Cognitive Orientation to Daily Occupational Performance (CO-OP), Cognitive Functional Intervention (Cog-Fun), & Occupational Performance Coaching (OPC)

By Diana Gantman Kraversky, OTD, MS, OTR/L, AP

Objectives
- Evaluate theoretical underpinnings of cognitive interventions for children
- Analyze concepts, principles, key features and strategies of cognitive interventions for children
- Describe essential elements and key features of CO-OP approach

Objectives
- Describe key features of Cog-Fun approach
- Describe similarities and significant differences between occupational performance coaching (OPC) and traditional caregiver education
- Apply CO-OP, Cog-Fun, and OPC to simulated clients

Theoretical Foundations of Cognitive Approaches
- Borrowed from education and psychology
- Purpose:
  - To assist client in identifying, developing, and utilizing cognitive strategies to perform activities
- Lev Vygotsky and Alexander Luria:
  - Zones of proximal development, scaffolding, just right challenge, discovery learning
- Feuerstein:
  - Instrumental Enrichment Program
- Bandura:
  - Metacognition
**Rationale for Using Cognitive Approaches**

- Performance based and promoting performance
- Motivation
- Generalization and transfer
- Lifelong Development

**CO-OP, Cog-Fun, OPC Follow Top-Down Approach to Practice**

- Begins at level of occupational performance
- Considers environment
- Explores role meaningfulness & competency
- Progresses downward towards performance components
- Examines deficits in performance components to define sources of functional limitations
- Interventions aimed at functional performance and participation enablement

**CO-OP, Cog-Fun, OPC: Occupation Centered Interventions**

- Occupation is central to all stages of intervention:
  - Goals based on typical children’s occupations
  - Occupational performance occurs within natural environments (home, community)
  - Occupational performance improvements based on occupational outcomes and evaluated throughout the intervention process
CO-OP Approach

“A client-centered, performance-based, thinking and problem solving approach that enables skill acquisition through a process of strategy use and guided discovery”

~Polatajko & Mandich, 2004, p.2

CO-OP: Characteristics

- Occupation-centered, task oriented intervention created for children
  - Initially for children with Developmental Coordination Disorder (DCD)
  - Proven effective with variety of populations
- Enhances skill acquisition, enables engagement in relevant occupations, promotes participation in various activities

What is the Theory Behind CO-OP?

- Neuroplasticity: foundation for learning
- Thinking and problem solving while learning skills promotes:
  - Better learning
  - Faster learning
  - Generalization of skills
CO-OP Objectives

1. Skill acquisition
2. Strategy use (global and domain specific)
3. Generalization
4. Transfer

Seven Key Features of CO-OP

1. Client-Chosen Goals
2. Dynamic Performance Analysis (DPA)
3. Cognitive-Strategy Use
4. Guided Discovery
5. Enabling Principles
6. Caregiver Involvement
7. Intervention Format

Structural Elements

Evaluations used in CO-OP

- Daily Activity Log – used to record activities child identifies as important over the course of a day
- PACS – picture based, daily activities, level of occupational engagement
- COPM – Canadian Occupational Performance Measure
- Performance Quality Rating Scale (PQRS) – observation-based rating scale used to measure performance and change in performance
Client-Centered, Occupation-Focused Goals

**Goals must:**
- Be Collaborative & Client Chosen

**Address Occupational Performance NOT**

Performance Components:
- Client will get organized for school in the morning **NOT** Client will improve praxis skills
- Client will jump rope at recess **NOT** Client will improve bilateral coordination and projected sequences

CO-OP Goal Setting Strategies

- **Providing Context:**
  - COPM, OSA/COSA, ACS/PACS, Daily Ax. Logs
- **Identifying Occupational Performance Issues:**
  - Semi-structured Interviews & Rating Scales
- **Using Facilitative Techniques:**
  - Active and Reflective Listening
- **Translating Problems into Goals:**
  - Relevant, specific, time frame, accountability, task oriented
  - Ex. I can’t tie my shoelaces. I fumble with my fingers. My teacher gets mad and tells me I will fall.
  - Goal: Client will tie shoelaces independently at school...

