

Applying Universal Design for Learning to Address the Challenges of Postsecondary Students with Learning Disabilities: A Review Study

¹Turki Mahdi Alqarni

¹Special Education Department, College of Education, Najran University, Saudi Arabia, Email: tmalqarni@nu.edu.sa

Abstract

To address the needs of postsecondary students with LD, changes have been made to promote accessibility and inclusion for this population through the engagement of universal design in university settings. Therefore, the purpose of the current review is to reveal the challenges of students with LD in their learning and investigate the roles of UDL in addressing these challenges. Mostly, students with learning disabilities face multiple challenges including lacks of skills and knowledge, learning isolation and accessibility issues, negative views and discrimination and stigma. Recent studies have revealed the effectiveness of universal design for learning to overcome such challenges encountering students with learning disabilities in postsecondary education. The current study had a further discussion of these challenges along with to efficiency of universal design for learning to meet these challenges.

Keywords: challenges, learning disabilities, postsecondary education, universal design for learning.

INTRODUCTION

Challenges for Students with Learning Disabilities (LD) in the College Classrooms

Many challenges have been facing students with learning disabilities in higher education which led them to drop out of continuing their education in universities (Casanova, Gomes, Bernardo, Núñez & Almeida, 2021). They represent difficulties in assignments compared to their peers without disabilities; especially, those who are self-reported. They have obstacles to learning due to their lack of nonacademic responsibilities and skills. In other words, when they are given projects to submit for courses; they encounter difficulties in these projects as they require specific skills and accumulative experiences to complete them.

García-González, Gutiérrez Gómez-Calcerrada, Solera Hernández, & Ríos-Aguilar, 2021) conducted a study focusing on how Spanish students with learning disabilities access to their university education and their academic life daily. They found those students experience many barriers related to learning and socialization. First, students with learning disabilities encounter web/computer barriers, banned them from being connected to students without disabilities in training and gaining access to academic information (Moriña, 2017; Román, Bernier, I. Rojas. 2013). Second, learning and training barriers impact students with learning disabilities including limitations in evaluation tests (Román, Bernier, I. Rojas. 2013). Third, they pointed out students with learning disabilities had little barriers in interpersonal relationships related to the interactions to their teachers. Fourth, students with learning disabilities also encounter

institutional and bureaucratic barriers related to administrative managements. Finally, social barriers were the main barriers encountering students with LD in higher education; these barriers including (a) the lack of information related to the accessibility within the university, (b) social awareness deficits related to the entailment of disability types and (c) work discriminations against students with LD in higher education.

As side from the work isolation that some students with LD encounter within universities, May and Stone (2010) believed students with LD can be discriminated by the stereotypes imaging students with LD as being less intelligent than other students in higher education. There are many examples of stereotypes encountering students with LD within universities; including negative views of college students and professors showing students with LD have a weaker metacognitive awareness compared to their peers without LD (Meltzer, Roditi, Houser, Jr., & Perlman, 1998; C. A. Stone, 1997; C. A. Stone & May, 2002), as well as stereotype threat.

Haft & Hoeft (2021, p.4) defined "stereotype threat as involving a situation in which members of a social group fear judgment or unfair treatment stemming from a negative group stereotype". Students can be susceptible of stereotype threat when they hold an identity of negative stereotypes in one or more contexts (Spencer, Logel, & Davies, 2016). Students with specific learning disabilities are usually stereotyped as careless, cheater, lazy, stupid or needy given appropriate accommodations in academia and occupation (Haft et al., 2019; May & Stone, 2010; Riddick, 2000). These stereotypes are highly noticeable in learning settings, particularly in academic exams or assessments (Shifrer, 2013).

Another barrier facing students with learning disabilities in higher education is stigma which defined as the depreciation of an feature based on undesirable perspectives, stereotypes, or views (Crocker & Major, 1989). For students with LD, their identification can be a label. In particular, using terminologies such as "disability" or "difficulties" when discussing

students with LD can involve some level of essential deficit (Fleming & Wated, 2016). Moreover, learners with LD can be substantially separated from their peers during the school day for special instruction or training, representing them as different. Researches have shown that the Specific Learning Difficulty (SLD) label can stigmatize those persons with disabilities, for instance, teachers and parents to can have lower educational expectations of individuals with LDs in comparison to their peers (Shifrer, 2013). Students without SLDs may also stigmatize their classmates with SLDs, resulting in bullying and peer victimization within the classroom (Baumeister et al., 2008).

A previous study conducted by Smart (2008) revealing that students with LD and other hidden disabilities are more marginalized compared to other students with visible disabilities. Also, some postsecondary pupils with LD are suspected of misunderstanding, marginalizing or discrimination (Kurth & Mellard, 2006) and those students who have this feeling often do not seek accommodation for fear which will be seen as taking advantage of the protocol or for fear others will not be empathized to their situation (Denhart, 2008).

