

Universal Design for Learning and Instruction: Overcoming Barriers Facing Students with Disabilities in Colleges and Universities

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Abstract

The purpose of this article was to examine ways that Universal Design for Learning (UDL) could enhance the educational experience of students with learning disabilities (SWDs) and explore barriers that SWDs face in post-secondary education. In addition, the barriers that university faculty and staff face when adapting to and accommodating SWDs were examined. SWDs are often handicapped by a lack of understanding of the laws designed to protect them and faculty are also prone to not understanding the process of accommodating these students. Many SWDs are reluctant to ask for accommodations thus risking failure. One approach is Universal Design for Instruction (UDI), which is a faculty-based approach to improve access to learning with inclusive teaching practices. Another teaching practice under the umbrella of UDL is mobile learning, flexible education using the internet or network using personal devices which allow students access to education anywhere.

Key words: mobile learning, UDL, UDI, Universal Design for Transition (UDT)

Introduction

Students with disabilities (SWDs) are attending colleges and universities at a much higher rate today than they have in the past due not only to Section 504 of the *Rehabilitation Act (1973)* and the *Americans with Disabilities Act (1990)* but of their own volition and perseverance. These students, their instructors, their parents, and other advocates have learned that many disabilities are not reasons to keep students from reaching a higher level of education than secondary school. Being admitted to postsecondary school is typically not problematic. Navigating college life, their courses, disability services, and the human factor are the elements that incite SWDs to leave the university environment.

Most students attending colleges and universities face many new undertakings, responsibilities, activities, and sometimes trials in the transition from secondary to post-secondary school. SWDs tend to have more struggles navigating through the university when they do not have a clear roadmap to take them through at least the first year. Certain road blocks possibly include getting to classes on time because they have not previously mapped out the campus, obtaining and using their identification cards, locating and using the office of disabilities, and other disability-specific issues (Fleming et al., 2017).

Courses may become inordinately negative experiences for SWDs because they do not know the questions to ask, they may not ask questions at all, they will not use or do not know how to use accommodations, or they may be intimidated by professors. They may also feel that they are not prepared for the material. This may prevent them from asking questions that many students find conventional or common—questions about tutoring, study groups, or appointments with professors. Conversely, SWDs may find their courses refreshing due to professors who are sensitive to disabilities and reinforce their instruction not only on in content but also by universally teaching to everyone (Morina, 2017).

Faculty

The transition to a post-secondary environment, whether straight from high school or from a work setting, is challenging for all students emotionally, academically, and socially (Heiman & Precel, 2003). These same struggles are intensified when a student has a learning disability or ADHD (Cortiella & Horowitz, 2014).

Since the passing of the *Education for All Handicapped Children Act* in 1975 and its reauthorizations through 2004, the *Individuals with Disabilities Education Improvement Act*, principles were established to include SWDs into the general education classroom. Laws that provide inclusive services beyond the secondary classroom, Section 504 of the *Rehabilitation Act (1973)* and the *Americans with Disabilities Act (1990)* entail a two-fold responsibility.

One, the student must know enough about the services of the laws that may benefit him/her and be willing to disclose the disability. Two, the campus department of student services and the college or university faculty must be knowledgeable and willing to acknowledge and adhere to the components of the laws that pertain to post-secondary SWDs. Even with the benefits of the laws, SWDs and their instructors find barriers that hinder their communication.

