

Universal Design as a Context for Teacher Education Program

Christopher S. Lanterman

Abstract

Over the past two decades, the quality of teachers and teacher education programs has been highly criticized, and teacher shortages and attrition have plagued U.S. education. Among the reasons cited for this attrition is the lack of teacher satisfaction with their preparation for working with students who have disabilities or who are culturally or linguistically diverse. The number of students who are culturally or linguistically diverse and who have disabilities is on the rise, exacerbating this problem. A promising approach to curricular and instructional design, universal design for learning (UDL), may offer a new way for teachers to view diversity and prepare them for the rapidly changing demographic in our schools. Universal design for learning meets the needs of diverse learners through flexibility of materials, assessment, and student engagement.

In 1983, the National Commission on Excellence in Education (NCEE) published *A Nation At Risk*, citing higher standards for teacher preparation programs as critical to improving the future of education in the United States. The Carnegie Taskforce on Teaching (1986) and the Holmes Group of Education Deans (1986) echoed this need, in the context of more stringent attention to subject-matter knowledge, content pedagogy and varied strategies for teaching students with diverse learning needs (Darling-Hammond, Chung & Frelow, 2002). These reports were succeeded by federal initiatives TO IMPLEMENT EDUCATIONAL REFORM, such as Goals 2000 in 1994 and the No Child Left Behind Act in 2002.

Although the quality of teachers and teacher education programs has been highly criticized, teacher shortages and attrition have also contributed to a struggling education system. For example, statistics indicate that nearly 30 percent of teachers leave within the first two years, and by six to seven years, that figure rises to approximately 50 percent (Hofer, 1999). Among the reasons cited for this attrition is the lack of teacher satisfaction with their preparation for working with students who have disabilities or who are culturally or linguistically diverse (Luekens, Lyter & Fox, 2004; National Center for Educational Statistics, 1999; Scruggs & Mastropieri, 1996). For example, the National Center for Educational Statistics (1999), reported that only an approximate twenty percent of teachers felt very well prepared to meet the needs of students who are limited English proficient, culturally diverse, or who have disabilities. These concerns are exacerbated by the rapidly growing diversity of the school-age population. Banks and Banks (1997) predict that forty-six percent of the school-age population will be children of color by 2020. Likewise, the number of students with disabilities increased by over 30 percent from the 1990-1991 school year to the 1999-2000 school year (NCES, 2003), and approximately forty-seven percent of those students were included in the regular classroom for more than 80 percent of the school day, nearly double the rate of inclusion from 1984-1985 (U.S. Department of Education, 2001).

In response to these concerns, there have been many efforts to improve outcomes for students with a variety of learning needs, as well as the quality of teacher education pro-

grams, over the past two decades. Often, the focus is on instructional practices in the classroom. Ortiz (2001) states that students may be placed at risk for educational success based on the teaching and learning environment. For example, students from low socio-economic backgrounds may face challenges when the delivery of instruction is primarily seen through the lens of middle-class experiences. Further, Ortiz (2001) suggests that students who are linguistically diverse learn best when there is an academic environment that is conducive to success and when proven interventions are applied. Such interventions include connecting new information with prior knowledge, reviewing previously taught information and demonstrating how they are relevant in new contexts, connecting ideas and themes across content areas, and providing individualized guidance, assistance and support (Ortiz, 2001). Similarly, Meyer (2000) suggests that the traditionally strict focus on language acquisition, for students who are English language Learners, is not as effective as teaching strategies, such as an emphasis on teacher-student interaction and the active support of adult personnel for the development of language production among their students (Meyer, 2000). Although such practices are widely recognized and accepted as effective, the challenge of implementing such interventions and strategies seems to be in the preparation of new teachers in the use of these methods, as well as helping them recognize and accept the barriers that existing educational practice may inadvertently create for CLD students. Cho and DeCastro-Ambrosetti (2006) cite the prevalence of ignorance among pre-service teachers about the experiences, needs, and resources of students who are culturally or linguistically diverse. This lack of knowledge may create barriers to successful educational outcomes for these students, and may result from the INCULCATION OF EDUCATIONAL PRACTICE through the values and beliefs of the dominant culture. In turn, these practices tend to marginalize students who are culturally or linguistically diverse (Sleeter & Grant, 1999) and those from low-income households (Bowles and Gintis 1976; Katz 1971). These teachers continued to feel unprepared to teach students from diverse cultural backgrounds (Cho & DeCastro-Ambrosetti, 2006) even after being taught with the use of a curriculum to create awareness among pre-service teachers about the background and experiences of culturally and linguistically diverse students.