Facilitative Goal Setting Techniques

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO be direct</td>
<td>Tell me, is there anything you need/like to do you aren’t doing now?</td>
</tr>
<tr>
<td>DO ask for clarification</td>
<td>Tell me more about that... Let me make sure I understand... How is it working for you?</td>
</tr>
<tr>
<td>DO make summary statements</td>
<td>It sounds like you have trouble doing...</td>
</tr>
<tr>
<td>DO acknowledge or affirm client’s words</td>
<td>Hmm... Yes... It must be hard for you...</td>
</tr>
<tr>
<td>DO allow clients sufficient time to answer</td>
<td>Be okay with silence Remember processing times vary</td>
</tr>
<tr>
<td>DO ask open-ended questions about specific tasks</td>
<td>How are you managing your meals? How is school going?</td>
</tr>
<tr>
<td>DON'T ask questions including multiple topics</td>
<td>How do you manage caring for yourself, driving, doing homework?</td>
</tr>
<tr>
<td>DON'T assume, rather clarify</td>
<td>So, you have no problem with that, great!</td>
</tr>
<tr>
<td>DON'T abruptly change topics</td>
<td>Client: I’d like to go back to take my driving test Therapist: So, what’s your school situation?</td>
</tr>
</tbody>
</table>
Perform DPA for each client chosen task-based goal

- **Objectives:**
  - to identify performance problems per goal: three breakdown points
  - to identify potential strategies to enable performance: domain specific strategies

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**Cognitive Strategy**
- Goal directed and consciously controllable cognitive processes that facilitate or support performance and skill acquisition
  - Global Cognitive Strategy – executive or metacognitive higher order strategy used to control and coordinate other strategies
    - Has broad applicability:
      - To different tasks within different contexts
  - Domain or Task Specific Strategies:
    - Specific to person, setting, or particular task or part of a task
    - Under global strategy

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**Global Cognitive Strategy**
- Put into place to help learn, memorize, and problem solve
- Goal directed, cognitive operation to facilitate learning and problem solving
Use of Meta Cognition in Cognitive Strategy
- Self-interrogation
- Self-monitoring
- Self-observation
- Self-evaluation

Guided Discovery

“Remember also that each time one prematurely teaches a child something he could have discovered for himself, that child is kept from understanding it completely”

~Piaget, 1971, p. 114

Guided Discovery

- Method of instruction in which practitioner acts as facilitator of active learning
- Middle ground between didactic or direct teaching and pure discovery learning
- Defining Characteristics:
  - Logical and sequential use of series of questions or guiding statements
  - Lead learner to discover NEW concepts, principles, relationships, rules or actions
  - Key – active engagement

Guided Discovery Strategies

<table>
<thead>
<tr>
<th>Instruction</th>
<th>Guided Discovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal instruction</td>
<td>One thing at a time</td>
</tr>
<tr>
<td>Sharing knowledge</td>
<td>Don’t tell, just ask</td>
</tr>
<tr>
<td>Providing feedback</td>
<td>Coach, don’t adjust</td>
</tr>
<tr>
<td></td>
<td>Make it obvious</td>
</tr>
</tbody>
</table>
### Strategies for Handwriting

<table>
<thead>
<tr>
<th>Handwriting Goal Use of Global Strategy</th>
<th>Domain Specific Strategy</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>To write letters and numbers accurately</td>
<td>Task specification</td>
<td>Join 3 dots to make a “3”; Start on the left side of the page and work right starting letters at the top</td>
</tr>
<tr>
<td></td>
<td>Verbal mnemonic</td>
<td>“5” looks like a dollar sign; “3” looks like a “B”, check to see if a line makes a “B”; “2” looks like a “z”;</td>
</tr>
<tr>
<td></td>
<td>Body position</td>
<td>Helper hand holds the paper, “3” goes away from the helper hand</td>
</tr>
<tr>
<td></td>
<td>Feel the movement</td>
<td>Trace the letters in the air, in shaving cream and other tactile media</td>
</tr>
</tbody>
</table>

### Enabling Principles

- Set of fundamental concepts that promote learning and facilitate goal attainment across time and place
- **Core Enabling Principles:**
  - Make it fun
  - Promote learning
  - Work toward independence
  - Promote generalization and transfer

### Structural Elements: Caregiver/Support Person Involvement

- Supports generalization and transfer to everyday routines
- Might be critical for children, not so important for adults
  - Parents
  - Caregivers
  - Teachers
  - Friends (imp. for adolescents)
  - Significant others

### Structural Elements: Intervention Format

**Varying** Factors:
1. **Session sequence:** 1-2 set goals, next several—CO-OP process; last session—re-eval
2. **Session format:** depends on client’s baseline and goals, typically individual sessions
3. **Session length:** typically 50 minutes
4. **Session duration:** typically 10-12 sessions
5. **Session frequency:** typically weekly or bi-weekly
6. **Materials used to support implementation:** strategy/homework sheets; visual mnemonic for global strategy
CO-OP Principles Revisited