Universal Design (UD)

Universal design is defined as creating products or environments which can be used by all people to the greater extent possible without the need for adjustments or specific design (North Carolina State University, 2011). In 1997, the Center for Universal Design (CUD) established the principals of universal design which increase the improvement of environments and products; The elements that best describes UD are the following; (a) used for equitable purposes and goals, (b) for flexibility and easy adaptability, (c) simple usage, (d) broad and complete information, (e) longer tolerance for mistakes and future errors, (f) lesser efforts on a physical basis, (g) additional size and space for use and approach. The conceptual framework of universal design refers to the understanding of disability as a one form of disability such as the race, ethnicity, gender and age (Kraglund-Gauthier et al., 2014). The use

of universal design was firstly implemented on the buildings and products and then it was used for the development of information technology to be accessible for users; and lastly great effort were put to employ universal design in learning and teaching (Burgstahler, 2012; Bowe 2000). The importance of UD designs is initiated from the beliefs of instructors and personnel who apply UD within the inclusive educational settings expect the occurrence of diverse students within these settings and make UD design decisions for these students, rather than focusing on the typical or average students (Bowe, 2000; Burgstahler, 2012). As a result, the application of UD provides a welcoming and accessible and useable products and environment to students with different characteristics, including disabilities. In order to have a beneficial application of UD, the instructors need to employ different approaches of teaching strategies to promote the accessibility of diverse students within inclusive higher education (Gurin, Dey, Hurtado, & Gurin, 2002). McGuire, Scott, and Shaw (2003) recommended that it is important to add more principals and approaches related to learners and instructional settings to Center for Universal Design (CUD) which they can serve as an appropriate foundation for the application of UD in postsecondary level.

Three characteristics of curriculum were identified by The Center for Applied Special Technology ([CAST], 2011) which represent the principals of Universal Design for Learning (UDL), including multiple means of actions, representations and expressions and engagement. The practices of UDL can meet the needs of all learners; including learners with disabilities, learners with different cultural backgrounds and learners who lack the appropriate preparations for courses. The examples of multiple means of representations are various and provide directions in multiple ways such as whiteboard, handouts, and outlines of class notes (Stein, 2013); and a mixture of group discussions, lectures and videos (Izzo, Murray, & Novak, 2008).

Examples of multiple means of engagement are provided with different approaches including repeating directions, facilitating class

discussions and providing chances for cooperative learning (Stein, 2013). also, encouraging a motivating and relevant learning for all learners (Izzo, Murray, & Novak, 2008). Stein (2013) represented instances of multiple actions and expressions including using boards of responses, checklists and organizers; also, written papers, portfolios, multimedia projects and various quizzes (Izzo, Murray, & Novak, 2008).

There are examples of multiple means of expression and actions including checklists/organizers, dry erase boards for responses and having students discuss their ideas and experiences (Stein, 2013); and using various types of assessments including written papers, oral and group presentations, portfolios and various quizzes (Izzo, Murray, & Novak, 2008).

Research Question

What is the identified role(s) of UDL to address the challenges of students with LD in postsecondary educational settings?

Methodology

A review study design was used to fulfill the gap of studies focusing on the learning challenges of students with learning disabilities and the use of UDL in addressing these challenges. Using the research question, the author identified four search concepts: LD, educational challenges, university education, and universal design for learning (UDL). The author electronically searched for peer-reviewed articles in the following five indexes/databases in the Saudi Digital Library system: Scopus, ERIC (EBSCO), Education Research Complete, and Web of Science. Using these databases, synonyms were harvested for each concept. All four concept lists were combined using Boolean operator and searches were run in Scopus, ERIC, and Web of Science databases in March and April of 2022.

Results

Result lists with titles and abstracts for each database were reviewed. Only empirical studies within the United States conducted between 2012 and 2022 were included; review articles were deleted. In all, 384 records were reviewed from the mentioned databases; 61 titles reviewed using all four concepts (column 3)

added to the 323 titles resulting from searching with three concepts (See Table 1). five articles were deemed appropriate for this review article. Searching the table of contents of ten journals for ten years revealed no additional titles. The authors found five peer reviewed articles that were related to the research questions outlined above.

Table 1 *Databases Used for the Review*

Database	Date	Search with 4 Concepts	Search with 3 Concepts
ERIC	3/28/2022	2	7
Scopus	4/20/2014	10	107
Education Research Complete	4/9/20	28	101
Web of Science	4/2/2022	21	108
TOTALS	4/30/2022	61	323
Note. Numbers in parentheses refer to results once peer-reviewed and date limitations were applied to databases.			

