

THE MULTICONTEXT APPROACH TO COGNITIVE REHABILITATION

**A METACOGNITIVE STRATEGY INTERVENTION
TO OPTIMIZE FUNCTIONAL COGNITION**

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Foreword

The goal of rehabilitation is to enable and facilitate human participation in everyday activities that are meaningful to life. It involves helping people acquire key skills and practices which empower them to care for themselves and others, as well as perform tasks and roles of significance to their lives.

The advent of this new publication is both highly timely and long overdue. The Multicontext (MC) approach, initially introduced in 1991, represents a metacognitive strategy-based intervention approach to cognitive rehabilitation, designed to promote and enhance strategy use, self-awareness, and self-monitoring skills over a range of functional activities. This rich approach incorporates numerous functional assessment tools based upon the principles of dynamic assessment, self-awareness, executive functions, and use of strategy; all these tools notably evidence high ecological validity.

At the outset, the approach was designated for people with acquired brain injury; however, over the years, it has been successfully implemented with additional populations with neurological conditions, neurodevelopmental disabilities, severe mental illness, and autism spectrum disorders.

This new book provides in-depth coverage of both the underlying theoretical concepts and key treatment elements of the MC approach and includes many case

studies to highlight implementation principles in clinic settings. Importantly, the text provides documentation of ongoing research enterprises that have accompanied the use of the MC approach, thus serving to support and validate the MC approach.

Both authors of this book are involved clinicians, professors, and scientists who have dedicated their careers to treating clients, promoting the MC approach worldwide, and stimulating the conduct of rigorous research on multiple facets of the MC approach with varied populations.

I look forward eagerly to use this important resource book in my personal toolbox, encouraging my students in their first steps as clinicians, and stimulating the research pursuits of my graduate students. Thank you to Joan Toglia and Erin Foster for contributing this valuable book and thereby promoting our profession.

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Introduction

The purpose of this book is to provide practical information, tools, and guidelines for implementation of the Multicontext (MC) approach. The MC approach is a metacognitive strategy-based intervention approach to cognitive rehabilitation that was designed to promote and enhance strategy use, self-awareness, and self-monitoring skills across functional activities. Metacognitive strategy interventions are evidence-based and have been demonstrated to be more effective compared to conventional rehabilitation for people with executive dysfunction (Goverover, et al 2007; Cicerone et al., 2019). In this text, in-depth coverage of the theoretical concepts and key treatment elements of the MC approach provides readers with a comprehensive view of this approach and its application.

The MC approach is a complex, multi-component intervention. A unique focus of the MC approach from its inception has been the integration of learning principles to promote transfer and generalization into intervention design, methods, and techniques. Treatment is purposely structured to maximize the application of cognitive strategies across activities and everyday functioning. Additionally, mediated learning techniques and a metacognitive framework are structured around functional activity experiences to promote self-awareness, strategy use, and self-monitoring skills during activity performance. The focus is on methods used to obtain a successful outcome rather than cognitive deficits, and the instructional techniques are designed to empower the person to figure out performance problems and generate solutions themselves. These are features essential to promoting a sense of control and self-efficacy. This text specifies and operationalizes the key components of the MC approach and provides tools and specific guidelines for its application in clinical practice and research.

The MC approach was initially developed in 1991 for individuals with cognitive impairments resulting from acquired brain injury. As such, most of the examples in this manual are of adults with stroke, acquired brain injury, or other neurological conditions. However, the intervention principles and techniques are broad and have been used with other populations with cognitive or learning difficulties including children and adolescents (Cermak, 2018; Waldman-Levi & Steinmann Obermeyer, 2018) as

well as those with mental health conditions (Josman & Regev, 2018). Thus, although much of the content in this manual focuses on adults with neurological conditions, the MC approach can be applied across a variety of populations and contexts.

The book consists of 15 chapters that are divided into 4 parts. Each chapter begins with an outline of the contents and concludes with a summary and key points. Extensive appendices (A-D) supplement the information in the chapters and provide learning activities, worksheets, tools, and other resources that can be used to support the implementation of the MC approach.

PART I. FOUNDATIONAL KNOWLEDGE AND SKILLS

The first section of this book (Chapters 1-5) provides critical background knowledge on functional cognition, self-awareness, the Dynamic Interactional Model (DIM) of cognition, performance analysis, and tools for assessment. Chapters 1 and 2 focus on understanding functional cognition and interpreting functional cognitive performance. A solid understanding of the underlying components of cognition is necessary to identify and analyze cognitive performance errors within functional activities as well as to help clients learn strategies to control cognitive performance errors. The components of executive functioning and memory are reviewed to provide an understanding of cognitive functional difficulties as a foundation for intervention. Information is provided on how executive function and memory deficits can manifest or be observed in everyday activities, behavior, social interactions, and life situations. Clinical examples of functional cognitive difficulties are integrated throughout these chapters.

An in-depth view of the multidimensional nature of self-awareness is provided in Chapter 3. The distinction between online awareness of performance within the context of an activity and general awareness that is outside the context of an activity or specific situation is emphasized. This distinction is important because the MC approach focuses on online awareness of performance. This chapter, therefore, provides important background for observing and interpreting

performance as well as for developing an MC intervention plan.

Chapter 4 introduces the Dynamic Interactional Model (DIM) of cognition and highlights how cognitive performance can vary with changes in characteristics of the environment or activity. A framework for analysis and manipulation of cognitive activity demands is reviewed as a foundation for interpreting functional cognitive performance. Chapter 5 builds upon this information and presents different methods for observing, analyzing, and interpreting functional cognitive performance. Examples of practical clinical assessment tools that are based on the Dynamic Interactional Model are described in the chapter and included within appendices.

PART II. COGNITIVE REHABILITATION INTERVENTION: THE MULTICONTEXT APPROACH

The second section of this book (Chapters 6-13) specifies the key components of the MC approach, focuses on treatment methods, and provides detailed information on implementation of the MC approach. An overview of the MC approach is presented in Chapter 6, including its treatment components, evolution, and evidence. Chapters 7-10 provide knowledge and practical guidelines for implementation of each of the three key treatment ingredients (strategies, transfer and generalization, metacognition). Strategies are discussed in Chapter 7 including examples of strategies for various cognitive performance problems. Methods for observing and analyzing strategy use are reviewed. Chapter 8 introduces specific methods for structuring treatment activities along a horizontal continuum that represents increasing transfer distance to promote generalization of self-monitoring skills and strategy use across functional activities. Detailed guidelines for using mediated learning techniques and a structured metacognitive framework within treatment sessions accompanied by sample scripts, examples, and worksheets are provided in Chapters 9 and 10.

Methods for assessing adherence and quality of MC treatment delivery and summarizing client responses within and across individual treatment sessions is reviewed in Chapters 11. A therapist fidelity tool is presented and examples of ways to track, document, and summarize clients' progress within treatment are described. Chapter 12 integrates best practice goal-setting principles with MC approach principles and focuses on measuring and documenting intervention outcomes (i.e., pre- to post-treatment change). Implementation of the MC approach requires a shift in thinking and practice and an investment of time and effort to learn, practice, and apply the methods described. Suggestions and guidelines for the therapist to

learn, implement, and gain proficiency in this approach are provided in Chapter 13.

PART III. CLINICAL APPLICATIONS OF THE MULTICONTEXT APPROACH

The third section of this book (Chapters 14-15) illustrates varied clinical applications of the MC approach across different client populations and contexts. Chapters 14 and 15 use clinical scenarios and case descriptions to illustrate how the MC approach can be tailored to meet the needs of a wide range of clinical problems or settings and can be used within interprofessional teams and with family collaboration.

