variation is necessary for selection of more effective review practices. However, if these variations result in inconsistent recommendations for practice or the recommendations of practices that are ultimately

ineffective, the legitimacy of the entire evidence-based education movement can be compromised.

The What Works Clearinghouse is a project of the U.S. Department of Education's Institute for Educational Sciences (What Works Clearinghouse, n.d.). It has reviewed, or is currently reviewing the topics of (a) beginning reading, (b) early childhood education, (c) elementary school math, (d) middle school math, (e) English language learners, (f) character education, and (g) dropout prevention. The WWC sets the standard for explicit and transparent review process and methodology. It has a standard process for locating primary research, screening and evaluating studies, and deriving ratings of the evidence support for practices. In addition, a protocol is developed to specify important considerations and variables for each topic. WWC produces intervention reports that summarize and evaluate the research related to that intervention and topic reports that compile and integrate information on all reviewed practices within the topic area. Each intervention is rated according to a clearly defined six-point scale from positive effects to negative effects. All reviews of primary research and reports are produced by Clearinghouse staff. WWC reviews place great value on randomized controlled trials (RCTs), and secondary value on quasi-experimental designs (QED). It classifies single-subject research as a type of QED; however, it has not developed systems for evaluating and summarizing results of single-subject research. Therefore such research is not considered in the review process.

The Best Evidence Encyclopedia (BEE; Best Evidence Encyclopedia, n.d.) is funded by a grant from the Institute for Educational Sciences to Johns Hopkins University. It provides summaries of a collection of systematic reviews on math instruction, technology in reading and math, comprehensive school reform, reading for English language learners, and secondary reading. These reviews have been produced by BEE staff and others. To be included on the BEE Web site, reviews must meet explicit criteria including (a) carrying out an exhaustive search for all studies that meet well-justified standards of methodological quality and relevance to the issue being reviewed; (b) present quantitative summaries of effectiveness for achievement outcomes; and (c) focus on studies comparing programs to control groups, with random assignment to conditions or high-quality matching. These criteria are a good deal broader than WWC procedures giving more latitude to the reviewer to define specifics of the review process and more room for judgment about what constitutes high-quality research. The strength of evidence for a program is rated on a five-point scale from strong evidence through no qualifying studies. The criteria for these ratings vary across reports.

The Promising Practices Network (PPN; Promising Practices Network, n.d.) is a project of the RAND Corporation funded by multiple partner organizations. PPN considers a wider range of topics that WWC or BEE spanning the broad outcome areas of: (a) healthy and safe children, (b) children ready for school, (c) children succeeding in school, and (d) strong families. Within these areas, PPN attempts to identify "programs and practices that are proven to improve outcomes for children." (Promising Practices Network, n.d.) Unlike WWC and BEE, PPN only makes statements about practices that have some level of research support (proven programs or promising programs), they do not list programs that are found to lack research support. A single high-quality study may be sufficient to earn a "proven" rating; however, criteria for weighing information across multiple studies are not explicit. PPN also includes a rating of "screened," meaning that the practice has been favorably reviewed by "other credible organizations that apply similar evidence criteria." (Promising Practices Network, n.d.) PPN does not produce topic reports with cohesive overviews or comparisons of the various interventions related to a particular topic, but their Web site allows searches that list all rated programs related to a particular outcome area, indicator, topic, or evidence level.

Other organizations provide evidence-based practice reviews in narrower areas related to particular populations or topics. The National Secondary Transition Technical Assistance Center (NSTTAC; National Secondary Transition Technical Assistance Center, n.d.) provides a good example of this kind of source of evidence-based practices. NSTTAC has produced reviews of practices in five areas related to secondary transition: (a) student focused planning, (b) student development, (c) interagency collaboration, (d) family involvement, and (e) program structure. Center staff review of specific practices within each of these topics; for example, practices such as "teaching functional life skills" and "teaching completing a job application" are reviewed under the topic of student development. These practices are defined at a more general level than the specific programs reviewed by WWC, BEE,

and PPN – that is, the practice of "teaching functional life skills" is defined by a particular set of targeted outcomes rather than by a specific instructional program shown to produce these skills. NSTTAC rates the level of evidence for each practice on a four-point scale of strong, moderate, potential, and low. Ratings are based on explicit criteria derived from the indicators of quality research published by Gersten, et al (2005), Horner, et al (2005), and Thompson et al (2005), as well as from previously published literature reviews and meta-analyses. In addition, NSTTAC provides access to relevant evidence-based practice reviews produced by other organizations such as the What Works Transition Research Synthesis Project. NSTTAC is one of the few sources that explicitly recognizes and includes single subject research as an evidence base for practice.

The number of sources of evidence-based practice reviews has grown rapidly and will continue to increase. The National Autism Center will soon publish its National Standards Report, its review of evidence-based treatment approaches for autism (National Autism Center, n.d.). The Council for Exceptional Children is organizing a project to establish evidence standards and develop a process through which the organization will indentify evidence-based practices (Council for Exceptional Children, n.d.). As the number and variety of sources of evidence-based practice reviews grows, professionals will have access to a great deal of information regarding the research base for numerous practices; but they will also be faced with increasing challenges to navigate among sources and evaluate potentially conflicting claims regarding the strength of the evidence-base for specific practices. It is already clear that subtle differences in review procedures rules of evidence can produce substantially different recommendations. No single review system will flawlessly identify effective practices; all will include some rate of false positive and false negative results. A looming challenge is to evaluate the validity of evidence-based practice reviews.

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Critical Issues in the Use of Randomized Clinical Trials and Control Groups within Applied Settings: Rationale, Challenges and Benefits

By Dr. Hill M. Walker, Center on Human Development

School districts and educators have recently come under intense pressures to accommodate the use of randomized control trials (RCTs) due primarily to the public demand for access to evidence-based interventions that can make a difference in the school success of all students, and especially those who may be marginalized and at-risk for destructive outcomes. Randomized control trials are considered the gold standard in terms of levels of scientific evidence in regards to evaluating the efficacy and effectiveness of interventions. RCTs have a long history of effective usage in fields such as medicine and psychology but this has not been the case in education. However, since schools are so well suited for the conduct of large-scale research in terms of providing broad access to child-youth populations, having a cadre of professionals who can serve intervention delivery roles (e.g. teachers, counselors, school psychologists, behavioral specialists), and which are expected to produce important social and academic outcomes for all students, they are increasingly seen by researchers as relatively ideal laboratory-type settings for testing interventions and new practices.

In spite of its suitability as a research site, the typical school district usually provides a number of challenges to the appropriate use of RCTs. For example, educators often have a visceral dislike for control groups and conditions where certain students are denied access to a new treatment or practice. RCTs with waitlist control groups are often invoked as a compromise for this dilemma; however, these designs do not allow for control conditions in follow-up assessments as the control group is provided access to the intervention immediately following exposure to it of the treatment group and the recording of post assessments. Further, the demands of random assignment create problems for both educators and parents who often terminate their study involvement when they learn they or their children have been assigned to a control group. Finally, the logistics and complex politics of school districts frequently result in demands for compromise of school-based, RCT study designs that reduce their integrity.

On balance, it is far easier to conduct single subject research within the context of schooling than it is to implement larger scale RCTs. However, both types of research are ultimately essential for developing and testing evidence-based interventions and practices in which parents and school professionals can have confidence. The purpose of this keynote is to address some of the critical issues and challenges involved in the use of randomized control trials within school settings. The following topics are discussed herein: (a) randomized control trials—definitions and key characteristics, (b) advantages and disadvantages of RCTs, (c) single subject vs. RCT designs in schools, (d) integrating single subject and RCT designs in a 3-stage R & D process, and (e) criteria used to classify evidence-based interventions and practice approaches.

Definitions and Key Characteristics of Randomized Control Trials

RCTs are typically large-scale studies that randomly assign individuals to an intervention or control group in order to measure the positive or negative effects of the intervention. RCTs are considered the surest way to avoid making serious mistakes on health, policy, and education issues that can affect the public well being and safety. Some seminal medical and education findings that have been validated by RCTs include vaccines, treatments for hypertension, cholesterol, and various forms of cancer; key educational findings established via RCTs are reduced class sizes in K-3 grades, reading and the role of phonemic awareness, and the impact of high quality early childhood development programs.

Advantages and Disadvantages of RCTs

RCTS provide the highest level of evidence that a treatment works or doesn't work. By testing outcomes against a randomly selected control group that provides a measure of ongoing, normal conditions in the treatment environment, RCTS create confidence that observed changes in the experimental group are due to the treatment and not to extraneous factors. The greatest disadvantages of RCTs are the time and effort involved in their effective implementation and dealing with educator or parental resistance and demands for compromises to the RCT design during implementation.

Single Subject Vs. RCT Designs Within Schools

Both types of research design have key roles to play in establishing the validity of potentially effective interventions. Single subject designs are regarded by many as invaluable in measuring and explaining sources of variability in behavior or performance while RCTs focus on controlling such variations statistically. Single subject designs have been used to good effect in identifying and testing the initial efficacy of treatment variables or components that appear promising for possible inclusion within a larger intervention package or approach. Single subject designs are noted for their strong internal validity.

In contrast to single subject designs, RCTs have stronger external validity due to the range of subject characteristics sampled by the random assignment of large numbers of participants to experimental and control conditions which, in turn, allows for broader generalization of treatment outcomes. RCTs also allow the calculation of effect sizes that provide an estimate of the magnitude of the achieved treatment effect. They also provide for subgroup analyses that contrast the performance of clusters of participants that share certain characteristics (e.g. gender, ethnic or racial background, disorder, etc.).

As a general rule, single subject designs are much more acceptable to educators due to their relative lack of complexity, their cost efficiency, the minimal intrusiveness of their implementation, and the fact that they do not require control groups or random assignment. However, while these designs allow study of the daily interactions of treatment and dependent variables, one disadvantage is that some educators object to the withdrawal of treatment for the purpose of establishing causal relationships.

Integrating Single Subject and RCT Designs in a 3-Stage Research and Development Process

Single subject designs are most efficiently utilized in the early or initial stages of an R & D process leading to development of a complex treatment package or intervention in order to (a) identify promising variables for inclusion in the larger package, (b) to test potential variables with diverse participant groups, and (c) to evaluate a small scale, prototype of the larger intervention. RCT group designs can then be used to aggregate treatment components into a larger package and test its efficacy against a control group or condition.

The author and his colleagues have used a three-stage model of this type to develop and test four behavior management packages—one each for the following behavior disorders: Acting Out Behavior, Peer Aggression, Social Withdrawal, and Academic Survival Skills. Stage one involved one year of research within a tightly controlled experimental classroom setting where daily interaction of treatment and dependent variables could be inspected. Stage two involved research within regular classroom and playground settings and generally involved two academic years of research and development. Stage three was focused on field testing in settings across the country in which we trained school personnel in school districts to implement the intervention under supervision of the developers in order to test its efficacy. Typically this model did not allow for testing the effectiveness of the intervention package and required one school year for implementation.

Criteria Used to Classify Evidence-Based Intervention and Practice Approaches

This section reviews the levels of evidence for evidence-based practices that are commonly used in scientific research. There are five evidence levels, each with specific indicators that range from Best Support through Known Risks and side effects associated with the intervention. Several sources are provided for the reader's convenience at the end of the ppt. along with instructions for accessing the presentation from the Web site of the Institute for Violence and Destructive Behavior at the University of Oregon.

The Role of Single Subject Research Design in Establishing Evidence-Based Practice Guidelines

By Dr. Susan M. Wilczynski, BCBA, National Autism Center

Evidence-based practice has become a very popular trend in most fields of health, service provision, and education. Although the term remains the same, the definition and procedures associated with different evidence-based practice guidelines vary. Often, differences in the definition and methodologies employed can make a tremendous difference in reported outcomes. Consumers must be aware of the definitions and methodologies employed in each evidence-based

practice guideline to understand the strength and limitations of each evidence-based practice guideline.

During the last three years, the National Autism Center has spearheaded an effort to establish an evidence-based practice guideline that systematically examines the strength of evidence for a broad range of educational and behavioral interventions for individuals with Autism Spectrum Disorders under the age of 22. For the purposes of the National Standards Project, evidence-based practice is defined as the integration of research findings with (a) professional judgment and data-based clinical decision-making, (b) values and preferences of families and students with ASD, and (c) capacity to implement interventions with a high degree of treatment integrity. Each of these components should be given due consideration as treatments are selected and implemented.

The remainder of this presentation focuses predominantly on the methodologies used in the National Standards Project. These methodologies are used to establish the strength of evidence for educational and behavioral treatments so that educators and other practitioners will have a concise resource describing the research findings that should contribute to evidence-based practice. However, this is not to suggest that the remaining components of evidence-based practice should be ignored or undermined.

Researchers have choices to make about the research designs they employ when answering research questions. Single subject research designs readily lend themselves to educational environments and are widely used to examine the effectiveness of educational interventions. It is unfortunate that they have been so widely ignored in the evidence-based practice movement. The National Standards Project involved the review of over 675 empirical articles on the treatment of Autism Spectrum Disorders. The vast majority of these studies relied on single subject research design. Like group research designs, single subject research design can be conducted with sufficient rigor to draw firm conclusions about treatment effectiveness. Similarly, weak group and single-case research designs have appeared in abundance in the scientific literature. Historically, evidence-based practice guidelines have restricted their reviews to studies employing group research designs. Given the fact that group and single subject research design each have advantages and disadvantages as well as strong and weak design, the exclusion of studies employing single subject research design is not warranted.

The National Standards Project established separate criteria for group and single subject research design. Each article was reviewed with respect to five dimensions: Research Design, Dependent Variable, Independent Variable, Participant Ascertainment, and Generalization. Scores on these dimensions were combined to produce a total score, the Scientific Merit Rating Scale score. In addition, all studies were coded to identify treatment effects. Those dimensions of the Scientific Merit Rating Scale and the Treatment Effects rating that directly relate to single-case research design are explored in further detail.

Research Design

The quality of research design that is used to establish a relationship between the independent and dependent variables is given the strongest weighting in the National Standards Project. Research design reflects to the extent to which experimental control was demonstrated in a given study. Studies that received higher ratings demonstrated more direct comparisons of the experimental and control conditions. Without sufficient replication of effects within a study, it is impossible to draw firm conclusions about treatment effects. In addition, in order to determine if differences across conditions exist, a sufficient number of data points must be collected per condition. Further, results must be established across multiple participants. Finally, in order to be most confident that true differences resulting from the application of experimental and control conditions exist, data loss should not occur.

Dependent Variable

The quality of the dependent variable is based on the degree to which accurate and reliable data were collected. Ideally, these data should represent a direct and comprehensive sample of the target behavior possible. Five factors influence the quality of the dependent variable. First, the quality of the dependent variable is influenced by the type of data collected. Specifically, whether the data collected were continuous or discontinuous was evaluated. In addition, the level of interobserver agreement influences the dependent variable rating. Without interobserver agreement estimates, it can not be known if a study reliably measured change across conditions. In addition, sufficient interobserver agreement requires that data are collected across a consider percentage of session and, ideally, that data

are collected across multiple conditions. Finally, the quality of the dependent variable can be influenced by the extent to which the dependent variable was operationally defined in the article.

