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Faculty Preparedness for Universal Design for Online Teaching at the University Level:

A Systematic Review

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Abstract

The systematic review examines the readiness of faculty members to utilize and implement universal design in online learning at the university level. (Li, 2020; Sun & Chen, 2016). The purpose of this systematic review is to investigate how university teachers perceive and utilize universal design in their daily classroom instructions. This systematic review explores the teachers' readiness to implement universal design in their online courses at the university level the review includes detailed research of the most relevant literature and articles based on the readiness of faculty members to utilize universal design in teaching at the university level. The systematic review involved conducting a detailed search of relevant literature and articles that explored the preparedness of educators for implementing Universal Design in online higher education instruction. The procedure included a complete investigation of different survey reports and researchers that dealt with the identified problem. For conducting this systematic review, broad research was conducted by using different databases, and relevant articles from 2010 to 2024 were selected and included in this review. The selection criteria of the research were based on utilization, perceptions, and effects of the Universal Design Principle in Higher educational institutes. The findings emphasized that it is required to improve training programs and professional development opportunities for teachers to improve the quality of online education.

Keywords: Faculty Preparedness, Universal Design for Learning, Systematic Review

Introduction

In higher education, the use of digital learning platforms needs more incorporation of universal design learning. It is important to ensure and confirm that educational opportunities are equally given to all students, even to students who have disabilities. For effective educational distribution, faculty members need to be ready to implement universal design learning in their teaching. (Li, 2020; Sun & Chen, 2016).

To tackle the issues brought on by the pandemic. All across the world universities have understood the need to incorporate online education into their system. Online education has been recognized as an effective strategy for universities even after the pandemic still many universities are continuing online education. The transformation to online learning emphasized the need and importance of online classes; online classes openly welcome all students. It provides equal opportunity to disabled students as well.

According to Bray et al. (2024), the principle of Universal Design offers a framework for providing an online learning atmosphere that is accessible to all students and comprehensive. Universal Design principles encourage different learning resources, classes, and evaluations that can effectively fulfill different learning needs according to the choices of people. It is important to implement the principle of universal design principle into the educational system to provide equal educational opportunities to all students, irrespective of their disabilities.

In past years, higher education has seen some changes, as with the advancement of digital technology education system has been shifted to online learning mode. Suddenly, the Education system has shifted to online mode especially during and after COVID-19; it has highlighted that online learning platforms are flexible and also highlighted the importance and need for an online learning atmosphere. For fulfilling diverse needs of students Universal Design for Learning (UDL) is an effective method. It is helpful for students with different disabilities because Universal Design for Learning Provides an approachable and flexible teaching approach.

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The idea of Universal Design (UD) is rooted in Architecture to ensure an accessible atmosphere for every individual according to his needs. Further, the principle of Universal Design has been implemented in Educational Settings. The basic purpose of UD in education was to improve teaching and learning for every individual based on their diverse needs. Incorporating Universal Design Learning into the online education system at the university level needs careful planning and proper Instructional Design that meets the diverse needs of students without lacking future modifications or adaptations.

As in higher educational institutes online education system is making progress day by day, it is necessary to consider the importance of the readiness of faculty for implementation of universal design learning in online teaching instructions. The preparedness of faculty members not only affects the delivery quality of education but also decides how educational institutes can effectively promote devotion towards the flexibility and accessibility of online education for all learners. In the era of digital world, online teaching and learning has become an important part of the higher education system. Educational institutions are making commitments and trying to provide easy access to learners in different degree programs, they are promoting online courses for online education (Mon et al., 2020). According to Mukhtar et al. (2020), the lack of focus on online teaching methods is another of challenge for faculty members. These difficulties are workload, time management, and lack of instructional & technical skills, which are vital for effective online teaching and learning. Moreover, another challenge for teachers is balancing face-to-face and online learning at the same time. To tackle these difficulties and improve the readiness of teachers to incorporate Universal Design for online teaching, professional development training, educational support, and collaboration are considered effective approaches.

COVID-19 has highlighted the significance of online learning and the need for teachers' readiness to incorporate Universal Design for online instruction. Due to the pandemic, the online education system has been sped up. Professionals and scholars need to investigate and improve the existing educational practices with effective design principles and evidence-based methods (Chiu et al., 2021).

The purpose of conducting this systematic review explores the readiness of faculty members for the implementation of Universal Design in online teaching (Karaköse, 2021). The study aims to evaluate how post-secondary education teachers perceive and incorporate the Universal Design Principle in Online teaching by examining the existing literature (Mukhtar et al., 2020).

The Purpose of this systematic review is to evaluate the existing literature relevant to faculty preparedness for using Universal Design in online teaching. The study aims to highlight the challenges and areas that need to be improved in the standard and quality of online education. Many educational institutions are offering online courses. In this regard, the importance of readiness of faculty members is considered crucial for the quality of online education. This systematic review focuses on the hurdles and difficulties faced by the teacher in implementing Universal Design in their online instructional practices, as well as an effective strategy to overcome these obstacles. Further, this research will investigate the perceptions and techniques used by teachers in higher educational institutes for incorporating Universal Design in online teaching.