- Personally Meaningful Goals
- Supportive Environmental Context
- Problem Solving Strategy

CO-OP Process
- Establish occupation-based meaningful client-chosen goals
- Apply problem-solving strategy to goals: Plan-Do-Check
- Clients use acquired skills in everyday life (generalization of skills)
- Clients use problem-solving strategy(ies) in other areas of life (transfer of strategy)

Goal – Plan – Do – Check
- Skill is Learned

Process
- Domain Specific Strategies
  - Body position
  - Attention to task
  - Task specification/modification
  - Supplementing task knowledge
  - Feeling the movement
  - Verbal motor mnemonic
Problem-Solving Strategy

- **Goal:**
  - Meaningful and attainable
  - Something client wants and/or needs to achieve

- **Plan:**
  - Steps to take to achieve goal
  - May have several parts

- **Do:**
  - Daily tasks/activities promoting goal achievement
  - Typically emerge through doing
  - Time to troubleshoot

- **Check:**
  - Did you do what was planned?
  - Did plan work?

Strategies Examples

<table>
<thead>
<tr>
<th>Circumstance</th>
<th>Strategies Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the child does not have enough information to specify the GOAL or PLAN</td>
<td>Supplement task knowledge, Task specification, Motor mnemonic</td>
</tr>
<tr>
<td>When the child does not DO the movement</td>
<td>Task modification, Body position, Feeling the movement, Attention to performing</td>
</tr>
<tr>
<td>When the child can do the movement but requires verbal guidance to practice</td>
<td>Verbal guidance, Verbal self-guidance, Verbal rote script</td>
</tr>
</tbody>
</table>

Sample Tracking Sheet

| Goal: _________________________________ |

<table>
<thead>
<tr>
<th>Date</th>
<th>Plan: How will I know plan worked?</th>
<th>Check: Did the plan work?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>
Activity

- Consider following scenario (Case study on next slide)
- Analyze application of CO-OP approach to this client

Sarah is a 10-year-old girl who was referred for an occupational therapy assessment of her fine motor skills. Sarah demonstrates difficulties completing a variety of self-care activities such as tying her shoes, buttoning buttons, and zipping zippers. An assessment of Sarah’s fine motor skills was conducted, revealing some challenges with in-hand manipulation skills and bilateral motor coordination skills. Sarah’s challenges in these areas were impacting her ability to be independent in a variety of areas. Sarah was seen by a private occupational therapist for 12 sessions, in which the CO-OP approach was used to support skill acquisition. Throughout the first sessions, the occupational therapist introduced the Goal, Plan, Do, Check framework and applied it to activities that Sarah was already successful in completing. In doing so, Sarah then understood how the Goal, Plan, Do, Check strategy could be applied. Working with Sarah’s parents, the occupational therapist explained this strategy and discussed how to incorporate it into Sarah’s daily activities. The occupational therapist then used dynamic performance analysis (DPA) to better understand client motivation, task knowledge, and current occupational performance. The occupational therapist, Sarah, and her parents identified a variety of domain-specific strategies to assist in skill acquisition. Through identifying proper body/band positioning, finding the movements, and using verbal instruction and self-guidance, Sarah mastered the three selected skills within the 12 therapy sessions.

Cog-Fun: CO-OP Spin-off for AD/ADHD

- Specific focus on executive functioning
- Addresses biological, psychological and social factors associated with ADHD
- Includes meta-cognitive learning, behavioral learning and environmental adaptation
- Positive results:
  - improved executive functioning and occupational performance
  - improved parental self-efficacy and quality of life
Cog-Fun Goals

1. To promote quality of life in persons with ADHD and their families
2. To improve participation in daily occupations
3. To acquire executive strategies to compensate for typical ADHD difficulties in daily life
4. To promote awareness to ADHD symptoms and implications through education and experiential learning
5. To enable successful experiences and feelings of efficacy in challenging daily activities
6. To educate and empower parents as mediators in the therapeutic process

Impact of the Cognitive–Functional (Cog–Fun) Intervention on Executive Functions and Participation Among Children With Attention Deficit Hyperactivity Disorder: A Randomized Controlled Trial

Jeri Hahn-Markowitz, Itai Berger, Iris Manor, Adina Maer

OBJECTIVE. We examined the effect of the Cognitive–Functional (Cog–Fun) occupational therapy intervention on executive functions and participation among children with attention deficit hyperactivity disorder (ADHD).

