Providing School-Based Physical Therapy: Innovations in School-Based Practice

Ecological Assessment for Educational Strengths & Needs

The federal regulations under which school-based services are provided mandate that these services be \textit{educationally related}, which requires that therapists identify the specific functional outcomes their services for a child are designed to achieve.

- Giangreco, 1995

Personnel Reflection

- Goal of our work?
- Role
- Disability definition
- How do you determine when you have been successful?
The Goal of our Work
- Support a child in the role of "student"
- Optimize function as it relates to the educational program
- Support participation in the natural environment
- Support LRE
- Support inclusion with non-disabled same aged peers

Role Definition: Related Service Provider
- Optimize function as may be required to assist a student with a disability to benefit from special education and participate in general education.
- Facilitate development and function in relationship to the educational program.

A 360° perspective on school-based PTs
- IDEA:
  - District/administration:
  - Teacher:
  - Student:
  - Parent:
  - Community/outside provider:

How do you define disability??
- Is an individual disabled when they cannot do or be the things they value doing or being?
- Is it a gap between current abilities and preferred abilities?
What is your perspective on students with disabilities?

- A moral perspective?
- A medical perspective?
- A social perspective?

This perspective sets the tone for your work

Contemporary thinking about disability: A Biopsychosocial Model

- The integration of disability and development
  - Previous work only addressed “normal”
  - “Normal” versus functional
    - What’s acceptable?
- The Dynamic Systems Theory
- The ICF

Educationally Relevant Student Assessment Utilizing the ICF and Ecological Theory
From Decision-Making in Pediatric Neurological Physical Therapy:

"what therapists think is needed in response to the dilemma of how to improve outcomes is new techniques for intervention. I tend to believe, however, that the use of more explicit decision making paradigms with objective assessment of functional outcomes is likely to be more productive."

- Campbell, 1999

Frameworks to Consider For Assessment

- ICF
- HOP-FA
- Natural environment
  - It's not just a location!

Key Concepts of the ICF

#1

- The ICF requires the clinician to systematically evaluate the relationships among all health factors in order to develop the PT plan of care (goals, outcomes and evidenced-based interventions) FOR THE IEP.
#2
- Build on an individual’s strengths, desires, and performance in relative contexts
- Focus on positive outcomes, which will lead to participation rather than the negative consequences of the pathology

#3
A student’s/child’s diagnosis alone does not impart the necessary information to adequately address his/her educational needs with regard to service provision, level of assistance or functional outcomes.

#4
- A direct relationship cannot be assumed between the severity of impairment and the student’s functional independence
- Every aspect of the model affects the others
- Ecological not linear

#5
- The ICF focuses on the student/client – emphasizing their goals and activities, not ours
Hypothesis-Oriented Pediatric Focused Algorithm (HOP-FA)

Key Concepts

- A systematic, stepwise guide to the patient/client management process
- Requires the clinician to assess the impact of multiple factors
  - Observing in relevant environments
  - Interviewing personnel in the student’s sphere
  - Examining participation in age-appropriate “typical” activities (social roles and functions)
  - Establishing outcomes as a means of directing the remainder of the assessment

#1

Requires the clinician to assess the student’s strengths and identify problem areas (impairment, functional limitations, activity or participation restrictions)

#2

It requires the clinician to identify a problem statement (a hypothesis) regarding the “why” a team is pursuing PT services
The hypothesis drives the remainder of the assessment process once the initial observations are done.

The clinician must consider contextual factors such as environmental barriers and societal expectations that impact participation.

### Natural Environment

- 3 dimensional framework
  - Setting
  - Activity
  - Provider
- Dynamic by nature - interaction among the dimensions

### Assessment Methodology

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Traditional</th>
<th>Contemporary</th>
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<tbody>
<tr>
<td></td>
<td>To determine what is needed to remediate the disability.</td>
<td>To determine what is needed to help the student attain educational goals/objectives</td>
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<tr>
<td>Method</td>
<td>Test scores</td>
<td>Ecological (environmental)</td>
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<td></td>
<td>Discrepancy model</td>
<td>Identification of supports and interferences to specific tasks, expectations</td>
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<td></td>
<td>Diagnosis driven</td>
<td>Collaborative decision making</td>
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<td>Comments</td>
<td>Test scores may not be relevant</td>
<td>Consideration of student-task environment</td>
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<td></td>
<td>Test scores and diagnosis may not relate to classroom performance</td>
<td>Direct relationship to performance expectations</td>
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<td>Test scores do not contribute to the development of functional goals</td>
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Supporting the Role of “Student”
- What roles do students play?
- How does that factor into assessment?