Independent Variable

In recent years, researchers have increasingly recognized the importance of establishing treatment fidelity. The quality of the treatment fidelity describes the degree to which procedural accuracy was established in a study. First, data must be collected to demonstrate that the procedures have been implemented as reported in the study. Second, data need to be collected during an adequate number of sessions. Third, interobserver agreement data for treatment fidelity are ideally reported. Finally, the degree to which the control and experimental conditions are operationally defined can influence our confidence that the treatments could be implemented with a high degree of integrity.

Participant Ascertainment

The quality of participant ascertainment is determined by examining the extent to which well-established diagnostic tools and procedures are used to determine participant eligibility for inclusion in a study. Participant ascertainment is influenced, in part, by the involvement of a qualified professional in the diagnosis and/or confirmation of a diagnosis of an Autism Spectrum Disorder. Further, whether or not evaluators and independent and/or blind to the experimental conditions to which the participants are assigned can influence our confidence.

Generalization

For the purpose of examining the scientific merit of each study with respect to individuals with Autism Spectrum Disorders in the National Standards Project, we defined generalization as the degree to which researchers attempted to objectively demonstrate the spread of treatment effects across time, settings, stimuli, and persons. Separate data were also recorded elsewhere to determine if treatment effects were generalized when establishing a treatment had the strongest level of research support. However, the extent to which objective data were collected to measure if a skill was maintained and/or generalized was the primary focus when establishing the scientific merit for our intended purposes. Of note, measurement of generalization occurred with respect to the spread of treatment effects across stimuli, settings, and/or persons.

The Scientific Merit Rating Scale combines each of the dimensions described here. However, the Scientific Merit Rating Scale score does not reflect the treatment effects; rather, the Scientific Merit Rating Scale score reflects the extent to which the scientific community can draw firm conclusions about treatment effects specific to the Autism Spectrum Disorders population.

Treatment Effects

Once each article was assigned a SMRS score, it was further classified as having: (a) Beneficial Treatment Effects Reported, (b) Unknown Treatment Effects, (c) No Treatment Effects Reported, or (d) Adverse Treatment Effects Reported. Beneficial Treatment Effects are reported when sufficient evidence has been provided to demonstrate a treatment produced a positive outcome. Unknown Treatment Effects are reported when, given the research design and the quality of the data, it is impossible to ascertain what the treatment outcomes mean. No Treatment Effects are reported when sufficient evidence is available to show the absence of beneficial treatment effects is meaningful. Adverse Treatment Effects are reported when sufficient evidence has been provided to indicate a treatment has resulted in greater deficit or harm to participants. When the Scientific Merit Rating Scale and Treatment Effects are combined for each study and the results of all studies for a given treatment are aggregated, the strength of evidence regarding a treatment can be determined. However, these studies may reflect a combination of group and single-case research design. It is noteworthy, however, that more studies employing single subject research designs are required to obtain the same score as do those employing group design. This reflects the need for sufficient representation of participants and issues of validity when single subject research design is used.

All educational and behavioral autism treatment studies could not be included in the National Standards Project. One of the primary reasons a single subject research design study could not be included was because it did not rely on linear graphical presentation of data (e.g., bar graphs may have been used to display data). The advantages and disadvantages of this decision are discussed. Further, the importance of practitioners recognizing decisions like this one impact the final outcomes of evidence-based practice guidelines is considered. For this reason, practitioners should take an active role when utilizing evidence-based practice guidelines. That is, evidence-based practice guidelines should never be

used following a 'cookbook' method and practitioners should become familiar with information beyond the documents that might supplement their selection of a given treatment. Irrespective of the definitions and methodologies employed, practitioners must vigorously consider multiple sources of data presented in the evidence-based practice guidelines, direct empirical investigations, and the clients whom they serve.

Nailing the Educational Pendulum to the Wall
By Dr. W. David Tilly III, Heartland Area Education Agency

A major challenge for education into the early 21st century is to move modal teaching toward evidence-based practice. Great strides have been made throughout the past 30 years at documenting teaching practices that predictably promote learning. Indeed, in some cases, the question no longer is whether we know what works. The question is do we have (a) the technologies for deploying effective practices broadly in schools and (b) the will to implement them?

One framework for importing evidence-based practice into schools recently has been titled Response to Intervention (RTI), though many of the practices associated with it have between 20 and 30 years of research behind them. According to the National Association of State Directors of Special Education, RTI is defined as:

RTI is the practice of (1) providing high quality instruction/intervention matched to student needs and (2) using learning rate over time and level of performance to (3) make important educational decisions. (Batsche, G., Elliott, J., Graden, J., Grimes, J., Kovaleski, J., Prasse, D., et al., 2005).

RTI practices have emerged as a reaction to four sets of converging influences: (1) Successive attempts to bring science into educational practice, (2) the emergence of an increasing number of evidence-based practices, (3) the evolution of social policy contexts, and (4) advances in systems engineering in schools.

The first influence on the emergence of RTI is the increased sophistication of methodology for bringing science into applied educational practice. Many approaches to importing science into education practices exist, whether explicitly or implicitly referenced as such. These include Behavioral Consultation (Bergan & Kratochwill, 1990; Kratochwill & Bergan, 1990; Sheridan, Kratochwill, & Bergan, 1996); the IDEAL problem solving model (Bransford & Stein, 1984); Functional Analysis of Behavior/Functional Behavioral Assessment - (Repp & Horner, 1999; Tilly III et al., 1998); The Scientist Practitioner Model (Barlow, Hayes & Nelson, 1984); Curriculum-Based Measurement (Deno, 2002; Shinn, 1989); Applied Behavior Analysis (Baer, Wolf & Risley, 1968), Action Research (Calhoun, 1994); Heartland AEA's Problem Solving Model (Reschly & Ysseldyke, 1995). Each model contains unique features, protocols, and language. In some cases, specific philosophies of science or theoretical orientations predominate and differential emphasis is placed on alternate parts of the process. With each successive attempt to bring science into applied educational practice, important lessons have been learned that guide improvement. Many of these improvements have been incorporated into generalized RTI models.

A second influence supporting the emergence of RTI is the increased availability of education practices with solid research foundations. Particularly in the areas of promoting pro-social behavior in schools (e.g., Simonsen, Sugai, & Negron, 2008; Sugai & Horner, 2008) and in preventing reading failure (e.g., National Reading Panel, 2000), increasing numbers of applied approaches and strategies have become available for deployment in schools. A third factor supporting RTI practices is the national movement toward educational accountability (e.g., Floch, K. C., Taylor, J. E. & Thomsen, K., 2006). Since the 2002 passage of the No Child Left Behind revisions to the Elementary and Secondary Education Act, schools have become accountable for every student's learning basic skills to at least a minimum level of proficiency. As such, many schools are looking for comprehensive, school-encompassing strategies to develop skills proficiency for all students. RTI by its very design addresses this issue. The final impetus for RTI in schools results from improved models for engineering service delivery in schools (e.g., Tilly, 2008). Historical structures in schools evolved over time with a multiplicity of purposes, frameworks and administrative structures. With the adoption of tiered models of service delivery, a new framework for engineering educational systems with a unified focus has emerged.

Predictable Phases of Implementation

At Heartland AEA in central Iowa, we have been implementing RTI practices for 18 years. Implementation of RTI in practice typically proceeds through three stages. The first stage is consensus building – where RTI concepts are communicated broadly to implementers and the foundational "whys" are taught, discussed and embraced. The second phase is infrastructure building – where sites examine their implementations against the critical components of RTI, find aspects that are being implemented well and gaps that need to be addressed. Infrastructure building centers around closing these practice gaps. The third phase is implementation – where the structures and supports are put in place to support, stabilize and institutionalize RTI practices into a new "business as usual." These phases of implementation track rather closely to the stages of the implementation process identified by Fixsen, et al. (2005).

Nailing the Pendulum to the Wall

The process of creating sustainability in evidence-based practices such as RTI results from careful and planful attendance to systems components that serve to occasion and reinforce professional behaviors. The next section identifies a series of components that we have found through experience in Iowa, to be directly related to the creation of sustainability.

Component 1: Identify principles of effectiveness and values. It is best to predicate practices in schools on principles of effectiveness rather than specific technologies or specific practices. In RTI systems, these principles take into account both the foundational values we hold about serving children and families as well as incorporating findings from the research literature. So, for example, a principle of effectiveness might be "monitor progress frequently and make instructional changes as data warrant" instead of stating "adopt Curriculum-Based Measurement (CBM)." At the current time, CBM is one of the most effective progress monitoring technologies available, and Heartland schools use it extensively. However, our practices are based on the principle of progress monitoring, rather than the technology. This type of focus allows practices to improve over time as our knowledge base evolves. That is, while we use CBM extensively in our system, if better technologies become available to monitor student performance over time, we will adopt them, consistent with our basic principles. The foundational principles that were used in Iowa during our major shift to RTI practices can be found at http://www.aea11.k12.ia.us spr/RSDSNeedsPrinciples.pdf.

Component 2: Align professional practices with principles of effectiveness. Once principles of effectiveness are written, the next piece to align is specific practices. As systems transition from historical systems to RTI systems, implementing practices based on the principles of effectiveness require new behaviors on the part of nearly everyone in schools. Conversations must be held about which behaviors and professional practices are aligned with the system's principles of effectiveness. These are difficult discussions because while past practices were based on the best available information and technologies, the principles of effectiveness cause a critical review, and in many cases rejection of past practice. The critical point to emphasize in this conversation is that implementing RTI is more about evolution than it is revolution. Past practices were not wrong. We simply know more now, we have better research, and there are improved technologies available to help us meet our principles of effectiveness. What would be a problem would be to not take advantage of what we have learned about instructional interventions since we began moving toward RTI. An example of defining professional practice behaviors consistent with principles of effectiveness was created by the Iowa AEA Directors of Special Education in 1994. This document, titled Professional Practices in Problem Solving, can be accessed at http://www.aea11.k12.ia.us/spr/ProfPracticesInProbSolving.pdf.

Component 3: Align procedures manuals with expected behaviors and principles. Once professional practices have been defined, it is important that these practices find their way into policy and procedures at the agency level. This level of codification serves a number of purposes. It clarifies expectations and defines specifically what behaviors are expected of professionals within the agency. Procedures manuals also serve as one standard against which professional practice will be held if ever challenged. Heartland has written an extensive procedures manual that supports comprehensive problem-solving practices. The modules can be accessed under "Special Education Manual" at http://www.aea11.k12.ia.us/spedresources/.

Component 4: Align professional development and skills coaching with procedures manual. When first implementing RTI practice, literally every

professional in the system will need to develop new skills and competencies. The professional development to assist in this skill development must align closely with the procedures, practices, and principles that have been developed. It must be skill-focused, performance-based and criterion-referenced. That is, it must incorporate a clear scope and sequence, it must allow for much practice in the new skills, there must be opportunities for coaching and feedback, and there must be a criterion of performance that all staff is trained to. One effective way to set this standard of performance is to create Practice Profiles (Hall & Hord, 2001) that identify different ways that specific skills might be implemented. Each of these different implementations represents a different level of proficiency along the road to competency. The Professional Practices in Problem Solving document identified earlier is written substantially as a set of practice profiles. The advantages of aligning your professional development with practice profiles are many. Primarily, however, practice profiles communicate to professionals that the skill development associated with problem solving exists on a continuum and there is an expectation that skill development will occur over time. They communicate specific behaviors that are needed and they give professionals a way to benchmark their progress across time as their skills grow.

Component 5: Align job descriptions with expected behaviors. Once your system has committed to implementing a problem-solving model of service delivery, it is important to realign job descriptions and the hiring process with expected competencies for the new role. As more systems move toward implementation of RTI practices, it will become increasingly possible to hire professional with proficiency in RTI practice. The questions on your job interviews should reflect the competencies from the job description and the rating criteria for candidate's answers should reflect variation in knowledge and skills related to these competencies. Heartland's school psychologist job description, as an example, can be reviewed at http://www.aea11.k12.ia.us/employment/schoolpsychologist.html.

Component 6: Align reinforcement systems with expected behaviors. It is no secret that systems contingencies govern much professional behavior. As educators are learning new knowledge and skills, leaders must align contingencies in the system to reinforce the right behaviors. Many behaviors are governed by contingencies associated with procedural compliance with Federal and state laws (e.g., evaluation timelines, providing parents appropriate notices, holding meetings with the right participants). Some of these cannot be avoided. However, these are not the behaviors most related to improving student functioning. When transitioning to RTI, contingencies must be arranged to reinforce improved professional behaviors as well. For example, paying attention to the number of student graphs a staff member is involved with that demonstrate significant progress would be preferable to examining how many "assessments" a school psychologist completed in a given time period. Or, asking staff to present to their colleagues on some of the new practices they are implementing is preferable to having someone from one of the big testing companies come in and talk about the "new version" of a widely-used, nationally-noted test. The general rule is to align reinforcement opportunities with the behaviors that are expected in the new system and to ensure that the reinforcers get delivered contingent upon the desired professional behavior.

Component 7: Align professional staff evaluation process with expected behaviors. A final component to put in place that supports and fosters RTI practice in schools is an evaluation process that is predicated on and consistent with successful implementation of problem-solving processes in practice. While this is an important component of overall systems alignment, it is probably the last component that should be put in place. Professionals need to have time to learn, implement, and experience RTI practice prior to being held accountable to those practices. As such, RTI training and coaching need to be in place for several years before aligning the evaluation system to allow professionals adequate time to grow and develop.

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Using RTI to Accomplish System Change

By Dr. Amanda VanDerHeyden, Education Research and Consulting, Inc.

Response to Intervention (RTI) is a science of data-based decision making to identify children in need of educational intervention and to deliver intervention to those students in the most efficient and least intrusive way. RTI is both logical and empirically supported as a vehicle for system reform and student learning. Direct performance data are used to identify where learning deficits are present, data are collected to identify interventions that are likely to be effective to resolve that particular learning problem, and then the intervention is implemented while progress monitoring data are collected to ensure that the intervention is having the desired effect. These data are used formatively to enhance intervention effects, and summatively to evaluate whether or not more intensive services should be provided. Children in need of more intensive intervention services can be made eligible to receive those services through special education resources, rendering nearly obsolete the need to determine disability prior to intervention service delivery in school systems. Hence, RTI is a system of prevention, where intervention services are provided at first notice of a learning problem and a child's response to those interventions may serve as the basis for determining the need for additional services.

RTI is rooted in behavior analysis in education. Both in principle and in implementation, RTI is a process that adheres closely to the ideals and science of applied behavior analysis. Specifically, RTI maintains a keen focus on consequential validity (Messick, 1995) because the decisions are driven by child performance data collected in the settings in which the child must function to realize full adaptation or success (Fuchs & Fuchs, 1998). Procedurally, there is an emphasis on brief, direct measures of student performance (Deno, 1985; Starlin, 1979; White & Haring, 1981) collected at routine intervals to evaluate the effects of interventions and inform subsequent decisions about intervention need (Barnett, Daly, Jones, & Lentz, 2004). Brief experimental analyses of academic responding (Daly & Martens, 1994; Daly, Martens, Hamler, Dool, & Eckert, 1999; Daly, Martens, Kilmer, & Massie, 1996; Daly, Witt, Martens, & Dool, 1997) have been and will continue to be featured prominently in viable RTI models as school personnel struggle to identify effective interventions for the small number of students who fail to respond to standard interventions implemented with integrity. Direct instruction-type interventions are featured prominently in RTI models (Carnine, Silbert, Kame'enui, & Tarver, 2004). Finally, viable models include direct measures of intervention implementation or treatment integrity (Witt, Noell, LaFleur, & Mortenson, 1997) and include procedures for enhancing integrity. At the same time, RTI represents an extension of applied behavior analysis first forecast by Deno & Mirkin (1977) in developing decision rules that include both functional and norm-referenced criteria. This extension is critical because this extension is what has permitted RTI to become a system of educational decision making that is replicable and applicable as a model of system change.

