BOARD #157: Exploring the Impact of Academic Accommodations on Student Success: A Comparative Analysis Across University Types and COVID-19 Trends

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WIP: Exploring the Impact of Academic Accommodations on Student Success: A Comparative Analysis Across University Types and COVID-19 Trends (Poster)

Abstract: Academic success, retention, and graduation rates of students with learning disabilities depend on the provision of appropriate accommodations, accessibility to institutional support resources, and faculty awareness of equitable practices. This research study presents a comparative analysis of the spectrum of student learning disabilities and the availability of academic accommodations across various types of higher education institutions including research-focused, teaching-focused, community colleges, and minority-serving institutions. Additionally, the study examines the differences in pre- and post-COVID accommodation requests across campus among different academic majors.

The study also compares the methods of disseminating information about students' rights to academic accommodations and the processing time for accommodation requests across universities. The study shows a positive correlation between accommodations, peer support, academic performance, and student retention rates both before and after the COVID-19 pandemic. The findings aim to shed light on the landscape of academic accommodations across different types of universities at the undergraduate level and will offer insights into how resources and policies at these institutions affect the effectiveness of accommodations.

Introduction: Academic accommodation refers to the reasonable adjustments made to support students with disabilities and ensure they have equal access to education. These accommodations are designed to eliminate any barriers that might impede the academic progress of students with disabilities and to provide them with the same opportunities for success as their peers. Such adjustments may include providing additional time for exams, offering note-taking assistance, providing assistive technology, and ensuring that course materials are accessible [8]. The goal of academic accommodations is to create an inclusive learning environment that fosters the full participation and success of all students, regardless of their disabilities. The impact of academic accommodations on the success of STEM (Science, Technology, Engineering, and Mathematics) students in teaching and research universities has been the subject of numerous case studies. These studies have highlighted the crucial role that academic accommodations play in providing equal access to education for students with disabilities and in promoting their academic success.

NSF has placed a high priority on the cultivation of a diverse STEM workforce in the United States [9]. Many studies [1, 2] have examined the impact of academic accommodations on the academic success of STEM students, revealing a rapid increase in the number of students with disabilities attending post-secondary institutions in recent years. Educational equity is key to meeting students' needs while having access to all the resources, so one may effectively reach their full potential. One study [4] investigated the experiences of STEM students with disabilities at a large research university in the United States. This study found that students who received academic accommodations, such as extended time on exams and access to assistive technology, were more likely to persist in their studies and achieve academic success than those who did not receive accommodations. The study also reported that accommodations

helped to reduce the stress and anxiety that students with disabilities often experience in academic settings, allowing them to focus more fully on their studies.

In the studies referenced in [5, 10] the authors explored the impact of academic accommodations on the success of STEM students with learning disabilities. The study found that students who received accommodations, such as note-taking assistance and access to audio recordings of lectures, were better able to keep up with course content and perform well on exams. Additionally, the study reported that these accommodations helped to improve the confidence and self-esteem of students with learning disabilities, who often struggle with feelings of inadequacy and frustration in academic settings. Overall, these case studies suggest that academic accommodations play a critical role in promoting the success of STEM students with disabilities in teaching and research universities. By providing equal access to education and supporting the unique needs of students with disabilities, academic accommodations can help to ensure that all students can reach their full potential in STEM fields. Research also indicates that academic accommodations significantly affect the overall grade point average of students with disabilities in post-secondary education [6, 7].

Previous research highlights the importance of academic accommodations in promoting equitable educational experiences for students, which in turn impacts their academic success. The COVID-19 pandemic led to a shift in instructional and assessment methods, necessitating adaptations to remote and hybrid learning environments. This study conducts a comparative analysis of the academic accommodation available across various types of higher education institutions, including public institutions (research-intensive (R1) and teaching-intensive (R2)), private universities, community colleges (CC), and minority-serving institutions. Additionally, it examines how institutional policies and resources influence students' access to these accommodations and explores trends before and after the pandemic. The findings will provide valuable insights for future educational practices.