Supporting LRE
- Assesses the impact of the instructional environment on performance
- Assesses social interactions and well as functional performance
- Fosters embedded intervention
- Requires collaboration among professionals to support inclusion
- How will we support students to be community, college and or career ready?

“Bottom-up versus Top-Down”
Bottom Up
- Targets the level of discrete component abilities
- Relies heavily on developmental tests
- Emphasizes normalization of underlying processes to achieve greater function

Top Down
- Defines what the student wants or needs to do
- Defines the context(s)
- Identifies discrete abilities only to the extent necessary

“Top down”
- Health condition (disorder or disease)
- Body Functions & Structure (Impairments)
- Activity (limitation) (Capacity & Performance)
- Participation (Limitations)
- Environmental Factors
- Contextual Factors
- Personal Factors
Top Down Approach

- Desired Outcome/Goal Participation
- What are the team/student/family priorities?

Identification of Barriers

Strategies to overcome barriers
- Passive/active strategies

Identification of Strengths

Intervention Plan/POC
- Re-assessment/revision
- Data driven decision making

Example

- What are the team/student/family priorities?
  - Play with peers on the playground

Identification of Barriers
- Initiation of peer interactions
- Cannot manage the terrain

Identification of Strengths
- Follows simple directions
- Asks for help

Strategies to overcome barriers
- Passive/active strategies

Intervention Plan/POC
- Re-assessment/revision
- Data driven decision making

Think “ecological”

- What is Ecological Theory?
- What is its history?
- Why is it useful?
  - How does it impact “educational relevance”?
  - How does it shape the IEP process and clinical decision making?

Why an ecological approach?

“...the environment is seen as a container and promoter of meaningful behavior”...
  (VanSant, 2003)

“Environment setting is an important consideration for assessment and intervention to improve mobility”
  (Palisano et al., 2003)

“Disability is a problem in the relationship between the individual and the environment...”
  (Law & Dunn, 1993)
What is an ecological approach/assessment?
- A comprehensive process of assessment where data on student performance is collected across different environments and or settings

**Facilitates decisions at the student specific level**

Ecological Assessment Framework
- Participation
- Complex task performance
- Activity performance
- Component Processes

Ecological assessment supports transdisciplinary practice
- Use of ecological assessment helps improve generalization for disabled children
- Can assist with clarifying roles
  - Task analyzing activities can identify the true barrier
- Assists with embedding instruction into classroom routines
- "More is better" – learning opportunities, not services

Ecological Assessment Concepts The Link to IDEA
- Needs must be understood in context to establish **education relevance**
  - Abilities are assessed in relation to activity demands and routines
- Observation of the students in daily activities
  - Provides information about environmental variables as well as needed skills
  - Allows for embedded intervention in high frequency activities
- What is the standard of measure?
The four major steps...to ecological assessment

1. Determine the routines to be included in the student’s program
2. Identify the activities within each routine
3. Prioritize activities for the student to participate in each routine
4. Determine the skills the student needs to do for each identified activity

Task Analysis of classroom activities and routines

- Identifies contextual variable such as:
  - frequency, difficulty, relevance of target behavior
  - Adult demands
  - Peer expectations
- Identifies the component steps to the problem activities
- Looks at existing supports
  - What works? What doesn’t?

When task analyzing: Collaborate!

- Collaboration helps to:
  - Identify the problem
  - Identify the environment where the problem exists
  - Identify where the activity limitations surface
- Collaboratively task analyze the activity
  - Ensure practice in context
  - Will assist with data collection and buy in

Therapist Tools

- Interviews
  - Student
  - Teacher
  - Parents/caregivers
- Ecological Approach-systematic direct classroom observation
  - Multiple environments
  - Multiple times of the day
  - Ecological inventories (task analyses)
- Data collection for a baseline
  - What tools?
  - Who does it?
  - How often?
- RTI data
- Standardized/Discipline specific tests
Writing Present Levels Academic Achievement and Functional Performance

Determining Strengths & Needs

Making decisions regarding educational impact

The Federal Regulation

Section 300.347(a)(1) A statement of the child’s present levels of academic achievement and functional performance, including—

(i) How the child’s disability affects the child’s involvement and progress in the general education curriculum; or

(ii) For preschool children, as appropriate, how the disability affects the child’s participation in appropriate activities;

The Present levels are a current snapshot of:

- Academic performance
- Functional performance
- Strengths of the student
- Needs resulting from the disability
- Impact of the disability on involvement and progress in the general education curriculum

It describes performance...

- The interaction of the student with his/her [school] environment.
- What does this student do every day?
The ICF: Write your present level

Build the Present Level: Consider the following...