The Science, Technology, Engineering, and Mathematics (STEM) disciplines want to keep the students who are truly interested in their area. Sithole et al. (2017) noted that more SWDs in STEM programs tended to either change majors or drop out of college altogether than did typically achieving students in the same field. Research conducted by Gokool-Baurhoo and Asghar (2019) found four barriers that impeded faculty from effectively teaching SWDs: 1) the instructors' lack of knowledge and experience with disabilities; 2) the instructors' lack of knowledge of laws, policies, and regulations for people with disabilities; 3) confidentiality and disclosure requirements; and 4) deficiency in training and professional development opportunities in areas of disability. Using semi-structured interviews, the authors isolated three themes: 1) professors' inadequate understanding of strategies and skills in teaching SWDs, 2) lack of supports and resources in working with SWDs, and 3) difficulty in developing relationships with SWDs. They concluded that "merely providing documentation of faculty instructors on accommodations for SWDs is insufficient. It is vital that postsecondary institutions hire an adequate number of well-trained staff to provide the appropriate resources to effectively support instructors through professional development programs" (Gokool-Baurhoo and Asghar, 2019, p. 26).

A program-specific study took place for pre-service teachers with learning disabilities and/or ADHD in a large university in Israel (Lipka et al., 2019). Three courses, language arts, writing, and English as a foreign language, were specifically adapted for SWDs and their specific needs. Six themes materialized from the student and instructor interviews that supported adapted courses: 1) small class size, 2) emotional support, 3) adjusted teaching methods, 4) independent practice exercises, 5) instruction by modeling, and 6) instructor characteristics. The themes of adjusted teaching methods and instructor characteristics reiterate assertions of previous research (Fleming et al., 2017; see also Black et al., 2014; Hong, 2015).

As stated previously, the rate of SWDs attending postsecondary institutions is rising. However, this population's educational achievement is typically less than those students without disabilities (Ryan & Bauman, 2016). The retention rate of SWDs has been found to have a direct correlation with how well their accommodations meet their needs (Jenson et al., 2011). However, less than 40% of the students who received services for disabilities in high school and attended a postsecondary institution reported to their institution's office of disability services and received accommodations (Newman et al., 2011). Given this knowledge, a year-long program was developed to prepare and instruct faculty on methods to better teach and provide accommodations for all their students. Another aim of the program was to make it sustainable in that its participants would become mentors of incoming instructors to the program (Hsiao et al., 2019). Using the Inclusive Teaching Strategies Inventory (Lombardy et al., 2011), the researchers discovered that participating faculty members revealed four topics of concern: 1) knowledge about types of disabilities, 2) accommodation and inclusion strategies, 3) access to resources, and 4) the availability of support services.

The program consisted of five modules offered to faculty throughout the year including a panel discussion with SWDs and a final project. Module themes included accessibility, laws, Universal Design Learning (UDL), a set of principles for designing curricula that provides all individuals with equal opportunities to learn, diverse learner characteristics, and accommodations. Post-training interviews revealed an increase in awareness in the areas of concern. Analyses showed that participants were more proactive, more flexible, and more broad-minded in their approaches to teaching and including all students (Hsiao et al., 2019).

SWDs have more obstacles to surmount than the typical college freshman. The office of student services, laws and rights for SWDs, disability evaluations, and necessary accommodations name only a few. If a SWD comes from a low socioeconomic status (SES) the student has an additional hurdle to overcome (Madaus et al., 2014). Students transitioning to college from a low SES milieu may imply poor transition planning and/or completing a less demanding secondary curriculum (Showers & Kinsman, 2017).

Research done at a mid-Atlantic university with a high population of students from low-income backgrounds (Murray et al., 2008) examined faculty perceptions using a 56-item survey developed to analyze faculty attitudes, beliefs, and practices concerning SWDs. Themes outlined within the survey were faculty knowledge about federal policies related to the nondiscrimination of SWDs in higher education, attitudes and perceptions about SWDs, availability of resources, and faculty willingness to implement minor and major course accommodations related to instructional and examination practices. Approximately two-thirds of the university faculty responded to the survey. Results showed faculty indicated

a willingness to provide minor accommodations, to invest in the support of SWDs, and to be willing to invite disability disclosure. The factor that faculty scored lowest was providing major accommodations to SWDs. Analysis by faculty rank indicated minimal difference, however, comments from full professors indicated that they did not have time to make the major accommodations and did not trust the security of the office of disability testing environment. Associate and assistant professors, however, felt that Universal Design for Instruction (UDI) was an essential element of their instruction. Banks (2019) concluded that the campus was relatively prepared to serve the diverse population of students. She recognized that training in the areas of disability law and UDI through professional development would better prepare the faculty for a more inclusive environment.