METHOD. We used a randomized, controlled study with a crossover design. One hundred and seven children age 7–11 or diagnosed with ADHD were allocated to treatment or wait-for-control group. The control group received treatment after a 3–6 mo wait. Outcome measures included the Behavior Rating Inventory of Executive Function (BRIEF) and the Canadian Occupational Performance Measure (COPM).

RESULTS. Significant improvements were found on both the BRIEF and COPM after intervention with large treatment effects. Briefer, significant time × Group interactions were found on the BRIEF.

CONCLUSION. This study supports the effectiveness of the Cog–Fun intervention in improving executive functions and participation among children with ADHD.

Occupational Performance Coaching (OPC)

...is a process whereby parents are guided in solving problems related to achieving self-identified goals. These goals may relate to their children’s or their own occupational performance in relation to their role as parents. OPC focuses specifically on the enablement of children’s and parents’ participation in occupations in home and community contexts through parent-identified solutions to performance barriers.
Theoretical & Philosophical Basis for OPC

- Grounded in:
  - Enablement perspectives of health
  - Occupation-centeredness
  - Family-centered practice principles

OPC: Indications

- Suitable when:
  1. Children’s performance is highly dependent on the context where it occurs
  2. Children’s occupational performance issues: mild to severe goals in any area of performance
  3. Parents seek ways to support their children’s performance of occupational roles, tasks, & routines

OPC: Indications

- Suitable when:
  1. Parents have goals relating to their own occupational performance
  2. Appropriate for parents:
     - with sufficient cognitive and language skills
     - with stable mental health and adequate physical health
     - when they have occupational performance goals for children that cannot be negotiated with the child

OPC: Objectives

- Two-fold:
  1. Enable occupational performance of children in areas identified by parents as goals
  2. Improve parents’ problem solving skills to increase ability to manage current and future occupational performance challenges

(Graham, Rodger, & Ziviani, 2009)
OPC: Implementation

- Process:
  1. Discussion of child and parents’ occupational roles
    - COPM, OSA
  2. Construction of enabling performance contexts:
    - 3 enabling domains – emotional support, information exchange, structured process

Role of Occupational Therapists within Three Enabling Domains

<table>
<thead>
<tr>
<th>Emotional Support</th>
<th>Information Exchange</th>
<th>Structured Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listen</td>
<td>Collaborative</td>
<td>Set Goals</td>
</tr>
<tr>
<td></td>
<td>Performance Analysis</td>
<td></td>
</tr>
<tr>
<td>Empathize</td>
<td>Typical development</td>
<td>Explore Options</td>
</tr>
<tr>
<td></td>
<td>vs. health condition/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>impairments</td>
<td></td>
</tr>
<tr>
<td>Reframe</td>
<td>Teaching &amp; learning</td>
<td>Plan Actions &amp;</td>
</tr>
<tr>
<td></td>
<td>strategies</td>
<td>Carry out Plan</td>
</tr>
<tr>
<td>Guide</td>
<td>Specialized Strategies</td>
<td>Check Performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage</td>
<td>Community resources</td>
<td>Generalize</td>
</tr>
</tbody>
</table>

Activity

- Consider the following scenario (next slide)
- Identify deficiencies in parent intervention
- Which specialized strategies would you recommend for parent to implement?
J., a 7 y/o boy, has an Intellectual Disability (ID), which affects his ability to learn developmentally appropriate skills. One of Mom’s goals for J. is that he learns to button his pants and shirts by himself. This is important due to the fact that he needs to be able to mange his clothing at school while going to the bathroom and to comply with uniform rules. J. is a full inclusion student (highly modified curriculum) and is attending general education class. Although, adapted clothing is an option for J. and his mother, she continuously attempts to teach him buttoning with failing results. The mother is utilizing teaching strategies of demonstration and explanation, for example, “Watch me J., see, it goes through here. Look, look again, you put the button through this hole and pull.” Mother quickly realized, however, that J. did not know what her explanations meant, had difficulties attending to the demonstration, and quickly lost interest. When J. was asked to show what he knew about buttoning, he held each side of the shirt and pressed them together inefficiently.