Because of the sudden transition to online learning and teaching due to COVID-19, it is necessary to investigate how teachers and faculty members have adopted this transition in their instructional practices and identify the areas for further support and improvement. Through this systematic review of research, the purpose is to provide valuable perceptions regarding the readiness of faculty members for Universal Design for Learning and to provide recommendations for the improvement of online education at the university level

Methodology

For conducting this systematic review, broad research was conducted by using different databases like Eric, Google Scholar, and ProQuest. Most relevant articles from 2010 to 2024 were selected and included in this review. The selection criteria of the research were based on utilization, perceptions, and effects of the Universal Design Principle in Higher educational institutes (Westine et al., 2019; Means et al., 2014). In the first stage, broad research was conducted by using an electronic database that was Scopus, Google Scholar, and ERIC. Various keywords like Universal Design, Online learning, and readiness of faculty members were used for thorough research. This review research included the research focused on faculty of universities, investigated universal design principles in

online learning and teaching, and explored faculty perceptions regarding Universal Design and teachers' training for implementing Universal Design in online teaching. Researches that focused on K-12 or nonacademic atmospheres and didn't relate to the readiness of faculty member readiness were excluded from this review. After the initial search duplicate articles were also excluded and the titles and abstracts were also screened for checking relevancy. In the next step, detail investigation of selected articles for checking the appropriateness for systematic review was done. This detailed assessment of selected research articles was conducted to examine its research method, data accuracy, and study goals alignment with results. The thematic analysis technique was used to identify the common themes, patterns, hurdles, and effecting elements to the readiness of faculty members for incorporation of Universal Design in online teaching instructions.

Theoretical Frameworks

This systematic review described many different theoretical frameworks to explore the readiness of faculty members for Universal Design Learning. One of the important and most relevant frameworks was the diffusion of innovations theory by Everett Roger. This framework helped in analyzing the process of why and how new ideas and technologies spread from one culture to another. Through implementing this theory, it became easy and possible to highlight obstacles and hurdles for incorporating Universal Design Learning principles among faculty members and to explore the strategies to tackle these obstacles.

Significance of the Study

The systematic review is crucial and has importance in the field of higher education and online teaching and learning. By exploring the faculty members' preparedness for the implementation of Universal Design in Online Teaching, the researcher highlights the different obstacles encountered in the changing system of online education. To ensure the standard and inclusivity of online teaching and learning in universities, the readiness of faculty members regarding Universal Design strategies cannot be neglected.

This research study will highlight the existing discussion about online education by exploring different existing problems and difficulties and effective techniques used by faculty members regarding the implementation of Universal Design for online teaching. The results of this study will be beneficial for teachers, administration of educational institutes, and policymakers in developing flexible strategies for faculty members.

In addition, this research study will investigate the effects of implementing universal design in education on students' engagement, accomplishment, and availability of online courses. Through exploring the effect of faculty preparedness on students' learning and achievements, this research study will offer practical suggestions for improving the quality of the online education system.

Moreover, this systematic review will be helpful for upcoming projects that will be based on quality improvement of online teaching and learning in universities. The findings will guide the development of different schemes of training, and policy changes and will help the full allocation of funds and resources that will be helpful for faculty members to implement Universal design in their online teaching.

Findings

The systematic review highlighted different factors that affect the faculty members' preparedness for Universal Design in online teaching:

Awareness and Attitudes

The findings of the research highlighted that faculty members have a lack of awareness and positive perceptions towards Universal Design Learning. Li (2020) highlighted that some teachers don't know UDL principles and who to incorporate whose principles in their online learning instructions. As faculty members were not aware of the Universal Design of Learning. They avoid implementing Universal Design Principles. They hesitate to bring any change in their traditional method of teaching, as they have misconceptions about the need for extra time and resources to incorporate UDL in their teaching methods. Different researches highlighted that faculty members' unawareness of Universal design principles is a challenge to the effective use of universal design learning in online teaching systems. The lack of knowledge about the principles of Universal Design is the cause of hesitation when it is required to implement in online teaching.

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Faculty Training and Professional Development

According to Bahar et al.(2020) education and faculty training play an important part in giving teachers basic skills to incorporate Universal Design in online education effectively. The Researcher highlighted the need and importance of inclusive training programs that not only introduce Universal Design principles but also suggest practical strategies for the incorporation of these principles. However, present opportunities are usually considered unsatisfactory, as many faculty members express the need for further support for the development of accessible online learning (Sun & Chen, 2016). The faculty members who have completed their training want to practically implement inclusive practices in their instructions and benefit all students.

Barriers to Faculty Preparedness

Many different difficulties become obstacles in the way of Teachers' preparedness for incorporating Universal Design In online instructional Practices. Some of the major challenges include a lack of support from educational institutes, a lack of funds allocation, and insufficient time allocation for practicing professional development in Universal Design (Al-Freih, 2022; Bahar et al., 2020). The lack of reward and official recognition for teachers devoted to improving their awareness of Universal Design discourages them from prioritizing these activities over other academic responsibilities (Hope, 2015).

