Evaluating Educational Programs for Children with ASD (Beth Lambert)

I wanted to share with my fellow parents what I learned at the highly informative presentation by Erik Mayville, Ph.D., BCBA-D, at the March 2010 conference put on by the CT Association for Behavior Analysis (CT ABA). Dr. Mayville, who works at The Institute for Educational Planning (IEP) in Milford, CT, titled his workshop "Evaluating Educational Programs for Children with ASD."

Dr. Mayville began by referring the audience to the text of the Individuals with Disabilities Education Act (IDEA) and especially to those sections defining the content and purpose of an evaluation and the circumstances under which a parent may request an independent evaluation at public expense. IDEA's statutory language and regulations can be found at the U.S. Department of Education's web site, www.idea.ed.gov.

Why Evaluate

Why might a parent request an Independent Educational Evaluation (IEE)? First, existing evaluations may not address all the specific educational needs relevant to autism. Autism spectrum disorders (ASD) typically affect functioning in numerous fundamental domains: speaking & listening; social interaction (particularly salient in "higher functioning" people with autism); and adaptive skills, including self-care & employment. Effectively addressing such a multiplicity of deficits requires programming precision.

Parents may be wondering if their student is making appropriate progress. "Appropriate" has different definitions depending on the age and apparent ability of the student. There is evidence that shows many young children may make greater than 12 months' gain in 12 months' time. So Dr. Mayville would be looking to see if the child is making that kind of accelerated quick progress in his current program. Children 12 – 15 years of age are expected to be making consistent gains.

Purpose and Content of an IEE

As a parent, I thought Dr. Mayville's description of the purpose and content of an IEE report was extremely helpful.

1) An IEE is a starting point for the educational planning procedure. Often it is this report that helps parents and school personnel to determine the child's needs and how to address them. It is not possible for the evaluator to get a whole view of a program in just one visit. The report should set the occasion for receiving effective educational services.

2) The evaluator needs to collect a variety of data in the relevant domains described above. This will include reports from all the professionals who have worked with or evaluated the child in the past as well as input from the parents.

3) The report should also include:
   a. a critical but constructive review of current or proposed services,
   b. specific statements about treatment needs
   c. collaborative and assertive communication of needs to the IEP team.

There are a variety of interventions for students with ASD & they are often presented as if they have equal merit. However, according to Dr. Mayville, they need to be based on solid research. Section 651 of IDEA addresses this. Applied Behavior Analysis (ABA) has the research behind it to show that it is effective. Some people think ABA is rigid but it actually is a flexible approach because it uses data to evaluate various techniques.

Dr. Mayville presented the following Seven Tenets of Applied Behavior Analysis:

1. Applied – the programming has social significance for the child.
2. Behavioral – it describes measurable behavior
3. Analytic – Looks at the functional relations of the behavior
4. Technological – Provides precise descriptions of the procedures used
5. Conceptually systematic – provides a description of the principles
6. Effective – the behavior must improve
7. Generality – change is stable and broad

When evaluating an ABA program Dr. Mayville keeps a number of ideas in mind. As Anderson & Romanczyk said in 1999, ABA is not "a stagnate single continuum of prescribed methods." So you need to look at the child and the program together. Any intervention strategy could possibly be accepted by behavior analysts – if described precisely, capable of being reproduced and demonstrated to be effective. Therefore, it's important to analyze if the program applies the seven tenets listed above.

Applied Behavior Analysis can be used as a problem-solving model. It can be used to figure out what is going wrong in a program and then make recommendations to correct the issue(s). Dr. Mayville provided a slide based on work by Ferraioli, Hughes & Smith (2005) that describes common problems and their possible solutions. You can see that this is not something parents can do, but are things at which the evaluator and program supervisor should be looking:

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If No Skill Acquisition Consider:

- Skills assessment and consider prerequisite skills
- Simplify or modify the materials
- Individualize the error correction procedure

If Inconsistent Progress consider:

- Conduct preference assessment
- Change instructional format
- Assess and address implementation variability

If Problem Behavior consider:

- Modify reinforcement procedures
- Evaluate and individualize prompting procedures
- Individualize teaching procedures

Standardized Testing

A good educational evaluation will include standardized testing. Such testing provides a common language that all the individuals involved in the child's programming understand. When done competently, testing contributes to determining a child's functioning level, thereby

providing an important tool for assessing whether the current program is appropriate. Standardized tests also allow you to determine if a child is making progress in his current setting by comparing scores from year to year.