Students with disabilities face similar challenges. Such implicit barriers, based on the perceptions of the cultural majority, exist for the efficacy of inclusive practices for students with disabilities (Hobbs, 1975; Kugelmass, 2001; Walkerdine, 1984). Additional concerns over inclusion of students with disabilities in the general curriculum have surfaced within the debate over the meaning of inclusion itself (Banerji & Dailey, 1995; Fuchs & Fuchs, 1994-5; Holmes, 1999; Manset & Semmel, 1997).

Salend (2001) suggests that inclusion is an attempt to “establish collaborative, supportive, and nurturing communities of learners that are based on giving all students the services and accommodations they need to learn, as well as respecting and learning from each other’s individual differences” (p. 5). In fact, as far back as 1968, it was suggested that students with disabilities would best benefit from inclusion in the general education classroom (Dunn, 1968). Salisbury (1991) proffers that “the diverse needs of all children (can be) accommodated to the maximum extent possible within the general education curriculum” (p. 147), and Sindelar (1995) argues that general education teachers and learning disability specialists must possess the same knowledge, skills, and dispositions in order to be effective in their instruction of any child who is at risk. These positions highlight the importance of examining the impact of the educational environment on learning for students with disabili-

ties. In this context, the environment may become the focus for intervention, rather than the individual student. While there is support throughout the literature for including students with disabilities in the general curriculum, there also exists contention over what inclusion is and the extent to which it should take place.

Perhaps the source of this debate lies within the Individuals with Disabilities Education Act, including its most recent reauthorization, the Individuals with Disabilities Education Improvement Act of 2004. These laws emphasize the importance of placing students with disabilities, to the greatest extent possible, with their peers who do not have disabilities (IDEIA, 2004). Additionally, the law states, "...special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily" (IDEIA, 2004, Sec. 612(5)(A)). This provision for placing students in the "least restrictive environment" does not automatically imply the general education setting for the entirety of the school day, however (Hagan-Burke & Jefferson, 2002). The IDEIA and its predecessors emphasize the importance of placing students with disabilities on a continuum of services, which ranges from the general education classroom to home-based instruction. Additionally, Huber, Rosenfeld, and Fiorello (2001) identify a difference between inclusive practice and inclusion. They suggest that inclusion is placing students in the general education classroom, while inclusive practice is related to training and curricular support. The debate over inclusion and inclusive practice, as well as their efficacy, continues to pepper professional journals (see Burstein, Sears, Wilcoxon, Cabello & Spagna, 2004; Rea, McLaughlin & Walther-Thomas, 2002; Trent, Driver, Wood, Parrott, Martin & Smith, 2003;). Whether the context is inclusion or inclusive practice, however, many researchers have found that students with disabilities experience improved academic and social outcomes when they receive instruction in the general education classroom.

Nearly 90 percent of students receiving services under the IDEA have mild disabilities, including specific learning disabilities, mild mental retardation, and emotional disturbance (Raymond, 2004; Turnbull, Turnbull, Shank & Smith, 2004), and students with learning disabilities comprise approximately 50 percent of all students with disabilities (NCES, 2003). Throughout the 1990's, the trend toward inclusion of students with disabilities in the general education classroom rose steadily (McLeskey, Hoppey, Williamson & Rentz, 2004). Conversely, the rate of inclusion for students with learning disabilities grew at a much slower rate than that of all students with disabilities (McLeskey et al., 2004). Thus, inclusion and inclusive practice for students with learning disabilities, in particular, have been the topic of much literature (Baker & Zigmond, 1995; Banerji & Dailey, 1995; Klingner, Vaughn, Schumm, Cohen & Forgan, 1998; Lindsey & Ghose, 2001; Rea, McLaughlin & Walther-Thomas, 2002; Scruggs & Mastropieri, 1995; Trent, Driver, Wood, Parrott, Martin & Smith, 2003; Vaughn, Elbaum & Boardman, 2001; Zigmond & Baker, 1996).