Research Overview:

The research hypothesis for this study are as follows:
Hypothesis 1: The availability and effectiveness of academic accommodations differ significantly across university types (R1, R2, community colleges and private colleges, minority serving institutions)
Hypothesis 2: There is a significant difference in the nature and volume of academic accommodations request pre and post pandemic, with an increase in the post pandemic periods.
Hypothesis 3: The academic accommodations processing times are positively correlated with number of requests and student success.
Hypothesis 4: Educational institutions with standardized process for determining the need for accommodations will see higher rates of accommodation utilization and student satisfaction compared to the ones with less formalized process.
Hypothesis 5: Educational institutions where accommodations are determined by qualified professionals will result in more tailored accommodations and better student outcomes compared to others.

In this research study, both quantitative and qualitative research data are being collected from various types of higher education institutions such as R1, R2 universities, private and community colleges and minority serving institutions to understand the following, (1) types of academic accommodations provided to STEM students with disabilities at the undergraduate level, (2) effectiveness of these accommodations in facilitating academic success, (3) variation in the current accommodation practices provided for undergraduate STEM degree programs based on university resources allocated at the institution, (4) time taken to process student accommodation paperwork, and (5) knowledge of student accommodation resources by faculty and support staff.

A data collection form was prepared for the study and is currently under review with Institutional Research Board (IRB) at University X. The questionnaire designed to collect data on academic accommodations from various educational institutions has been updated based on feedback from the IRB review. The revised questionnaire is provided below. It was distributed to different universities, seeking data from their academic accommodations offices, as well as through our contacts at various levels of these institutions. This work in progress paper is based on the data collected from three institutions- one R1, one R2 and one Community College (CC). The questionnaire included multiple questions related to different hypotheses. The responses offer valuable insights to test each hypothesis effectively.

Results

The data was collected on the most requested types of accommodation for students with learning disabilities at different institutions. A thematic analysis was conducted and classified data into five categories. Based on the institution's designations Table 1 shows the availability of different types of accommodation.

Table 1. Most requested types of accommodation by university types

Institution	CC	R2	R1
Mental Health / Psychological Conditions	Generalized Anxiety, Depression	Anxiety	Psychiatric Disability

Attention / Executive Function	ADD, ADHD	ADHD	ADHD
Neurodevelopmental Issues	—	Autism, Specific LD	Autism Spectrum, LD
Medical / Chronic Health Problems	—	Diabetes	Chronic Health
Physical / Sensory Problems	—	Speech Language	Mobility Disability

The data suggests that CC heavily focuses on mental health and attention disorders whereas the other two reported a balanced representation of mental health, attention, neurodevelopmental, and some physical/medical conditions. The data suggests that research-intensive institutions offer more support to Psychiatric and chronic medical conditions and Neurodivergent and physical impairments with likely more resources and specialized support services.

The reported accommodations were categorized into five broader functional categories as assessment support (Extended exam/quiz time, Alternative assignments, Deadline extensions, Breaks during exams), Instructional access (Note-taking assistance, Permission to record lectures, Laptop for notes), Environmental modifications (Preferential seating, Quiet space, Breaks during class), Technology and format access (Assistive technology, Alternative formats (e.g., digital text)) and Attendance flexibility (Intermittent attendance adjustments). A content analysis based on the responses suggests that there is a progressive increase in complexity and breadth from CC→ R2 → R1. R1 institutions appear to accommodate not just exam needs but full-spectrum support including classroom tools, digital access, and behavioral accommodations. CC and R2 may benefit from reviewing best practices from R1s to consider expanding or diversifying accommodation offered, particularly in assistive tech and instructional access as shown in Table 2.

Table 2. Accommodation Types vs. Institution Types

Accommodation Type	CC	R2	R1
Extended exam/quiz time	✓	✓	✓
Preferential seating or quiet space	✓	✓	✓
Note-taking assistance	X	✓	✓
Alternative assignments	Y	X	✓
Deadline extensions	✓	✓	✓
Assistive technology (e.g., screen readers, speech-to-text)	X	X	✓

Alternative formats for materials (e.g., digital text, large print)	X	X	✓
Audio recording of lectures	X	X	✓
Laptop use for note-taking	X	X	✓
Breaks during class/exams	X	X	✓
Intermittent attendance adjustments	X	X	✓

The results of the study are arranged by hypothesis.