**Collaborative Performance Analysis**

- Determine what needs to change in order for child to be successful – child factors
- Determine what needs to be different in order for parent to enable change
- Identify what (parent perceives) currently occurs – task & environment factors
- Identify what parent would like to happen, step by step
- Set goals
- Develop parents’ ability to find solutions (motivation & learning needs)

**Structured Problem Solving Process: Goals**

- Occupation based goals: ex. Josh will play quietly with his brother for 10 minutes while at home.
- Objectives: time (3 minutes, 5 minutes, etc.); complexity of contexts (grandma’s house, friend’s house, public place)

**Goal Attainment Scaling (GAS):**

- Measures changes based upon individualized behaviors and not standardized scores
- Measures wide range of behaviors and skills
- Measures goals that reflect meaningful changes to the client & family
- Predicts outcomes

---

**Sample Collaborative Performance Analysis for Activity: Eating at the dinner table**

1. Identify what currently happens
   - J. currently has difficulty with eating at the dinner table due to his ID, which affects his ability to learn developmentally appropriate skills.
   - He often struggles with tasks such as holding a fork, using his left hand, and remembering the rules for eating.
   - He requires constant reminders and visual cues to stay on task.

2. Identify what the parent would like to happen
   - J. would like to be able to eat at the dinner table independently without requiring constant reminders and visual cues.
   - He would like to be able to use a fork, eat with his left hand, and remember the rules for eating.

3. Explore barriers and barriers to enabling performance
   - J.’s ID affects his ability to learn and retain new skills, which makes it difficult for him to eat independently.
   - His parents find it challenging to provide him with the necessary support and guidance.

4. Identify parents’ needs in implementing enabling change
   - J.’s parents need support in teaching him new skills and providing him with the necessary tools and resources to eat independently.
   - They need guidance on how to create a positive and supportive environment for J.

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- Predicts outcomes
GAS

**Advantages:**
- Improves clarity of treatment objectives for client/family/therapist
- Establishes realistic occupation based goals
- Increases motivation of client/family to achieve specific goals
- Increases satisfaction when change is measured

**CONCERN:** Decreased ability to participate in a family dinner due to oversensitivities to textures, tastes, smells, and sound

**GOAL:** To be able to daily participate in a family meal at home, at friends' and relatives' homes, and at a restaurant

**INTERVENTION PERIOD:** 12 sessions

<table>
<thead>
<tr>
<th>Outcome Level</th>
<th>Eating</th>
<th>Scissor skills</th>
<th>Pre-writing skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Much less than expected (-2)</td>
<td>Finger foods</td>
<td>Holds scissors in one hand and is able to open and close the blades</td>
<td>Makes marks on paper</td>
</tr>
<tr>
<td>Less than expected (-1)</td>
<td>Uses spoon to scoop food and bring to mouth (using palmar grasp)</td>
<td>Snips stiff objects e.g. straw</td>
<td>Does circular scribble</td>
</tr>
<tr>
<td>Expected outcome (0)</td>
<td>Stabs food with fork and brings to mouth (using palmar grasp)</td>
<td>Snips paper using open and close action</td>
<td>Imitates vertical line</td>
</tr>
<tr>
<td>More than expected (+1)</td>
<td>Stabs food with fork and brings to mouth (using tripod grasp)</td>
<td>Cuts a piece of paper in half</td>
<td>Imitates vertical and horizontal line</td>
</tr>
<tr>
<td>Much more than expected (+2)</td>
<td>Uses a knife to spread butter/jam on bread and cuts</td>
<td>Cuts along a straight line</td>
<td>Copies vertical and horizontal lines and stimulus</td>
</tr>
</tbody>
</table>
Activity

- Write 1 occupation based goal for each of the 3 meaningful activities stated on the previous slide
- “Frame/scale” your goal in accordance to GAS expectations
- Share your goal
- Make up your own occupation and goal

Plan Actions

- **Develop parent ability to find solutions:**
  - Which of the actions will you implement this week?
  - When and Where? (routine building)
  - How are you going to do this?
  - Clarifying hesitation, cynicism, or anxious responses is a key – You seem a little unsure about the goal/plan. What is your concern? What would be more realistic? How confident are you?

Generalization of Strategies

- Build on first improvements of children’s performance
  - Ex. Adjusting child’s seating and introduction of “challenge foods” to the whole family made improvements at dinner, ask where else his seating and adaptations could make a difference
- Consider other tasks, routines, and situations
  - Think ahead, what would be the first sign in your child’s behavior that would remind you to adjust the situation? What would be first action you would do?

Carry Out Plan & Check Performance

- Check if parent still thinks the plan is doable
- Ask for video report rather than just verbal report
- Analyze together and encourage reflection
- Guide and coach through difficulties, encourage parent to come up with further solutions (What worked? What could you do differently next time?)
Summary: Structured Process of OPC

And don’t forget...

“Only occupational therapy practitioners focus on the use of occupations to promote health, well-being, and participation in life”

~AOTA, 2014, p. S11