PART IV. TOOLS, RESOURCES, AND SUPPLEMENTARY MATERIAL

The final section of the book consists of four appendices with resources, tools, worksheets, supplementary information, and additional summaries of key concepts, that can be used to implement the MC approach. The appendices are also available in a separate digital file available for download and easy printing (see Part IV, page XX for website and passcode).

The appendices are organized into four themes: (A) Learning Activities for Therapists, (B) Assessment and Observational Tools, (C) Treatment Forms, and (D) Supplementary Material. These are each described below:

Appendix A – Learning Activities for Therapists:

This includes reflective exercises to increase knowledge and skills in the area of executive functioning, interpretation of functional cognitive scenarios, and mediated learning techniques. Sample answers or analysis of selected questions are included.

Appendix B –Assessment and Observational Tools:

This includes worksheets for systematically observing, analyzing, interpreting, and summarizing functional cognitive performance.

Appendix C – Treatment Forms:

This includes treatment planning worksheets that can be used by therapists, worksheets that can be used with clients (including a sample treatment session), a treatment fidelity tool, and forms for documenting treatment observations.

Appendix D – Supplementary Material:

This includes expanded information on concepts from

the chapters, guidelines, summaries, and completed examples of selected worksheets.

This book provides in-depth and comprehensive coverage of the MC approach. By presenting foundational knowledge underlying its core concepts, clearly specifying

its key components, and providing practical information, guidelines, and tools for treatment delivery, it is hoped that this book will promote wide and skilled implementation of the MC approach in clinical practice and research to optimize the occupational performance and participation of individuals with cognitive impairment.

Cognition, Occupational Performance, and Participation

In this chapter, we describe the critical role that cognition has in all aspects of daily life and define the concept of *functional cognition*. The cognitive dimensions of key areas of daily life are reviewed and the broad impact that cognitive changes can have on participation in meaningful activities and life roles is highlighted. Additional factors that can affect cognitive health are also reviewed.

CONTENTS OF CHAPTER 1

The Central Role of Cognition in Everyday Life

Functional Cognition and The Role of Occupational Therapy

Cognition and Daily Function

Instrumental Activities of Daily Living

Leisure

Work

Behavior and Personality

Social Function

Emotional Regulation

Self-Identity and Self-Efficacy

Coping and Resilience

Factors Affecting Cognitive Health

Summary and Key Points

THE CENTRAL ROLE OF COGNITION IN EVERYDAY LIFE

Adaptive and independent functioning requires the integration and synthesis of cognitive skills. Cognition refers to mental processes involved in gaining knowledge, understanding, and reasoning. It encompasses a broad range of areas, including attention, thinking, learning, memory, visuospatial skills, and executive functions. Cognition allows us to process and assimilate all parts of an activity or situation, as well as learn new information. Therefore, changes in cognition can affect all aspects of daily life and participation. A variety of medical, mental health, and neurological conditions are associated with cognitive deficits that negatively impact daily function such as schizophrenia, acquired brain injury (ABI), multiple sclerosis, Parkinson's disease (PD), lupus, congestive heart failure, critical illness, and cancer (Toglia & Katz, 2018). Even mild cognitive impairments that are not easily discerned by others can affect participation in complex occupational or social activities (Foster & Hershey, 2011).

Executive functioning (EF) has taken a prominent role in contemporary literature on cognition and this manual reflects that emphasis. EF is described broadly as a set of inter-related cognitive abilities that coordinate, regulate and control thinking processes and are associated with the

Functional Cognition: Understanding How Executive Function and Memory Impairments are Expressed in Everyday Life

A solid understanding of the underlying components of cognition is necessary to identify and analyze cognitive performance errors within functional activities as well as to help clients learn strategies to control cognitive performance errors. This chapter provides an overview of the main components of executive function (EF) and memory, common clinical signs and complaints associated with deficits in these functions, and examples of how deficits can manifest in the performance of daily activities.

CONTENTS OF CHAPTER 2

Executive Function

Basic Components of Executive Function and the Impact on Daily Life

- Working Memory
- Initiation
- Inhibition
- Cognitive Flexibility
- Metacognition

Integration of Executive Function Components and Higher-Level Cognitive Skills

- Problem solving
- Organization

- Multitasking
- Executive Function Summary

Memory

Memory Processes: Registering, Retaining, Retrieval

- Clinical Scenarios Illustrating Problems with Different Memory Processes

Types of Memory and the Impact on Daily Life

- Declarative Memory
- Procedural Memory
- Prospective Memory

Memory Summary

Summary and Key Points

EXECUTIVE FUNCTION

Given the critical importance of EF skills in daily functioning, participation, and treatment outcome as described in Chapter 1, it is important to look more closely at the underlying dimensions of EF and understand how EF deficits manifest in everyday activities. Executive functions underlie the ability to cope with a cognitively demanding activity. One way to better understand EF is to try activities that are cognitively challenging and require the integration

information (due to an inability to hold information in mind).

Clinical Example 2.2 Working Memory: Cooking

Carol put pasta in boiling water and then proceeded to make a salad. As she was making the salad, she received a phone call and walked into another room to take the call. After she hung up the call, she went onto her computer to check e-mails, unaware that she had left pasta cooking on the stove.

Carol lost track of what she had been doing after an interruption. Once she left the kitchen to take a phone call, she no longer had a visual cue to remind her of her goal. She became engaged in a different activity. She completely forgot that she left pasta cooking on the stove. Her WM limitations resulted in a failure to maintain or keep track of her initial goal and created a safety hazard (leaving pot on stove). This type of behavior is an example of goal neglect.

Clinical Example 2.3 Working Memory: Self-Care

Kevin was asked to put his comb, toothbrush, toothpaste, razor, and shaving cream into a basket and bring them to the bathroom. He only brought his shaving cream into the bathroom.

Kevin was given a list of directions, but he could not hold all of the information in his mind at the same time. The amount of information presented exceeded his WM capacity. He only remembered the last item that was stated.

INITIATION

Initiation includes the ability to begin tasks and actions as well as the ability to generate mental ideas, thoughts, and

plans. Deficits in initiation can result in a reduction in goal-directed behavior and sustained activity (Lane-Brown & Tate, 2010). Apathy or “adynamia” may be present with a flat affect, inertia, passivity, a loss of spontaneity, and diminished interest, drive, or motivation to engage in previous activities. Decreased initiation following brain injury is different from depression because it is not accompanied by the typical signs of depression such as hopelessness, despair, decreased appetite, or sleep (Lane-Brown & Tate, 2011).

A person can have intact cognitive skills in other areas but may fail to initiate and follow through with intentions, plans, or goals. If a task is started, the person may have difficulty maintaining performance. Tasks may be stopped right after they begin. There is often a dissociation between what one says they will do and what they actually do. The person may verbally state that they need to pay a bill and be able to recite the steps but then neglect to fully carry out their intentions unless prompted by others to do so (Oddy et al., 2009).

Figure 2.2 illustrates how initiation deficits can range in severity and affect activities across the spectrum of complexity. At the more severe end of the continuum, difficulty “getting started” may be observed in routine tasks such as getting ready in the morning. If someone reminds the person to get washed or dressed, he or she has no difficulty, but they do not initiate these activities themselves. Or, once activities are started, the person may end prematurely or fail to initiate the next step, thereby requiring cues throughout an activity to “keep going” (Toglia & Golisz, 2017).

Mild difficulties in initiation may only be observed under novel or unstructured situations that require seeking information, asking questions, generating goals, ideas, or plans, or investigating something new. For example, vague or ambiguous directions such as “make reservations for a restaurant for two guests” requires active seeking of information. The person needs to determine day and time, type of meal (lunch or dinner), location, and food preferences.

