Implementing Universal Design for Learning in Classrooms with Minorities with Autism

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Abstract

In 2013-2014 school year, 6.5 million children ages 3-21 received special education services which constitute almost 13% of total public school enrollment. Throughout the last two decades, particularly from 1990 through 2004, the number of students ages 3-21 who received special education services, increased from 11% to 14% of total public school enrollment. Educators during this period have tried to include students with disabilities into more inclusive settings as a response to the No Child Left behind Act (NCLB, 2001) and the Individuals with Disabilities Education Act (IDEA, 2004). This movement has increased the number of diverse students in inclusive settings.

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Prevalence of Autism Spectrum Disorders (ASD)

In 1999, the Individual with Disabilities Education Act (IDEA) first guaranteed individuals with autism the right to education. Over the past decade, there has been a significant increase in the prevalence of autism. In 2008, based on a sample of 8 year olds, the Centers for Disease Control (CDC) reported that the prevalence of autism had risen to 1 in 88 in American children. The CDC just released new incidence numbers based on input from 11 states. The incidence has remained stable at 1 in 68, making ASD the most common developmental disability diagnosed in children [1-10].

Minority Students with ASD

Autism Society of America (2000) claims that "autism…knows no racial, ethnic, or social boundaries; family income, lifestyle, and educational levels do not affect the chance of autism' occurrences" (p: 3). Numerous research studies have indicated that ethnicity status does not influence the prevalence of ASD [11-16]. Since children from ethnically diverse backgrounds, children have low socioeconomic status, or those with lower educational levels are all underserved populations, we discuss them together as a minority group.

Although autism prevalence is similar across different ethnicities, when compared to their middle-class White peers, children from minority backgrounds are underrepresented and have less access to educational services Travers et al. [16] and health care Inkelas et al. [6] According to Mandell et al., Medicaid-eligible White children with ASDs received more services and at an earlier age than children with ASDs from a minority race. Thomas et al. [15] found that minority students with ASD are less likely to receive sensory integration care or use services from a case manager, pediatrician, or psychologist. Bitterman et al. found that family income was negatively associated with receiving special transportation services [2].

Tek and Landa found that young minority children with ASD from lower SES backgrounds are at increased risk for delayed enrollment into early intervention services than children from higher socioeconomic classes [14]. It has also been found that children with ASD from homes with lower income and lower education are less likely to access specialized health services, in part because their parents are less aware of the need for, and benefit from, these services Porterfield and McBride [12].

Implementing Universal Design for Learning (UDL)

In order to enable teachers to provide effective instruction for a wide range of learners, understanding efficacious instructions and assessment strategies is strongly recommended. Nonetheless, finding an effective method to address all diverse learners' needs is a challenge. To ensure the success of all learners, classroom reform is urgently required. The framework and principles of Universal Design for Learning (UDL) can meet this need as the

plan calls for improvements in student learning by applying new technologies.

Rose et al. stated that "learning is supported and facilitated by the interaction between the learner and the curriculum" (p: 19). In fact, if a teacher designs a flexible curriculum to suit individual needs, the chance of academic success is increased [11]. Accordingly, the UDL guidelines offer flexible options that can be integrated into curriculum and instruction to support all diverse students. The framework for the UDL was developed based on three main principles: Providing multiple means of representation, providing multiple means of action and expression, and providing multiple means of engagement (CAST, 2012), which intentionally target a wide range of learners.

As diverse learners commonly bring variability into the classroom, the UDL framework focuses on defining how the learning process can be accommodated to meet their various needs. For clarification, the UDL framework does not imply the approach of one-size-fits-all solution as it's no longer tenable rather, it acknowledges that each learner has unique needs and learns differently [14].

Recently, the emphasis on instructional delivery has shifted towards how services are delivered instead of where they are delivered [13]. Because the UDL focuses on creating inclusive learning environments that meet all learners' needs, it has prominently become an effective approach in the field of special education. The principles of the UDL are relevant and applicable for all learner variability. By applying the UDL framework, teachers can design a curriculum that supports all students including students with disabilities, and general education students. This approach is even more important as the labor market is evolving, individuals lacking a college education or a standard high school diploma have fewer career options [16].

As UDL is about all learners, it is planned to meet diverse needs and benefit every student in the classroom including English language learners, students with special needs and minority students with autism. UDL strives to make teaching and assessment accessible and inclusive Milton, et al. through multiple means of representation and expression which allows materials to be presented in various ways to accommodate different approaches to learning and allows learners to demonstrate their knowledge in individual ways [9]. By focusing on modification to the environment, UDL constitutes a sustainable approach to the management of the diverse needs of learners Harrison [7] Not only do its strategies and goals allow wider access to students with disabilities, but they allow the integration of the "millennium learners", encourage higher student retention, guarantee higher rates of graduation and establish greater equity and respect for diversity Fovet and Mole [5].