RTI efforts are organized across tiers (generally three tiers of increasing intensity) with each tier representing more intensive/costly services and serving smaller numbers of children. Tier 1 is universal screening. Curriculum-based measurement (CBM) probes in reading, math, and writing are administered class-wide following standardized directions (Shinn, 1989). Screening requires approximately 1 hour and yields a fluency estimate of reading, math, and writing performance on a task that reflects expected grade-level performance at that time in the instructional program. Screening provides information about whether or not the core instructional program is working well for most students, which individual students or classes are at risk relative to their peers, and also provides a logical and efficient basis for evaluating the effects of supplemental programs (e.g., children receiving Title 1 services, children receiving special education services, children from certain demographic groups). Decision rules are applied to the data to identify which children are at risk relative to their classmates. Under the Screening to Enhance Educational Performance (STEEP) RTI model, the data are first examined to rule out a class-wide learning problem. If the class median score falls in the frustrational range (Deno & Mirkin, 1977), then a class-wide intervention is implemented prior to working with children individually from that class. Class-wide intervention follows a standard protocol and includes basic elements of direct instruction (modeling, guided practice, timed independent practice for a score with delayed error correction) using grade-level materials. When the class median reaches the mastery range on that task, any children remaining in the frustrational range are identified for further assessment. When class-wide problems are rare in a school, class-wide intervention is considered a Tier 2 intervention activity. When class-wide interventions are prevalent, then class-wide intervention is treated as a Tier 1 activity and efforts are made to examine the core curriculum for enhancement in addition to more intensive school-wide intervention efforts.

If the screening ruled out a class-wide learning problem, then a decision rule is applied to identify individual children in need of further assessment. STEEP applies a two-step rule that reflects both a local comparison (normative) and a functional criterion (external to the instructional program). Under STEEP, children who are in the bottom 16% of their classes and perform below the functional criterion (Deno & Mirkin, 1977) proceed to Tier 2 assessment which is the performance/skill deficit assessment (for full implementation details, see VanDerHeyden & Witt, 2008). This assessment is grounded in the brief experimental analysis research and is a brief assessment to test the effects of incentives on child performance. Standardized directions are followed to administer the assessment and if the student's score improves with incentives to surpass the criterion, then no further assessment is conducted. If the student's score does not surpass the criterion, then the child proceeds to Tier 3 assessment and intervention.

At Tier 3, a brief individual assessment session is conducted to identify instructional level materials for

intervention, to select rewards, and to conduct a brief trial of the intervention (to ensure intervention effects). All intervention materials are then provided to the classroom teacher or peer tutor and training is conducted to ensure that the teacher or peer tutor can independently follow the intervention protocol to correctly complete all the steps of the intervention. Once training is complete, the intervention begins. At this point, the RTI consultant works with the child once per week to administer a generalization probe, an integrity check, and to troubleshoot intervention effects. If performance on the generalization probe does not surpass the criterion following 15 consecutive days of intervention implemented with integrity, then this information is shared with the school special education referral team with a recommendation to consider a full psycho-educational evaluation for the student. Data collected at routine intervals (e.g., screening data collected three times per year) provide an opportunity to follow-up on children who have received intervention with a successful response and continued in the general education curriculum without assistance.

Research examining the components of RTI models (e.g., screening, intervention) are prevalent (Vaughn, Linan-Thompson, & Hickman, 2003; Vellutino et al., 1996). Research has also occurred examining the overall model (screening, intervention, outcome decision-making) with researchers implementing most of the procedures (Case, Speece, & Molloy, 2003; Speece, Case, & Molloy, 2003). Research findings evaluating RTI implementations in districts have been somewhat rare. Dr. VanDerHeyden will describe findings from her own research ranging from experimenter-implemented procedures to a district-wide implementation trial where RTI procedures were implemented by school personnel. Data will be shared concerning the diagnostic or decision-making accuracy of RTI-based risk judgments relative to other sources of identification like teacher referral (VanDerHeyden, Witt, & Naquin, 2003); the effect of RTI procedures on proportionate identification of children for special education services (VanDerHeyden & Witt, 2005; VanDerHeyden, Witt, & Gilbertson, 2007); the percentage of children identified and at Tiers 1, 2, and 3 (VanDerHeyden et al., 2003; VanDerHeyden et al., 2007); the effect of RTI data on special education referral decisions (both number and accuracy) at the school level (VanDerHeyden et al., 2007); the relative cost of RTI procedures and traditional referral, evaluation, and placement costs (VanDerHeyden et al., 2007); and effect of RTI procedures on student learning outcomes (VanDerHeyden & Burns, 2005; VanDerHeyden, Witt, & Gilbertson, in preparation).

Dr. VanDerHeyden will discuss how to plan and implement RTI within schools in ways that promote the capacity of schools to use data to improve every day instruction and schooling decisions. District-wide implementation in Vail Unified School District will be described as a case example for participants. Data will be shared concerning effective ways to enhance learning within a system using RTI. Current data on educational decision-making as well as ideas for the future will also be highlighted.

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A Place at the Education Reform Table: Why Behavior Analysis Needs To Be There, Why It's Not as Welcome as It Should Be, and Some Actions that Can Make Our Science More Relevant

By Dr. William L. Heward, BCBA, The Ohio State University

Improving the effectiveness of public education is one the most important challenges facing U.S. society today. For more than four decades behavior analysts have provided powerful demonstrations of how their science can promote learning in the classroom. In spite of this evidence, behavior analysis is, at best, a bit player in our country's efforts to reform education.

Observational studies consistently reveal a huge gap between what research has discovered about effective instruction and what is practiced in the majority classrooms. The scope and depth of the knowledge-to-practice gap in education has caused many behavior analysts to lament its existence, discuss and analyze possible reasons for it, and suggest ways to shrink it (e.g., Axelrod, 1991, Baer & Bushell, 1981; Binder, 1994; Carnine, 1992, 1997, 2000; Deitz, 1994; Fowler, 1994; Greer, 1983, 1991; Heward & Cooper, 1992; Kohler & Strain, 1992; Lindsley, 1992; Skinner, 1984; Stone, 1991). This presentation is an effort to extend and contribute to that discussion. I identify a dozen attributes of applied behavior analysis (ABA) that make it well-suited to help improve education,

review characteristics of ABA and those of contemporary education philosophy that impede the acceptance and adoption of behavioral practices in the classroom, and suggest some actions that educators, practitioners and researchers can take to enhance and further ABA's contributions to effective education.

Why ABA Is Good for Education

The defining dimensions of ABA (Baer, Wolf, & Risley, 1968, 1987; Cooper, Heron, & Heward, 2005), characteristics of ABA-inspired lesson plans and instructional strategies, and effects on student learning when those teaching plans and strategies are implemented systematically suggest that ABA is good for education for the following reasons:

1. ABA is meaningful.
2. ABA is effective.
3. ABA is focused.
4. ABA is broadly relevant.
5. ABA is self-correcting.
6. ABA is accountable.
7. ABA is public.
8. ABA is doable.
9. ABA is replicable.
10. ABA is empowering.
11. ABA is optimistic.
12. ABA knows motivation.

Why ABA's Impact on Education Has Been Limited

After considering the impressive list of ABA's positive attributes, one might reasonably exclaim, "Wow! What's not to like about ABA? It is all good for education." The following list of reasons may help to explain why ABA has not had anywhere near the impact and influence on education its positive characteristics suggest that it should:

1. ABA's basic assumptions about the purpose and process of education are incompatible with the views of many educators.
2. ABA's data do not interest educators.
3. ABA's data do not matter because educational decisions are seldom informed by data on student learning.
4. ABA's empirical pragmatism is antithetical to education's retreat from objective science.
5. ABA seems too simplistic.
6. Other approaches promise more.
7. ABA's use of reinforcement goes against current beliefs in education.
8. ABA is an easy mark for criticism.
9. Some teachers view ABA as a threat to their creativity and independence.
10. ABA places the responsibility for student learning on teachers and schools.
11. Implementing behavioral approaches yields too little reinforcement for teachers.
12. Behavioral educators have insufficient understanding and control of the contingencies that govern the adoption and maintenance of effective practices.
13. ABA has yet to prove its value to the students about whom society cares most.
14. Improving education is not an urgent mission for society.

Reconciling the Opposing Reasons

As a partner and contributor to improved education, ABA has a lot to recommend it (e.g., it's meaningful, focused, effective, self-correcting, doable, replicable, and so on). Unfortunately, many educators perceive ABA as a largely irrelevant approach based on a mechanistic worldview and an overly simplistic theory. While some educators recognize ABA as a source of techniques for managing problem behavior, few appreciate what ABA can contribute to curriculum design and academic instruction.

If the reasons given here regarding ABA's value to—and lack of adoption by—education are on the mark, many of ABA's strengths are also its weaknesses: ABA's predisposition for explicit instruction of carefully defined skills is viewed as out-of-context teaching; ABA's emphasis on direct and frequent measures of student performance is thought to obscure authentic learning, if not prevent it altogether; ABA's requirements of procedural fidelity and repetition are viewed as threats to teachers' independence and creativity; ABA's use of reinforcement is thought to have detrimental effects on students, and so on.

What can those who wish to see ABA play a more influential role in education do? Four actions that may help are described here.

Develop a Technology of Adoption. Although ABA has produced a scattered research literature on factors that influence the adoption and sustained use of instructional practices by teachers and schools, such studies represent a very small fraction of behavioral research in education. Most behavior analytic research in education consists of discovery-oriented studies designed to demonstrate the effectiveness of various curricular and instructional arrangements. Perhaps this is because researchers

believe that discovery-oriented research is more glamorous or is held in higher regard by university promotion and tenure committees. I have heard academicians state that before an investigator can conduct meaningful research on the dissemination and adoption of a science-based educational strategy, he or she must first be heavily involved in fundamental research designed to discover and analyze the functional variables and principles that comprise the strategy. I disagree.

Limiting research on dissemination and adoption to the small circle of investigators involved in the original discovery process is an inefficient and unnecessarily slow way to turn scientific discovery into technological applications. Developing an effective technology of adoption will require the combined and sustained efforts of many behavioral researchers and school practitioners working together. It will require not just more and better applied research, but also more and better applied practice (Johnston, 1996, 2000; Moore & Cooper, 2003). A positive sign for the future of education would be a sizeable number of early career behavior analysts dedicating their professional lives to studying the adoption and sustained use of evidence-based strategies.

Keep Telling Our Story. I agree with Foxx (1996), who said that every behavior analyst has been entrusted with a covenant to do everything possible to ensure the survival and success of the science. Behavior analysis must be promoted, not because it is "the right way," but because it offers society a scientific approach to human affairs—in this instance, to one of society's most important responsibilities: education—that is "unrivaled in its effectiveness" (p. 147).

Although the effective discussion and advancement of any science requires a technical language consisting of terms with precise and limited meanings, the scientific language of behavior analysis limits its attractiveness and accessibility to many educators and the public in general (e.g., Axelrod, 1992; Bailey, 1991; Foxx, 1996; Lindsley, 1992; Neuringer, 1991; Rolider & Axelrod, 2005). Behavior analysts must describe what they have to offer education in the language of the larger culture as that language is reflected in educational practice. Instead of avoiding words like critical thinking and self-regulated learners, behavior analysts should be helping teachers identify and apply alterable variables that will make their goals for students a reality (Fowler, 1994; Schwartz, 2005).

Maintain a Realistic Optimism. Given that most of the fundamental strategies of ABA have been "visible and available to education" (Baer & Bushell, 1981, p. 260) for decades, the size and protracted nature of the knowledge-to-practice gap is especially frustrating. However, there are reasons to remain optimistic. One reason is the continued progress within ABA to design curriculum and instructional practices with ever-increasing effectiveness (e.g., Twyman, Layng, Stikeleather, & Hobbins, 2005). The growing number of behavioral educators and school programs provides another reason for optimism. Although behavior analysts comprise a tiny percentage of professionals in education, there are more behaviorally oriented teachers and teacher education programs today than ever before (e.g., Alber & Nelson, 2005; Maheady, Harper, & Mallette, 2005; Webber, 2005), and there are more schools employing thoroughgoing behavioral systems that can serve as models for administrators and program developers (e.g., Johnson & Layng, 1994; McDonough et al., 2005). Additional hope that ABA may have an increased role in education might be found in federal legislation such as the No Child Left Behind act and the Reading First grants, and the Response to Intervention approach within the Individuals with Disabilities Education Act, which emphasize explicit instruction and data based accountability.

Keep Nibbling. The best advice I have heard about how each of us might help close the knowledge-to-practice gap in education came from Fred Keller. When asked how behavioral educators could best promote and advocate for effective instruction in the schools, Keller replied:

> The best advice I ever heard was offered by a friend of mine, Burrhus Skinner. . . Someone asked him what we can do to promote better education. Skinner was silent for a moment, then he said, "Well, I guess we just keep nibbling." I take that to mean to keep on working is a small way, keep on promoting good things. When you see something good taking place, reinforce it if you can. When you see something going in the right direction, praise it. Anytime you see a model school that looks as if it's applying good behavioral principles, give it your support. I believe the process is something like shaping. Don't expect many big changes to take place. There's not going to be any revolution. But maybe, if we all keep on nibbling, we can change education. I don't know of any

other way. (F. S. Keller in Heward & Dunne, 1993, p. 343) finalize

Keller and Skinner offer us wise counsel. When we see a teacher or school doing something good, we should try to reinforce it. We should not think that a teacher's or a school's effort must meet the technical rigor and conceptual purity of a study in the Journal of Applied Behavior Analysis before we recognize it as "behavioral" and worthy of our support. Doing so will cause us to miss opportunities to make inroads, friends, and partnerships. Such an approach could put behavior analysts in a can't-see-the-functional-forest-for-the-topographical-trees situation in which we do not recognize effective applications of behavioral strategies because we are looking for them by formal characteristics instead of by their outcomes; for example, failing to recognize an effective application of programming for generalization because the procedure is described as a "cognitive learning strategies" approach. Such a mistake is akin to a fundamental error that Skinner (1953) warned us about half a century ago: defining an operant by its topography instead of its function.

The primary goal of behavior analysts working in education should not be getting education to do more and better ABA; our goal should be helping education do better. We must remember that it is the product (student achievement and learning), not the process (and certainly not what that process is called) that is important. Because ABA is all about the analysis of function, it is ideally suited to help discover and refine educational practices that will produce improved learning. This is the essence of applied behavior analysis and the most important reason why it is good for education.

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Teacher Stress and Collegiality: Overlooked Factors in the Effort to Promote Evidence-Based Practices

By Dr. Anthony Biglan, Oregon Research Institute

Teachers' psychological well-being and school culture are important in preventing adolescent problems and ensuring successful youth development. Teachers report considerable stress, burnout, and depression (Bauer et al., 2006; Jurado et al., 1998; Kyriacou, 2001; Schonfeld, 1990, 1992). Makinen and Kinnunen (1986) studied teacher stress over a year. Stressed teachers had more illness, medicine intake, anxiety, depression, and sexual passivity. Those high in burnout reported more psychological and psychosomatic symptoms (Bauer et al., 2006).