Hypothesis 1: The availability and effectiveness of academic accommodations differ significantly across university types (R1, R2, community colleges and private colleges, minority serving institutions).

The determination criteria for academic accommodation vary across different types of institutions. At CC, the process is balanced between two primary sources: 50% of the determination relies on documentation provided by students, while the remaining 50% is based on evaluations conducted by the Disability Services Office. In contrast, universities classified as R1 and R2 rely exclusively on documentation from students, with 100% of the determination based on these materials. Neither R1 nor R2 institutions incorporate evaluations from the Disability Services Office in their decision-making process for academic accommodations. This contrast highlights a more collaborative approach at community colleges compared to the documentation-centered process at research universities.
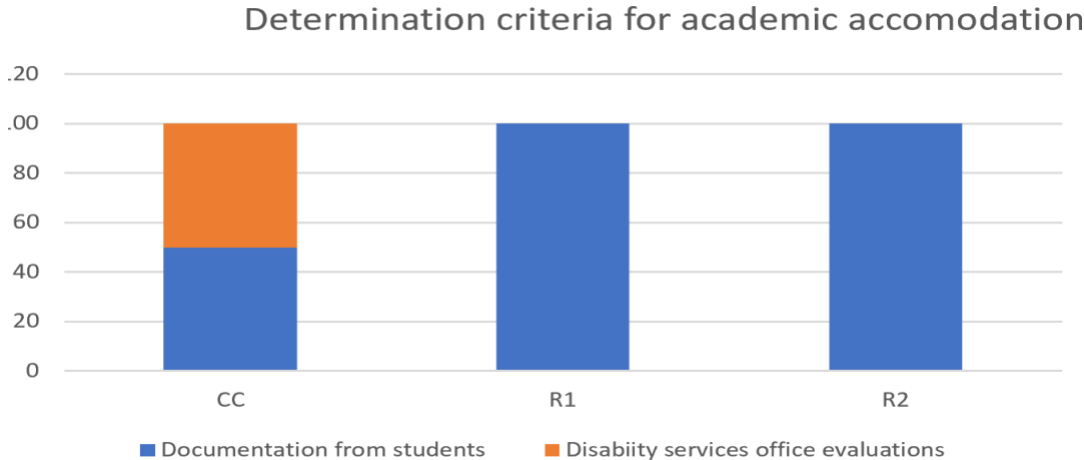

Figure 1. Determination of criteria based on institution designation.

Figure 2 shows the time taken to process an accommodation request after students have submitted the necessary paperwork.
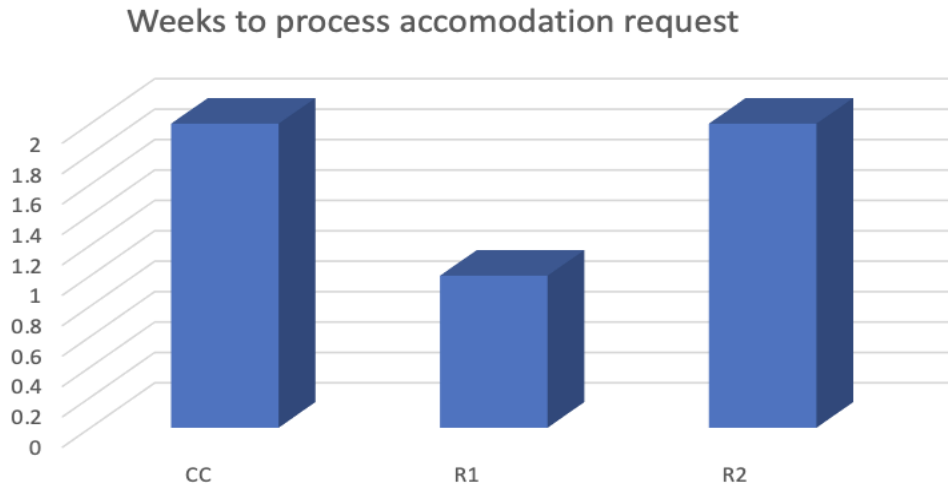
Weeks to process accomodation request

Figure 2. Time for processing accommodation request based on institution designation.

