Engineering Educators Bringing the World Together
2025 ASEE Annual Conference & Exposition
Palais des congrès de Montréal, Montréal, QC • June 22–25, 2025 ASEE
Paper ID #48565

Faculty, Staff, and Administrator Experiences Supporting Neurodivergent and Neurotypical Learners in Higher Education

Katherine Ann Rockett, Clemson University

Katherine Ann Rockett is a senior Biological Sciences major at Clemson University.

Dr. D. Matthew Boyer, Clemson University

Dr. Boyer is a Research Associate Professor in the Department of Engineering and Science Education and an Educational Proposal Writer in the College of Engineering, Computing and Applied Sciences.

WIP: Faculty, Staff, and Administrator Experiences in Supporting Neurodivergent and Neurotypical Learners in Higher Education

Introduction

In this work in progress, we share an analysis of interviews with faculty, staff, and administrators in STEM-affiliated departments (Science, Technology, Engineering, and Mathematics) and positions at an R1 institution in the southeastern US related to their knowledge and experiences of neurodiversity. This study is part of an ongoing look into neurodiversity in STEM majors via a course-based undergraduate research project with the goal of better understanding the unique challenges that neurodivergent learners face in academic institutions.

Neurodivergent individuals are classified as people with different strengths and weaknesses based on brain differences that affect the brain's ability to work [1]. To understand neurodiversity, a basic comprehension of the term neurotypical is essential. A neurotypical individual is defined as a medically healthy person who exhibits a typical pattern of neurodevelopment along an expected timeline compared to their peers [2]. This study focuses on the training methods available to faculty, staff, and administrators to increase their support for neurodivergent learners in higher education. The objective of this study was to establish if Clemson University provides its instructors with proper training to raise awareness of neurodivergence and how it can be implemented in the classroom. It also looked at how modern technological advances may affect the educational process. These themes are analyzed for their perceived effectiveness in influencing participants' knowledge and attitudes surrounding neurodiversity.

Literature Review

Neurodivergent learners are typically less successful in higher education settings compared to neurotypical learners due to the lack of support that is seen in these educational settings. Neurodivergent learners may require different support methods than neurotypical individuals due to the differences in their brain functionality. Common examples of adapting classroom environments to include a larger scale of diverse mindsets include different methods of communication, minimizing sensory distractions, or creating structured routines. A 2013 scientific research team found that many other methods at once are most beneficial in classroom settings. The leading method for promoting positive change is having a structured organizational system in the classroom [3]. In higher education, these structured systems can vary from assignments due at the same time each week to the same presentation style in every lecture. Many of these methods are taught during neurodivergence training to provide educators with new ideas to promote inclusion.

A 2023 research team found that creating a thriving environment for neurodivergent individuals requires a system-wide approach. Providing training modules across campuses is one way to help increase support [4]. Dwyer and colleagues found that online training modules were practical when there was minimal prior understanding of the topic and reduced stereotypes around neurodivergence on the University of California (UC)-Davis campus [4]. As the human population continues to evolve and neurodivergence rates increase, technology is also rapidly advancing. These technological breakthroughs could be the change we need to shrink the divide between neurotypical and neurodivergent individuals. Walkowiak emphasizes the importance of

examining neurodivergence and emerging technological devices simultaneously to create an inclusive system [5]. The combinatorial way of thinking allows multiple perceptions to be applied to technology since no technological device alone can eliminate biases [5]. These introductions to understanding neurodivergence and technology emphasize how the two areas could work together to increase the amount of support provided to neurodivergent individuals.
methods

Methodology
There were two aspects of data collection for this study: a primary survey and voluntary interviews. The primary survey was part of our larger project's study, which focused on collecting data to learn about neurodivergent students' and staff's experiences in higher education. We analyzed the results of those whose role in higher education fell within an administrator, faculty, or staff position. From there, we classified which academic college they most closely associated with to find STEM-based participants and whether they identified as neurodivergent or neurotypical. Whether individuals self-identified as neurotypical or neurodivergent, the data used in this study relied on whether they would be interested in participating in a training or workshop to better support and understand neurodivergence. Those who answered yes or maybe were contacted regarding participation in an interview. The survey was used as a sampling method to filter those individuals who work for Clemson University in STEM fields and would be interested in talking more about training experiences focused on supporting neurodivergent learners.

Interviews were conducted over Zoom and consisted of nine primary questions, open for follow-up questions. The questions were arranged to follow the flow of introduction, body, and conclusion. The questions were created by initially reconfirming their survey answers regarding their role and understanding of neurodivergence, and then evolved into their individual experiences with training. The interviews began by identifying the participants' roles at Clemson University to understand how frequently they interact with the student body. Individuals were then asked to describe neurodivergence to establish a baseline understanding of the topic. Participants were then asked if they had received training from the university specific to understanding and supporting neurodivergent students. If the participants had received university training, they were asked which training method they received and if they had implemented any of their learned practices into their role in a classroom setting. If they had not received university training, the interviewer skipped inquiring about what practices had been implemented and continued to the following question. All participants were asked if they had sought additional training on their own and if they believed the university should provide more frequent training or workshops for faculty, staff, and administrators. The final part of the interview focused on modern technological advances and whether individuals have seen an increase in educational training and accommodations. The second-to-last question asked about whether or not participants felt that technology could play a role in advocating for neurodivergent awareness and how that could be done. Lastly, individuals were asked if, due to their participation in this study, they felt an increased understanding of neurodivergence and a desire to prioritize it in their lives.