Teachers also have alcohol and other substance issues, with stress as a major contributor. Watts and Short (1990) found a higher rate of alcohol use among elementary teachers than for all occupations (12% had five or more drinks in a row in the past week, and 6% three or more times in the prior 2 weeks). Teachers were higher than the national sample on lifetime amphetamine and tranquilizer use. Fimian et al. (1985) studied alcohol and OTC drug use among 1,788 teachers (6 to 11% reported a great-to-major need for substances to manage stress; 3 to 11% used them daily or near daily). The Index of Teacher Stress accounted for up to 24% of the variance in total substance use. According to Jarvis (2002), a survey of teachers indicated that 40% saw doctors for stress-related problems,

20% felt they drank too much, 15% considered themselves alcoholics and 25% suffered from problems including "hypertension, insomnia, depression, and gastrointestinal disorders."

Teachers' Effectiveness

Teachers' psychological wellbeing is related to their ability to deal with student behavior; the relationship is certainly reciprocal. Student misbehavior is a major teacher stressor (Abel & Sewell, 1999; Borg et al., 1991; Chan & Hui, 1998; Dorman, 2003; Kelly & Berthelsen, 1995; Makinen & Kinnunen, 1986; Manassero et al., 2006; Newmann et al., 1989). Depression and burnout are more likely in schools with high levels of student disruptiveness (Beer & Beer, 1992; Dorman, 2003; Hastings & Bham, 2003; Schonfeld, 1992). At the same time, distressed teachers are less able to handle misbehavior or provide nurturance. Their intolerance of challenging behavior (Kokkinos, Panayiotou, & Davazoglou, 2005) impairs their ability to handle it. Yoon (2008) found elementary teachers who reported stress in handling student misbehavior had much more negative relationships with students. Burnout also has a relationship to teachers' uncertainty about dealing with problem behavior. Just as parental depression can increase parents' attention to children's negative behavior (e.g., Johnson & Jacob, 1997), depressed teachers fail to handle students' misbehavior as well as they could.

Attrition, Turnover, and Absenteeism

Teachers quit at much higher rates than those in other careers do (9% in their first year, 20% within three years, and 30% by five years; NCES, 1997). Losing teachers constitutes national loss, given the teacher shortage (e.g., CAPE, 2000) and the high cost of replacement (AEE, 2005). High turnover, when teachers transfer to escape stressful conditions (Ingersoll, 2001) hampers educational effectiveness. More qualified teachers have high turnover rates (Lankford et al., 2002; Podgursky et al., 2004). Finally, many who continue teaching still want to leave. Jackson et al. (1986) found that many teachers who scored high on burnout stayed, despite preferring to leave the job (and sometimes education itself). Only 39% of those who stayed said they wanted to; 30% said they would rather leave.

Miller et al. (1999) surveyed 1,576 Florida special education teachers and examined predictors of their leaving the field or transferring in two years. Perceptions of high stress and poor school climate were two of the most important predictors of leaving or transferring. Jackson et al. (1986) studied burnout among New Hampshire teachers and found all three burnout dimensions predicted whether teachers had left teaching a year later. Collegial social support predicted personal accomplishment. Role conflict predicted emotional exhaustion, which predicted turnover. Bartoli (2002) found a significant relationship between emotional exhaustion (on the

Maslach Burnout Inventory) and absenteeism among teachers and paraprofessionals.

Other factors associated with teacher attrition involve school organization. They include administrative support (Betancourt-Smith et al., 1994; Certo & Fox, 2002; Ingersoll, 2001), student discipline problems (NCES, 1997; Certo & Fox, 2002; Langdon, 1996), colleagues' social and emotional support (Grant, 1988; Guarino et al., 2006; Kim & Loadman, 1994; Parsons, 1959; Rosenholtz, 1985; Shann, 1998), and professional development, participation in decision-making, and support for student discipline (Yee, 1990).

Experiential Avoidance (EA): A Core Process in Psychological Wellbeing

The problems occurring among teachers may relate to a newly identified core psychological process called experiential avoidance. EA is the tendency to try controlling the form or frequency of thoughts or feelings even when doing so causes behavioral or psychological difficulties. Growing evidence indicates that EA contributes to diverse problems.

In our research (Biglan et al., in preparation), we found EA associated with diverse measures of psychological wellbeing among both middle and preschool teachers. Among 127 teachers and administrators from 16 middle schools, we found EA significantly associated with teacher depression, stress ratings, satisfaction with living, and self-efficacy as teachers. We found similar results among 61 preschool teachers and home care providers.

Although related to measures of psychological wellbeing, EA is a distinct construct associated with varied psychological and behavioral difficulties. Bond et al. (in preparation) assessed psychometric properties of a 10-item measure of EA, the Acceptance & Action Questionnaire II. They collected data from 2,226 subjects. The measure did not correlate with a measure of social desirability and, despite strong relationships with other psychological functioning measures, a confirmatory factor analysis involving items from the AAQII, BDI (Beck et al., 1961), BAI (Beck et al., 1988), GHQ (Goldberg, 1978), Negative Affectivity, and Big Five factors (Goldberg, 1993) showed the AAQII measured a construct distinct from the others.

Two ideas may explain how EA can relate to so many problems (Biglan et al., in press). People try to avoid stressors and reactions to them; thus, stress of any sort is likely to increase people's tendency toward EA. Efforts to control thoughts and feelings instead exacerbate them (Marcks & Woods, 2005; Wegner & Erber, 1992). Thus, diverse stressors increase EA, which, in turn, locks people into struggles with whatever distress their situation and their history bring them.

The Value of a Collegial School Culture

Studies of correlates of teacher wellbeing consistently stress the benefits of a positive school culture. The primary dimensions of these cultures include (a) colleague supportiveness (Brouwers et al., 2001; Burke & Greenglass, 1995; Burke et al., 1996; Chan & Hui, 1998; Dussault et al., 1999; Gersten et al., 2001; Griffith et al., 1999;

Newmann et al., 1989; Talmor et al., 2005a; 2005b); (b) principal (Burke & Greenglass, 1995; Brouwers et al., 2001; Davis & Wilson, 2000; Gersten et al., 2001) and other administrative support (Betoret, 2006; Burke & Greenglass, 1995; Newmann et al., 1989); (c) participatory decision-making (Ingersoll, 1996); (d) autonomy (Burke & Greenglass, 1995; Ingersoll, 1996); and (e) shared values and goals (Burke & Greenglass, 1995; Chubb, 1988; Dorman, 2003). Support is particularly important for new teachers. Smith and Ingersoll (2004) found that new teachers with mentors (particularly related to collegial support) in their first year were less likely to leave or transfer. On average, 29% of new teachers changed schools (15%) or left teaching (14%). Without mentoring, the probability of leaving rose to 40% (Smith & Ingersoll, 2004).

Evidence suggests that building cooperative relations and having a shared commitment to common purpose among staff are critical to a school's success. Besides supporting teacher wellbeing, collegiality benefits school effectiveness. Bryk and Driscoll (1988) identified features of the school community associated with effectiveness: (a) shared values about the school's purpose, (b) clear expectations for students and staff, (c) high expectations for learning, (d) an agenda of activities designed to foster meaningful interactions among school members, and (e) caring social relations. Other studies show greater gains in academic achievement in schools with faculty, student, and parent participation in determining a school's goals and practices (e.g., Cook et al., 2000; Hallinger & Heck, 1998). Battistich and colleagues found that improving a sense of community is associated with various positive outcomes (e.g., lower levels of student drug use, delinquency, and other problem behaviors; Solomon

et al., 2000). Rowan et al. (1997) found that teacher control of decision-making led to higher student achievement, when controlling for other correlates of achievement.

The Value of ACT for Teachers and School Organizations

An acceptance-focused intervention to reduce EA can ameliorate teacher burnout and depression while increasing teachers' work commitment and openness to evidence-based practices. Our recent work indicates that such an intervention can foster a more socially supportive, caring, and dedicated school culture to benefit staff and students. Acceptance and Commitment Therapy or Training (ACT; Biglan et al., in press; Hayes et al., 2006; Hayes et al., 1999) applies acceptance, mindfulness, commitment, and behavior change processes to reducing EA.

In a pilot, we evaluated the impact of workshops with 61 people in a randomized wait-list control group design. We implemented the study in a preschool for children with developmental disabilities and with a group of consultants to families of children with developmental disabilities. We replicated it with home childcare providers. The preschool (Early Education Program) is a large countywide provider of preschool services to children with developmental disabilities and typically developing youngsters. For the preschool, teams (consisting of lead teachers and assistants) by random assignment took the workshop immediately or three months after the first group did. We randomized consultants individually to the two conditions. Participants completed assessments four times—five weeks, four months, and six months after the pretest. In the replication with home care providers, only three assessments occurred.

The intervention consisted of two 3.5-hour workshops given two weeks apart for the immediate group and three weeks apart for Delayed. We based the workshops on descriptions of other ACT workshops provided to work organizations (Bond & Bunce, 2000; Hayes et al., 2004) and on Dr. Biglan's training and experience in providing ACT clinically. The intervention included experiential exercises and metaphors designed to promote acceptance of unpleasant thoughts and feelings and the pursuit of valued actions even in the context of such thoughts and feelings.

Our analysis showed that the workshops affected three subscales measuring aspects of EA. There was evidence that the workshops increased people's ability to attend to their inner experience as indicated by the Observing/Noticing/Attending to Inner Experience Subscale. Workshop participation led to significant improvements on stress ratings and on ratings of efficacy in teaching or working with children. The analyses showed no effect on participants' depression, but the proportion of participants in Immediate who were depressed declined significantly after the intervention and remained significantly lower at T3 and T4.

Besides benefitting individuals, the intervention aided substantial change in the culture of the Early Education Program. Since a majority of EEP staff participated and the preschool Director was one of the workshop presenters, it was possible to use ACT principles in everyday preschool activities. In training, supervision, and collaboration, it became common for staff to acknowledge and accept their own and other's feelings and thoughts. It became more common to take and give critical feedback because staff did not have to avoid the feelings that arose in such situations; they increasingly recognized their thoughts and feelings as what they were—not a frightening reality they had to avoid. Since implementing the ACT workshops, the preschool has implemented two major innovations. First, they put Positive Behavior Support (PBS) into service throughout the preschool. PBS for preschools creates routines for common daily activities and richly reinforces adherence to those routines. Second, they implemented the PATHS Preschool program (Domitrovich & Greenberg, 2000) in all 19 classrooms. It teaches young children about emotions and ways to handle them. The Director reports that the speed, acceptance, and success of these implementations were unprecedented in her 20 years in charge of the preschool.

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Implementing Applied Behavior Analysis at Socially Important Scales

By Dr. Robert H. Horner, University of Oregon

The principles of applied behavior analysis have guided the design of a growing array of organizational models and intervention strategies addressing issues such as development of core academic skills, reducing problem behavior, improving productivity, and enhancing parent effectiveness. While a compelling body of research now exists to validate the principles of behavior analysis, and the interventions they inspire, the implementation of these tools remains isolated. Too often applied behavior analysis is viewed as an approach only relevant for fringe populations or extreme behavior problems. A major challenge exists today if we are to make behavior analysis an embedded part of society, and a technology that is applied at scales of social importance. Our experience with implementation of school-wide positive behavior support provides one perspective that may be useful.

During the past ten years George Sugai has led an effort to extend applied behavior analytic logic to the issue of social behavior in schools. At this time over 7,500 schools across 44 states are actively engaged in implementation of school-wide positive behavior support. This multi-tiered prevention model includes (a) operational definition and instruction of behavioral expectations for all students in a school, (b) systematic strategies for reinforcing appropriate behavior, (c) predictable and consistent consequences for problem behavior that are designed to reduce the social rewards typically associated with those behaviors, (d) functional behavioral assessment and intensive individualized interventions for students with more severe needs, and (e) the collection and use of data for active decision-making. Research results from large-scale evaluations, single-case analyses and randomized controlled trials now document that implementation of school-wide positive behavior support is associated with both reductions in problem behavior and improved academic outcomes.

The more lasting message from our experience with school-wide positive behavior support is what we have learned about implementing evidence-based practices at socially important scales. Basic lessons learned include:

1. Build behavioral interventions that are sufficiently comprehensive to produce change in very highly valued outcomes.
    a. Produce change in outcomes that are of high value to many people
    b. Produce effects that are much better than what is traditionally available
2. Expand the unit of analysis to meet the level of societal significance
    a. We need to not only describe the effects of our technology for individual behavior, but for whole schools, communities, businesses, families
3. Collect and use data for decision-making
    a. Build efficient, valid and reliable data collection and summarization systems
    b. Collect data on "fidelity" as well as "outcomes"
    c. Collect data with both "research rigor" and "clinical efficiency"
4. Make behavioral principles accessible
    a. Use rigorous language to build the science, but use accessible language to implement the technology.
5. Implement behavioral technology with the same level of care and discipline that was used to build the technology.
    a. Define the variables that affect high fidelity implementation
    b. Implement with features that will improve sustainability
6. The process of **scaling-up** effective practices is different from the process of initial implementation in demonstration contexts.

In summary, behavior analysis is a compelling science with phenomenal potential for contributing to an array of social challenges. Conducting science to validate the principles and practices of behavior analysis is necessary but insufficient for large-scale social adoption of behavioral technology. If we wish to see behavior analysis applied at scales of social importance we need to attend to variables beyond those with which we are most comfortable.

Updates from ABAI Chapters and SIGs

Behavior Analysis Online SIG

By Dr. Michael Weinberg & Dr. Joseph Cautilli

The Behavior Analyst Online (BAO) Organization is easily one of the largest special interest groups within the Association for Behavior Analysis International. It includes eight journals, each of which has an editorial board of 50 people or more. It also includes six Listservs, each ranging in membership from 30–150 members. In addition, it contains a mailing list for each of the eight journals, each with well over 100 members with a total membership of over 2,300 people. The Behavior Analyst Online is run by its 20-member governing board. The SIG is now chaired by Michael Weinberg, Ph.D., BCBA, and is also president of the BAO Governing Board, as voted by the board at the SIG meeting at the 2008 ABAI conference in Chicago.

The BAO Web site will develop and deploy new resources available on the Internet free of charge to the public. These resources will be dedicated to educating the public about Behavior Analysis and is a resource for professionals involved in research and/or application of principles of Behavior Analysis. The BAO Web site will be responsible to its membership to develop resources that the membership will find useful in everyday research, education, and application of the science of behavior. Currently published journals include: *The Behavior Analyst Today* (BAT)*, Journal of Early and Intensive Behavioral Intervention, The International Journal of Behavioral Consultation and Therapy, The Journal of Speech-Language Pathology and Behavior Analysis, The Behavioral Development Bulletin, Analysis of Gambling Behavior, Journal of Behavior Analysis in Health, Sports, Fitness and Behavioral Medicine, and the Journal of Behavior Analysis in Crime and Victim: Treatment and Prevention.* All the journals are peer-reviewed with over 400 editorial slots. Currently, all journals have completely filled editorial positions. Two journals are planned to begin in 2010: *Behavior Analysis in Schools* and *the Experimental and Applied Analysis of Verbal Behavior.* Combined, the journals have published over 150 articles last year and are expected to publish close to 300 this year.