 The results suggest that R1 institutions may have more streamlined procedures or greater resources dedicated to handling such requests efficiently.

Hypothesis 2: There is a significant difference in the nature and volume of academic accommodations request pre and post pandemic, with an increase in the post pandemic periods.

Figure 3 shows the number of accommodation requests has changed across institutions in the post-COVID period compared to pre-COVID levels.

Post COVID accomodation requests

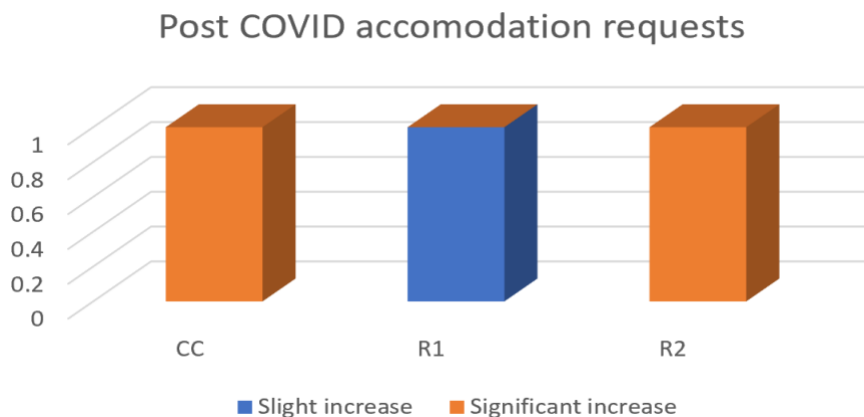■ Slight increase ■ Significant increase

Figure 3. Post-pandemic accommodation requests based on institution designation.

All types of institutions have experienced some growth in accommodation requests, the rise has been more pronounced at community colleges and R2 institutions than at R1 universities.

Hypothesis 3: The academic accommodations processing times are positively correlated with number of requests and student success.

When correlating the availability of data on student success rates with the time it takes to process accommodation requests, R1 and R2 research universities tend to process accommodation requests relatively quickly. However, CC lack data on student success, take

about two weeks to process requests. This may suggest that institutions with more structured systems for tracking outcomes (like R1 and R2 universities) also tend to have more efficient processes for handling accommodation requests. The presence of data may reflect not only better monitoring but also potentially stronger institutional support mechanisms that enable faster response times.
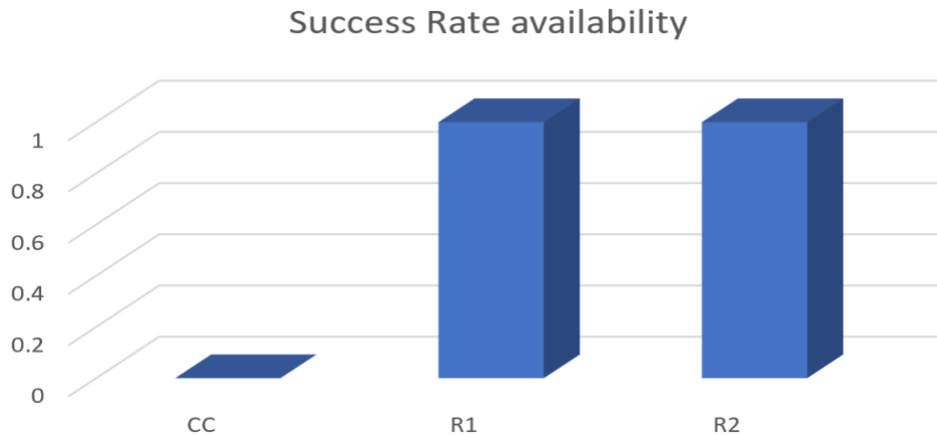

Figure 4. The % of success rate for students who received accommodation.

Hypothesis 4: Educational institutions with standardized process for determining the need for accommodations will see higher rates of accommodation utilization and student satisfaction compared to the ones with less formalized process.