Figure 2.2 Initiation Deficits on a Continuum from Severe to Mild

Difficulty initiating rote, routine activities	Begins routine activities but stops activity prematurely (needs cues to go from step to step)	Difficulty getting started and persisting in less familiar or less structured activities May not recognize need for action	Difficulty generating and initiating plans, thoughts or ideas in unstructured or complex situations
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People with decreased initiation can demonstrate a large discrepancy between performance in structured versus unstructured conditions or between routine versus unfamiliar situations. Although the person may have knowledge and skills to perform an activity, they will exhibit greater difficulties if the activity format or directions are presented in an open-ended or less structured manner. This is important to consider because many assessments and treatment activities are highly structured, making it difficult to observe subtle initiation deficits, particularly within a clinic or hospital setting (Toglia & Golisz, 2017). Exhibit 2.2 includes clinical observations and behaviors indicative of initiation deficits.

Difficulty Formulating versus Carrying Out Intentions

It is important to understand if the observed problems in initiation are related to difficulty generating an intention or formulating goals and ideas or if they represent difficulty translating an intention or goal into action. A person who has difficulty forming intentions or goals themselves may still be able to carry out a plan formulated by others. Initiation deficits, however, can also be related to an inability to carry out intentions once they are formed or provided (Oddy et al., 2009). A person might be able

to generate and/or state the goal and all of the steps of a task but still fail to carry out the task. If a person is observed to have difficulty beginning an activity, the following questions should be considered to determine the source of the problem:

- Can the person repeat what needs to be done?
- Can he/she formulate or understand the goal?
- Does he/she know the steps of the task or have a plan?
- Can he/she generate ideas for the plan?
- Does he or she want to do the activity?

An inability to repeat what needs to be done could indicate difficulty in working memory. The person may have not started the task because they forgot what they were supposed to do. An answer of “no” to the questions above, except for the last question, suggests that the person has difficulty formulating goals, plans, or ideas for action. If the person is given a plan or the activity is structured with clearly identified steps, they will likely be able to carry it out, as long as it is something that they want to do.

An answer of “yes” to all of the questions above suggests that the person may have difficulty translating intentions into action. In this situation, providing the person with a plan or additional structure may not help. There is a disassociation between what a person says he is going to do or one’s plans and what the person actually does. Stronger cues within the environment such as video prompts, demonstrations, tactile cues, or very specific plans with small and detailed steps may be needed to increase the ability to execute actions. It is also important to differentiate between the person that does not initiate because they do not have motivation or interest to do the activity versus someone who wants to do activities but cannot get themselves started (Oddy et al., 2009).

Functional Cognitive Examples of Initiation Dysfunction

Exhibit 2.2 Behaviors Associated with Initiation Dysfunction

- “Just sits there.”
- Slow in getting started or needs help to get started.
- Appears passive, disinterested, unmotivated.
- Starts but stops prematurely.
- Needs cues to move from step to step or to “keep going.”
- Not sure where or how to begin.
- Decreased idea generation.
- Decrease in spontaneous behavior and communication.
- May not recognize the need for action.
- Lack of spontaneous conversation. Does not initiate asking questions of others.
- Requires prompts to engage in activities.
- Has difficulty responding to open-ended questions and often says “I can’t think of anything.”
- Has difficulty elaborating on answers to questions or yes/no responses.

Clinical Example 2.4 Initiation: Generating Ideas

Sue was asked what she could make for dinner and she said hamburgers, but she couldn’t think of anything else. Her mind was blank. When given prompts, she could think of additional ideas, but she needed someone to prompt her to keep the ideas flowing.

Sue had trouble generating ideas or brainstorming and experienced a “mind blank.” She was unable to access or

Exhibit 2.10 Analyzing Memory Complaints

Do memory complaints relate to

- Recent past events (earlier that day, day before, or week before)? (*episodic memory - recent*)
- Keeping track of information during a task? (*working memory*)
- Holding information for very short time periods (minutes)? (*short-term memory*)
- Remembering to carry out future intentions? (*prospective memory*)
- Remembering how to do something? (*procedural memory*)
- Remembering facts and meanings of words? (*semantic memory*)
- Remembering events from the past? (*episodic memory - remote*)

practice. Different types of memory problems have different implications for treatment. For example, WM difficulties require strategies to help the person keep track of all aspects of a task, whereas prospective memory difficulties may require strategies to keep track of time or retrieve future intentions.

In addition, the extent that memory difficulties are related to decreased ability to encode or retrieve information as a result of other cognitive problems versus an inability to consolidate new memories or hold onto information over time (storage) also has treatment implications. Strategies such as rehearsal, association, or simplifying the to-be-remembered items by condensing information into key words or images help enhance encoding of information, whereas repeated viewing of pictures or video clips of past events may facilitate retention of episodic memories. Chapter 7 and Appendix D.1 include specific strategies for memory dysfunction.

SUMMARY

This section reviewed the definitions and clinical signs of impairments in EF and memory and provided examples of the impact of said impairments on functional cognitive performance. Learning activities are provided in Appendix A to help the reader integrate the information presented and to provide the opportunity to self-assess functional cognitive skills. For example, Appendices A.1-A.5 requires analysis of behavior and social skills from an EF perspective as well as identification of EF skills within simulated activities or exercises. Appendix

A.6 presents a variety of brief, everyday functional cognitive scenarios to provide the opportunity to practice analysis and interpretation of cognitive performance errors.

Executive function and memory are multi-faceted cognitive constructs. As such, identifying a person as having deficits in EF or memory is too general to be useful for treatment because the clinical picture and intervention approach can be so varied. Even when impairments in the specific components of EF or memory are identified, a range of functional cognitive difficulties can arise. Functional cognitive performance is complex, as it requires an intricate interplay of cognitive skills with activity and environmental demands and other non-cognitive personal factors (e.g., experience, fatigue, medication). Also, the expression of similar cognitive impairments in the performance of functional tasks may be highly varied both across and within individuals.

A thorough understanding of EF, memory, and how cognitive impairments can be expressed in the context of functional activities can help facilitate communication between OTs and other team members. It is also necessary background information for using the MC approach, as it helps therapists analyze, manipulate, and grade cognitive functional activities, interpret performance observations, and identify cognitive performance errors. This process is described in Chapters 4 and 5 and forms the foundation for helping a person understand and manage cognitive performance errors within the context of everyday life.

KEY POINTS

- The key dimensions of EF include WM, initiation, inhibition, and flexibility. These core components work together in an integrated manner to provide a foundation for higher-level cognitive skills such as problem solving, organization, abstract thinking, or multitasking.
- Memory is a multi-component process, which includes the registering, retaining, and retrieving of information.
- Other cognitive skills are used during the encoding and retrieval of information.
- Different types of memory tasks, such as recall of facts (semantic), recall of how to do something (procedural), recall of a personal event (episodic), or remembering to carry out a future intention (prospective) involve different types of memory that reflect different neural processes.

Self-Awareness, Metacognition, and Self-Efficacy

A comprehensive understanding of the multidimensional components of self-awareness is needed as a foundation for interpreting assessment, as well as planning and implementing cognitive rehabilitation interventions. This chapter provides an overview of a theoretical model of awareness, including its relationship to self-efficacy and metacognition, types of self-awareness deficits, and clinical manifestations and implications for assessment and treatment. Factors that contribute to the expression of awareness limitations and defensive denial are also reviewed.