Indeed, when students with disabilities are included in the general curriculum, positive educational and social outcomes have been reported. For example, Truesdell (1985) reported that teachers observed successes in a wide range of academic behaviors such as attendance, homework, attention, participation, and test scores, when students with learning disabilities were included in the general education classroom. Banerji and Dailey (1995) found that fifth grade students with learning disabilities kept pace with their peers without disabilities on measures of academic growth. This same study reported growth in self-es-

teem and motivation for students with learning disabilities when included with peers without disabilities (Banerji & Dailey, 1995). Additionally, in their review of 36 studies on the inclusion of students with mental retardation in the general education classroom, Freeman and Alkin reported that students with mental retardation experience greater academic gains when they are included more in the general education classroom (Freeman & Alkin, 2000). Their synthesis of the literature also suggested that social status and social competence among children with mental retardation can be enhanced when specific and intensive training programs are implemented for teachers and classrooms (Freeman & Alkin, 2000). Along with benefits for students with learning disabilities and mental retardation, academic curriculum restructuring is cited as one of the most effective practices for teaching students with emotional disturbance and challenging behaviors, along with social skills training and behavioral interventions (Gottfredson, 1997; Lipsey, 1991). However, research indicates that these are the least used strategies for appropriate inclusion of students with emotional and behavioral disabilities (Gottfredson, 1997; Lipsey, 1991; Mayer, 1995).

It has also been demonstrated that inclusive practices can contribute to positive academic gains for students without disabilities (Huber, Rosenfeld & Fiorello, 2001). In particular, inclusive practices, such as multiage grouping, cooperative learning, integrated curriculum, whole language reading instruction, ongoing authentic assessment, the use of math manipulatives, regular consultation with experts, team teaching, and adapted instruction have resulted in positive academic outcomes for students without disabilities (Fuller, Ronning, VanVoorhis, & Moore, 1993; Liddiard, 1991; Madden, Slavin, Karweit, Dolan, & Wasik, 1993; Saint-Laurent, Dionne, Giasson, Roger, Simard, & Pierard, 1998). This research is most salient, suggesting that the use of strategies that benefit students with disabilities also benefit those without disabilities.

Throughout the literature, students with and without disabilities have recorded positive academic and social outcomes through inclusion and the use of inclusive practices. However, such practices are not incorporated in all schools, nor do such practices guarantee a positive outcome. Inclusive practices often have differential results, depending on the environment within which they are implemented (Banerji & Dailey, 1995; Hagan-Burke & Jefferson, 2002; Huber et al., 2001). Embedded in this controversy are the philosophical underpinnings of inclusive practice. The dominant model for special education centers on the idea that interventions should be specific to the child with the disability. By the very nature of this "medical model," there will always be endless variations to the way inclusion and inclusive practice manifest in schools. Uncertainty over the best method for including students with disabilities, inconsistent implementation of inclusive practices, and insufficient teacher preparation have all contributed to a lack of efficacy for students with disabilities in our schools. As a result, these students may be placed in more restrictive settings than the general education classroom. The least restrictive environment, as represented through the continuum of services, may contribute to the abdication of school and teacher responsibility for teaching students with mild disabilities, with or without special education supports and services, in the general education setting. Nonetheless, the importance of including students with disabilities in the general education classroom continues to surface as one of the key premises of special education in the 21st century.

These issues point to an increasing need for teacher preparation programs to recognize and address the growing diversity of our nation's schools. In short, pre-service teachers must be prepared to face classrooms more diverse than ever before. Such characteristics as

cultural and linguistic diversity, socio-economic status, and disability are recognized as traditional barriers to student educational success, as suggested in the No Child Left Behind Act (NCLB, 2001). As over one-fourth of public schools continue to falter under the guidelines and expectations of the No Child Left Behind Act (National Education Association, 2005), the criticisms of the past twenty-five years continue to nip at the heels of U.S. education.

In order to address this ongoing quandary for educational policymakers, consideration might be given to a promising new approach to curricular and instructional design—universal design for learning (UDL), as a context for preparing pre-service teachers to meet the needs of today's students. Adopting the underlying philosophy and associated instructional practices of universal design can position teacher education programs and their graduates to face the challenges of the rapidly changing needs of our educational system.