Use the ICF to determine not only barriers but strengths to build from

Consider:
- The type of program is the student in
- The student’s participation and assistance required for routines and activities (what are those routines and activities?)
- The part(s) of the day the student’s participation is limited

Other considerations...
- The barriers/the supports to the accomplishment of these skills (will support SAS decisions)
- The current supports that meet the student needs
- Progress toward goals/objectives if appropriate

After the Evaluation/Assessment
Start the PT POC decision making process:
- Diagnosis:
- Prognosis:
- Determining SAS, Goals and objectives
- Tailoring your Interventions/Strategies
  - Prioritize where you are intervening (think ICF) and where (think ecologically)
- Data and Outcomes (team):
  - Student performance
  - Efficacy of intervention
  - Results/re-evaluation
What are we accomplishing?

- **Learning** = A relatively permanent change
- **Performance** = A temporary change
- **Conditioning** = paring ideas or relating a behavior to a consequence

Deshler & Schumaker, 2006

PEDAGOGY or ANDRAGOGY?

- **Pedagogy**: refers to teaching, and is usually teacher centered.
- **Andragogy**: focuses on learning and therefore, considered learner centered.


Evidence for Learning: Strategies, Differentiating, Embedding...

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LEARNING CONSIDERATIONS

- Active vs. Reflective
- Sensing vs. Intuitive
- Visual vs. Verbal
- Sequential vs. Global

LEARNING STYLES

- Visual Learner
- Auditor Learner
- Tactile Learner

Type of Learner

**Auditory = Clear Instruction**

- may not attend with eye contact
- acquire knowledge by reading aloud
- hum, sing talk to themselves or others when bored
- remember by repeating lessons to themselves

**Strategies**

- Learn with peers to talk aloud
- Tape lectures

**Visual = Images**

- prefer a quiet, organized learning environment
- often close their eyes to visualize or remember something
- find something to watch if they are bored
- take numerous detailed notes
- tend to sit in the front

**Strategies**

- Remember by writing things down
- Benefit from illustrations and use of color
- Study area visually appealing
- Focus on speaker
- Underline
- Read aloud
Type of Learner

**Kinetic or Tactile - Experience**

- need to be active and take frequent breaks
- speak with their hands and with gestures
- remember what was done, but have difficulty recalling what was said or seen
- rely on what they can directly experience or perform
- find reasons to fidget or move when bored
- are uncomfortable in classrooms where they lack opportunities for hands-on experience and free movement
- communicate by and enjoy touching

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Tactile Learning Strategies and Resources

- Write things down
- Study aloud
- Recite / memorize while walking or pacing
- Underline
- Breaks with exercise, relaxation, snacking
- Repetitive movement with content (e.g. rote counting, vocabulary)

Movement-based Instruction/Energizers:


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Learning

- All students can learn
- All learning is based on prior knowledge
- For SWD to learn:
  - Teaching must be intensive and explicit
  - MUCH more practice than other students
  - Feedback must be concrete and individualized
- There is no quick fix
- What is going on: sensory overload, processing delay, insufficient practice, not connecting with instruction...a moving target

Deshler & Schumaker, 2006

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Learning, continued

Requirements to learn (what is the issue?):

- Learning the concepts
- Applying or generalizing learned concepts to new situations
- Comparing concepts
- Understanding relationships (e.g. rules)
- Integrating main ideas and details
- Learning procedures, processes or sequences
- Understanding cause and effect
- Exploring problems, making judgments, finding solutions

Deshler & Schumaker, 2006
THEREFORE, what do our students need?

- Clear, concrete feedback at the time
- Practice in setting where skill will be used (real-life)
- Much more practice than you would expect (how many football fields?)

Types of Practice

- Whole (the entire task)
- Part (task broken down and taught piece by piece)
- Transfer or generalization (applying learning to new situation)
- Mental (performing skill with imagination)
- Guided (physical prompts through skill)
- Discovery (self-guided exploration of skill)

Feedback

- Verbal (everyone's favorite)
  - Volume
  - Amount
  - Context
  - Delivery
  - Speed
- Manual/Physical
  - Appropriate
  - Force
  - Context
  - Delivery

- Visual
  - Clear
  - Context
  - Attention
- Modeling
  - Peer if possible
  - Speed
  - Attention/Focus

DIFFERENTIATING INSTRUCTION

Differentiated Instruction: instructional theory that allows teachers to take into account the diversity of student factors when planning and delivering instruction.

Based on:
- Individual differences in learning styles, interests, and abilities found in a classroom.
DOs and DON’Ts

**Do**
- Do provide several learning options or different pathways to learning
- Do provide varying levels of challenge for all students

**Don’t**
- Don’t develop separate lesson plans for each student in a classroom
- Don’t “water down” the curriculum for select students.

