A Brief History of the Cognitive Disabilities Model and Assessments

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Beginnings

The cognitive disabilities model had its beginnings at the Eastern Pennsylvania Psychiatric Institute in the late 1960's when Claudia K. Allen, MA, OT, FAOTA and her colleagues first observed patterns of performance difficulties in adult patients with mental disorders. In seeking to better understand and thereby serve the needs of these individuals, Allen and other therapists began a systematic and careful collection of observations of these difficulties. The focus of inquiry at that time was the "sensorimotor actions originating in the physical or chemical structures of the brain and producing observable and assessable limitations in routine task behavior" (Allen, 1985). The construct of "functional cognition" has since become a useful term for describing the focus of concern of the cognitive disabilities model.

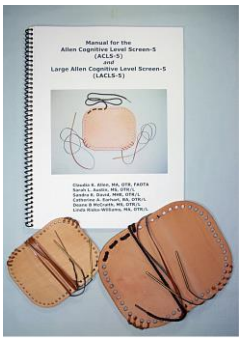
Functional cognition encompasses the complex and dynamic interactions between an individual's cognitive abilities and the activity context that produces observable performance. Allen and her colleagues first observed and described a sequence of six levels of abilities, called the cognitive levels, in the 1960's and early 1970's. The cognitive levels were conceptualized as a hierarchical sequence of sensorimotor abilities similar to the developmental levels of cognition described by Jean Piaget. Allen hypothesized that these underlying global cognitive abilities were largely responsible for observable, qualitative differences in activity performance. She further suggested that that this sequence could be observed in the progression and remission of mental illness, dementia, and fatigue in adult individuals.

Assessments

Work on identifying the levels, now called the Allen Scale, was continued by Allen and others at Johns Hopkins Hospital in Baltimore and after 1974, at LAC+USC Medical Center in Los Angeles. A test of learning three increasingly complex sewing stitches on a piece of leather, now known as the Allen Cognitive Level Screen (ACLS), was developed to provide a quick measure of new learning and sensorimotor problem solving abilities. A standardized procedure for administering the ACLS was developed in 1978 (Moore, 1978). Several studies followed, establishing inter-rater reliability and correlations between the ACLS and other psychological tests including the Block Design of the WAIS, the Brief Psychiatric Rating Scale, Shipley Institute of Living Scales, and the Symbol Digit Modalities Test. Other studies examined the relationship of cognitive level, as measured by the ACLS, to different psychiatric disorders, and between normal and psychiatric populations. The standardized directions for the ACLS were first published in the text *Occupational Therapy for Psychiatric Diseases: Measurement and Management of Cognitive Disabilities* (Allen, 1985) and revisions in ratings were made in 1988, 1990, 1996, and in 2000.

The ACLS test tool was manufactured and made available for purchase by S&S Worldwide in 1990. An enlarged version of the tool, called the Large Allen Cognitive Level Screen (LACLS),

was developed for use with persons with vision impairments and impaired hand function in 1992 (Kehrberg, et al., 1992).



In 2007 the fifth version of the Allen Cognitive Level Screen (ACLS-5) was published. The six contributing authors relied on feedback from various stakeholder groups in academic and practice settings and were guided by the *Standards for Educational and Psychological Testing* (AERA, et al., 1999). This process continued the tradition begun by Allen of relying on the skilled experiences and opinions of many expert clinicians to develop the tools used in the cognitive disabilities model. The fifth version defined the construct of "functional cognition" as encompassing "both functional performance and the global cognitive processing capacities of the brain." (Allen, et al., 2007) The structure of the test and its links to theory were described, as was the intended use of the assessment as a screen to guide further interventions.

During the 1980's, Allen and therapists at the LAC+USC Medical Center became increasingly aware that they were unable to adequately account for clinically significant functional improvements they observed with the existing 6 point scale. As a result, an effort to identify the elements of an expanded scale began in 1990. The modes of performance, a 26 point expansion of the original 6 cognitive levels, were published in *Occupational Therapy Treatment Goals for the Physically and Cognitively Disabled* in 1992 (Allen, Earhart, & Blue, 1992). In this text, Allen also articulated the framework for a clinical practice theory. Assessment tools described included the ACLS-90; the Routine Task Inventory-2, an analysis of fourteen activities of daily living by cognitive level; and the Cognitive Performance Test, six standardized tasks of daily living analyzed by cognitive level. The *Routine Task Inventory-Expanded (RTI-E)* has since been developed by Katz (2006) and the CPT has been used to assess function in persons with dementia (Burns 1994).

In 1993, Catherine Earhart, Allen, and other experienced therapists at LAC+USC Medical Center combined their extensive clinical experience to develop the first edition of the *Allen Diagnostic Module*, a collection of craft based performance assessments of new learning and problem solving abilities. The materials and procedures used in each assessment were standardized to introduce predictable problems to solve while engaging the individual's energies in making a useful and attractive object such as a greeting card or a key chain. The ADM administration manual was updated in 2006 with the addition of new assessments, expanded Guidelines for Use, and a format guided by the *Standards for Educational and Psychological Testing* (AERA, et al., 1999). The *ADM-2nd Edition* contains 35 assessments with task demands ranging from modes 3.0 through 5.8 on the Allen scale of modes of performance.

Recent Updates

In the chapter "The Cognitive Disabilities Model in 2011" (McCraith, Austin, & Earhart, 2011) in *Cognition, Occupation, and Participation* (Katz, 2011), the foundational framework of the CDM, principles that guide assessment and intervention, and intervention tools and processes are presented in the context of current best practice with language informed by the *International*

Classification of Functioning, Disability and Health (World Health Organization [WHO}, 2001) and the *Framework* (AOTA, 2008). The dual use of the Allen Cognitive Levels Scale to measure both abilities of persons and relative difficulties of activity demands articulated by Austin in her investigation of the validity of several ADM assessments is highlighted.

Current Practice

The cognitive disability model and assessments are used by practitioners in the areas of mental health, forensic psychiatry, rehabilitation medicine, and geriatric care. Interventions vary by setting and the functional problem. In acute care settings, changing functional capacities are monitored for anticipated improvements. In post-acute or stable conditions, the specific activity analysis in the Allen Scale of levels and modes identifies the requirements of realistic, meaningful activities that fit the individual. In deteriorating conditions, therapists recommend activities that help maintain abilities, protect the person's safety, and reduce the burden of care. In all settings, interventions guided by the CDM aim to support what Allen called a person's *Best Ability to Function*: successful and safe participation in meaningful activities in a supportive context.

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