Impact on Students

Lack of readiness among faculty members for Universal Design badly affects students, especially those students who have disabilities and have diverse learning needs (Westine et al., 2019). Students who have some disabilities face many challenges like access to online systems and online course material. These challenges impact their academic achievements. Incorporating the Universal Design Principle is crucial for overcoming these challenges and improving online education for every learner. The basic purpose of the implantation of Universal Design Learning Into online education is to improve students' academic results. In the finding of the research, it is highlighted that effective implementation of Universal Design for learning principles can improve accessibility and student engagement and enhance students' academic achievements, especially for disabled students. However, a lack of preparedness among faculty members' results in badly designed courses that often lead to difficulties for students.

Universal Design for Online Learning (UDOL)

Rao et al. (2015) emphasized that the framework of Universal Design for Online Learning is becoming common for incorporating comprehensive and accessible online education for all. The Universal Design for Online Learning (UDOL) framework promotes the progress of a flexible learning environment that provides an inclusive range of learner needs and effectively deals with students' learning needs

Training Programs and Resources

To encourage faculty members to incorporate the Universal design principle in their teaching it is necessary to improve the quality and accessibility of teachers' training programs. These steps should be offered for both academic understanding and practical resources, allowing teachers to implement Universal Design principles into their teaching instructions effectively.

Institutional Commitment

Universities need to show devotion to the principles of universal design by giving appropriate resources like proper time and funds. Every institution should highlight the importance of Universal Design in institution guidelines. Universities should emphasize inclusive instructional methods and promote an academic environment where Universal design should be crucial in institutional goals. (Equal Access: Universal Design of Distance Learning Programs, 2017). For the implementation of universal design learning principles educational support is crucial, this support is such as proper funding for training, appropriate resources for creating accessible course content, and development and development of policies that encourage the use of Universal design learning practices in the universities.

Resource Allocation

Resource allocation like open access to technology and other different resources is important for the effective and successful use of Universal Design for learning. Appropriate Resource allocation helps in providing different learning needs and professional development of teachers to implement

principles of the Universal Design of Learning. Insufficient resource allocation recognized in the assessment often leads to faculty members feeling unrestricted in their activities to implement UDL.

Faculty Motivation and Commitment

If the Faculty members are aware of the benefits and challenges linked with Universal design principles, they will grasp the UDL principles in their courses. The faculty members who go through with training and experiences improve students' engagement and learning outcomes and are more motivated to persevere in using UDL approaches. In contrast, faculty members who didn't receive training and failed to get awareness about instant benefits were inclined to regress to conventional teaching approaches.

Conclusion

Regardless of increasing recognition of the Universal Design for Learning (UDL) Principle in online teaching at the university level, the is still an identified gap in the Readiness of faculty members for implementing the Universal Design of Learning in their instructional Practices. Higher educational Institutes can enhance their faculty members' abilities to create flexible and accessible learning environments for learners by incorporating the suggestions addressed in this review.

For providing a flexible and accessible learning atmosphere at the university level, it is important to prioritize the training of faculty members regarding Universal Design for online teaching. By discussing the current gap in teachers' training, appropriate resources, and support of educational institutes, the institutes can improve the academic achievements of learners, especially those from demoted backgrounds.

Discussion

The significance of improving the readiness of faculty members through effective training and strong support of educational institutes is emphasized by the results of the research. For the improvement of the knowledge of faculty members regarding the Universal Design, it is important to encourage a flexible online learning environment (Dukes et al., 2009). Furthermore, incorporating the Universal Design Principle for Teachers Evaluation and promotion criteria can inspire teachers to prioritize this approach in their teaching (Elias, 2010).

The results of the systematic review highlight the significance of the readiness of faculty members to incorporate Universal design in online instructional practice at the university level. The findings emphasized that it is required to improve training programs and professional development opportunities for teachers to improve the quality of online education. The suggestions regarding online teaching approaches focus on the implementation of proactive and flexible methods in curriculum design and content delivery (Qu & Cross, 2024) by arranging the different needs of learners (Bartlett & Ehrlich, 2024).

Recommendations

To address the present gap in faculty members' readiness for implementation of the Universal Design of Learning in online teaching and learning, this systematic review recommends the following suggestions: 1. as there was a lack of training facilities, Higher education institutes may develop training sessions that will focus on Universal Design for online teaching. These initiatives may cover availability standards, flexible teaching methods, and appropriate use of technology for effective learning. 2. It is vital to provide effective sources to develop support to help teachers in implementing and incorporating Universal design in instructional practices. It includes providing technical support, developing accessible departments, and promoting collaboration within societies. 3. Educational institutes (Colleges and universities) may consider Universal Design principles as their standard for assessing faculty members; it may promote and recognize incorporation of UD principles by faculty members in their instructional practices.

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