LAYING FOUNDATION

- Get to know students
- Identify curriculum areas that could be adapted to differentiated instruction
- Examine your role in differentiated instruction

APPLICATIONS FOR THERAPISTS

**Based on content**
- Thinking on various levels of Bloom’s Taxonomy
- Break into smaller parts
- Varying levels of complexity
- Keep Gentile’s Taxonomy in mind

**Based on process**
- Access to variety of learning materials
- Target auditory, visual and kinesthetic learners
- Stations for inquiry-based, independent learning
- Activities of varying levels of complexity and degree of abstract thinking
- Flexible grouping based
APPLICATIONS FOR THERAPISTS

Based on product
- Variety of assessment strategies
- Offer students choices that reflect a variety of learning styles and interests
- Make assessments an on-going, interactive process

MOTOR LEARNING

- Relatively permanent differences in motor skill capability that is transferable and generalized to new learning situations
- Ultimate focus of intervention

INTENTIONS OF INTERVENTIONS

Based on Dynamic Systems Theory (DST)
Promote motor learning by encouraging (student) to actively explore and problem solve around complex, goal-directed tasks in meaningful environments.

Contemporary functionally based interventions
Interventions emerge through a process of self-organized interaction between:
- characteristics of the child
- features of the task
- learning environment
MOTOR LEARNING STRATEGIES (MLS)
- Practical application of motor learning theory into interventions
- Can be used by therapists to structure presentation of the task and learning environment during intervention sessions
- Insufficient evidence to state that a specific strategy should be applied in a specific methodology with pediatric clients

Foundation of pediatric therapeutic interventions: promoting motor learning

MOTOR CONTROL AND MOTOR LEARNING
Historical Perspective:
- Theoretic Groundwork
- Schema Theories and Sensorimotor Theories
- Ecologic Approaches
- Dynamic Systems Approach

MOTOR LEARNING AND TEACHING STRATEGIES
- Context
- Motivation and Prior Knowledge
- Instructions
- Observational Learning
- Purposeful Tasks
- Kinesthetic Mental Practice
- Practice Sessions: Length and Frequency
- Caregiver Education and Training
USE OF MOTOR LEARNING STRATEGIES
- Intended to enhance the benefits of therapy sessions
- Determine goal of therapy:
  • Acquisition
  • Generalization
  • Fluency
  • Maintenance
- Provide a structure to support transfer, generalization and progression of learning
- Assist therapist decision making related to configuration of the task and the environment

FUNCTIONALLY BASED INTERVENTIONS
- Grounded in DST perspectives
- Focus on enhancing problem solving and improving skill acquisition
- Emphasis on learning of purposeful tasks and not the quality of movements to achieve the tasks

Flow from Prognosis
- From PT dx and student goals developing POC to attain
- Developing intervention plan and strategies based on prognosis and diagnosis
  • What evidence?
  • What experience?
  • What experiments?

TAKEAWAY
- Functional and purposeful activities
- Frequent practice
- Natural occurring environment which activity takes place
- Child – centered

Push in vs. Pullout
What do we want?

What is our job, ultimately?
- Altering student experience and increasing opportunities for practice with expertise in addition to or instead of intervention
- At what point do we:
  - prepare the student for the ‘road’=gen ed world
    ...instead of...
  - prepare the ‘road’ for the student=special ed

LEAST RESTRICTIVE ENVIRONMENT (LRE)
- Ensures access, participation, and progress in general education curriculum, program options, and non-academic services and settings to the maximum extent possible
- Sustained by needed supports and services
- Promotes measurable educational benefit
- Means high expectations for children

(IDEA 2004 612a5)

Key to ultimate student success

LEAST RESTRICTIVE ENVIRONMENT
“To promote academic success and social participation and to access, progress, and participate in the general curriculum”

(Wolfe & Hall, 2003)
LRE - Research

- Results in increased achievement for children with and without disabilities (Kennedy & Itkonen, 1994; Hughes, 2001).
- Typical peers serve as models (Visoky, 2000).
- All students learn to appreciate and value diversity (Hughes, 2001).
- Prepare students for adult life in an inclusive society (Ellery, 1995).

What is Embedded Intervention?

- Providing service in the setting the student routinely participates.
- Planning and collaborating between teachers and service providers.
- Curriculum-context-based intervention.

Continuum of Service Delivery

Characteristics of Embedded Intervention

- Assumes collaborative planning.
- Occurs within daily routines.
- Uses childhood activity as instructional and therapeutic media.
- Recognizes dynamic relationship between student, activity, and/or environment.
- Front-load investment with long-term efficiency.