Attitudinal studies gathered by Molina (2017) found similar results. Though some faculty members appreciate and use inclusive strategies for SWDs in their courses, other faculty do not implement them (Lombardi et al., 2015). This issue leads to that of being sensitive to the needs of SWDs. When many professors recognize the need and understand how to address the basic needs of SWDs, they, the professors, are more willing to work with the students (Molina et al., 2015). Through training in sensitization and instruction, specifically UDL, faculty show more responsive attitudes toward SWDs and even creating more UDL friendly syllabi and coursework (Black et al., 2014).

Students

Approximately half of the students diagnosed with disabilities attend a college or university. Since 1998, the percentage of SWDs attending college is higher than 11%, including those who do not self-identify (Cortiella & Horowitz, 2014). The *Americans with Disabilities Amendment Act* (2008) and Section 504 of the *Rehabilitation Act* (1973) provide accommodations and resources to make college a reality for more students with disabilities. Also the United Nations Convention on the Rights of Person with Disabilities (2006) states “Persons with disabilities are not excluded from the general education system on the basis of disability, and children with disabilities are not excluded from free and compulsory primary education, or from secondary education, on the basis of disability” (United Nations Convention on the Rights of Person with Disabilities, 2006, Article 24A). Zeng et al. (2018) recognized three reasons these services are not effective for all SWDs: 1) All students do not self-disclose 2) accommodations focus on the disability rather than needs of the students’ environment (Cooper et al., 2011), and 3) many services encourage a dependence on the accommodations and aids rather than developing the students’ own management skills (Rath & Royer, 2002).

Zeng et al. (2018) identified four categories of successful interventions currently used in post-secondary institutions: 1) assistive technology, 2) direct assistance, 3) strategy instruction, and 4) comprehensive support programs. Additionally, Snyder et al. (2016) found that SWDs who enrolled in a four-year institution were more likely to complete their degrees compared to students who attended a two-year institution.

SWDs are provided services by law while in secondary school. A similar team, including the student, should map his/her path from high school to the postsecondary arena. However, this may not provide the assortment of opportunities the student needs to be self-sufficient in college (Bassett & Kochhar-Bryant, 2006). Fleming et al. (2017) saw the disconnection between the services provided in high school and those provided in college. Results of their research stressed the value of the campus offices of disability services and counseling. Students conveyed the need for additional staff and services in both offices and for more staff training.

The inclusive philosophy of education has expanded from teaching students in the K-12 arena to teaching students at the postsecondary level. In higher education, differences should be seen as a benefit rather than a hindrance. However, in order for SWDs to have unbiased opportunities, colleges and universities must put policies into place to impede any inequity. Policies may include such components as student orientation, faculty sensitivity training, and Universal Design for Learning (Morina, 2017). Morina examined several studies concerning SWDs in higher education and the barriers that they identified. One complication that students faced was negative faculty attitudes. The professor did not believe or doubted the student had a disability, the accommodations were ignored, or the student’s ability was questioned. Other obstacles were inaccessible physical space, inaccessible materials, and limited resources (Mullins & Preyde, 2013; Strnadova et al., 2015).

On the positive side, many SWDs in postsecondary education were found to have one or more support systems. Students’ networks included family members, friends and peer groups, certain faculty and staff members, members from the office of disability support, and the students’ own strategies (Riddell et al., 2004). Several students also commented on the value of a higher education and believed that their experiences from their difficulties actually strengthened them (Weedon & Riddell, 2007).

