This article discusses the role developmental dyspraxia plays in developmental coordination disorder (DCD), based upon a review of literature on apraxia, developmental dyspraxia, and DCD. Apraxia and dyspraxia have often been equated with DCD. However, it is argued that apraxia and dyspraxia primarily refer to the problems of motor sequencing and selection, which not all children with DCD exhibit. The author proposes to distinguish developmental dyspraxia from DCD. Other issues discussed include the assessment, etiology, and treatment of developmental dyspraxia and DCD, and the relationship between DCD and learning disabilities. A research agenda is offered regarding future directions to overcome current limitation.

KEY WORDS: developmental coordination disorder; specific developmental disorder of motor function; apraxia; developmental dyspraxia; learning disabilities.

INTRODUCTION

Children with developmental coordination disorder (DCD) (Diagnostic Statistical Manual [4th edition]: American Psychiatric Association, 1994) or specific developmental disorder of motor function (SDDMF) (ICD-10) (International Classification of Diseases [10th Revision]: World Health Organization, 1992) are children evidencing poor motor coordination with no evident neurological defects (Hall, 1988). Their competence in motor skills is significantly impaired so that their daily activities are adversely affected both at home and school (Walton et al., 1962). These children have been
often referred to as *clumsy children*. However, this term is avoided in this paper because of the negative connotation, and instead, children with DCD or SDDMF will be used.

There has been a growing interest surrounding children with DCD in various professions, including pediatrics (Dawdy, 1981; Hall, 1988; Taft and Barowsky, 1989), neurology (Gubbay, 1975; Denckla, 1984), physical and occupational therapy (Conrad *et al.*, 1983; Cermak, 1985; Murray *et al.*, 1989), and education (Arnheim and Sinclair, 1979; Larkin and Hoare, 1991; Cratty, 1994). Professionals have shown an interest in the causes, assessment, and management of DCD in children. However, their motives have varied. Neurologists have been primarily concerned with neural basis of motor incoordination. Clinical pediatricians and neurologists have attempted to explain the causes of motor incoordination from the results of neuropsychological tests, neuroradiological examinations, and by surveying birth conditions. In addition, physical and occupational therapists and educators have also been concerned about the treatment of children with DCD. Physical and occupational therapists have used assessment tools to enhance therapy strategies. Educators have also tested the children with DCD for placement and remedial purposes.

**DIAGNOSIS**

The professionals surrounding the children exhibiting motor incoordination play different roles in the diagnostic process: child neurologists, psychiatrists, or pediatricians examine the child's medical conditions and the general neurological function of cranial nerves, motor and sensory systems, and cerebellum. If mental retardation, pervasive developmental disorder, or severe neurological impairments (e.g., cerebral palsy, hemiplegia, or muscular dystrophy) is evident, a diagnosis other than DCD will be made. Otherwise, the child is referred to physical therapists, occupational therapists, psychologists, or educators who scrutinize the cognitive and motor functions of the child.

The assessment strategies for motor coordination differ between the two major diagnostic systems, namely DSM-IV and ICD-10. The diagnostic criteria of DCD in DSM-IV includes late motor milestones and poor motor performances that significantly interferes with the activity of daily living and academic achievement. Thus, according to DSM-IV, the diagnosis of DCD is made primarily based upon episodic data. On the other hand, the best recommendation of the ICD-10 is the administration of a standardized test to assess fine and gross motor coordination. Although ICD-10 does not recommend any specific measures, a good example of a standardized test is the Movement Assessment Battery for Children (Henderson and