The governing board has a subcommittee on indexing chaired by Michael Commons, Ph.D., and one on quality improvement is co-chaired by Mary Jane Weiss, Ph.D. and David Richman, Ph.D. We have identified a resource to conduct careful archiving of all journal issues to retain listings including J-GATE, EBSCO, DOAJ, PsycInfo, and hopefully receive an ISI listing, and PUBMED, Gale Publishing, among others. Additional efforts to provide support for the journals efforts and continue the BAO mission to offer free, on-line journals to the public are underway. We will offer hard copies of issues to any individual or organization for a reasonable fee, and also welcome donations from individuals or organizations to support the mission of the BAO.

The editor in chief for the *Journal of Early and Intensive Behavioral Intervention* (JEIBI) is Michael Dorsey, Ph.D., BCBA. The journal is a primary source of information for those who work within the field of early childhood interventions and intensive interventions from a behavioral perspective.

The lead editor for *The International Journal of Behavioral Consultation and Therapy* (IJBCT) is Jack Apsche, Ed.D. IJBCT is committed to increasing the communication between various areas of behavioral consultation and therapy.

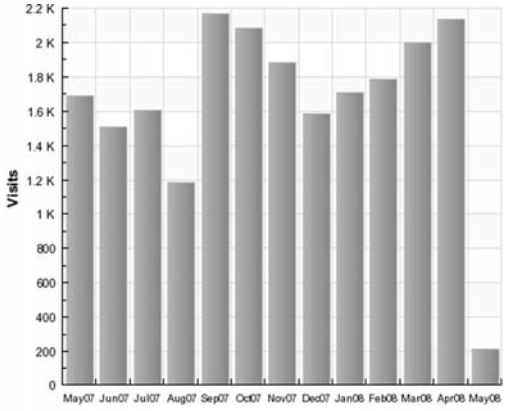
Co-lead editors of *The Journal of Speech-Language Pathology and Applied Behavior Analysis* are Joe Cautilli, Ph.D. and Douglas Greer, Ph.D. Topics for consideration of manuscripts submitted include support for disorders of prelinguistic communication, speech perception/production, oral language and literacy, speech fluency, and voice.

The Site and Its Improvements

The BAO has completed a website reconstruction and upgrade this year. We give special thanks to Craig Thomas for his significant contribution to management of the journal sites, design, and web hosting. See the above figures for details on Web traffic details for BAO and BAT.

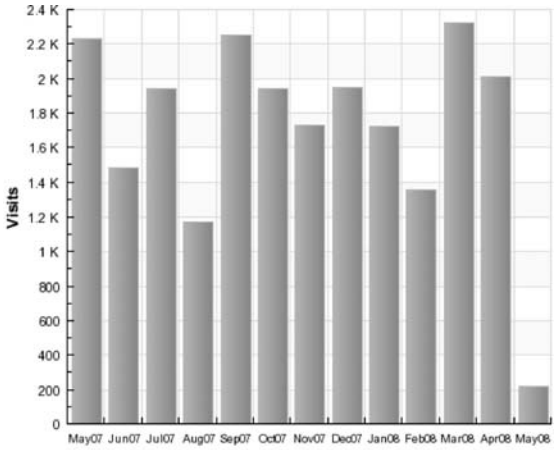
Listservs

The site runs three Listservs, four announcement lists, and a discussion board to discuss articles that appear in the journals. The BAO also serves as a "total communication" network.



Month of the Year	Visits
May08	216
Apr08	2,136
Mar08	1,997
Feb08	1,786
Jan08	1,707
Dec07	1,588
Nov07	1,883
Oct07	2,081
Sep07	2,167
Aug07	1,183
Jul07	1,602
Jun07	1,509
May07	1,688

Figure 1. BAO Web site traffic, April 2007-April 4, 2008.



Month of the Year	Visits
May08	216
Apr08	2,011
Mar08	2,324
Feb08	1,356
Jan08	1,720
Dec07	1,947
Nov07	1,731
Oct07	1,940
Sep07	2,255
Aug07	1,169
Jul07	1,941
Jun07	1,484
May07	2,232

Figure 2. BAT Web site traffic, April 2007-April 4, 2008.

Continuing Education

The governing board elected Michael Weinberg, Ph.D., LP, BCBA as the site's continuing education director. Mike's organization, OBHS, LLC has become an approved CE provider by the BACB, and an APA CE Sponsor Organization, providing BACB and Psychologist Continuing Education for the journals. In addition, he is in the process of looking into counseling, social worker, LMFT, and LMHC CEs for reading the journals.

New Projects: Journals and Collaborations

Mike Weinberg, Ph.D. has formally taken over operations as Joseph Cautilli, Ph.D. stepped down at ABAI's conference in May of 2008. The transfer process has been smooth.

The second set of issues is the growth of our operation. We plan to continue the growth of the BAO organization through collaboration with other ABA SIGs. We have formed the Practitioner Issues in Behavior Analysis SIG. Mike Weinberg was elected SIG Chair at the ABAI conference this year, and the Dissemination of Behavior Analysis SIG, chaired by Josh Pritchard. We have also formed a critical alliance with the members of the Crime and Delinquency SIG and the Behavior Analysis and Positive Behavioral Support SIG for editors, reviewers, and support in the creation of our new journal *The Journal of Behavior Analysis of Offender and Victim—Treatment and Prevention*. Kirk Newring has been a valuable resource for this effort.

In addition, we have brought the Behavioral Development Bulletin (BDB) to the site. Since its inception, the BDB journal has published articles of an interdisciplinary and multidisciplinary nature, including areas of socio-biology and behavioral methodology.

Conclusion

The Behavior Analyst Online SIG is an aggressive and multifaceted group focused on many aspects of the professionalization and internationalization of behavior analysis. Our goal now, as it has always been, is to serve behavior analysts all over the globe in an aggressive campaign of dissemination. We expect to continue with this focus in 2008 and 2009. To do this, we need your commitment to our efforts. Contact us if you seek to serve your profession as it serves you: http://www.behavior-analyst-online.org/.

New Zealand ABA

By Dr. Louis S. Leland, Jr. and Dr. Oliver Mudford

The New Zealand ABA (NZABA) chapter has 73 names on its list, most of whom are staff and students of the seven universities in New Zealand. Some also have other roles (in addition to being staff or students) including therapists, horse trainers, and business consultants. As you will see below, the branch made a good contribution to the 2007 ABAI conference in Sydney (approximately 1200 ocean miles west of us) and recently held its own (5th) annual (2008) conference at the University of Otago in Dunedin New Zealand. Prior to being NZABA we were NZBAG (New Zealand Behaviour Analysis Group) and before that, the Behaviour Analysis Division of the New Zealand Psychological Society. The Dunedin conference featured twenty-one papers and one poster. The student prize was won by Mary Armistead for her paper *Behavioural Economics: Demand for Different Feeds with Horses*. The judges thought that "It was an interesting combination of a behavioural paradigm" (Behavioural Economics) and "an applied problem (food preferences in horses)" (Aslop 2008). Our official website is www.nzaba.org.

NZABA Continuing Education Report for 2007

There was one special event organised for two BACB CEUs in 2007. This was a presentation by Professor Jeff Sigafoos (University of Tasmania) on "Behavioral Flexibility in Children with Autism", followed by discussion with all attending BCBAs on: Heward, W. L. (2005). Reasons applied behavior analysis is good for education and why those reasons have been insufficient. In W. L. Heward et al. (Eds.), Focus on behavior analysis in education (pp. 316-348). Upper Saddle River, NJ: Pearson. Further CEUs were available for New Zealand BCBAs at the Sydney International ABA conference. New Zealand behaviour analysts contributed presentations at which other BCBAs could earn CEUs at that conference.

Ohio ABA

By Dr. Sheila Alber-Morgan

We are pleased to announce the new Ohio Chapter of ABAI, OH ABA. The introductory meeting will be held at the 35th annual convention of the Association for Behavior Analysis International 2009 in Phoenix on Memorial Day weekend. Please check the ABAI program for date, time, and location. ABAI members who reside or work in Ohio are invited and encouraged to attend as elections for offices for 2010 will be held. If you are interested in contributing the development of OH ABA and/or would like to run for an office, please e-mail Sheila Alber-Morgan (morgan.651@osu.edu) or Terri Hessler (hessler.16@osu.edu) by April 1, 2009.

OH ABA's mission is to support the growth and dissemination of applied behavior analysis in the public and private sectors, with special emphasis on application in educational settings. Objectives include supporting the Focus on Behavior Analysis in Education conference held in Columbus every 10 years (the next one scheduled for 2012); starting and maintaining a peer reviewed electronic journal; and supporting BCBA certification for OH ABA members. Membership is open to faculty, students, parents, clinicians, teachers, administrators, and anyone interested in applied behavior analysis; membership levels and dues will be discussed at the introductory meeting.

OH ABA's interim leadership is as follows:

- Sheila Alber-Morgan, interim president
- Terri Hessler, interim vice president
- Laurice Joseph, interim secretary
- Helen Malone, interim treasurer
- Moira Konrad, interim membership director

Attention!

Did you graduate from the Bronx High School of Science? If so, please contact Andy Bondy (abondy@pecs.com) if you are interested in establishing an award for high school students that show an interest in behavior analysis.

Opportunities for Behavior Analysts

Other opportunities are available on the ABAI Web site: www.abainternational.org/start/jobs.aspx.

MayInstitute
Shaping Futures. Changing Lives.

As we continue our national expansion, May Institute is actively seeking behavior analysts to join our team. We have current and future openings for licensed psychologists, board certified behavior analysts (BCBAs), and board certified associate behavior analysts (BCABAs) for management and treatment positions across the country.

Behavior analysts work with our team to provide educational services, program supervision and consultation services to individuals with intensive behavioral needs. Responsibilities include functional behavior assessments and training for children and families. Opportunities for participation in applied research, ongoing projects, publications and professional development activities.

Ph.D., BCBA, or BCABA required. We offer competitive salaries, an excellent benefit package, and many exciting career opportunities.

FOR CONSIDERATION, PLEASE APPLY ONLINE AT WWW.MAYINSTITUTE.ORG

For more information, you may contact:

Craig Barry, Director of Recruitment
Phone: 781-437-1235
41 Pacella Park Drive
Fax: 781-437-1240
Randolph, MA 02368
Email: abajobs@mayinstitute.org

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CARD is seeking enthusiastic applicants to provide services to children with autism.

The Center for Autism and Related Disorders, Inc. (CARD) is among the largest and most experienced organizations providing individualized behavioral intervention programs for children with autism. CARD currently provides services to hundreds of families across the world.

CARD is at the forefront of cutting edge curriculum programming and principles of applied behavior analysis treatment and research in autism.

If you are an interested applicant please contact Dr. Jonathan Tarbox at j.tarbox@centerforautism.com

CARD Specialized Outpatient Services (CARD SOS) provides applied behavioral services to families in need of feeding, assessment, medical program assistance, and treatment of challenging behavior.

If you are interested in joining the CARD SOS team, please contact Katharine Gutshall at k.gutshall@centerforautism.com .

Visit www.centerforautism.com to see how our experienced clinical and research staff continue to lead the way.

Education Coordinator

Work as part of a Site Management Team providing managerial support to several key program functions including: supervision of classroom teachers; insure compliance with California Department of Education guidelines; assist with risk management components of the school program; provide behavior assessments, and provide guidance in empirical classroom management systems and data-guided teaching.

MA desired in the field of Special Education, Psychology, candidates with a BA/BS will also be considered. Experience and clinical training in Applied Behavior Analysis plus additional experience providing supervision and program management in a setting serving students with special needs and challenging behaviors required.

Flexible Health Benefits Plan, Retirement Package, and Generous Extended Holiday Leave.

Fax or send your letter of interest and resume to:

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Ph.D. Behavior Analyst: Supervise Master's level BCBAs, develop behavior program for children with serious behavior problems, review restrictive behavior plans, coordinates clinical supports for advanced treatment techniques, develops and conducts staff training, incentives for research presentations and publications, university teaching opportunities.

BACB approved course sequence and supervised behavioral fieldwork opportunities. Subsidized relocation accommodations for up to 6 months. Please apply online with cover letter and resume to recruitment@evergreenctr.org.

For additional information on any position please contact:
Gordon Defalco PhD, BCBA, Evergreen Center,
345 Fortune Blvd.
Milford, MA, 508 478-2631 x115,
GDefalco@evergreenctr.org

Faculty/Staff Development Opportunity

BEACON Services, a private ABA practice employing over 120 staff and serving over 300 families throughout the Massachusetts area, is seeking doctoral level staff to teach BCBA approved University coursework and provide some staff training/supervision. Responsibilities include: teaching graduate level coursework at a BEACON affiliated university, conducting quarterly staff trainings, participating in the publication and presentation of behavioral research, and providing organizational support and supervision to employees seeking BCBA certification. Applicants should have some basic skills relative to web-based training. A doctoral degree in applied behavior analysis or related field and BCBA certification is required. BEACON offers a very competitive compensation model, incentives, and provides numerous professional growth opportunities. Applicants should e-mail curricula vitae to Steve Woolf, Vice President of Operations and Program Development, at swoolf@beaconservices.org.

Announcement from the Evergreen Center and BEACON Services

It is with great pleasure that the Evergreen Center in conjunction with BEACON services located in Milford Massachusetts announces the establishment of an affiliation with the Education Department at Cambridge College and the Psychology Department at the University of Massachusetts (Dartmouth campus) to offer a 5-course sequence and fieldwork requirement leading to board certification as a behavior analyst approved by the Behavior Analyst Certification Board Inc®. Cambridge College offers a Masters of Education degree with concentration in Autism Spectrum Disorder and UMass Dartmouth offers a Master of Arts degree in Psychology. Doctoral level staff at the Evergreen Center and BEACON services will teach at both schools and offer the 5 courses in applied behavior analysis. On successful completion of the masters program, the 5 course sequence, and fieldwork requirements, students will be eligible to take the Board Certified Behavior Analysts™ (BCBA®) exam. For those who have already obtained a Masters degree in a related field they may enroll in the 5 course sequence and/or fulfill the fieldwork requirement to become eligible to take the BCBA® exam.

Calendar of Upcoming Conferences

For more details, please visit the Web sites indicated and the Affiliated Chapters section of the ABAI Web site.

December 2008

Maryland ABA ♦ December 5 ♦ Baltimore, MD
Tremont Grand ♦www.marylandaba.org

February 2009

Third ABA International Autism Conference
February 6–8 ♦ Jacksonville, FL ♦ Hyatt Regency Jacksonville-Riverfront ♦ www.abainternational.org

Behavior Analysis Association of Michigan
February 19–20 ♦ Ypsilanti, MI ♦ Student Center, Eastern Michigan University ♦ www.baam.emich.edu

North Carolina ABA ♦ February 20 ♦ Wrightsville Beach, NC ♦ Holiday Inn SunSpree
www.nc-aba.com

March 2009

Texas ABA ♦ March 6–7 ♦ Houston, TX
www.unt.edu/behv/txaba

California ABA ♦March 12–14 ♦Burlingame, CA
Hyatt Regency San Francisco Airport
www.calaba.org

March 2009 (cont.)