Universal design was first conceived in the built environment. Based on principles developed by Ronald Mace and his colleagues at the Center for Universal Design at North Carolina State University, universal design is "...the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (Center for Universal Design, 2006)." Additionally, these considerations are to be made proactively, with aesthetics as a consideration in balance with functionality and cost (Mace, Hardie & Place, 1991). Ronald Mace and his colleagues envisioned an approach to design that recognizes how products and environments can either create or eliminate barriers for the diverse needs of individuals. The curb cut is a classic example of universal design principles. The gently sloping transition from the sidewalk to the street is beneficial for people who use strollers, delivery dollies, skateboards, bicycles, and wheelchairs, among others. A single adaptation enhances use for many people.

Similar to its architectural counterpart, universal design in the educational context focuses on the capacity of instructional design, methods and materials to maximize learning outcomes for all students, regardless of their learning differences. These differences include, but are not limited to, language, culture, socio-economic status, prior knowledge and disability (Bowe, 2000, OSEP, 1998; Rose & Meyer, 2002). The principles of universal design for learning address three key elements of the curriculum: representation, expression and engagement (OSEP, 1998). These three key areas are representative of flexibility in instructional materials and delivery, student activities and evaluation, and physical, cognitive and emotional engagement.

The inherent flexibility allows for various elements of the curriculum to be accessible to the maximum number of students possible, without the need for accommodations and modifications (Pisha & Coyne, 2001; Rose, 2001; Rose & Meyer, 2002). For example, digital or electronic text provides flexible access to print material (OSEP, 1998; Pisha & Coyne, 2001; Rose & Meyer, 2002). The text can be manipulated, changing size, color, font, backgrounds, etc., to provide access based on an individual's needs. Digital text can also interface with screen-readers or other text-to-speech devices for auditory output. This flexibility is useful to individuals with vision impairments, but it is also beneficial to students who are English language learners, students who are auditory learners, students who have attention deficit disorder, and students who have difficulty turning pages, among others.

In addition to making materials accessible, the principles of universal design have been applied to assessment strategies and classroom management. Rose and Meyer (2002) detail the factors that can lead to erroneous or confounded assessment results, including individual

learning differences, characteristics of the media used to assess students, the withholding of student supports, and misalignment of assessments to curriculum. These factors are addressed through universal design for learning with the provision of varied media (e.g. paper-pencil test and computerized test), varied supports (e.g. connections to relevant background information or context-sensitive vocabulary supports), or varied formats (e.g. diagrams, timelines, or concept maps) (Rose & Meyer, 2002). Acrey, Johnstone & Milligan (2005) applied these principles in the development of study guides and classroom assessments. This study, conducted in a school with greater than half of the student body being English Language Learners, resulted in improved on-task behavior and comprehension of materials, along with enhanced student cooperation (Acrey et al., 2005). Thompson, Johnston, and Thurlow (2002) expanded these premises into the domain of large-scale assessments. They authored a report for the National Center on Educational Outcomes (NCEO) on the use of universal design for large-scale assessment. In their report, the authors suggest that the validity of standards-based assessments is compromised by the barriers imposed in the instruction of students, as well as in the design and implementation of the assessments. Thompson et al. (2002) further suggested that states and school districts are having difficulty with making large-scale assessments fully inclusive of the range of learners, including those who are English Language Learners (ELL), those with disabilities, and those from cultural and ethnic minority groups. For example, results for the standards-based high stakes assessment used in Arizona, the Arizona Instrument to Measure Standards (AIMS), show significant discrepancies in performance among several different groups. For the Spring 2005 administration of the assessment, nearly 64 percent of students who are ELL “fell far below” the standards in math, 31 percent in reading, and 26 percent in writing, compared with 24 percent of students who were not English Language Learners in math, 8 percent in reading, and 5 percent in writing. Similar gaps appeared for students with disabilities and those of non-white ethnic groups. For tenth, eleventh, and twelfth grade students who took the AIMS in the spring of 2005, approximately 47 percent more students with disabilities “fell far below” the standards than their peers without disabilities in math, 23 percent in reading, and 21 percent in writing. Only 11 percent of European American students “fell far below” the standards in math, compared with 29 percent of Hispanic students, 30 percent of African American students, and 36 percent of Native American students. Similar differences occurred for the reading and writing portions of the assessment (Arizona Department of Education, 2006). Such disparate results for these students signify a disconnect between the purpose of the standards and how they are working for students who have been historically disadvantaged, and further evidence for the continuing imperative to find new solutions for meeting the needs of these students.