CONTENTS OF CHAPTER 3

The Impact of Self-Awareness Limitations

The Dynamic Comprehensive Model of Awareness

- Relationship between Self-Awareness, Metacognition, and Self-Efficacy
- The Distinction between General (Offline) Awareness and Online Awareness
- Variations in Awareness across Domains and the Object of Awareness
- Online Awareness of Performance
- Depth of Awareness

Implications for Assessment

- Assessing General Awareness
- Assessing Online Awareness

Implications for Treatment

- Building Self-Efficacy
- A Focus on Online Awareness

Defensive Denial

- Interaction of Denial Reactions and Impaired Self-Awareness
- Denial and Treatment Implications

Summary and Key Points

THE IMPACT OF SELF-AWARENESS LIMITATIONS

A significant proportion of individuals with acquired brain injury do not recognize that their cognitive-perceptual abilities or daily functioning have changed. A large discrepancy between one's subjective view and actual performance can present a major challenge in rehabilitation. An individual who does not have concerns about their functioning will not be actively engaged in treatment. In addition, a failure to recognize limitations in performance will result in a tendency to try activities

The Dynamic Interactional Model of Cognition: Activity and Environmental Demands

This chapter presents the Dynamic Interactional Model (DIM) of cognition and explains how this conceptualization of cognition and performance is used in clinical assessment and treatment. The Multicontext (MC) approach is based on the DIM. The influence of activity and environmental characteristics on cognition and performance represent one aspect of this model that is the focus of this chapter. Methods for analyzing and adjusting activity and environmental demands to place lesser or greater demands on specific aspects of cognitive performance are described with multiple examples. This provides a foundation for interpreting and analyzing performance during assessment and treatment.

CONTENTS OF CHAPTER 4

Overview of the Dynamic Interactional Model of Cognition

Conceptualization of Cognition

Internal and External Factors Influence Cognitive Performance

Summary of the Dynamic Interactional Model of Cognition

Analyzing and Manipulating Activity and Environment Demands

The Activity and Cognitive Performance

- Activity Characteristics that Influence Cognitive Demand

- Manipulating Activity Characteristics to Influence Cognitive Performance
- Integrating Cognition into Motor-based Activities
- Functional Cognitive Activity Sets
- The Environment and Cognitive Performance

Summary and Key Points

OVERVIEW OF THE DYNAMIC INTERACTIONAL MODEL OF COGNITION

The DIM, influenced by the work of Vygotsky (1978), Feuerstein et al. (2015), and others in Educational Psychology, provides the foundation for performance analysis and the MC approach described in this manual. This section provides a brief overview of the DIM; however, the reader is encouraged to refer to other sources that provide a more comprehensive description to gain a full understanding of the theoretical basis of this model (Toglia, 2011, 2018) and clinical applications (Kaizerman-Dinerman et al., 2018; Zlotnik et al., 2009).

The DIM was developed in 1992 and indicates that cognitive performance is best understood by analyzing the dynamic relationship between the person, activity, and environment. Contemporary descriptions of functional

be modified to *reduce* cognitive demands and support cognitive performance.

SUMMARY

The Dynamic Interactional Model of cognition, developed in 1992, describes cognitive performance as an ongoing product of the dynamic interaction among the person, activity, and environment. The term *functional cognition* as described in Chapter 1 integrates this key concept. The Dynamic Interactional Model indicates that observed cognitive errors or behaviors can best be understood by analyzing the interactions between a variety of internal (person) and external (activity and environment) factors. Appendix A.14 provides the reader with the opportunity to practice organization and analysis of clinical case information using the DIM framework. Specific methods for performance analysis using the DIM framework will be described in Chapter 5.

Cognitive deficits are not all or none but represent observable patterns of errors or behaviors that emerge under certain conditions. Functional cognitive performance is vulnerable to dynamic changes in response to various external and internal factors. Descriptions of functional cognition need to specify and analyze the conditions under which performance is optimal as well as the conditions that increase the probability that cognitive errors or symptoms may emerge.

This chapter focused on the external factors of the Dynamic Interactional Model and provided a comprehensive description of the ways that activity and environmental demands can impede or support performance. Assessment and treatment involve analyzing, adjusting, or manipulating activity and environmental characteristics to increase or decrease demands on functional cognition. Examples illustrated how variations in specific activity and environmental characteristics place demands on different types of cognitive abilities. Activity analysis forms that can be used to analyze the effect of changes in activity demands on executive function abilities are included in Appendix A.

KEY POINTS

- Cognitive performance is not only a function of a person's cognitive processing skills. Rather, it can vary depending on a combination of internal (e.g., personal context, strategies, self-awareness) and external (activity and environment) factors.
- Cognitive limitations are described as observable patterns of behaviors or performance errors that affect functional performance across a variety of different activities.
- Performance on the same task can vary depending on the conditions. Specification and analysis of both activity and environmental demands are critical for a comprehensive understanding of functional cognitive performance.
- If activity and/or environmental demands change, different levels of cognitive resources, strategies, and self-monitoring skills are required.
- Slight variations in activity characteristics (e.g., directions, materials, number of items or steps, arrangement of materials) or the environment (e.g., familiarity, predictability, people, level of noise, amount of distractions, interruptions, other people, social interactions) can influence the demands placed on cognitive abilities.
- Knowledge of cognitive skills (e.g., EF components) and their interaction with activity and environmental characteristics can be used to manipulate activity and environmental variables so that different demands are placed on functional cognition.
- The same type of activity (e.g., making lunch, scheduling appointments on a calendar) can place different demands on cognitive skills depending on its characteristics and how it is presented (e.g., directions). This suggests the same functional activity can be used in a variety of ways in treatment.
- Knowledge and skill in adjusting activities to vary cognitive demands and thus impact performance provide a foundation for both assessment and intervention.

Assessing Functional Cognitive Performance

This chapter focuses on how to obtain information on a person's functional cognition from direct observation of performance. Prior to this, therapists should gain an understanding of the client's personal context such as their beliefs, concerns, valued activities, culture, routines, roles, and previous lifestyle as well as the environment and community in which they function. This information can be gathered through questionnaires and interviews of the client, relative, and/or care partner. In addition to a more general occupational history or profile, self and informant report measures can be used to gain an understanding of functional cognition. Questionnaires, formal interviews, and rating scales that can be used to gather this information are described in other sources (Bar-Haim Erez, & Katz, 2018) and Chapter 12. These perspectives of the person's functioning should be combined with information from performance-based assessment of functional cognitive performance, as detailed in this chapter, to provide a comprehensive picture of the person's functional cognition.

CONTENTS OF CHAPTER 5

Methods of Performance-Based Assessment Performance Analysis Based on the Dynamic Interactional Model of Cognition

Dynamic Interactional Model Performance Analysis Guide
General Methods for Observation of Performance and Error Analysis

- Cognitive Performance Observation Tool
- Error Analysis Tools
- Performance-Based Tools for Specific Activities

Summary of Dynamic Interactional Model-based Performance Analysis

Dynamic Interactional Model and Treatment Planning

Summary and Key Points

METHODS OF PERFORMANCE-BASED ASSESSMENT

Different methods can be used to observe and rate functional cognitive performance. These include (1) breaking a task into discrete steps or components and rating competency in performing each task step or component, (2) rating the level of cues or assistance needed to successfully perform a

MC approach, described in Part 2 of this manual). In both of these activities, there is a focus on helping the client monitor her tendency to repeat information. The client is guided in the use of strategies that are applicable across other activities, such as talking out loud or using a list, to control repetition errors. Thus, the example below illustrates how different treatment approaches can be used simultaneously by selecting some tasks that are completely adapted by others and selecting other tasks that involve strategy and awareness training. A blank DIM Treatment planning form is included in Appendix C.1.