There are seven areas of standardized testing to be considered for a child on the spectrum. One type of standardized testing is the psychological evaluation. This includes determining the child's developmental and cognitive functioning level – often done with an IQ test. Verbal comprehension and non-verbal reasoning are two parts of developmental /cognitive testing. Some of these tests are the *Stanford-Binet V, the Wechsler Scales, or Mullen*. If the person is nonverbal then only nonverbal reasoning ability should be tested and examples of those tests might be *the Leiter International Performance Scale* (often used with deaf children), or the *Test of Nonverbal Intelligence.*

Dr. Mayville emphasized the need to look at the subtest results of any standardized tests that are given. Sometimes the whole score doesn't indicate there is a difficulty but when the subtests are analyzed a deficit can be identified. Sometimes because the person scores highly in most subtests the overall score doesn't indicate that one or two subtests are very low. Be sure to look at the subtests and get an explanation of what each indicates.

Psychological testing should also look at a child's adaptive functioning – how does he make it through the day? This information is almost exclusively gathered through third party (parent or teacher) report. It looks at socialization (very useful for "higher functioning" children and includes their ability to develop interpersonal relationships), communication, daily living skills, and physical development. To be accurate and helpful these tests/questionnaires require good reporters (parents need to be honest). Possible tests to be used are the *Vineland Adaptive Behavior Scales, 3rd Edition* and *the Scales for Independent Behavior, Revised*. Again, Dr. Mayville emphasized the need to look at the sub-domain scores.

Another aspect of the psychological evaluation looks at clinical symptomatology. This means looking for possible co-morbid diagnoses such as ADHD, anxiety disorder, & aberrant behavior. While there are tests and questionnaires that can be used to assess a person's psychological abilities, it is important that direct behavioral observation be done as well. The observation should be done in different contexts – office, school, home & community.

Specific tests were mentioned for each of four disorders. Dr. Mayville did not recommend one over the other as it depended on the individual person as to which would be "best." Those tests are:

For Autism: *Autism Diagnostic Observation Schedule (ADOS), Childhood Autism Rating Scale (CARS), Gilliam Scales, Autism Behavior Checklist*.

For Anxiety or Mood Disorders: *Nisonger Child Behavior Rating Form, Child Behavior Checklist, Behavioral Assessment System for Children*

For ADHD: Conners Rating Scale, NCBRF

For Aberrant Behavior: *Aberrant Behavior Checklist, Behavior Problems Inventory* (good for "lower functioning" children)

Standardized testing also includes an Educational Assessment. This can be a curriculum-based assessment which is "direct observation and recording of a student's performance in the local curriculum as a basis for gathering information to make instructional decisions." The test used should be designed to measure whether the child has mastered the material taught in the classroom. Standardized tests of educational assessment might include the *WIAT-II, Woodcock –Johnson Tests of Achievement, 3rd Edition,* or the *Autism Screening Instrument for Educational Planning, 3rd Edition.*

Another area of standardized testing is the measurement of a child's Social Functioning. Since this is the fundamental component of autism spectrum disorders, this type of assessment may be the primary domain of interest in the evaluation. Careful social functioning assessment is rare as most social skill assessments don't offer a thorough survey of ASD-specific social impairment. The use of ASD-specific instruments is important. The three rating scales he mentioned are the *Social Responsiveness Scale, the Children's Communication Checklist, and the Children's Social Behavior Questionnaire*. Dr. Mayville also said an evaluator may want to use another scale for "higher functioning" children to compare them to typical peers.

The final area of standardized testing Dr. Mayville discussed was a Speech-Language Communication assessment. These assessments need to look at vocabulary, language, articulation and oral-motor skills, and pragmatic language. Again he said it was important to look at the sub-domain results & not just the overall score.