The National Center for College Students with Disabilities (NCCSD) provides training for SWDs on postsecondary campuses and those faculty and staff who serve such students. This organization chaired by Sally Scott (2019) conducted a study on campuses across the nation to recognize the experiences and many times encouraged the perseverance of the students and also to discover the supports that help provide students with the tenacity to continue their postsecondary journey. The study team examined the following topics: 1) the barriers SWDs confront in higher education, 2) the assistance and strategies that the students found to support nondiscriminatory participation, and 3) the recommendations that the students have for training and resources. Semi-structured interviews in focus groups were held in six universities across the nation. The majority of the disabilities of students interviewed were: 1) psychological, emotional, mental health; 2) physical, orthopedic, or mobility; 3. LD, dyslexia, or CAPD; or 4) ADHD or ADD. Common barriers found were working with the office of disability services, the classroom and instructional environment, campus access and supports such as physical and programmatic barriers, and the campus climate such as stigma of disability across campus. Supports included the office of disability services, inclusive classrooms, and the disability community which encompassed support from peers. Some groups reported that the disabilities resource office provided adequate accommodations. Individual students commented that they did not know such an office existed, or if they had heard of it, they did not know where it was. Another comment was that the office was generally helpful; however, many students did not know what to ask for. College is the first time many SWDs have had to advocate for themselves.

NCCSD found the prominent recommendations of the students to be continual improvement of campus access in physical and electronic spaces. Students also suggested training for faculty. The majority of students had encountered faculty who challenged accommodations, would not adhere to the accommodations, or did not know what to do with them. Another area of training or development the students commented on was counseling and career development. Students found physical barriers still existed in structures and that disability counseling was not in the purview of many counselors. Students also recommended stream-lining procedures for accommodations. Their final recommendations were to include “disability as an aspect of student diversity” as part of the positive campus climate and provide training and resources from the administration to permeate the positive concepts of disability as diversity throughout the campus and the curriculum (Scott, 2019, p. 4).

Many SWDs coming to the university have the same need for accommodations as they did in secondary school. Some of the same laws protect their rights for accommodations as they did in secondary school. A difference is that students must become their own advocates and ask for accommodations once they reach the postsecondary level. Colleges and universities provide access to SWDs for accommodations through the office of disability services, and a student with a disability is required to disclose his/her disability along with necessary documentation before receiving any accommodations

Some barriers are created by the students themselves (Lyman et al., 2018). Several themes from their data emerged. Students: 1) wanted self-sufficiency, 2) wanted to avoid negative social reactions, 3) did not know about accommodations or how to use them, and 4) the accommodations and/or the office of student services was not helpful or available.

Researchers surmised that including the students in all and more in-depth conversations about their needs would lead to better facilitation. Encouraging and fostering faculty efforts and faculty and student training and orientation would benefit attitudes and perceptions toward disability and accommodations. Monitoring the SWDs’ progress was also suggested. This could help determine which accommodations might or might not be successful and would provide the students with another line of support (Lyman et al., 2018).

Universal Design for Learning

Universal Design (UD) is a philosophy that pertains to architecture and product design (Davies et al, 2013) and has been modified to meet the needs of educators called Universal Design for Learning (UDL). UD has seven principles that can enhance physical access for people with a broad range of needs (The Center for Universal Design, 2008): 1) equitable use, 2) flexibility in use, 3) simple and intuitive, 4) perceptible information, 5) tolerance for error, 6) low physical effort, and 7) size and space for approach and use.

The Universal Design for Learning (UDL) framework was created from the Universal Design (UD) principles (Rose & Meyer, 2002) and assumes that learning is a special process and focuses on design of the curricula techniques to minimize the implications of the differences of learners (Courey et al., 2012). Implementation of UDL by college and university professors is seen as, “a conceptual and philosophical foundation on which to build a model of teaching *and learning that is inclusive, equitable, and guides the creation of accessible course materials*” (Schelly et al., 2011,

p.18). Prior meta-analysis, however, has shown that the framework has not gained real momentum yet and has mainly been adopted in the United States (Mangiatordi & Serenelli, 2013).