Case Study

A first grade public school teacher, Miss K, has eighteen students in her class, seven of them with IEPs. Their individualized learning goals and accommodations are all different and the teacher has eleven other students to consider. She needs to plan how to teach adding to each of these students as a whole class. Although using UDL supports all students, the teacher is hoping that the use of UDL will support Han, a seven-year-old student who emigrated from China a year ago and has a diagnosis of Autism. Han has limited communication abilities and it is unclear if that is due to the severity of her Autism or the language barrier. Her family reported that the use of visual aids along with directive statements is the primary use of communication. Miss K is concerned that her teaching strategies are not reaching Han and that she does not fully comprehend the concepts to the best of her ability. She needs to implement the 3 principles into her instruction to target the needs of Han and the other seventeen individuals in her class.

Principle 1

As stated above, there are three principles of Universal Design for Learning (UDL) and they are all equally important. The ultimate goal is to blend the three of them so they work together. The first principle is to provide multiple means of representation. This includes perception, language, expressions and symbols, and comprehension or in simple terms, the "what" of learning. Teachers need to consider what they are presenting and how they are presenting it. Students do not all learn the same way and they should not be expected to. There are many ways to approach presenting the concepts that the teacher is teaching. When planning the delivery, the teacher needs to consider perception and students can perceive concepts differently. How can the teacher anticipate the different perceptions in a way that they are represented in the delivery of the instruction? The information needs to be able to be processed through different ways such as touch, visually, or auditory.

Miss K has an introductory lesson planned to build on simple adding and subtraction skills that each of the students learned in Kindergarten. She has planned to incorporate manipulates such as counting bears and the single blocks from the base ten blocks. When introducing the concept, she represents the numbers in manipulative on the board. Throughout the introduction, she walks towards Han to show her how to correctly use the manipulative. She engages the students by having them all count verbally and then she gives each of the students a choice of using the blocks or drawing on a paper. She continues to walk around the classroom, monitoring the progress of each student as they use the manipulative to solve the problems. She stops at Han's desk and points to a problem that is unsolved and asks for her to solve it. This allows for Miss K to have visual confirmation that the concept has been grasped.

Principle 2

The second principle, providing multiple means of expression, reflects the show of learning in which students are actually learning what they are given. This can be done through physical action, expression and communication, and executive function. The students navigate and express what they are learning in different ways. There are some students who are able to complete a simple math problem mentally, where someone else prefers to use their fingers, and another uses a counting on

strategy aloud. None of these are wrong in any way; they are just different ways of expressing their knowledge and what they are learning. Students with dyslexia will be able to demonstrate comprehension more accurately when they are hearing what is being read and then able to verbalize their comprehension. A student with dysgraphia has wonderful ideas on a certain topic, but if it is a requirement to physically write a response, their expression of knowledge will certainly be hindered and they will know be able to show the best of their ability. Assistive technology can be incorporated well throughout principle 2 by using the necessary means to allow the students to deliver their knowledge and understanding to the best of their ability.

When the lesson is over, the teacher will check for comprehension. The teacher has taught the concept using tactile, auditory, and visual ways and she is now allowing the students to represent what they learned through whatever means they feel work for them. There are students who are drawing neat groups of circles to represent each number and adding them together as other students can be seen using mental math, or using manipulative to represent the answer. Miss K observed Han ripping tissues up and at first she was concerned that she was not paying attention. After giving her a moment, she realized Han was using the pieces of tissue as manipulates to add and subtract. Miss K provided physical praise of her use of manipulates to reinforce her strategy. It was later found that Han likes the texture of tissues and since she was tactile in her representation, she used a preferred texture.

Principle 3

The third principle is to provide multiple means of engagement through recruiting interest, sustaining effort and persistence and self-regulation. The students need to be engaged and motivated when learning and how that happens is through the third principle. Students can be engaged in the lesson through simple means such as creating the lesson around a common interest or providing a choice of books based on the students' interests. The attention of the students varies and if the students are not paying attention or lose interest, there is no point in continuing on with the lesson. This is the opportunity to be culturally reflective as well understand that students have different likes, dislikes, and understanding.

Miss K provides examples on adding numbers by creating scenarios that have her students' names and their interests. The teacher knows that Jada gets frustrated easily and loves beads so she will begin an ex ample by stating "Jada has 7 beads and then her friend, Matt gave her 3 more! How many does she have now?" This instantly engages the student who is being used as an example, but the other students as well hoping that they can be used as examples too. Miss K is also aware that some students may feel targeted if their names are used so Miss K decided to use an example representing adding stuffed animals knowing that this is an extreme interest of Han's along with other students. Miss K noticed that Han picked her head up and had a small smile as they were going through the examples. Miss K makes a gesture along with stating to use their fingers to show the answer. As she surveyed the class, she saw that Han not only had the correct answer but she was comfortable enough to share it in her way.

Conclusion

Recently, the emphasis on instructional delivery has shifted towards how services are delivered instead of where they are delivered. Because the UDL focuses on creating inclusive learning environments that meet all learners' needs, it has prominently become an effective approach in the field of special education. The principles of the UDL are relevant and applicable for all learner variability including students with autism. By applying the UDL framework, teachers can design a curriculum that supports all students including students with disabilities. The main purpose of the UDL is to create a classroom environment that addresses all students' needs including students with disabilities. Since the concept of the UDL is relatively new, continued research and exploration is needed. Specifically, about the effects of students with autism.

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