Document Review

Before Dr. Mayville visits a child's school to evaluate the program, he reviews the IEP and related documents. It is important the independent evaluator receives these other documents BEFORE going in to observe the child. They include:

- Evaluations & progress notes
- Curriculum development tools
- Program descriptions
- Behavior reduction plans, incident reports, HRC recommendations
- Data collection procedures & graphs
- Motivational systems

Data Collection

Schools often say they collect data but insufficient expertise may result in fairly meaningless data. It's important to consider a number of aspects of the data collection system.

First, is the measurement of progress being done through the appropriate measurement dimension? Look at the goals and objectives and make sure the proper dimensions are being used for collection – frequency, rate, accuracy, duration and latency (how long it takes to respond). Data should be recorded immediately & accurately. It's easy to forget if recording is delayed.

Data should be taken across all relevant environments – not just at the discrete trial table. Data should be taken often enough and long enough to be representative of current performance. If they do probes, then are they really getting a full picture of the child's ability? Data should be

graphed regularly & displayed in an understandable, standard format and should represent a dynamic learning system.

Since programming decisions are based on data, other aspects need to be considered. Data should be periodically verified via inter-observer agreement by a trained observer. While graphing is important, the graphs need to be interpreted at a minimum of every few days by a QUALIFIED professional and then analyzed to make programming changes & decisions.

Classroom Observation

After the evaluator has conducted or reviewed the standardized assessments, he should look for evidence that appropriate skills are being taught. The student's needs are determined by the assessments. A typical school program may not contain objectives in the following areas, but they should: language and communication, pre-academic and academic, social skills, daily living and problem-solving, adaptive living and independence, play skills, safety skills and healthy lifestyle (diet & exercise, taking medication, routine health & dental). The last four areas are especially important for older children.

When looking at what is being taught a child, there should be evidence that an appropriately detailed & sequenced curriculum is being used and that the curriculum is being appropriately individualized for the child. Dr. Mayville listed a number of commonly used guides but did not recommend a specific one: *The Assessment of Basic Language & Learning Skills (ABLLS); Adaptive Living Skills Curriculum* (Bruininks, Morreau, Gilman & Anderson) is comprehensive; *SRA Direct Instruction Programs*; and *A Work in Progress* (Leaf and McEachin).

There are a number of observation considerations. What are the observation parameters? Look at the physical space, the classroom organization & the time spent on what type of objective in what type of format. There is an Education Options Survey in the back of *Teaching Language to Children With Autism or Other Developmental Disabilities* by Sundberg & Partington that provides a checklist to assess the classroom.

Also, are evidence-based learning procedures observable? Is the learning process observable and is the range of learning parameters accounted for? Are you watching the child in the acquisition, maintenance, fluency or generalization phase? Is the evaluator observing a typical day? Is the person working with the child the person who normally teaches him or is there a "guest appearance" of the supervisor? Is the format typical? Is this one- to-one typical or does he usually work with one or two other students at the same time? Is the observation sample representative of the full variety of typical day-to-day activities? Does he see implementation of well-written programs?

Discrete Trials

While we all know that ABA involves more than just discrete trials, if your child learns novel information through discrete trials, then assessing the school's ability to conduct them appropriately is important. When observing discrete trial instruction, Dr. Mayville looks at a number of factors.

1. Organization of the trials

    a. Rationale for procedural arrangements. Are they doing probe trials or teaching trials? Why?
2. Presentation of trials
    a. Clear, single presentation
    b. Appropriate language level – not above the child, not "baby talk"
    c. Clear opportunity to respond
3. Reinforcer delivery
    a. Have reinforcers been identified?
    b. Immediacy of delivery – does child knows what behavior resulted in getting the reinforcer?
    c. Delivery schedule – Delivered too often? Not often enough?
4. Error correction strategy
    a. Corrective "No"
    b. Timing of correction within teaching protocol – don't practice the wrong answer
5. Prompt & prompt fading protocol
6. Mastery criteria
7. Discrimination training protocol
    a. Example: Single item to a field of items format
    b. Data collection procedure
8. Stimulus control factors
    a. Expansion of field size
    b. Rotation of comparison stimuli
    c. Systematic variation of sample, comparison stimuli
    d. "observing" response

Dr. Mayville shared two charts with the audience that an evaluator could use as a checklist to determine if the instructor(s) are doing the above correctly. One is titled *Discrete Trial Instruction Checklist* but I don't know the author (Dr. Mayville?). The other is titled *The 21 Components of the Discrete Trials Teaching Evaluation Rating Form* by Babel, Martin, Fazio , Amal, & Thomson.