Figure 5 shows how accommodation procedures are communicated across campus. Standardized processes not only promote consistency and fairness in accommodation decisions but also enhance transparency, which can increase students' trust in the system. When students clearly understand how accommodations are determined and what documentation is required, they are more likely to engage with the process and follow through with requests. Additionally, institutions with formalized procedures are better positioned to train staff, collect meaningful data, and identify areas for improvement, all of which contribute to a more supportive learning environment. In contrast, less formalized systems may result in inconsistent decisions, longer processing times, and reduced student confidence, ultimately impacting both accommodation utilization and overall academic success.
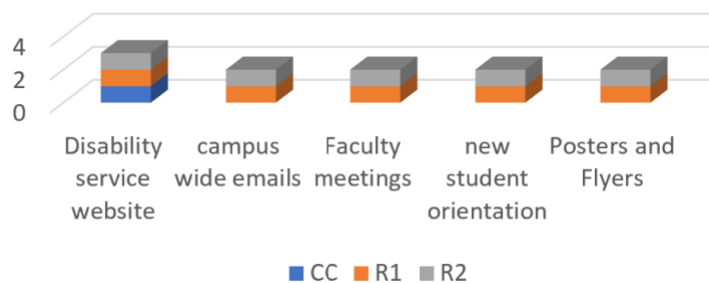
Figure 5. Accommodation communication across campus at institutions.

Hypothesis 5: Educational institutions where accommodations are determined by qualified professionals will result in more tailored accommodations and better student outcomes compared to others.

Figure 6 shows the frequency of faculty training or awareness programs on academic accommodations and students' rights varies across institutions. R1 and R2 research universities conduct such training semi-annually, indicating a regular commitment to keeping faculty informed and up to date on policies and practices related to student accommodations. However, in CC faculty training is seldom available. This lack of training at CCs may contribute to inconsistencies in how accommodation is provided and could impact on both faculty understanding and student experiences. Regular training, as seen in R1 and R2 institutions, likely supports a more inclusive and legally compliant academic environment.
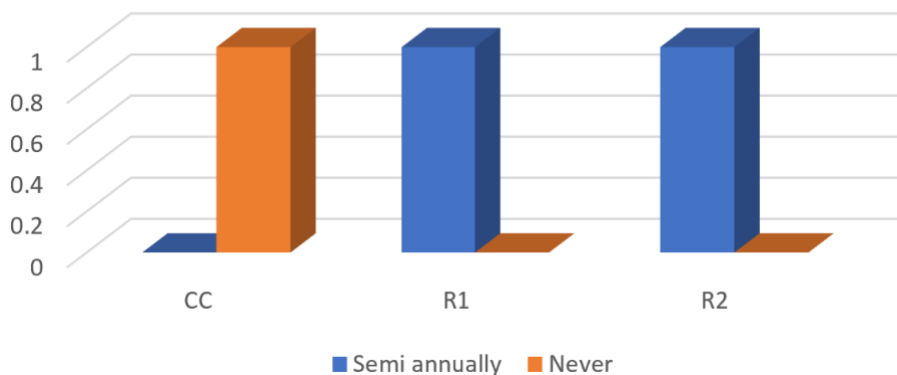

Figure 6. Accommodation training for faculty at institutions.

Conclusion:

This study highlights the pivotal role that academic accommodations play in supporting the academic success of STEM students with disabilities across different higher education

institutions. Through data collected from R1, R2, and a community college (CC), significant variation was observed in the types, availability, and implementation of accommodations. The research study provides notable differences in how academic accommodations are handled across institution types. Community colleges tend to have less formalized processes, slower response times, and limited data tracking, which may hinder accommodation effectiveness and student satisfaction. In contrast, R1 and R2 research universities demonstrate more structured systems, quicker processing, regular faculty training, and access to outcome data. These institutions also report increased accommodation requests post-COVID, highlighting growing student needs. R1 institutions generally offer a broader spectrum of services, particularly in assistive technology and instructional access, likely due to greater resources and infrastructure.

The findings also underscore the importance of standardized processes for accommodation determination. Institutions with formalized and transparent procedures tend to show higher student satisfaction and success, while institutions lacking such systems may experience inconsistent decision-making and delays. Additionally, a post-pandemic rise in accommodation requests across all institution types reveals an evolving need for adaptability and resource expansion in disability services.