Pennsylvania ABA ♦ March 26–27 ♦ Hershey, PA
Hershey Lodge and Convention Center
www.pennaba1.org

Virginia ABA ♦ March 29 ♦ Harrisonburg, VA
James Madison University ♦ www.v-aba.org

April 2009

Connecticut ABA ♦ April 4 ♦ Cromwell, CT
Crowne Plaza Hotel ♦ www.ctaba.org/index.html

Four Corners ABA ♦ April 6–7 ♦ Sedona, AZ
www.4caba.org

May 2009

35th Annual ABAI Convention ♦ May 22–26
Phoenix, AZ ♦ Phoenix Convention Center & Sheraton Phoenix Downtown
www.abainternational.org

August 2009

5th International ABAI Conference
August 7–9 ♦ Oslo, Norway ♦ Radisson SAS Plaza Hotel ♦ www.abainternational.org

Upcoming Event?

Does your group have a conference that is taking place in the next year that you want to include on our events calendar?
Contact the ABA International staff at: **mail@ abainternational.org**
Let us know and we'll make sure it is in our next newsletter!

Applied Behavior Consultants, Inc.

~ Caring and Effective Education ~

Applied Behavior Consultants, Inc.® (ABC, Inc.) is a 21-year-old company that employs over 400 employees applying the principles of Applied Behavior Analysis --primarily with children with autism-- at six locations throughout California. We are informed by Radical Behaviorism. We operate day schools in Sacramento, Fairfield, Duarte and Ontario California. Additionally, we consult with group homes, school districts and provide in-home programs. Presently, we are providing ABA services in seven countries in Africa, Asia and Europe.

Contact Information
President: Joseph E. Morrow Ph.D.
Email: JMorrow223@aol.com
Main Office: 4540 Harlin Drive - Sacramento, CA 95826
Phone: (916) 364-7800, extension 114
Website: http://www.abcreal.com

2008 SABA Donors

We want to take this opportunity to thank all of the ABAI members who contributed to SABA in 2008 to help build our funds. This list reflects donations received from January 1, 2008 through November 18, 2008.

$5,000

Unrestricted Fund:

Berkshire Association for Behavior Analysis and Therapy

$1,000-$2,000

International Endowment:

Greg Stikeleather

Student Presenter Fund:

Richard Malott

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Greg Stikeleather

$500-$999

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Tribute to Edwin Dyer, 1977-2008

Edwin Dyer passed away in his home on September 29th, 2008. Ed was a dedicated radical behaviorist and a passionate defender of those less fortunate than him. Ed was known for being obsessed with behavior analysis. Ed worked in many specialties within the field, including adults with developmental disabilities and severe behavior problems. However, Ed was most dedicated to working with emotionally disturbed youth – a population that rarely, if ever, expressed their gratitude to him, but who were terribly saddened by his passing. Obsessed with perfection, Ed didn't know how to do anything half way. Perhaps more than anything else, Ed was known for his love for his wife Becky. Ed is survived by his parents, brother, wife, and by his many friends and colleagues. His family and the field of behavior analysis have experienced a true loss in Ed's passing. He will be missed but not forgotten.

ABA International 2009 Membership Types & Benefits

Members of ABA International enjoy reduced convention registration fees, subscriptions to the *ABAI Newsletter*, and access to on-line membership services through the ABAI portal. Additional benefits are included in each member type description, below.

Full Members

Full membership dues help support the involvement of undergraduate and graduate students in behavior analysis.

Additional Benefits: voting rights on ABAI business matters, to participate in the nominations and election of officers, and a subscription to the journal, The Behavior Analyst.

Requirements: A Master's degree in experimental or applied behavior analysis or contributions to the field of behavior analysis. Submissions are subject to review by the Full Member Application Review Committee. When requesting this status, submit a vita that contains all the information requested on the "Application for Full Member Status Checklist" on the next page for the one category under which you are applying, as well as the accompanying checklist.

Emeritus Full Members

Emeritus Full membership is for individuals who have been approved for full membership status and are over the age of 65.

Requirement: Send verification of age when applying for this status for the first time.

Supporting and Sustaining Full Members

Supporting and Sustaining Full memberships provide additional support to encourage the involvement of undergraduate and graduate students in the science and practice of behavior analysis through increased membership dues.

Additional Benefits: Citation in the *ABAI Newsletter* and the Convention Program Book.

Affiliate Members

Affiliate Membership is for individuals who have an interest in behavior analysis or have completed undergraduate credit, but do not meet the full member education requirements. Dues help support the involvement of undergraduate and graduate students in the science and practice of behavior analysis.

Additional benefit: subscription to the journal *The Behavior Analyst*.

Requirement: Send a letter of recommendation from a voting member of ABAI International or complete the "Recommendation from a 2008 ABAI Full Member" section below.

Emeritus Affiliate Members

Emeritus Affiliate membership is for individuals who are over the age of 65 but do not have voting rights.

Requirement: Send verification of age when applying for this status for the first time.

Supporting and Sustaining Affiliate Members

Sustaining & Supporting Affiliate memberships provide additional support to encourage the involvement of undergraduate and graduate students in the science and practice of behavior analysis through increased membership dues.

Additional Benefit: Citation in the ABAI Newsletter and the Convention Program Book.

RECOMMENDATION FROM A 2009 ABAI FULL MEMBER FOR AFFILIATE MEMBERSHIP

I, _____, believe the interests/studies of the applicant meet ABAI's Affiliate membership requirements.
Date: _____

Full Member Signature: _____

Chapter/Adjunct Members

Chapter/Adjunct membership is for individuals who are members of an ABA International affiliated chapter.

Requirement: Send proof (e.g., member fee receipt or copy of membership card) from the chapter confirming current chapter membership or complete the "Verification of ABAI-Affiliated Chapter Membership" section below. If purchasing a three-year membership, proof must be sent annually at the time of ABAI membership renewal.

VERIFICATION OF ABAI-AFFILIATED CHAPTER MEMBERSHIP

I, _____, have the proper knowledge and authority to assure that the applicant is a member of the _____ABAI affiliated chapter.

Date: _____

Chapter Officer Signature: _____

Student Members

Student membership is for full-time undergraduate or graduate students, residents, or interns.

Additional benefits: subscription to The Behavior Analyst and free resume posting in the on-line job placement service.

Requirement: Send proof of full-time student, intern, or resident status or complete the "Verification of Full-Time Student Status" section below. Students who do not send proof with their application will be charged the fee for and classified as Affiliate members until verification is received.

VERIFICATION OF FULL-TIME STUDENT STATUS

I, _____, certify the applicant is a full-time student, intern, or resident at (insert institution name):

_____

Date: _____

Faculty Signature: _____

ABA International 2009 Full Member Application Requirements and Checklist

Full membership in the Association for Behavior Analysis International (ABAI) requires the minimum of a Master's degree in psychology, behavior analysis, or a related discipline and a demonstration of competence in either the experimental analysis of behavior or applied analysis of behavior. When requesting this status for the first time, select the one category from the checklist below for which you are qualified and submit the required documentation. Applications are subject to review by the Application Review Committee; applicants will be classified as Affiliate Members until a decision is made by the Committee.

PRINT YOUR NAME: _____

☐ CATEGORY 1: Experimental Analysis of Behavior

I have the minimum of a Master's degree in psychology, behavior analysis, or a related discipline and my attached vita demonstrates competence in the experimental analysis of behavior via evidence that my training included a minimum of one year's supervised laboratory research and that my graduate project, thesis, or dissertation was an investigation based in the experimental analysis of behavior.

☐ CATEGORY 2: Applied Analysis of Behavior

I have the minimum of a Master's degree in psychology, behavior analysis, or a related discipline and my attached vita demonstrates competence in the applied analysis of behavior via evidence that my training included a minimum of one year's supervised practicum and that my graduate project, thesis, or dissertation was an investigation based in the applied analysis of behavior.

☐ CATEGORY 3: Other Competence in Experimental Behavior Analysis

I do not have the minimum of a Master's degree in psychology, behavior analysis, or a related discipline but my attached vita demonstrates competence in experimental behavior analysis via evidence of two or more years supervised experience in the experimental analysis of behavior.

☐ CATEGORY 4: Other Competence in Applied Behavior Analysis

I do not have the minimum of a Master's degree in psychology, behavior analysis, or a related discipline but my attached vita demonstrates competence in applied behavior analysis via evidence of two or more years supervised experience in the applied analysis of behavior.

Required Documentation for Categories 1 - 4

For the above selections, please provide the following documentation:

A) For the terminal degree, the vita must include:
- Date degree was conferred
- Degree granting institution
- Title of the graduate project, Master's thesis or doctoral dissertation
- Name of applicant's graduate advisor (if there was no advisor include the name of a graduate faculty member in the program who can serve as a reference).

B) For the supervised research or practicum, the vita must include:
- Dates it took place
- Research topic
- Name of the institution at which it was supervised
- Supervisor's name, e-mail, phone number, and mailing address

Note: unsupervised job experience does not meet the requirement for supervised research experience.

C) If selecting Categories 1 or 2 (Experimental or Applied Analysis of Behavior) please also include:
- The title and a 100-word abstract of the graduate project, Master's thesis or doctoral dissertation
- A 50-word description of the supervised research activities, appended as the last page of the vita

D) If selecting Categories 3 or 4 (Other Competence in Experimental or Applied Behavior Analysis) please also include:
- A 250-word description of the two years of supervised experience in the analysis of behavior, appended as the last page of the vita

☐ CATEGORY 5: Significant Contributions to Behavior Analysis

I do not meet the requirements for Categories 1 – 4, above; however I have made significant contributions to knowledge in behavior analysis as evidenced by research publications or any such other meanings as may be determined by the ABAI Membership Board.

Required Documentation for Categories 5

For the selection of Category 5 (Significant Contributions to Behavior Analysis), please provide the following documentation:

A) For the terminal degree, the vita must include:
- Date degree was conferred
- Degree granting institution
- Title of the graduate project, Master's thesis or doctoral dissertation
- Name of applicant's graduate advisor (if there was no advisor include the name of a graduate faculty member in the program who can serve as a reference)

B) For evidence of significant contributions to knowledge in behavior analysis, the vita shall normally include multiple reports of empirical research, literature reviews, or conceptual analyses published in well-cited, peer-refereed journals, chapters, or books. Conference presentations and posters alone will rarely suffice.

C) The names, e-mails, phone numbers, and mailing addresses of two professional references who can comment on the significance of the applicant's contributions to knowledge in behavior analysis.

ABA International 2009 Membership Form

Mail form and payment to: 550 West Centre Ave., Portage, MI 49024-5364
Telephone: (269) 492-9310; Fax: (269) 492-9316

MEMBERSHIP DUES FOR RENEWING AND NEW MEMBERS

Please circle Membership Type:	Category A		Category B		Category C		Category D	
	1-Yr	3-Yr	1-Yr	3-Yr	1-Yr	3-Yr	1-Yr	3-Yr
Sustaining Affiliate / *Sustaining Full	$308	$893	$231	$670	$185	$536	$123	$357
Supporting Affiliate / *Supporting Full	$167	$485	$126	$364	$100	$291	$67	$194
Affiliate / *Full	$126	$366	$95	$274	$76	$219	$50	$146
Chapter/Adjunct	$50	$144	$45	$131	$45	$131	$45	$131
Emeritus	$50	$144	$45	$131	$45	$131	$45	$131
Student	$50	N/A	$45	N/A	$45	NA	$45	N/A

*__First-time__ Full Member applicants have additional requirements. Please submit all documentation listed on preceding Membership Information form.

Membership fees for international members: ABA International offers discounted fees for members with permanent residency in countries with per capita income of less than 75% of the United States'. ABAI determines members' permanent residency based on members' mailing addresses. Fees have been divided into four categories. Income per capita information was obtained from the World Bank Group, 2006. Source data are available at http://www.worldbank.org/data/quickreference/quickref.html. If your country is not listed above, but you feel you qualify for reduced dues based on the income per capita of your resident country, contact the ABAI office.

Category A: For countries with income per capita of 75%-100% of the US, including **Australia, Austria, Belgium, Bermuda, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Japan, Luxembourg, Netherlands, Norway, Qatar, Sweden, Switzerland, United Kingdom**, and all other countries not listed in categories B, C, and D.

Category B: For countries with income per capita of 50%-75% of the US, including **Hong Kong, Italy, Kuwait, New Zealand, Singapore, Spain, and the United Arab Emirates. (**Members in Category B receive a 25% discount on membership dues).

Category C: For countries with income per capita of 25%-50% of the US, including **Bahrain, Cyprus, Czech Republic, Greece, Israel, Korea, Portugal, and Saudi Arabia. (**Members in Category C receive a 40% discount).

Category D: For countries with income per capita of <25% of the US, including **Albania, Argentina, Bangladesh, Benin, Brazil, Chile, China, Colombia, Costa Rica, Ecuador, Egypt, Georgia, India, Jordan, Malaysia, Mexico, Nigeria, Oman, Pakistan, Paraguay, Peru, Philippines, Poland, Russian Federation, South Africa, Thailand, Turkey, and Venezuela. (**Members in Category D receive a 60% discount).

PERSONAL INFORMATION

TITLE (CIRCLE): Dr. / Prof. / Ms. / Mrs. / Mr.
FIRST NAME: _____
PREFERRED FIRST NAME: _____
MIDDLE INITIAL: _____
LAST NAME: _____
AFFILIATION: _____
DATE OF BIRTH: _____
GENDER (CIRCLE): Male /Female ADDRESS (CIRCLE): Home /Work
STREET: _____
CITY: _____
STATE/PROVINCE: _____
POSTAL ZIP CODE: _____ COUNTRY: _____
CITIZENSHIP: _____
E-MAIL: _____
WORK TELEPHONE #: _____
HOME TELEPHONE #: _____
CELL #: _____
FAX # (Home / Work): _____

Personal information such as age and annual income will be kept confidential. This information is collected for the purpose of membership data analysis only.

JOURNAL SUBSCRIPTIONS

	Student	Individual
The Analysis of Verbal Behavior	❑ $23	❑ $32
Behavior Analysis in Practice	❑ $25	❑ $35
*The Behavior Analyst**		❑ $49

Dues for all membership categories **except Chapter/adjunct** INCLUDE subscriptions to *The Behavior Analyst.*

International orders must add $10 for *TAVB* and/or $20 for *TBA* or *BAP* shipping

PAYMENT DUE

Amount for Dues: _____ Subscriptions: _____ **Total =** _____

If paying by credit card, please complete the following:

☐ American Express ☐ Discover ☐ MasterCard ☐ Visa

NAME ON CARD: _____
CARD NUMBER: _____
EXPIRATION DATE: _____
SIGNATURE: _____

Payment of dues is subject to current federal, state and local tax regulations. To determine the tax-exempt status of your payment, contact your local office of federal, state, or local tax information. All funds are in U.S. dollars. Overpayments and discounts not taken by the applicant will be considered donations to SABA unless a request for a refund is received by the ABAI office in writing within 45 days. Requests for membership cancellations will not be granted. Please be advised that full payment in U.S. dollars must

be received by the ABAI office before services will be granted. Payment may be made by check (payable to ABA International), credit card, or money order.