Incidental Teaching

Any educational program our children participate in will include incidental teaching opportunities. Dr. Mayville discussed a number of considerations in connection with incidental teaching.

First, does it occur? Is the classroom environment pre-arranged to facilitate incidental teaching? It's difficult to provide opportunities for students to practice in non-traditional environments such as play areas and cafeterias. It takes determined effort from the staff to be successful.

Is there a process for data collection? See above for more details. If this is the primary instructional format, are there sufficient learning opportunities and sufficient breadth in the targets? The student should not be give too much "down time" where he is not actively engaged in learning.

Small Group Instruction

When the child participates in small group instruction there are some quantitative considerations the evaluator will be looking for. Does the child demonstrate attending behavior such as eye contact with the speaker and body orientation? The evaluator will look at the target student's behavior and compare it to peers in the small group. Are there sufficient opportunities for the student to respond in this setting? What reinforcement procedures are in place? What is the type of reinforcement and frequency? Are a number of IEP objectives being addressed while in this group? The evaluator will also assess the number of interactions the child has with peers including responses, initiations and exchanges.

There are qualitative considerations to small group instruction as well. Is there any connection between the individual and the small group activities? Is there evidence of a strategy to influence group responding? Are careful language modifications made? What is the language rate and content? Is there carry-over from the DTI format? The BCBA should be overseeing not only the DTI but also this small group instruction to ensure there is carry-over. Dr. Mayville referenced *The Effectiveness of a Group Discrete-trial Instructional Approach for Preschoolers with Developmental Disabilities* by Taubman, Wishner, Baker, McEachin & Leaf for more information.

Inclusion

One of the advantages often cited for keeping a child at the local school is the opportunity for inclusion with typical peers. Again, Dr. Mayville listed some things that should be considered when observing a child integrated in a typical classroom.

First, be aware of the primary purposes of integration - social skill acquisition, play skill acquisition and group learning skill acquisition. Are the conditions necessary for learning evident? There should be reinforcement, shaping, prompting & prompt fading. It should be clear learning is taking place. Even though it's harder to take data in an integrated setting, it is still possible & will help evaluate the effectiveness of the inclusion program.

If the inclusion program is to be successful, the student's skill level must match the demands of the environment. Dr. Mayville listed some prerequisite skills a student should have in order to be successful in an integrated setting. I don't believe this was a complete list though:

1. Observational learner
2. Stereotypic and/or disruptive behavior under stimulus control
3. Responds to social reinforcers
4. Sustains appropriate play for 5-10 minutes
5. Follows one-step instructions
6. Transitions to and from activities independently
7. Asks and answers simple questions
8. Reciprocates greetings
9. Responds to delayed contingencies

As stated earlier, data should be collected while the child is in an inclusive setting. Some possible *quantitativ*e data collection targets are:

1. Attending to the speaker
    a. To teacher (interval data)

   b. To child (frequency data)
2. Stereotypy – both frequency & interval
3. Opportunities to respond
4. Responses to "nonspecific" language
   a. Does child respond when directions are given to whole group?
5. Degree of independence in managing transitions
6. Use of self-management tools
7. Social interactions
   a. Initiations
   b. Responses
   c. Exchanges
8. Hand raising – opportunities/responses

Possible *qualitative* data collection targets may be:

1. Responses to questions – what does he/she say?
2. Types of directives responded to
3. Content of exchanges between peers
   a. Subject-peer
   b. Peer-peer
4. Degree of assistance required to complete work – set according to child's skills

Social Programming

Lack of appropriate social skills is core to the diagnosis of autism, so it's essential that the evaluator looks at the child's social programming. The primary and most severe deficits demonstrated by children with Asperger Disorder or "high functioning autism" may be in this social learning domain. If so, social programming should be a vital core part of the child's curriculum and staff needs to be very focused on this. No matter the child's functioning level, when looking at social programming some questions need to be asked.