SUMMARY

Performance analysis provides information on how a person goes about doing an activity. This requires an understanding of the cognitive demands of the activity as well as the ability to observe and recognize cognitive errors that may be influencing performance. Performance analysis identifies patterns of task errors that impede performance across activities. At the same time, strategy use, self-monitoring skills, and self-awareness of performance are observed, probed, and analyzed. This includes the ability to recognize and detect performance errors, describe task methods used, identify task challenges, and accurately assess performance. Cues are generally avoided during assessment so that the person's ability to cope with cognitive challenges and problem solve can be best observed. If additional information for treatment is needed, a test-teach-retest dynamic assessment format that examines changes in performance after a brief period of mediation, as briefly described within the WCPA, is suggested.

Information on performance errors, self-awareness, and strategy use provides a foundation for treatment planning. Within the Dynamic Interactional Model framework, cognitive performance can be facilitated by changing the task, environment, person's awareness and strategy use, or a combination of approaches. If the person exhibits a total lack of awareness or strategy use during assessment, despite attempts at probing after the task or mediation (test-teach-retest approach), treatment approaches that do not expect change in awareness or learning across different situations may be most appropriate. This includes adaptations by others, care partner collaboration and training, errorless learning, use of the Cognitive Disability Model (McCraith

& Earhart, 2018), or the Neurofunctional approach (Giles, 2018).

If the person demonstrates some awareness or strategy use during performance-based assessment, it implies that the person may be a good candidate for strategy-based intervention such as the MC approach, which is described thoroughly in the next section of this manual. The specific information obtained through performance analysis based on the Dynamic Interactional Model provides an important starting point for treatment planning.

KEY POINTS

- Performance-based functional cognitive assessments differ according to methods used and the type of information provided.
- Assessments based on the Dynamic Interactional Model of cognition include analysis of performance errors, awareness, and strategy use. This information is interpreted together to guide treatment.
- Assessments refrain from cues and focus on the process of how a person goes about doing an activity.
- An after-task interview is used to probe the person's perceptions of performance and strategies used across different activities.
- Tools that can support performance analysis based on the Dynamic Interactional Model include:
 - DIM Performance Analysis Guide (broad generic guide for any activity).
 - Cognitive Performance Observation Tool (structures observations for use with any activity).
 - Performance-Based Error Analysis tools (specific analysis of performance errors that can be used with any activity).
 - Specific Performance-Based Assessment Tools (specific activities including the WCPA, Multiple Phone Task, Upper Body Dressing Error Analysis Tool).

Introduction to the Multicontext Approach

This chapter introduces the Multicontext (MC) approach to cognitive rehabilitation, including background, theoretical concepts, treatment components, history and evolution, evidence, and criteria for use. Subsequent chapters within this section operationalize the key elements of the MC approach and provide guidelines and resources for clinical practice and research.

CONTENTS OF CHAPTER 6

Overview of the Multicontext Approach

Characteristics of the Multicontext Approach

Phases Across the Multicontext Approach

Background of the Multicontext Approach

History and Evolution of the Multicontext Approach

A Review of Evidence on the Multicontext Approach

For Whom is the Multicontext Approach Most Appropriate?

Knowledge and Skills Needed to Implement the Multicontext Approach

Summary and Key Points

OVERVIEW OF THE MULTICONTEXT APPROACH

The MC approach was initially developed for adults with acquired brain injury and cognitive limitations who had difficulty learning as well as recognizing and understanding changes that had occurred in their thinking and information processing skills following a traumatic brain injury, stroke or other neurological condition. The treatment principles broadly focus on methods to optimize learning, generalization, and functional outcomes and are therefore applicable across a wide range of conditions.

The MC treatment approach, derived from the Dynamic Interactional Model (DIM) of cognition (Chapter 4) is directed at promoting the person's use of strategies and metacognitive skills so they can control and optimize their cognitive performance across a variety of situations. While the Dynamic Interactional Model presents a broad conceptualization of cognition, the MC approach provides intervention guidelines and methods to help a person learn to recognize, monitor, and manage cognitive symptoms or control error patterns across different activities by using effective strategies. The MC approach emphasizes intervention methods that are directed at the "person" aspect of the Dynamic Interactional Model, while other treatment approaches such as the Cognitive Disability Model (Allen et al., 1992; McCraith & Earhart,

Cognitive Strategies

The Multicontext (MC) approach utilizes a broad range of cognitive strategies within the context of a structured metacognitive framework. This chapter defines and describes general characteristics of strategies including important things to think about when using strategies in intervention. Examples of strategies for various cognitive performance problems and domains are provided. The latter part of this chapter discusses how strategies are used specifically in the MC approach.

CONTENTS OF CHAPTER 7

What are Strategies?

- Classifying Strategies
- Multiple Uses of Domain-Specific Cognitive Strategies
- General Cognitive Strategies
- Summary of Strategies and Their Use

Strategy Use in the Multicontext Approach

- Distinguishing the Multicontext Approach from Other Strategy-based Intervention Approaches
- Strategy Selection
- Observation of Strategy Use
- Insights from Strategy Development
- Implications for Intervention: Clinical Examples

Summary and Key Points

WHAT ARE STRATEGIES?

Strategies are often described as compensatory or as serving the purpose of circumventing cognitive limitations (Ihle et al., 2018). In the MC approach, cognitive strategies are not just compensatory. Rather, they are considered to be an inherent part of normal cognition, learning, and performance. They include task methods, tactics, or mental tools that people use to help manage cognitive resources, enhance information processing, and cope effectively with performance challenges (Toglia et al., 2012). Strategies can be described as mental routines, mind tools, or mind habits that can be used before, during, or immediately after a task to enhance learning or performance. Figure 7.1 demonstrates this conceptualization of strategies.

Healthy people have a wide repertoire of strategies that can be combined, adjusted, or modified to help them cope with cognitive challenges, prevent or manage cognitive lapses, and support functioning. Cognitive strategies, therefore, are an inherent part of healthy functioning and performance. In challenging activities, people typically use multiple strategies to enhance cognitive performance (Toglia et al., 2012).

Lower or inefficient strategy use compared to healthy controls has been linked to poorer performance across a wide variety of ages and populations that experience cognitive difficulties including people with mild traumatic

Structuring Treatment Activities to Promote Awareness and Strategy Transfer

Generalization, or the ability to apply what has been learned to a variety of situations and environments, including everyday life situations, is a major challenge in treatment for people with acquired brain injury. Strategy transfer, or carryover of strategy use from one activity or context to another, is often used interchangeably with generalization; however, it is narrower in scope and can be directly observed within or across intervention sessions. This chapter provides an overview of the principles of generalization and transfer including methods and treatment ingredients that facilitate positive transfer. A horizontal continuum of treatment activities that represent gradual increases in transfer distance is described as a way of promoting transfer for those who have difficulty recognizing connections between activity experiences. Generalization and transfer, therefore, can be facilitated through techniques utilized by the therapist, as well as by structuring the progression of treatment activities in a sideways manner.

CONTENTS OF CHAPTER 8

Overview of Generalization and Transfer

Promoting Generalization and Transfer

Treatment Techniques to Promote Transfer

Sideways Learning: The Horizontal Activity Transfer

Continuum

Structuring Treatment Across Activity Themes

- Activities with Consistent Cognitive Demands
- Treatment Activities and Materials
- Multicontext Activity Modules

The Horizontal Activity Transfer Continuum: Considerations

- The Activity Transfer Continuum Does Not Represent a Fixed Progression
- Treatment Using the Activity Transfer Continuum Can Also Progress “Vertically”
- The Activity Transfer Continuum is Not Necessary for All Clients
- Client-Centered Practice and Structured Activities

Summary and Key Points

OVERVIEW OF GENERALIZATION AND TRANSFER

The occurrence of generalization and transfer of learned strategies is critical because strategies acquired in treatment activities are useless unless they are applied to everyday

Introduction to Metacognitive Strategy Interventions and Guided Learning

This chapter introduces and explains differences between metacognitive strategy interventions with a focus on the distinction between direct strategy methods and guided learning methods. The way that the Multicontext (MC) approach uses guided or mediated learning techniques is explained and general mediation guidelines are presented. Type and content of guided questions used within the MC treatment are distinguished from those that have a task-specific focus. The use of mediated learning methods to promote self-awareness and self-efficacy for management of cognitive performance errors is discussed. Chapters 10 and 11 further expand upon the concepts and information presented in this chapter and operationalize the procedures for using and assessing metacognitive methods.