ABA International 2009 Membership Form pg. 2

Student Member Information

- ☐ High School
- ☐ Undergraduate
- ☐ Master's
- ☐ Doctoral
- ☐ Post Doctoral

Name of School You Attend: _____

Program Name: _____

Expected Grad Date: _____

Reason for Membership or Renewal

- ☐ Encouraged by University Program
- ☐ Family Members Exposed to Behavioral Treatment
- ☐ Maintain Certification Status
- ☐ Obtain *The Behavior Analyst*
- ☐ General Interest in Behavior Analysis
- ☐ Required by Employer
- ☐ Other: _____

Degree Held

Most Recent Degree Received: _____

Conferring Institution: _____

Year Received: _____

Certification

Are you a certified behavior analyst? ☐ Yes ☐ No

If yes, by whom? _____

BACB #: _____

Languages Spoken

First Language:_____

Second Language: _____

Third Language: _____

Position Title

Please check one box that most closely describes your job title:

- ☐ Administrator
- ☐ Student
- ☐ Consultant/Staff Trainer
- ☐ Professor/Academic
- ☐ Psychologist/Therapist
- ☐ Researcher
- ☐ Social Worker
- ☐ Speech/Language Pathologist
- ☐ School Teacher
- ☐ Parent
- ☐ Other: _____

Primary Activity

Please check the one box that most closely describes your work:

- ☐ Administrative/Management
- ☐ Clinical/Therapeutic Service
- ☐ Consulting
- ☐ Research
- ☐ Social Service
- ☐ Staff/Parent Training
- ☐ Teaching (Primary Education/K-12)
- ☐ Teaching
- ☐ Training or Continuing Education
- ☐ N/A (I am retired, a student, not currently employed, etc.)
- ☐ Other: _____

Primary Discipline

Check the one box that most closely describes your field of study:

Behavior Analysis

- ☐ Applied Behavior Analysis
- ☐ Behavior Theory and Philosophy
- ☐ Experimental Analysis of Behavior
- ☐ Organizational Behavior Management

Psychology

- ☐ Behavioral Psychology
- ☐ Clinical Psychology
- ☐ Counseling Psychology
- ☐ Developmental Psychology
- ☐ Educational Psychology
- ☐ Experimental Psychology
- ☐ Industrial/Organizational Psychology
- ☐ School Psychology
- ☐ Social Psychology

- ☐ Counseling
- ☐ Education
- ☐ Medicine
- ☐ Neuroscience
- ☐ Psychiatry
- ☐ Public Policy and Administration
- ☐ Rehabilitation/Rehabilitation Science
- ☐ Special Education
- ☐ Speech Pathology/Speech-Language-Hearing Sciences
- ☐ Social Work
- ☐ Sociology
- ☐ Other: _____

Annual Income Range:

- ☐ <$15,000
- ☐ $15,000-$35,000
- ☐ $35,001-$55,000
- ☐ $55,001-$75,000
- ☐ $75,001-$100,000
- ☐ $100,001-$150,000
- ☐ >$150,000
- ☐ Do not wish to share data

During the past 12 months have you served as a member of a grant review committee? ☐ Yes ☐ No

During the past 12 months did you receive funding for behavioral research? ☐ Yes ☐ No

Note: This information may be shared with persons or agencies/ organizations engaged in efforts to support & promote behavioral research.

What source provided the funding?

_____

What was the amount of funding? $ _____ over (# of)_____year(s)

What is the subject of your funded research? _____

May we have your permission to contact your institution or university library on your behalf to advertise our journals?

If yes, please provide name of institution and contact information:

_____

_____

Participation is needed on ABAI Boards & Committees. Please indicate where you would like to volunteer:

- ☐ Affiliated Chapters
- ☐ Education
- ☐ Membership – Recruitment & Retention
- ☐ Program – Program Committee
- ☐ Practice
- ☐ Publications
- ☐ Science

ABA International 2009 Membership Form pg. 3

Special Interest Groups (SIGs) are a critical component of ABA International and provide additional services and support to members with specialized interests. SIGs are initiated by members to provide a forum for information exchange and a vehicle to promote a particular area of interest.

Please indicate which SIGs of which you are a member of and which you are interested in. Mark those you are a member of with **M** and those you are interested in with **I.**

_____ Applied Animal Behavior
_____ Autism
_____ Behavior Analyst Online
_____ Behavioral Coaching and Counseling
_____ Behavioral Gerontology
_____ Behavioral Medicine
_____ Behavioral Technology
_____ Behaviorists for Social Responsibility
_____ Behaviorists Interested in Gambling
_____ Child Welfare
_____ Clinical
_____ Crime and Delinquency
_____ Development & Behavior Analysis
_____ Direct Instruction
_____ Dissemination of Behavior Analysis
_____ Evidence-Based Practice
_____ Experimental Analysis of Human Behavior (EAHB)
_____ Health, Sports & Fitness
_____ Instructional Design
_____ Interbehaviorists
_____ Neuroscience
_____ OBM Network
_____ Parent-Professional Partnership
_____ Positive Behavior Support
_____ Practitioner Issues in Behavior Analysis
_____ Rehabilitation & Independent Living
_____ Sex Therapy and Educational Programming (STEP)
_____ SIG Español
_____ Speech Pathology
_____ Standard Celeration Society
_____ Teaching Behavior Analysis
_____ Verbal Behavior

Affiliated chapters are membership organizations associated with ABA International through their interest in the dissemination and growth of behavior analysis. They are defined by a geographical boundary; for instance, a state, a region, or a country. ABA International maintains a mutually beneficial relationship with 64 affiliated chapters in Asia, Australia, Europe, and North and South America. These chapters often hold conferences, sponsor lectures, and offer continuing education opportunities.

Please indicate which ABAI affiliated chapter(s) you are a member of or are interested in. Mark those you are member of with **M** and those you are interested in with **I**.

_____ ABA Colombia
_____ ABA India
_____ ABA of Argentina
_____ ABA of Brazil
_____ ABA of Italy (IESCUM)
_____ Alabama ABA
_____ Asociación Latinoamericana de Análisis y Modificación del Comportamiento
_____ Asociación para el Avance de la Ciencia de la Conducta (ABA España)
_____ Association for the Advancement of Radical Behavior Analysis (ABA of Italy)
_____ Australian Association for Cognitive Behaviour Therapy
_____ Behavior Analysis Association of Michigan
_____ Behaviour Analysis in Ireland
_____ Berkshire Association for Behavior Analysis and Therapy
_____ British Columbia ABA
_____ California ABA
_____ Charter ABA
_____ Chinese ABA
_____ Connecticut ABA
_____ Delaware Valley ABA
_____ Experimental Analysis of Behaviour Group UK
_____ Florida ABA
_____ Four Corners ABA
_____ Georgia ABA
_____ Hawai'ian ABA
_____ Heartland ABA
_____ Iceland ABA
_____ Indiana ABA
_____ Iowa ABA
_____ Israel ABA
_____ Japanese ABA
_____ Jordan ABA
_____ Kansas ABA
_____ Korean ABA
_____ Louisiana ABA
_____ Manitoba ABA
_____ Maryland ABA
_____ Massachusetts ABA
_____ Mid-American ABA
_____ Middle East ABA
_____ Minnesota Northland ABA
_____ Missouri ABA
_____ Nevada ABA
_____ New Jersey ABA
_____ New York State ABA
_____ New Zealand ABA
_____ Norsk Atferdsanalytisk Forening (Norwegian ABA)
_____ North Carolina ABA
_____ Northwestern ABA
_____ Ohio ABA
_____ Ontario ABA
_____ Oregon ABA
_____ Pennsylvania ABA
_____ Philippines ABA
_____ Polish ABA
_____ Polish Association of Behavioral Therapy
_____ Sociedad Mexicana de Análisis de la Conducta
_____ South Carolina ABA
_____ Southeastern ABA
_____ Swedish ABA
_____ Taiwan ABA
_____ Tennessee ABA
_____ Texas ABA
_____ Vermont ABA
_____ Virginia ABA
_____ Wisconsin ABA

ABA International 2009 Annual Convention Registration Form

Mail form and payment to: 550 West Centre Ave., Portage, MI 49024-5364
Telephone: (269) 492-9310; Fax: (269) 492-9316

CONVENTION REGISTRATION

	Entire Convention (Sat., May 23 – Tues., May 26)		One Day Registration ☐ Sat., May 23 ☐ Sun., May 24 ☐ Mon., May 25 ☐ Tues., May 26		
	Until 3/2	**3/3 – 4/30***		**Until 3/2**	**3/3 – 4/30***
Sustaining, Supporting, Full, or Affiliate Member	☐ $137	☐ $157	Select Day Above	☐ $69	☐ $79
Emeritus or Student Member	☐ $69	☐ $79	Select Day Above	☐ N/A	☐ N/A
Chapter/Adjunct Member	☐ $177	☐ $197	Select Day Above	☐ $92	☐ $102
Non-member	☐ $325	☐ $345	Select Day Above	☐ $121	☐ $131

To register for the convention at the member rates, including if you are a student, you must be a 2009 member of ABAI for the 2009 calendar year. To renew your membership, please fill out the separate ABAI 2009 Membership form. If you do not wish to renew your membership for 2009, you must register as a non-member.

Name Badges will be required for entry to all convention events. All attendees, including presenters, must register for the convention.

***On-site Registration:** Pre-registration will end April 30, 2009. Registration forms received after this date will be processed on-site during the convention. On-site registration will open at 5:00 PM on Thursday, May 21.

All Student, Emeritus, and one-day registration fees will increase by $10 on-site. Affiliate, chapter/adjunct, full, sustaining, supporting, and non-member registration fees for the entire convention will increase by $20.

PERSONAL INFORMATION

TITLE (CIRCLE): Dr. / Prof. / Ms. / Mrs. / Mr.
FIRST NAME & M.I.: _____
PREFERRED FIRST NAME: _____
LAST NAME: _____
AFFILIATION: _____
ADDRESS (CIRCLE): HOME / WORK
_____
CITY: _____
STATE/PROVINCE: _____
POSTAL ZIP CODE: _____ COUNTRY: _____
E-MAIL: _____
WORK TELEPHONE #: _____
HOME TELEPHONE #: _____
WORK FAX #: _____
HOME FAX #: _____
CELL #: _____

Cancellation Policy: Requests for registration refunds, minus a $30 processing fee, received by 12:00 midnight (EST) May 1, 2009 will be met. Refund requests received after the deadline, except for those made as a result of a death in the immediate family, will not be granted. Cancellation due to death must be submitted to the ABAI office in writing; ABAI reserves the right to request legal verification of the death. Requests for registration transfers (attendee replacements) received by 12:00 midnight (EST) May 1, 2009 will be processed in the ABAI office prior to the convention. Requests made after this date will be processed on-site at the Registration Counter. There will be a $30 processing fee for transfers.

PAYMENT DUE

Donation to support Student Presenters ..... $_____
Total Payment ..... $_____

Please be advised that full payment in U.S. dollars must be received by the ABAI office before services will be granted. Payment may be made by check, credit card, or money order.

Make checks payable to *ABA International* or charge your:
☐ American Express ☐ Discover ☐ MasterCard ☐ Visa
NAME ON CARD: _____
CARD NUMBER: _____
EXPIRATION DATE: _____
SIGNATURE: _____
BILLING ADDRESS (IF DIFFERENT FROM ABOVE):
_____
CITY: _____
STATE/PROVINCE: _____
POSTAL ZIP CODE: _____ COUNTRY: _____

Overpayments and discounts not taken will be considered donations to SABA unless a request for a refund is received by the ABAI office in writing within 45 days. Requests for membership cancellations will not be granted.

Special Accommodations Policy: ABAI makes accommodations for convention attendees with disabilities. We ask that individuals requiring special arrangements at the convention submit their need in writing and follow up with the ABAI office accordingly. Arrangements are not guaranteed for requests made after 12:00 midnight (EST) April 1, 2009.

Behavior Analysis *in* Practice

Behavior Analysis in Practice (BAP) is ABA International's new peer-reviewed journal for practitioners and the people who train and supervise them. Published twice annually, *BAP* promotes empirically validated best practices in an accessible, colorful format and describes not only what works but also the challenges of implementation in applied settings. Articles and topics published in *BAP* will include empirical evaluations of behavior-analytic procedures and programs; discussion papers on professional and practice issues; technical articles on methods, data analysis, and instrumentation; tutorials on terms, procedures, and theories relevant to best practices; and critical reviews of books and products that are aimed at practitioners or consumers of behavior analysis.

Order Form

Quantity	Description	Unit price			Total
		Individual	**Student**	**Institution**	
	Volume 1 (2008)	$35.00	$25.00	$88.00	$
	International shipping fee, per annual subscription*	$20.00	$20.00	$20.00	$
				6% Sales Tax (Michigan Residents Only) SUBTOTAL x .06 =	$
	**(Prices include domestic shipping and handling)*			**Total Cost Included =**	**$**

Name: _____ E-mail: _____

Street Address: _____

City: _____State: ____ Country: _____ ZIP Code: _____

Phone: _____ Fax:_____

❑ Visa ❑ MasterCard ❑ Amex ❑ Discover Credit

Credit Card #: _____ Expiration: _____

Signature: _____

Payment of dues is subject to current federal, state and local tax regulations. To determine the tax-exempt status of your payment, contact your local office of federal, state, or local tax information. All funds are in U.S. dollars. Overpayments will be considered donations to ABAI unless a request for a refund is received by the ABAI office in writing within 45 days.

Mail of fax form and payment to: ABAI; 550 West Centre Ave., Portage, MI 49024
Fax: (269) 492-9316: Telephone (269) 492-9310; E-mail: mail@abainternational.org

Join Us in Oslo!

Fjords in Bergen

Oslo Central Station

5th International Conference
Oslo, Norway
August 7 – 9, 2009
Radisson SAS Plaza

Be sure to visit
www.abainternational.org/oslo/index.asp
for more information on the conference and to make a Call for Papers submission.

The Analysis of Verbal Behavior

If you are interested in a behavioral analysis of language, *The Analysis of Verbal Behavior* is the ideal journal for you. No other journal offers this unique contribution to the empirical and conceptual analysis of verbal behavior.

The Analysis of Verbal Behavior (ISSN 0880-9401) publishes original papers relevant to the elementary verbal operants, autoclitics, multiple control, private events, rule-governed behavior, epistemology, scientific verbal behavior, language acquisition, language assessment and training, second languages, pedagogy, the verbal behavior of nonhumans, and verbal behavior research methodology.

Order Form

Make checks payable to: ABA International, 550 West Centre Ave. Suite 1, Portage, MI 49024
Order online at: https://apps.abainternational.org/onlinestore/

Prices include domestic shipping and handling

	Unit Cost				
	Individual	Student	Institution	Quantity	Total
Separate Volumes					
Volume 25 (2009)	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 24	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 23	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 22	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 21	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 20	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 19	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 18	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 17	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 16	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 15	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 14	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 13	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 12	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 11	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 10	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 9	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 8	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 7	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 6	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 4	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
Volume 1, 2, & 3 bound together	$ 32.00	$ 23.00	$ 75.00	x ____ = $	_____
* International Shipping Fee, per volume	$ 10.00	$ 10.00	$ 10.00	x ____ = $	_____
Set					
Volumes 1-24 (Volume 5 is unavailable)	$ 395.00	$ 395.00	$1,015.00	x ____ = $	_____
* International Shipping Fee, complete set	$ 95.00	$ 95.00	$ 95 .00	x ____ = $	_____
SUBTOTAL					$ _____
6% Sales Tax (Michigan Residents Only)	**SUBTOTAL x .06 =**				$ _____
TOTAL					$ _____

Name:_____ E-mail: _____

Street Address: _____

City: _____ State:_____Country:_____ZIP Code: _____

Phone: _____ Fax: _____

Credit Card #: _____ Expiration: _____

❑Visa ❑MasterCard ❑Amex ❑Discover

Signature: _____

Society for the Advancement of Behavior Analysis (SABA) Donations

General Information

SABA was chartered in 1980 as a non-profit corporation devoted to the welfare and future of behavior analysis. SABA exists to secure and administer private funds in support of behavior analysis. These activities include, but are not limited to, the advancement of basic knowledge about behavior analysis and the applications of that knowledge to problems of developmental disabilities, and other areas.