1. What are the acquisition procedures?
   a. Group instruction is common, but this is typically not enough. Not just " lunch bunch," it should be done throughout the day
   b. Degree to which evidence-based procedures are followed
   c. Is there reinforcement?
   d. Is there training for peers?
   e. Are prompts being faded?
2. Are there generalization procedures?
3. Are there appropriate staffing resources? What kind of training?
4. Is there appropriate programming intensity?
5. Is there a consistent conceptualization of learning across activities?

Contents of the Evaluator's Report

Finally, when the evaluator has sufficiently reviewed the documents, done the testing and observed the child in the program, he should write a report to be shared with the parents & school personnel. Below are elements that should be in a report.

1. History of the child including prenatal information
2. Previous evaluation results

3. Standardized test data
    a. Behavior during testing, intervention procedures required
    b. Comparison to previous results
    c. Description of items that comprise scores
    d. Autism-specific measures
    e. Lack of elevation does NOT equal no need for intervention
4. Review of program documentation
    a. Frequency of program implementation
    b. Timely changes in programming
    c. Correspondence between observed lessons and IEP
5. Direct observations in relevant environments
    a. Data collected on behavior specific to referral question
    b. Might be communication, social interaction, restricted/repetitive interests
6. **Recommendations** – For parents, this is all important. Dr. Mayville provided specific language he might include in the report. This specific language really helps parents understand & fight for what their child needs.
    a. Intervention modality
    "David's educational program should be based in the principles of ABA"
    b. Intensity of intervention
    "David should receive 30 hours/week of ABA-based education intervention."
    c. Program supervision personnel
    "A BCBA or a similarly qualified behavioral consultant (see www.bacb.com for a list of suggested competencies) should supervise all aspects of David's program to ensure that it is supported at all times by technical expertise in behavior analysis"
    d. Program supervision intensity
    "Given David's current learning needs, the supervisor will likely need to train staff approximately 10 hours per week or more until they have met criteria for competency in indicated behavioral instructional methods. Decreases in this level of supervision should only be made following from data collected on direct instructor competencies that illustrates that staff have met competency criteria".
    "To facilitate an appropriately sensitive supervisory process, it is recommended that David's behavior analyst have no more than 8-10 children on his/her caseload in an intensive behavioral intervention (EIBI) capacity."
    e. Staffing levels
    "David's programming should currently be implemented in a 1:1 teacher-to-student ratio, with the primary instructor being a teaching assistant who has been trained to criterion in behavior analytic instructional skill domains."
    f. Staff training areas
    g. Range of programming environments
    "David should also receive at least 10 hours of additional ABA-based programming at home that is structured in the manner described in recommendation letter a.
    h. Continuity of program across the year
    "Extended year programming must be provided for David to ensure maintenance of skills required and the prevention of any skill regression. This should consist of approximately 35 total programming hours per week (e.g., 25 school-based, 10 home

based) with no more than a 2-week break between the beginning and ending of the regular school year services."

i. Specific programming structure
   -social
   -language
   -discrimination training
   -discrete trial
   -small group
j. Identify particular procedures that appear appropriate as well as reference for description

Conclusion

Dr. Mayville concluded his presentation with the following: "Evaluation of educational services should go beyond descriptions of standardized test data and surface descriptions of behavior, and should be detailed enough to inform specific educational and treatment directions."

Clearly, conducting an educational program evaluation is complex and must be done by qualified personnel. I was grateful for the opportunity to learn more about that complexity, especially to understand better the essential elements of the kind of meaningful assessment necessary to develop and implement a truly individualized education plan. I hope that this information is helpful to you in obtaining appropriate services for your own child and that you will share it with others.