Universal Design for Instruction (UDI) is an approach to teaching that consists of proactive design and use of inclusive instructional strategies that benefit a broad range of learners including students with disabilities (Emory, 2016). UDI offers a set of flexible principles for instructors to use to manage diverse learning needs including: 1) equitable use, 2) flexibility in use, 3) simple and intuitive use, 4) perceptible information, 5) tolerance for error, 6) low physical effort, and 7) size and space for approach and use, 8) a community of learners, and 9) instructional climate (Emory, 2016).

The community of SWDs is getting larger (U.S. Department of Education, 2013); however, research on peoples' experiences with disabilities and how institutions are meeting their needs is lagging (Evans et al., 2017). In addition, participation in research can be challenging for those with special needs (e.g. students with learning disabilities) who could need accommodations to be involved (Goegan et al., 2018). The voices of those with disabilities in higher education are marginalized on college and university campuses (Pena, 2014). When accommodations have been included in research designs, questions of reliability and validity of results have arisen (Lovett et al., 2015).

Tobin and Behling (2018) believe people should forget what they know about accessibility. UDL is often seen as resource intensive work that can paralyze faculty and administrators. Tobin and Behling (2018) want to involve a diverse UDL team of people from across the campus. In summary, the authors believe campuses should do away with accommodations, switch to a mobile learning model, and involve every area of campus in Universal Design for Instruction (UDI). Teachers must be prepared to teach all students including students with disabilities. The one-size-fits-all combined with a direct instruction approach to education does not address the diversity of students (Al-Azawei et al., 2016).

Several researchers have created a strategy to help teachers and educators meet the diverse needs of students. They have named this new strategy Universal Design for Transition or UDT (Thoma et al., 2009). UDT is a framework for applying UDL to secondary transition, which focuses on building opportunities to assist transition from school to post-school services for students with disabilities. The transition principles are: 1) multiple life domains, 2) self-determination, 3) multiple resources and perspectives, and 4) multiple means of assessment (Scott & Bruno, 2018). This strategy will also help transition specialists, and administrators make changes in instructional design and delivery of instruction to meet legal requirements and better prepare SWDs for successful transition to higher education and other transitions. This model enhances the principles of UDL and UDI (CAST, 2008).

The number of SWDs who obtain their final higher education degree is lower than expected (Shepler & Woosley, 2012) as diversity brings pedagogical difficulties and challenges that go beyond accommodations (LaRocco & Wilkins, 2013). Many faculties do not address the learning needs of SWDs because they feel ill-equipped to teach them (Mull et al., 2001). In addition, the traditional model does not require that faculty members have the necessary experience in curriculum design and effective teaching methods or other formal training with respect to the needs of SWDs. Consequently, several studies documented skepticism among faculty members about whether it is fair to provide students with reasonable accommodations (Griful-Freixenet et al., 2017).

Discussion

SWDs are entering postsecondary school at a much higher rate than they did ten years ago, but they continue to graduate at a much lower rate than students without disabilities (Newman et al., 2009). The purpose of this paper was to explore barriers that SWDs face as they enter postsecondary education along with the barriers that university faculty and staff encounter when adapting to and accommodating SWDs. Several discoveries were rendered from this research. One was that many students were unaware of accommodations available, or students chose not to use them for misguided reasons. Another finding was many offices of disability services were under-resourced and therefore unable to adequately serve SWDs. Many faculty members who had SWDs in their classrooms appeared to have misconceptions about the students and/or accommodations. Due to these erroneous beliefs, faculty also insufficiently served SWDs. Research showed that training, especially in Universal Design for Learning (UDL) and Universal Design for Instruction (UDI) was beneficial to both the faculty's and the students' success.