CONTENTS OF CHAPTER 9

Metacognitive Strategy Intervention

Instructional Approaches in Metacognitive Strategy

Interventions

Therapist-Directed

Guided Learning

- *Application of Guided Learning: Mediation Methods in the Multicontext Approach*
- *General Therapeutic Techniques*

Summary and Key Points

METACOGNITIVE STRATEGY INTERVENTION

Metacognitive strategy intervention is a broad term to describe interventions that focus on helping a person think about their own thinking. Several different studies, as outlined in Exhibit 9.1, support the effectiveness of metacognitive strategy-based approaches within the context of functional activities to optimize executive functions (EF) and self-awareness (Cicerone et al., 2019, Haskins et al., 2012; Radomski et al., 2016). Metacognitive strategy interventions have been identified as evidenced-based and recommended for treatment of mild-moderate deficits in EF after traumatic brain injury (practice standard) and stroke (practice guideline) (Cicerone et al., 2019).

Although all metacognitive strategy interventions share a focus on structured methods for managing multiple-step activities and using strategies, there can be key differences in skills emphasized, degree of client centeredness, and teaching and learning methods used. For example, some metacognitive strategy interventions such as the MC approach emphasize online self-awareness of performance (Goverover et al., 2007; Toglia, 2018); others emphasize goal management and problem-solving strategies, (Dawson, Binns, et al., 2013; Stamenova & Levine, 2019), and others include a focus on emotional regulation (Cicerone et al., 2008; Tornas et al., 2016).

The Metacognitive Framework: Guidelines for Mediated Learning within Multicontext Treatment Sessions

This chapter builds on the general guidelines for mediated learning described in Chapter 9 and provides specific examples and methods for implementing mediated learning techniques within the structured metacognitive framework used in the Multicontext (MC) approach. This framework focuses on identifying aspects of activities that are challenging and generating methods to stay a step ahead. It involves questions that encourage the person to self-generate strategies and anticipate, monitor and evaluate performance.

- Guidelines for the Post-Activity Guided Questions
- Summary of Post-Activity Discussion
- End of Session: Methods to Enhance Connections to Everyday Life**
- Guided Questions for Strategy Bridging
- Journaling or Structured Logs
- Cognitive Strategy Action Plans and Strategy Worksheets
- Summary and Key Points**

CONTENTS OF CHAPTER 10

Pre-Activity Discussion

- Pre-Activity Discussion: When is it Used?
- Guidelines for the Pre-Activity Discussion
- Summary of Pre-Activity Discussion

During-Activity Mediation

- Mediation Relies on Observation of Performance
- The Art of Mediation
- Guidelines for Mediation in the Multicontext Approach
- Summary of Mediation During Activity Performance
- Alternatives to Mediation

Post-Activity Discussion

- Structured Self-Evaluation Methods

The metacognitive framework and mediation techniques are designed to help a person reflect on their performance, control cognitive symptoms during functional activities, and promote autonomy. A focus is placed on online awareness of performance (see Chapter 3) and methods used to obtain a successful outcome rather than on cognitive deficits. Helping a person learn to anticipate, monitor, regulate, and manage challenges themselves builds self-efficacy and promotes effective performance as described in Chapter 9 (Mentis et al., 2008).

MC treatment sessions involve four phases of mediated learning that occur within the context of functional cognitive activities. These include (1) Pre-activity questions, (2) During-activity mediation, (3) Post-activity

Specific examples of guided questions and mediated learning methods that could be used to promote awareness of performance and strategy use were provided in this chapter, and Appendix C includes multiple worksheets and forms that can be used within treatment. However, mediated learning methods must be responsive and adapted to the needs of the person. Although the metacognitive framework includes a before-, during- and after-task discussion, the use of these phases is not fixed but represents a guide to be used as needed. It may vary across a treatment program or clients, depending on needs. Appendix D.7 provides a summary for the therapist that includes problems that can be encountered during use of the metacognitive framework and methods for managing them. Additionally, Appendix D.8 provides a “cheat sheet” or things to remember and a summary of common phrases used during mediated learning that may be helpful for the therapist.

During treatment, guided questions are faded as the person begins to utilize more efficient mental habits. For example, as the person begins to plan ahead and size up a task before beginning, pre-task questions may be skipped. Similarly, as the person automatically self-checks work, structured self-assessment can be faded, and a greater focus may be placed on strategy action plans or journaling to facilitate generalization to everyday activities.

The metacognitive framework can be applied broadly across varied levels of functioning, treatment contexts, and different types of cognitive performance problems or activities as described in Chapter 14. Methods for measuring and documenting changes in treatment targets and functional goals within and across treatment sessions are described in Chapters 11 and 12.

KEY POINTS

- The MC approach uses a metacognitive framework that provides guidelines for questions and mediated learning techniques that can be used before, during, and after treatment activities.
- The extent that metacognitive questions or discussion phases (pre, during, post) are used varies across the treatment program and needs of the client. For example, only the post-discussion is typically used in the first or second treatment sessions.
- If answers are vague during questioning, ask for further elaboration or examples (e.g., tell me more about that).
- The pre-activity discussion focuses on helping the person (1) recognize the connection between the current activity and past activity experiences (optional), (2) identify activity challenges, and (3) self-generate strategies.
- Mediation during the activity is directed at helping the person (1) discover performance errors and (2) initiate, evaluate, and adjust strategies to manage performance errors.
- The post-activity discussion guides the person in self-assessment of methods used, challenges encountered, and generation of alternate strategies.
- Guided questions and methods such as journaling, strategy worksheets, structured logs, or cognitive strategy action plans are used at the end of every treatment session to help the client make connections between treatment activities and everyday life.
- Review Appendix C. Appendix C includes a variety of treatment forms to help therapists implement this approach, including a sample treatment activity with pre and post discussion questions (Appendix C.6), pre and post-activity question forms (Appendix C.7-C.8), as well as client strategy worksheets, action plans, and sample self-ratings.
- Tables 9.3 and 9.4 (Chapter 9) and Appendices D.7 and D.8 provide additional mediation guidelines.

The Multicontext Approach: Assessing Treatment Delivery and Client Response

This chapter begins by summarizing the key features of the Multicontext (MC) approach that have been reviewed in Chapters 6-10 and compares these features to those of conventional practice. The key ingredients of the MC approach are described within the framework of the Rehabilitation Treatment Specification System (RTSS). A treatment fidelity tool that is based on this framework and that can be used as a tool for research and clinical practice to monitor therapist adherence and quality of MC treatment delivery is described and included in Appendix C.13 (Toglia et al., 2020). Methods of monitoring, analyzing and documenting client awareness, strategy use, and generalization within and across individual MC treatment sessions will be presented. This includes structured methods for describing and rating client responses to metacognitive questions. A variety of worksheets and rating scales for assessing and summarizing responses to individual treatment sessions are included in Appendix B and C.