There is also growing recognition for the value of universal design for learning as a mediator of student engagement. Incorporating the affective domain within learning goals can contribute to developing “persistence and deep interest” among learners, thus leading to enhanced motivation and engagement (Bremer, Clapper, Hitchcock, Hall & Kachgal, 2002; Orkwis, 1999; Rose, 2001; Rose & Meyer, 2002). It has even been suggested that the use of UDL principles can ameliorate school contributors to depression among students (Guetzloe, 2003). In order to accomplish this connection, without compromising standards for achievement, choice, and relevance are paramount (Rose and Meyer, 2002). Additionally, creating an awareness of accomplishment and progress are important tenants of universal design for learning, and are key to instilling intrinsic motivation for learning (Rose & Meyer, 2002).

The importance of this component of the UDL model cannot be understated. Flexible materials and assessments will have little impact for educational outcomes if students do not feel safe in the classroom or cannot establish self-motivation.

Universal design for learning is gaining momentum as a practical approach to meeting the needs of all students. Muller and Tschantz (2003) report on four state initiatives to implement universal design for learning in their school systems. California, Kentucky, New York, and Ohio have each implemented initiatives to increase the practice of universal design through technology, curriculum development, and assessment practices. Kentucky piloted a project in 2000 to train teachers in the principles and use of universal design strategies in the classroom, through technological enhancements. In addition, Kentucky piloted a web-based state assessment in 2002 to align the classroom-based use of universal design principles with the statewide assessment of learning (Abell & Lewis, 2005; Muller & Tschantz, 2003). Although Kentucky's UDL initiative focused on students with disabilities, New York has implemented universal design trainings in recognition of the possibilities they have in assisting students who are traditionally disadvantaged, and professional development materials have been distributed to over 1100 staff development personnel. The New York State Education Department (NYSED) has also been working with the Higher Education Support Center (HES) to develop strategies to disseminate information on universal design for learning to faculty in teacher preparation programs at 56 institutions of higher education in the state (Muller & Tschantz, 2003). More recently, the Individuals with Disabilities Education Improvement Act of 2004 includes a provision for the development of a National Center for Special Education Research, referred to as the Special Education Research Center. One of the charges to this center is to "examine and incorporate universal design concepts in the development of standards, assessments, curricula, and instructional methods to improve educational and transitional results for children with disabilities" (Individuals with Disabilities Education Improvement Act of 2004, Pub. L. 108-446, Part E, Sec. 177(12)).

The application of universal design for learning can have far-reaching implications. The universally designed curriculum provides the physical access mandated by federal law, but also provides cognitive access. It provides the means for students with diverse learning needs to engage with the curriculum in such a way that the high expectations of standards-based education are more readily achievable. In addition, educators will become more aware of how systems and environments can represent inherent barriers to student achievement. Such awareness can lead to a change in their paradigm of "difference." As universal design for learning is applied to all aspects of the classroom and generalizes strategies to all students, these standards may be attained without the necessity of "separate, but equal" education, which is how our current system of special education manifests for over half of all students with disabilities (U.S. Department of Education, 2001). Universal design for learning bolsters support for students who are racially or ethnically diverse, students who are of a low socio-economic status, those who are English language learners, and students with disabilities, each of whom are cited in the No Child Left Behind Act (2001) as disadvantaged populations.

With education in the United States continuing to face concerns over student outcomes, teacher preparation and shortages of qualified teachers, solutions will also continue to be theorized, suggested, and even mandated. Universal design for learning has a place in this discussion, with its emphasis on assisting all students to reach curricular goals and academic standards through curricular and instructional design. It may also help educators to view

student diversity as an opportunity for enhancing the educational system, rather than as a barrier to their career satisfaction. Establishing universal design for learning as a framework for teacher education may help to assure that pre-service teachers are cognizant of, and prepared for, the diverse learning needs of the rapidly changing student demographic, while providing them with the tools and strategies necessary to help all students meet increasingly stringent performance standards.

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