Students have been protected and served by the *Individuals with Disabilities Education Improvement Act* (2004) throughout secondary school. When students begin postsecondary school, *Section 504 of the Rehabilitation Act* (1973) and the *Americans with Disabilities Act* (1990) serve as protection of students' rights. Nonetheless, it is essential that students not only know that the laws exist, but also the provisions that each stipulates. Using these laws in the postsecondary environment requires students to have correct and current documentation of their disabilities and submit it in a timely manner and to the precise place and individuals (Fleming et al., 2017).

In addition to an unawareness or a misunderstanding of the laws, many student barriers involved accommodations and how they were or were not applied. Most SWDs performed well in the postsecondary setting and completed their degrees when they used appropriate accommodations (Salzer et al., 2008). Students experienced several problems when working with office of disability services providers and specific uninformed instructors.

Student barriers to success in postsecondary school were found in various areas of office of disability services. Like the students, some offices were not fully aware of all the requirements of *Section 504 of the Rehabilitation Act* (1973) and/or the *Americans with Disabilities Act* (1990). As some students progressed through their programs, their accommodation needs changed. Unlike being served under the *IDEIA* (2004) with the annual assistance of others, SWDs have the responsibility for determining their accommodations and any necessary adjustments when in the postsecondary environment. Some offices of disability provided only a list of specific accommodation options rather than those that may explicitly suit the student. Furthermore, many students found that the office of disability services was difficult to locate, their services were difficult to decipher, and/or the offices were understaffed or unknowledgeable of rules, policies, and/or laws. The office of disability services staff discovered that orientations, which introduced students to services, staff, and requirements were beneficial in extinguishing some of the transitional barriers. The staff also recognized that having more resources, including additional staff members, could provide students with mentors throughout their time in the university environment and a greater variety of accommodations (Scott, 2019).

SWDs encountered several attitudinal barriers from faculty members. Some faculty were hesitant about providing students with accommodations. Some faculty members doubted that students had disabilities and therefore they did not need accommodations, and some faculty believed that if the students had disabilities, the students should not be in the college classroom. Due to some of these attitudes, some students refused to use accommodations, hence, rendering them useless (Lyman et al., 2018). Findings were that students and faculty needed to work together, along with the office of disability services providers. Through this cooperation, all parties would better comprehend all issues and possible misunderstandings and thus be able to better facilitate the needs of the others (Lombardi et al., 2011).

Faculty also felt that they confronted several barriers when working with SWDs. When students presented accommodation letters or notations, they often provided minimal explanation or instruction. This led to faculty members' insensitivity to SWDs and a disinclination to accommodate the students. Additionally, few faculty members had a history of working with SWDs in any capacity. Furthermore many faculty lacked experience with inclusive education, which did not help the already capricious condition. Subsequently, just to add a splash of gasoline to an already precarious flame, some faculty believed that they, like students, received inadequate support from the office of disability services and the university administration (Gokool-Baurhoo & Asghar, 2019).

A key finding across the research was that faculty training was imperative. Faculty who had been educated through professional development or another specified program in the areas of sensitivity, disability, special education law, and especially universal design for learning (UDL) showed an increase in understanding, open-mindedness, and a flexibility in instruction (Hsiao et al., 2019). Faculty and students with and without disabilities reaped the benefits of UDL. However, research showed that students, faculty, and professional development, require the continued support of the university administration and a strong office of disability services for successful implementation and maintenance of UDL and its elements (Davies et al., 2013; Scott, 2019).

Conclusion

Even with the aid of laws and disability service providers, SWDs in postsecondary education were more successful when instructors became more knowledgeable and sensitive to disabilities, accommodations, and instructional styles, specifically, universal design for learning (UDL) and universal design for instruction (UDI). Instructors who either worked with people with disabilities previous to their university appointments or received disability training during their time at the university were able to better relate to and teach their SWDs.

Additionally, students who knew what accommodations they needed and received the appropriate accommodations were more successful and more likely to complete their programs than their counterparts who did not receive the right and proper accommodations. Administrations and disability service providers who support and train faculty members in the instruction of UDL and UDI produced more successful SWDs in postsecondary education in the academic and the social environments.

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