CONTENTS OF CHAPTER 11

The Multicontext Approach and Treatment Fidelity

Multicontext Treatment Specification

Multicontext Treatment Delivery: The Multicontext Treatment Fidelity Tool

Client Response to Treatment Sessions: Observing, Tracking, and Documenting Progress

Selecting Treatment Targets

Observing and Tracking Progress Within and Across Treatment Sessions

- *Level of Task Challenge*
- *Strategy Use*
- *Awareness of Challenges, Awareness of Strategy Use, and Strategy Generation*
- *Tracking Progress across Treatment Activities*
- *Other Indicators of Progress*

Using the Metacognitive Framework to Write Progress Notes

Summary and Key Points

THE MULTICONTTEXT APPROACH AND TREATMENT FIDELITY

The MC approach is a complex multicomponent intervention that differs from conventional cognitive rehabilitation practices in several ways. For example, rather than improving specific cognitive skills or providing strategies for improving performance on specific activities,

Goal Setting and Measuring Functional Outcomes

Collaborative client-centered goal setting, goal adjustment, careful monitoring, and documentation of progress toward functional goals are foundational practices in occupational therapy (OT) and cognitive rehabilitation. This chapter discusses special considerations and techniques to optimize these practices within the MC approach. It discusses the impact of cognition and self-awareness on the goal-setting process and provides suggestions for maximizing client engagement in goal setting and adjustment during treatment. In the MC approach, treatment fosters the process of goal setting and goal adjustment by increasing self-awareness. Thus, engagement in goal setting and identification of realistic and attainable goals are viewed as positive outcomes of treatment. This chapter then discusses monitoring and documentation of functional goals for the MC approach. The use of goal rating, goal attainment scaling, and standardized outcome measures to track progress and measure functional outcomes of MC intervention is reviewed.

CONTENTS OF CHAPTER 12

Goal Setting and Adjustment for People with Cognitive Impairment

Cognitive Impairment and Considerations in Goal Setting

- *Breaking Down Goals: Sub-goaling*

Reduced Self-Awareness and Considerations in Goal Setting

- *Partial or Vague Awareness*

The Process of Goal Adjustment

Documenting Functional Goals and Progress

Goal Rating and Monitoring

- *Goal Attainment Scaling*
- *Bangor Goal Setting Interview*
- *Informal Goal Rating Within the Multicontext Approach*

Assessing Outcomes

Proximal Outcome Measures

- *Awareness*
- *Strategy Use*
- *Cognition*
- *Cognitive Self-Efficacy*

Distal Outcome Measures

Summary and Key Points

The Multicontext Approach: Putting It All Together

Background information, theoretical concepts, and a comprehensive description of each component of the Multicontext (MC) approach were reviewed in this book. Key MC treatment elements were specified, guidelines to operationalize the elements were described, and tools to support implementation of this approach were provided. In addition, assessments of both therapist delivery and client progress were provided. This chapter summarizes the steps of the MC approach and is designed to help therapists review key information and get started with implementing this approach. Suggestions for self-assessment of knowledge of foundational information as well as for practicing delivery of treatment components are provided. Integration of information for treatment planning, challenges to implementation, and frequently asked questions are discussed. Examples of treatment session activities, outlines, and existing treatment protocols further illustrate treatment implementation.

CONTENTS OF CHAPTER 13

Steps of the Multicontext Approach

Learning and Gaining Proficiency in the Multicontext Approach

- Foundational Knowledge and Skills
- Assessment and Synthesis of Assessment Results as a Foundation for Treatment
- Planning and Implementing the Key Treatment Components
- Assessing Multicontext Treatment Delivery, Treatment Response, and Functional Outcomes

What does a Multicontext Treatment Session Look Like?

- Variation with Consistency
- Sample Treatment Protocols
- Practicing a Multicontext Treatment Session

Challenges in Implementing the Multicontext Approach

- Using Guided Learning
- Focusing on the Process Rather than the Task Outcome
- Selecting Activities at the Optimal Level of Challenge
- Clients with Defensive Denial
- Clients with Aphasia

Typical Frequently Asked Questions

Summary and Key Points

Applying the Multicontext Approach Across Different Clinical Problems or Contexts

This chapter describes considerations for application of the Multicontext (MC) approach across different situations. This includes certain client factors, such as level of awareness, cognitive ability, and spatial neglect, as well as environmental factors, such as the treatment setting. The MC approach is broad, and different aspects of this approach can be emphasized to better fit the client's abilities, needs, and goals as well as any constraints or affordances of the treatment setting.

CONTENTS OF CHAPTER 14

Client-Related Factors

- Low Self-Awareness
- Low Cognitive Functioning
- Self-Identified Cognitive Concerns or Subtle Cognitive Deficits
- Spatial Neglect

Treatment Setting

- The Multicontext Approach in Acute Inpatient Rehabilitation
- The Multicontext Approach Within an Interprofessional Team
- The Multicontext Approach in the Home: Collaborating with Care Partners or Significant Others
- Group Applications of the Multicontext Approach

Summary and Key Points

CLIENT-RELATED FACTORS

The MC approach focuses on helping people gain an understanding of their cognitive performance strengths and weaknesses. The type and extent of guided questions used in the metacognitive framework can vary depending on the client's level of cognitive functioning and awareness. Similarly, the extent to which activities are structured along a horizontal continuum can differ depending on the severity of cognitive symptoms and self-awareness of deficits. Those that are at the low and the high ends of the spectrum require special considerations. This section will first discuss application of the MC approach to clients who have poor self-awareness and lower cognitive functioning and then to those who have self-identified cognitive concerns and subtle cognitive deficits.

Low Self-Awareness

In general, clients with low self-awareness require short parallel-structured activities in the initial stages of treatment to provide the opportunity to recognize repeated error patterns. There is typically a greater emphasis on mediation *during* the activity than on reflection after the activity. Additional methods may be needed to supplement the metacognitive framework. For example, video review of activity performance with guided questioning is

Case Examples of the Multicontext Approach

This section includes three case examples and applications of the Multicontext (MC) approach with different settings, diagnoses, functional cognitive status, and stages of recovery. Each case includes a summary of assessment, the treatment program (including a table of sample treatment activities), and outcomes. Additionally, comprehensive case descriptions can be found in the following sources: Toglia et al. (2011), Toglia (2018), Steinberg & Zlotnik (2019).

CONTENTS OF CHAPTER 15

Case 1: Inpatient Setting, Stroke

Case 2: Outpatient Day Program, Traumatic Brain Injury

Case 3: In-Home Treatment, Parkinson's Disease

Summary

CASE 1: INPATIENT SETTING, STROKE

This case discusses application of the MC approach for a person with impulsivity and difficulty inhibiting responses in an inpatient rehabilitation setting. This case was initially presented in Chapter 5 (See Clinical Example 5.1). A sample of the treatment planning worksheet for this case is presented in Appendix D.12. The client, Fred, is unaware

of cognitive limitations and is only motivated to address physical deficits. This case illustrates how treatment can begin with the client's physical concerns and gradually increase awareness of cognitive limitations simultaneously. Treatment activities include use of lists as an inherent part of activities that involve gathering information or attending to details, rather than as a strategy.

Overview of Current Functional Status and Occupational History

Fred is 64 years old and had a stroke two weeks ago. He is in an inpatient rehabilitation setting. He actively participates in therapy and is motivated to "get better" so he can return to work and living independently in his apartment. He is independent in all self-care activities. His cognitive screening Montreal Cognitive Assessment (MoCA) score was 20/30, indicating mild cognitive impairment. Fred presently has limited standing tolerance and ambulates approximately 8-10 feet with a walker and close supervision. He has full active range of motion (AROM) in his right upper extremity (RUE), but his strength is 3/5.