SABA supports behavior analysis through both independent projects that it initiates and through underwriting activities of the Association for Behavior Analysis International (ABAI). The nine Directors of SABA also are members of the Executive Council of ABAI.

Contributions

Individuals can donate to specific SABA funds or make unrestricted donations. As well, a $66 donation to the Student Presenters Fund sponsors the registration of one senior student presenter for the ABAI convention. Planned giving through SABA's Legacy program allows you to arrange gifts of cash, securities, or other property for the benefit of behavior analysis. The Society's Board of Directors works with specific programs to be supported with funds received by SABA.

The **Research Endowment Fund** is allocated to support master's students writing theses and doctoral students writing dissertations.

Unrestricted funds are used to support the SABA award ceremony at the ABAI convention and other regular SABA activities.

The **Student Presenters Fund** supports registration fees for senior student presenters of a paper or poster at the ABAI annual convention.

The **Legacy Planned Giving Program** allows you to plan for long-term support of the field.

Advantages of Giving

The Society provides advantages to donors and to behavior analysis because:

- It is private and non-profit, existing solely for the benefit of behavior analysis.
- It is directly accountable to the behavior analysis community through its permanent connection with ABAI's Executive Council.

It allocates unrestricted gifts to help advance behavior analysis in areas which otherwise might not be funded.

- It is flexible in working with donors to see that any specific requests they have will be honored within the guidelines of the Society.
- Its gifts are tax deductible.
- Its small size and low overhead ensure that gifts are directed to programs and not to administrative costs.

Tax Status

As a non-profit organization, SABA is exempt from federal income tax under Section 501 (c)(3) of the 1986 Internal Revenue Code as amended.

Contributions to SABA qualify for tax deductions to the full extent provided by law. The IRS identification number assigned to SABA is 38-2325364.

Ethical Standards

The Society is deeply committed to the philosophy, science, and practice of behavior analysis and will support only those activities and programs consistent with this commitment. Behavior analysis activities and programs supported by SABA must in turn conform to the ethical guidelines promulgated by the Association for Behavior Analysis. Such programs also must be consistent with the Association's policy on social justice.

The Society safeguards privacy rights and confidential information. The Society neither accepts nor grants favors for the personal gain of any individual, nor does it accept favors where a higher public interest would be violated. The Society avoids actual or apparent conflicts of interest and, if in doubt, seeks guidance from appropriate authorities.

Gifts should be made to:

Society for the Advancement of Behavior Analysis, Inc.
550 West Centre Ave.,
Portage, MI 49024

SABA welcomes inquiries about gifts of any type by writing to the above address, by calling (269) 492-9310, by sending a fax to (269) 492-9316, or by e-mailing the ABAI office at mail@abainternational.org.

ABAI Organizational Promotional Program

Each year the Association for Behavior Analysis International (ABAI) strives to develop new ways to serve its Organizational Members. ABAI is pleased to announce its comprehensive 2009 Organizational Promotional Program—an innovative way to market and promote your organization to the wider behavioral community while taking advantage of generous package discounts.

The 2009 Organizational Promotional Program offers the opportunity for organizations to participate in ABAI's many events through exhibitor options and advertising packages, as well as premier sponsorship opportunities.

We are excited to extend this opportunity to assist in the marketing and promotion of your organization. We invite you to join us as we embark on another year with organizational and individual members who are actively involved in the support of behavior analysis.

Benefits of the Organizational Promotional Program:

Organizational Members receive:

- Complimentary exhibitors booth at 35th ABA International Annual Convention.
- Three complimentary full memberships.
- Three complimentary Annual Convention Registrations.

Exhibitors receive:

- Complimentary listing in conference/convention program book and on ABAI website.
- Description of your organization on the ABAI website.
- Conference registration for two organization representatives.

Sponsors receive:

- On-site sponsorship signage display.
- Special acknowledge in conference/convention program book and in opening remarks of event.
- Listing on the ABAI website.

More information is available at: http://www.abainternational.org/member/mem_org.asp

CAREER OPPORTUNITIES IN APPLIED BEHAVIOR ANALYSIS

Spectrum Center
Schools and Programs

Come work in a Behavior Analytic Organization providing innovative education services in the San Francisco Bay Area.

Spectrum Center provides educational services:

- For children 3 - 22 years of age
- For children with a variety of special education diagnoses and classifications including autism and emotional disturbance
- Addressing severe challenging behavior
- Using evidence-based practices to maximize educational growth

We currently have openings for:

- Special Education Teachers
- SLP, OT, and APE Service Providers
- Education Coordinators
- Senior Behavior Analysts
- Assistant Program Directors
- Program Directors

What sets us apart:

- CEUs available on an ongoing basis for BCBAs and BCABAs
- Promotional opportunities
- Research opportunities
- Collaborative work environment

We are continuing to expand our services!
Please see our website for job descriptions and workshop information.

Spectrum Center - where Every Student Succeeds

Send your letter of interest and resume to:

Spectrum Center
16360 San Pablo Avenue • San Pablo, CA 94806
Phone: 510-741-5440 • Fax 510-741-2775
hr@esa-education.com

www.spectrumschools.com

Spectrum Center is an equal opportunity employer

Why Should I Join ABAI?

The Association for Behavior Analysis International has more than 5,000 members from 40 countries. ABAI's members include scientists who conduct basic and applied research, practitioners in a wide range of human service professions whose work is enhanced by the findings of behavior analysis research, professors who teach behavior analysis, undergraduate and graduate students, and consumers of behavior analysis services.

ABAI membership would give me…

- opportunities to *expand and enhance my knowledge and skills* about the science and/or practice of behavior analysis through attending conventions, workshops, and conferences; reading ABAI journals, etc.
- opportunities to *share the results of my research and practice efforts* with other ABAI members.
- *access to a worldwide network* of scientists, practitioners, and others who are committed to increasing our understanding of behavior and how that knowledge can help create a better world.
- *recognition* as part of the world's largest and most widely respected organization of behavior analysts.

Membership benefits include:

- Reduced registration fee for annual convention and pre-convention workshops.
- FREE subscription* to *The Behavior Analyst*, ABAI's peer-review journal of conceptual and review papers on topics of interest to researchers and practitioners. (*for all members excluding Chapter/Adjunct).
- Reduced subscription fee to *Behavior Analysis in Practice*, ABAI's peer-reviewed journal translating research to practice for practitioners. Inaugural issue published Spring 2008.
- Reduced subscription fee to *The Analysis of Verbal Behavior*, ABAI's peer-reviewed journal of research and conceptual articles on verbal behavior.
- FREE subscription to the *ABAI Newsletter,* ABAI's peer published three times per year with news, etc.
- Access to members-only portions of the ABAI Web site, such as the Membership Directory and selected employment services.

To learn how to become a member of ABAI, see the ABAI 2009 Membership Form on page 89 or go to www.abainternational.org/member/index.aspx.

ABAI 2009 Autism Conference Registration Form

Research to Practice: Making Real Changes in the Lives of People with Autism

CONTACT INFORMATION

TITLE: ☐ Dr. ☐ Prof. ☐ Ms. ☐ Mrs. ☐ Mr.

FIRST NAME & M.I.: _____

LAST NAME: _____

AFFILIATION: _____

ADDRESS: ☐ Home ☐ Work

_____

CITY: _____

STATE/PROVINCE: _____

POSTAL ZIP CODE: _____

COUNTRY: _____

E-MAIL: _____

WORK TELEPHONE #: _____

HOME OR CELL TELEPHONE #: _____

CONFERENCE NAME BADGE

If you would like your name or affiliation on your badge to be different than above, please print them as you would like them to appear:

Name:

_____

Affiliation:

_____

METHOD OF PAYMENT

Please be advised that full payment in U.S. dollars must be received by the ABAI office before services will be granted. Payment may be made by check, credit card, or money order.

Make checks payable to *ABA International* or charge your:

☐ Am. Express ☐ MasterCard ☐ Visa ☐ Discover

If paying by credit card, please complete the following:

Name on card: _____

Card Number: _____

Expiration Date: _____

Signature: _____

Billing Address (if different from above):

_____

City: _____

State/Province: _____

Postal Zip Code: _____

Country: _____

CONFERENCE REGISTRATION

A discount is available for early payment of registration fees. If your registration is received in the ABAI office by December 11, 2008, send the amount listed in the "12/11 or before" row. Please note that single day registration is not offered. The registration fee is a flat fee.

All conference registrants, including students, must be a member for the 2009 calendar year in order to receive the member rate. To renew your membership, please fill out the separate ABAI 2009 Membership form available on our Web site. If you do not wish to renew your membership for 2009, you must register as a non-member. Chapter members must also be members of ABAI to qualify for the member rates.

On-site Registration: Pre-registration will end January 15, 2009. No registration forms received after this date will be processed. On-site registration will open on-site on Friday, February 6th.

All attendees, including presenters and authors, must register for the conference. Name Badges will be required for entry to all conference events.

Registration for the Entire Conference
Friday, February 6 – Sunday, February 8, 2009

	Register on or before 12/11/2008	Register 12/12/2008 – 1/15/2009	On-site 2/6/2009 – 2/8/2009
2009 ABAI Student Member	☐ $115	☐ $140	☐ $165
2009 ABAI Member	☐ $195	☐ $220	☐ $245
Non Member	☐ $345	☐ $370	☐ $395

SABA STUDENT PRESENTERS FUND

Donating to the SABA Student Presenters Fund helps to support the registration of student presenters.

Donation to support student presenters..... $_____

Total Payment Enclosed ..... $_____

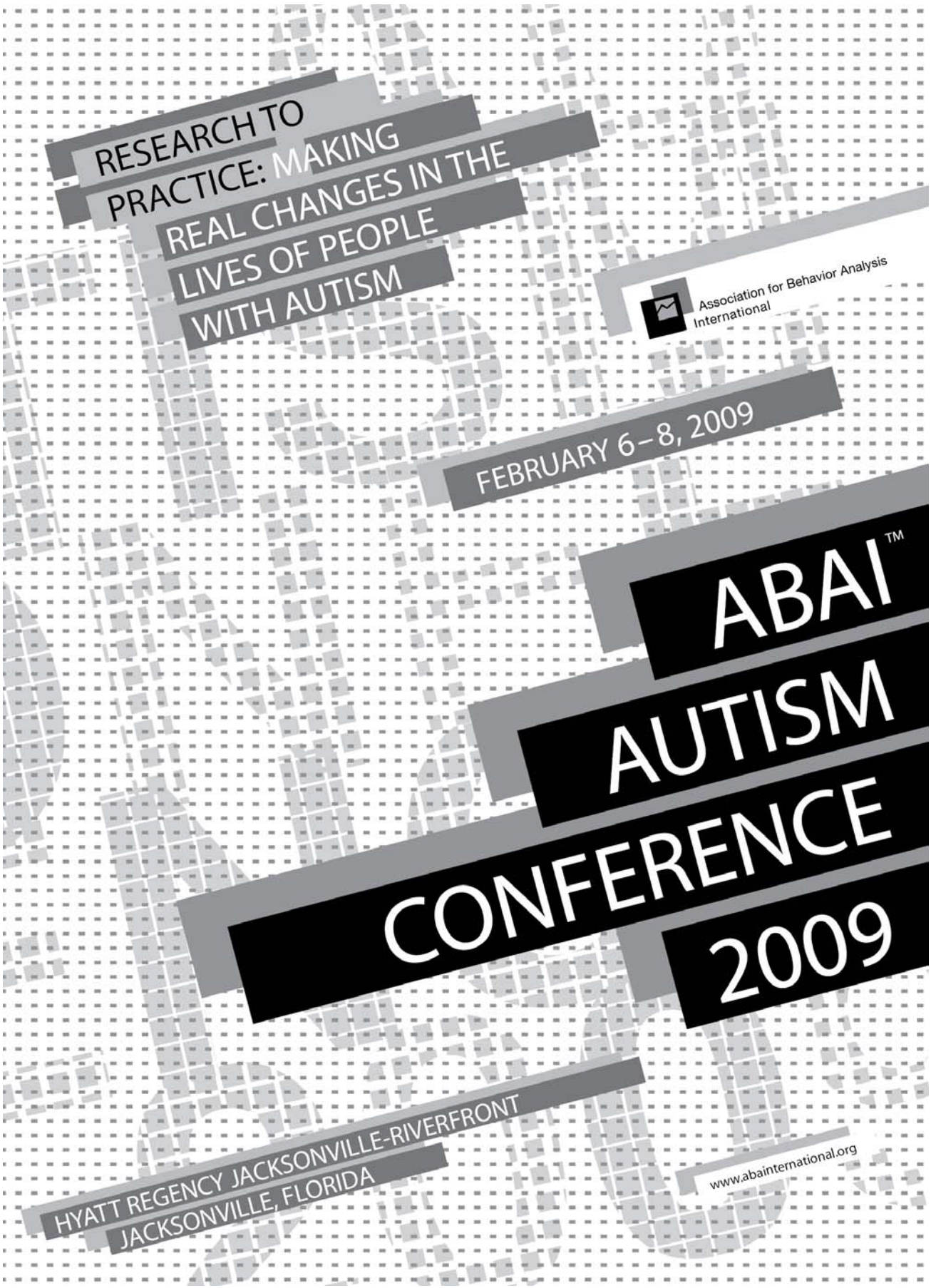
Payment of dues is subject to current federal, state and local tax regulations. To determine the tax-exempt status of your payment, contact your local office of tax information. All funds are in U.S. dollars. Overpayments and discounts not taken will be considered donations to ABAI unless a request for a refund is received by the ABAI office in writing. Returned checks are subject to a $25 fee.

CANCELLATION POLICY

Requests for registration refunds, minus a $35 processing fee, received by midnight (EST) January 15, 2009, will be met. Refund requests received after the deadline, except for those made as a result of a death in the immediate family, will not be granted. Cancellation due to death must be submitted to the ABAI office in writing; ABAI reserves the right to request legal verification of the death. Requests for registration transfers (attendee replacements) received by midnight (EST) January 15, 2009, will be processed in the ABAI office prior to the conference. Transfer requests made after this date will be processed on-site at the registration counter. There will be a $35 processing fee for transfers.

SPECIAL ACCOMMODATIONS POLICY

The Association for Behavior Analysis International makes accommodations for conference attendees with disabilities. We ask that any individual requiring special arrangements at the conference submit their need in writing and follow up with the ABAI office accordingly. Arrangements are not guaranteed for requests made after midnight (EST) January 9, 2009.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