The interview results were then analyzed and classified into question categories to help finalize the results and gather the proper data. Potential limitations to this study were the distribution of

the primary survey among the university population. The survey was distributed to clubs and organizations on campus, including honors societies, athletic groups, and additional class and residential hall groups. To achieve a more significant faculty, staff, and administration population, we plan to distribute the survey institutionally to increase that specific demographic of participants. Additionally, the interview questions limited the interviewee to their implementation of knowledge solely within a classroom setting. In further interviews, we plan on clarifying the questions to ensure that any implementation of previous training, whether in or outside of the classroom, is included to gather a more comprehensive understanding.

Results

Throughout this study, we interviewed four participants; two self-identified as neurotypical, and the other two as neurodivergent. All four were members of STEM colleges, with two serving as administrators, one as a faculty member, and one as a staff member. Only 50% of the participants claimed to have received university training, which was conducted in the form of online workshops. The participants enjoyed the online modality because it "brought many people together" and worked well with the different schedules of many departments. Standard practices that the participants implemented in their roles included working with "an inclusive syllabus" and emphasizing "opportunities for nonverbal participation" to measure the accessibility and distraction level of presentations. An example that was used was the implementation of a virtual chat box during instructional time instead of physically raising one's hand to account for those who may not want to participate verbally. All participants admitted to seeking additional training on their own in the form of workshops. Some participants followed up with the presenter after a presentation they attended, some sought neurodivergence research specific to STEM fields, and even fewer participants admitted to reading books on the topic. All participants also felt that Clemson University should provide more frequent training on neurodivergence and that the training should combine online and in-person offerings. 75% of participants felt that accessibility to education has increased as technological advances have increased, and the remaining 25% admitted that they are not well-versed in the area. Still, they felt the technology exists but might not yet be adequately implemented. However, in terms of advocacy for neurodivergence, all participants believe there has been a rise in awareness following the evolution of technology and the combination of efforts to spread awareness in the digital field. After participating in this study, all participants were interested in learning more and implementing their findings in their university roles.

Discussion

Due to this study's limited sample size, the results cannot be applied to all institutions or members within a singular institution. However, the apparent themes from this research can be used to focus on the research process and help instill future implementations. This study found that when training modules are offered, individuals prefer an active space with other participants as it creates a more human-like connection and allows for questions to be directly answered. The increase in virtual options has rapidly expanded in the last few years, and with it has come increased accessibility, allowing people from different departments to confer together, which was rare in a face-to-face modality. All of our participants noted that after attending an introductory training, they sought further information across different modalities. Continuing education is essential in supporting neurodivergence, and one participant mentioned the use of an incentive for faculty, staff, and administrators to have weekly meetings to discuss their ongoing discoveries

and reward them for their time. This could be an interesting variable to add to further research implementations to see if it makes a difference in people's willingness to participate in training.

Conclusion

This work-in-progress study attempts to understand current educational practices for faculty, staff, and administrators about supporting neurodivergence in higher education and how modern technological advances can affect this process and advocacy. By using evidence-based revisions to the survey protocol, we established a greater understanding of the levels of awareness surrounding neurodivergence among faculty, staff, and administrators within a higher education setting. As this research expands, the results gained from the survey and interviews will allow for further information about technology's ongoing effect on the educational world and how it can increase educational opportunities for individuals.

Acknowledgments

The Creative Inquiry undergraduate research program at Clemson University supports this work.

References

[1] Cleveland Clinic, "Neurodivergent: What It Is, Symptoms & Types," *Cleveland Clinic*. 02, June 2022. [Online]. Available: https://my.clevelandclinic.org/health/symptoms/23154-neurodivergent. [Accessed Jan. 4, 2025]

[2] N. Chown, "Neurodiversity," in *Encyclopedia of Autism Spectrum Disorders,* pp. 3134–3135, Jan. 2021. [Online]. Available: https://doi.org/10.1007/978-3-319-91280-6_102298. [Accessed Jan. 4, 2025]

[3] S. Lindsay, M. Proulx, H. Scott, and N. Thomson, "Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms," *International Journal of Inclusive Education,* vol. 18, no.2, Jan. 2013.

[4] P. Dwyer, E. Mineo, K. Mifsud, C. Lindholm, A. Gurba, and T. C. Waisman, "Building Neurodiversity-Inclusive Postsecondary Campuses: Recommendations for Leaders in Higher Education," *Autism in Adulthood*, vol. 5, no. 1, Feb. 2022.

[5] E. Walkowiak, "Digitalization and inclusiveness of HRM practices: The example of neurodiversity initiatives," *Human Resource Management Journal*, vol. 34, no. 3, Feb. 2023.