Prior to his stroke, Fred lived alone in an urban setting and worked as an inventory control manager for an electronic company. Fred describes himself as an organized person that likes to "get things done." He prepared meals,

APPENDIX A: Learning Activities for Therapists

APPENDIX A.1	Analyzing Negative Behaviors from the Perspective of Executive Function (Chapters 1-2)
APPENDIX A.2	Social Skills and Sample Underlying Cognitive Components (Chapters 1-2)
APPENDIX A.3	Executive Function Skills Exercise 1 (Chapter 2)
APPENDIX A.4	Executive Function Skills Exercise 2: Medication Schedule (Chapter 2)
APPENDIX A.5	Reflections on Strategy Use for Executive Function Exercises (Chapter 2)
APPENDIX A.6	Functional Cognitive Examples of Executive Function and Memory Deficits (Chapter 2)
APPENDIX A.7	Awareness Clinical Scenario and Strategy Use (Chapter 3)
APPENDIX A.8	Worksheet: Brainstorm Activities and Variations in Directions (Chapter 4)
APPENDIX A.9	Characteristics of Simple and Complex Problem-Solving Tasks (Chapter 4)
APPENDIX A.10	Functional Cognitive Problem-Solving Scenarios (Chapter 4)
APPENDIX A.11	Executive Function Analysis Worksheet (Chapter 4)
APPENDIX A.12	Variations in Activity Demands (Chapter 4)
APPENDIX A.13	Variations in Activity Demands 2 (Chapter 4)
APPENDIX A.14.1 and A.14.2	General Case Analysis using the Dynamic Interactional Model Framework Dynamic Interactional Model Case Analysis Form (Chapter 4)
APPENDIX A.15	Cue Analysis: Picture Yourself in the Situation – What would you say or do? (Chapter 10, 11)
APPENDIX A.16	Treatment Role Play: Metacognitive Questions and Guided Learning (Chapters 10,11,14)
ANSWERS	Answers for Appendices A.1, A.2, A.3, A.4, A.6, A.7, A.8, A.10, A.14, A.15

APPENDIX B: Assessment and Observational Tools

APPENDIX B.1	Personality Characteristic Checklist (client) (Chapter 1)
APPENDIX B.2	Personality Characteristic Checklist (other) (Chapter 1)
APPENDIX B.3	Dynamic Interactional Model: Performance Analysis Guide (Chapter 5)
APPENDIX B.4	Cognitive Performance Observation Tool (Chapter 5)
APPENDIX B.5.1 and B.5.2	Directions for Pizza Phone Delivery Task and Pizza Phone Delivery Task: Analysis of Task Errors (Chapter 5)
APPENDIX B.6	Performance Analysis of Task Errors (Chapter 5)
APPENDIX B.7	Multi-step Activity Error Analysis (Chapter 5)
APPENDIX B.8.1 and B.8.2	Smartphone: Multiple Tasks Smartphone: Multiple Tasks Scoresheet (Chapter 5)
APPENDIX B.9	Upper Body Dressing Error Analysis (UBDEA) (Chapter 5)
APPENDIX B.10	Assessment Summary (Chapter 5)
APPENDIX B.11	Worksheet for Analysis of Strategy Attributes (Chapter 7)
APPENDIX B.12	Therapist Worksheet for Observing Types of Strategies (Chapter 7)
APPENDIX B.13	Therapist Checklist for Observation and Analysis of Strategy Use (Chapter 7)
APPENDIX B.14.1 and B.14.2	Guidelines for Challenge Identification Questions and Rating Scale. Challenge Identification Rating Scale (Chapter 11)
APPENDIX B.15.1 and B.15.2	Guidelines for Strategy Generation Questions and Rating Scale Strategy Generation Rating Scale (Chapter 11)
APPENDIX B.16	Strategy Awareness Questions and Rating Scale (Chapter 11)

APPENDIX C: Treatment Forms

APPENDIX C.1	*Dynamic Interactional Model (DIM): Treatment Planning (Chapter 5)
APPENDIX C.2	*Multicontext Treatment Planning Worksheet (Chapter 13; completed sample, D.12)
APPENDIX C.3	*A Team Approach: Multicontext Treatment Planning Worksheet (Chapter 14)
APPENDIX C.4	*Multicontext Activity Worksheet: Increasing Transfer Distance (Chapter 8)
APPENDIX C.5	Sample List of Treatment Activities for Client to Choose From (Chapter 8)
APPENDIX C.6	Sample Structured Multicontext Activity Treatment Session (Chapter 13)
APPENDIX C.7	Pre-Activity Questions: Guided Anticipation & Strategy Generation (Chapter 10)
APPENDIX C.8	Post Activity: End of Session Self-Assessment (Chapter 10)
APPENDIX C.9	End of Session Strategy Bridging Questions or Structured Journal for Client (Chapter 10)
APPENDIX C.10	*Treatment Activity: Therapist Observation Checklist (Chapter 10)
APPENDIX C.11	*Treatment Session: Therapist Summary Worksheet (Chapter 11)
APPENDIX C.12	*Therapist Self-Reflection and Analysis of Mediated Learning Methods (Chapter 11, 13)
APPENDIX C.13.1 And 13.2	13.1 *Multicontext Treatment Fidelity Tool (Chapter 11) 13.2 *Multicontext Fidelity Tool Rating Criteria and Clarifications
APPENDIX C.14	Structured Journal Formats (Chapter 10)
APPENDIX C.15	Client Strategy Worksheet (Chapter 10)
APPENDIX C.16	Cognitive Strategy Action Plan (Chapter 10)
APPENDIX C.17	My Action Plan For Keeping Track (Chapter 7,10)
APPENDIX C.18	Emotional Regulation Action Plan (Chapter 7)
APPENDIX C.19	Cognitive Log (Chapter 14)
APPENDIX C.20	Generic Self-Evaluation (Chapter 10)
APPENDIX C.21	Simplified Self-Ratings (Chapter 10)
APPENDIX C.22	Simplified Self-Monitoring Ratings (Chapter 10)
APPENDIX C.23	Strategy Self-Rating Scale (Chapter 10)
APPENDIX C.24	Pre-Made Goal Examples for Clients (Chapter 12)
APPENDIX C.25	Sample Goal Book (Chapter 12)
APPENDIX C.26	Subgoaling Worksheet (Chapter 12) (see completed samples D.18-D.19)
APPENDIX C.27	Goal Plan (Chapter 12) (see completed sample D.20)
APPENDIX C.28	Goal Setting and Tracking (Chapter 12)
APPENDIX C.29	Blank Goal Rating Form (Chapter 12; see completed sample D.22)

**Forms that are used only by therapists for treatment planning, observing, or summarizing. All other forms can be used with clients, either during interviews (C.7-C.8) or as worksheets/forms.*

APPENDIX D: Supplementary Material

- APPENDIX D.1 Strategies for Specific Cognitive Domains or Performance Errors (Chapter 7)
- APPENDIX D.2 Sample Activity Themes and Activities: Cognitive Demands that Remain Consistent Across a Series of Treatment Sessions (Chapter 8)
- APPENDIX D.3 Sample of Everyday Treatment Materials for Cognitive Rehabilitation (Chapter 8)
- APPENDIX D.4 Overview of Multicontext Activity Modules (Chapter 8)
- APPENDIX D.5 Inpatient Activities: Simple Level 1 or 2 Structured Activities using Pre-made Multicontext Activity Modules (Chapter 8)
- APPENDIX D.6 Sample Higher Level Activity Sequence from Multicontext Activity Modules (Chapter 8)
- APPENDIX D.7 The Metacognitive Framework: Problems Encountered and How to Manage Them (Chapter 10)
- APPENDIX D.8 Things to Remember During Mediated Learning (Chapter 10)
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