UDL studies for learning disabilities

Marino, Gotch, Israel, Vasquez III, Basham and Becht (2014) conducted a study to investigate whether video games and alternative texts can increase participations and learning for students with learning disabilities in their inclusive science classrooms. 57 students with learning disabilities participated in the study by using traditional curricular materials and materials that created by video games and alternated texts guided by UDL principles over the course of a school year. Findings indicated that there was an effectiveness of multiple means of representations and expression after providing video games and alternated curricular supplements aligned with UDL. Also, the UDL- aligned supplements increased the engagement of students with LD.

Hall, Cohen,Vue and Ganley (2015) addressed students with LD issues by evaluating the efficiency of Strategic Reader a technology-based method engaging both UDL and Curriculum Based Measurement (CBM) in a digital learning setting using two methods of treatment for determining growth (online vs. offline). Findings of quantitative and qualitative data indicated that students with LD

using online method experienced a significant progress. In addition, students with LD pointed out that they had a significant engagement by Strategic Reader.

King-Sears and Johnson (2020) conducted two studies in chemistry to examine the effectiveness of UDL treatment on students with and without LD in chemistry. In the first study, the UDL treatment was implemented on students with and without LD in co-taught classes. However, the UDL treatment was implemented on students with LD in self-contained classes. Pre- and posttest were administered for the treatment and comparison group. Also, the treatment group of students completed a social validity survey. Findings of posttest indicated that students in UDL treatment had significantly higher results than students in the comparison group.

Mohamed, Alqurashi and Alshmmry (2022) conducted a study to identify the degree of using UDL principals by general education teachers for the instruction and evaluation of students with LD, based on gender, qualification and experience. Findings indicated that general education teachers were using UDL principles for instructing and evaluating students with learning disabilities.

Moreover, teachers whose expertise were 5–10 and < 5 years revealed a significant differences at providing learning chances regarding individual differences. Additionally, postgraduates and diploma holders of teachers had a statistically significant differences of using UDL principals in their instruction and evaluation of students with LD.

Basham, Blackorby and Marino (2020) The authors conducted this study to explore the shift happened in the education system due to COVID-19 pandemic as can be an opportunity to engage UDL for educational reforms of students with learning disabilities. They pointed out UDL can be a beneficial design framework that encourages active expectation of learner variability. They mentioned that the UDL framework supports the most feasible foundation for launching this redesign process.

Discussion

Only five researches met the criteria approved for this current review. Each of them were peer-reviewed studies published between the years of 2012 and 2022 and included some mention of UDL for students with LD. Given the very small sample of studies related the criteria as well as the limitations that each studies possessed to answer the proposed questions, these studies can reveal the roles of UDL to meet the challenges encountering students with LD in their schools.

College students with LD experience many challenges that led to difficulties related to the achievements school tasks and works (Casanova et al., 2021). Most students with LD encounter lacks of skills and knowledge (Casanova et al., 2021), learning isolation and accessibility issues (García-González, 2021), negative views and discrimination (May & Stone, 2010), and stigma (Fleming & Wated, 2016).

UDL framework is a promising tool to meet the challenges of students with LD in their colleges. To address the accessibility issues in the learning of students with LD, the redesign of education through the engagement of UDL

can be beneficial as it can support the equity and access for all learners (Basham et al., 2020). Also, the use of UDL for students with LD can allow access to all students and provide scaffolds to support comprehension through some technologies such as Strategic Reader (Hall, 2015).

The application of UDL can increase the skills of students with LD that are important for their academic achievement. The foundation of Strategic Reader technology was built by two methods including UDL and CBM and this the implementation of technology increased the reading skills and engagement of students with LD (Hall, 2015). King-Sears and Johnson (2020) pointed out students who were exposed to UDL treatment in their chemistry co-taught classes had a significantly higher outcomes in their learning accessibility and engagement than comparison group of students. In addition, Engaging UDL in the instruction and evaluation of students with LD promote the idea of individual differences in classrooms which can reduce negative views and practices towards students with LD (Mohamed et al., 2022).

Conclusion

The current study presented the challenges encountering students with LD in their learning and proposed the roles of UDL in addressing these challenges. Students with LD experience many obstacles during their learning journey. However, they may show different types of learning frustrations related to accessibility, discrimination, learning isolation, stigma and engagement. However, we can rely on UDL framework to address these issues to make the learning and participation of students with LD great within our schools. Personally, empirical studies need to be conducted to practically identify the effectiveness of UDL in addressing such issues of learning disabilities.

Acknowledgment: Financial support from the Deanship of Scientific Research at Najran

University, Kingdom of Saudi Arabia (NU/-/SEHRC/10/1157) is gratefully acknowledged.

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