Future research will benefit from expanding the dataset to include more institutions, especially private colleges and minority-serving institutions, to validate and broaden the findings. Longitudinal studies tracking student success over multiple semesters would help establish causal relationships between accommodations and academic outcomes.

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[9] NSF News, "NSF's NCSES releases report on diversity trends in STEM workforce and education", Jan 30, 2023.

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Appendix I: The following questionnaire was provided to the institutions to gather data.

Institution Type:

1. Institution Type:
   o Research-Focused University (R1)
   o Teaching-Focused University (R2)
   o Community College
   o Minority-Serving Institution
   o Other (Please specify): _____

General Institutional Information:

1. How many students with documented learning disabilities have requested accommodations at your institution over the past academic year?

   o Less than 50
   o 50–100
   o 101–200
   o 201–500
   o More than 500

2. What percentage of the total student population at your institution does this represent?
   o Less than 1%
   o 1-2%
   o 3-5%
   o More than 5%

3. What were the most common reasons/disabilities for requesting academic accommodations? (if possible add numbers or percentages for past year)
   a.
   b.
   c.
   d.
   e.
   f.

4. What are the most commonly requested types of accommodations for students with learning disabilities at your institution? (Check all that apply)
   o Extended exam/quiz time
   o Note-taking assistance.
   o Use of assistive technology (e.g., screen readers, speech-to-text)
   o Alternative formats for materials (e.g., digital text, large print)
   o Preferential seating or quiet space
   o Alternative assignments or deadlines
   o Other (Please specify): _____

5. Of the above, what is the most utilized academic accommodation used by students?

6. Please fill the information in the following table

	2016 Fall	2017 Spring	2017 Fall	2018 Spring	2018 Fall	2019 Spring	2019 Fall	2020 Spring
Total Enrollment								
Number of students requested academic accommodations								
No. of academic accommodations granted								
No. of academic accommodations request for STEM courses								
No. of academic accommodations granted for STEM courses								
No. Female academic accommodations request								
No. of request by Race White								
Asian								
African American								
Minorities								
No. of traditional students who got academic accommodations								
No. of non-traditional students who got academic accommodations								
No. of transfer students who got academic accommodations								
No. of Engineering students who got academic accommodations								
Staff-student ratio in accommodations office								

	2020 Fall	2021 Spring	2021 Fall	2022 Spring	2022 Fall	2023 Spring	2023 Fall	2024 Spring	2024 Fall
Total Enrollment									
Number of students requested academic accommodations									
No. of academic accommodations granted									
No. of academic accommodations request for STEM courses									
No. of academic accommodations granted for STEM courses									
No. Female academic accommodations request									
No. of request by Race White									
Asian									
African American									
Minorities									
No. of traditional students who got academic accommodations									
No. of non-traditional students who got academic accommodations									
No. of transfer students who got academic accommodations									
No. of Engineering students who got academic accommodations									
Staff-student ratio in accommodations office									

Accommodation Request Process:

1. **How does your university determine the need for academic accommodations?**

   o Documentation from students
   o Faculty recommendations
   o Disability services office evaluations
   o Other (Please specify): _____

2. Is the accommodation granted dependent on a specific problem/diagnosis? Is a doctor's diagnosis required to get academic accommodations for students?

   o Yes, a diagnosis is required
   o No, a diagnosis is not required
   o Some accommodations require a diagnosis, but not all
   o Other (Please specify): _____

3. Are there specific staff or offices responsible for coordinating academic accommodations at your university? If yes, please give details.

   - o Yes (Please specify the office or staff responsible): _____
   - o No
5. What is the qualification of the person who decides accommodations for students?
   - o Licensed Disability Services Professional
   - o Medical Doctor (e.g., psychologist, psychiatrist)
   - o Academic advisor or counselor
   - o Other (Please specify): _____
6. How long, on average, does it take to process an accommodation request from the time it is submitted?