- McWilliams & Scott, 2001.
**Embedding Goals into Daily Routines & Activities**

- Team approach
- Understanding of the relationship between the curriculum and the IEP
- IEP with functional goals everyone ‘buys into’
- Daily schedule including planned activities
- Knowledge of child’s preferences, interests, & motivators

**Embedding Interventions**

**THE BENEFITS – Student & Staff**

- More practice
- Skills more readily generalized
- Generates strategies for with all students
- Provides therapists as models
- Provides peers as models for students
- Minimizes hallway transition time
- Demystifies therapy room ‘magic’
- Informs transition decisions

**Embedding Interventions: Classroom Benefits**

- Informs whole-student perspective
- Increases understanding of role
- Increases involvement in school culture
- Grows repertoire of skills
- Wider variety of interventions and modifications are attempted
- Enhanced teaching methods, techniques and strategies
- Increase collaboration among staff

**All students get opportunities to participate in alternative learning experiences like:**

- peer tutoring
- cooperative learning groups
- specific strategies instruction
- individual remediation
- small group instruction
- differentiated instruction

(Wolfe & Hall, 2003)
One thing leads to another...

- How can we address student need in ‘real-life’ context?
- Where do we start?

Supplementary Aids and Services: Therapists’ Interventions?

“...create a system of support that enables many students with disabilities to learn and participate alongside typical peers regardless of their unique instructional needs and differences.”


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How will the IEP address the student’s unique needs?

What does the student require for:

- Access to his/her educational curriculum?
- Progress in general education curriculum?
- Participation in extracurricular & nonacademic activities?
- Progress toward attaining IEP goals?
- Participation with nondisabled peers?
- Transition – are we on track?

IEP GOALS

Related Services

Supplementary Aids & Services

• “When service providers are focusing on client’s impairments as the problem rather than treating the environmental barriers as the true problem...”
  (Roush & Sharby, PTJ 2011)

• “Successful physical therapy services depend on more than developing intervention focused on the physical aspects of a task”
  (Campbell, 2006. p.600)
Supplementary Aids, Supports and Services

- What is a supplementary aid?
  "...means aids, services and other supports that are provided in regular education classes, other education-related settings and extracurricular and non academic setting to enable children with disabilities to be educated with non-disabled children to the maximum extent possible..." §300.42

- What is the purpose of supplementary aids?
  "...to support students with disabilities as active participants with non-disabled peers as well as to enable access to the general education curriculum..."

The ICF: Write your present level

How should we make decisions about SAS?

- Compile and organize information about the student
- Create a profile of the setting and expectations
- Identify and work to remediate potential barriers to:
  - achieving goals
  - meeting expectations/curricular demands
- Discuss existing supports
- Review data
- Problem solve

Compile Student Information

As a team, brainstorm things that would improve access and participation:

- Subject specific needs
  - Learning style/rate of learning
  - Performance given various contexts and personnel
- Adaptive equipment and other supports that would facilitate participation

It takes a TEAM
Compile Classroom Information

- List existing supports
- List potential barriers to curricular materials and classroom activities and routines; this may include:
  - instructional format
  - Physical environment
  - Social environment
  - Classroom management (student behaviors)
  - Peer engagement
  - Staffing

SAS Considerations

Do I need to support the physical management of classroom or other instructional materials during the school day?

SAS Considerations

Do I need to promote inclusion in self-help skills and/or personal hygiene?

SAS Considerations

Do I need to promote improved posture/positioning for access to curriculum/instruction?
SAS Considerations
Do I need to promote inclusion during transitions within the school day?

SAS Considerations
Do I need to modify the physical environment?

SAS Considerations
Do I need to support this student’s health with positioning?

SAS Considerations
Do I need to support this student’s continued acquisition of motor skills for greater independence using practice opportunities during the school day?
SAS Considerations

Do I need to support this student’s social interactions with peers?

SAS Considerations

Do I need to support the classroom staff or other school personnel in the physical management of the student with training or some other type of instruction?

SAS Considerations

Do I need to assist the team and/or peers with understanding the impact of the student’s disability on learning?

Analyze SAS effectiveness

- Discuss the implementation of the SAS and outcomes as a team
- Are classroom staff members implementing SAS as they are documented on the IEP
  - If not, why not?
  - Has training been adequate?
  - Is data being collected?

Revise as needed
SAS Wrap up

Create an environment of **inclusion** by creating an environment that promotes **participation**

- Utilize your needs assessment data
- Promote participation using accommodations, modifications and assistive technology throughout the school day
- Equip personnel with the tools they need to support student access, participation and independence