- o Less than 1 week
- o 1-2 weeks
- o 3-4 weeks
- o More than 4 weeks

7. What is the most common reason for any delays in processing accommodation requests?
   - o Insufficient documentation from students
   - o High volume of requests
   - o Communication issues with faculty
   - o Lack of resources or staff
   - o Other (Please specify): _____
8. Are there any specific periods during the year when accommodation requests tend to peak?
   - o Yes (Please specify time periods): _____
   - o No
9. How does your university ensure the accessibility of academic facilities and resources for students with disabilities?
   - o Accessible classroom and lab spaces
   - o Accessible websites and online learning platforms
   - o Adapted classroom materials and technology
   - o Other (Please specify): _____
10. How does your university communicate information about academic accommodations to students, faculty, and staff?
    - o Campus-wide emails
    - o Disability services website
    - o Faculty meetings or workshops
    - o Orientation programs for new students
    - o Posters or flyers around campus
    - o Other (Please specify): _____
11. Are there workshops provided on a regular basis so existing faculty can be briefed about the resources and facilities available for academic accommodations for students?
    - o Yes

o No

12. Are there any student or faculty follow-up mechanisms regarding the provided academic accommodations?
    o Yes
    o No

13. Any data available on the success rate of students who received academic accommodations?
    o Yes (Please provide details if available): _____
    o No

14. Does your university offer any additional programs to support students with disabilities other than providing academic accommodations? If so, please give details. (e.g. course substitutions)
    o Yes (Please specify): _____
    o No

Accommodations Before and After COVID-19:

1. Has the number of accommodation requests increased, decreased, or stayed the same post-COVID (compared to pre-COVID)?

   a. Increased significantly
   b. Increased slightly
   c. Stayed the same
   d. Decreased slightly
   e. Decreased significantly

2. Has the type of accommodation requested changed post-COVID? (e.g., increase in requests for virtual or online accommodations, changes in the total number of requests, types of requests, or types of services offered)
   a. Yes (Please describe the changes): _____
   b. No

3. Have you implemented any new processes or systems for handling accommodation requests since the COVID-19 pandemic?
   a. Yes (Please specify the changes): _____
   b. No

Faculty Awareness and Training:

1. How often do you provide faculty training or awareness programs on academic accommodations and students' rights?
   a. Annually
   b. Semi-annually
   c. Quarterly
   d. Never

2. How effective do you think these faculty training programs are in improving faculty awareness of accommodations and equitable practices?
   a. Very effective
   b. Somewhat effective
   c. Neutral
   d. Somewhat ineffective
   e. Very ineffective
3. Do you receive feedback from faculty on their experiences with providing accommodations?
a. Yes, regularly (every semester)
b. Yes, occasionally (>= annually)
c. No

Institutional Support and Resources:

1. What types of institutional resources are available to support students with learning disabilities? (Check all that apply) –
a. Disability services office
b. Academic advising services
c. Peer mentoring programs
d. Assistive technology labs
e. Mental health
f. Counseling services
g. Other (Please specify): _____
2. Do you think that the current level of support resources is adequate to meet the needs of students with learning disabilities at your institution?
   a. Yes
   b. No (Please explain any challenges or gaps in the resources):
      _____

Communication and Awareness of Rights:

1. How do you primarily disseminate information about students' rights to accommodations? (Check all that apply)
   a. Campus-wide emails
   b. Disability services website
   c. Faculty meetings or workshops
   d. Orientation programs for new students
   e. Posters or flyers around campus
   f. Other (Please specify): _____
2. How effective do you think these methods are in ensuring that students are aware of their rights to accommodations?
   a. Very effective
   b. Somewhat effective
   c. Neutral
   d. Somewhat ineffective

e. Very ineffective
3. **Have students reported any challenges in accessing information about their rights to accommodations?**
   Yes
   No

Impact of Accommodations:

1. In your experience, how do accommodations impact student retention rates for students with learning disabilities?
   a. Strong positive impact
   b. Some positive impact
   c. No impact
   d. Some negative impact
   e. Strong negative impact
2. Do you have data or evidence that shows a correlation between accommodations and academic performance for students with learning disabilities?
   a. Yes, data is available
   b. No, data is not available
   c. Not sure