

# Digital Inclusion and Accessibility: Assessing the Quality of Higher Education Websites in India in Light of UNCRPD Guidelines and RPwD Act 2016

***P.J. Mathew Martin***

### **Abstract**

In the contemporary digital landscape, organizational identity is often encapsulated by websites, serving as the virtual facade with global implications. This holds true for universities in India like the University of Mumbai, pivotal institutions providing higher education, which leverage websites and social media platforms for educational purposes and information dissemination. This study delves into the critical assessment of the accessibility of these digital platforms, considering it as a litmus test for their global outreach and commitment to digital inclusion. Anchored in the Uses and Gratification theory by Blumler and Katz, the research explores how viewers actively shape their online experiences.

Highlighting a significant legislative gap, the Information and Technology (IT) Act 2000 of India, and its 2022 amendment, remain conspicuously silent on the matter of accessibility for individuals with disabilities. Against the backdrop of the COVID-19 pandemic, where human interaction is constrained, technological shortcomings have exacerbated isolation and marginalization, particularly impacting the education of persons with disabilities.

In contrast, international frameworks such as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) provide clear guidelines, endorsed by the Government of India, emphasizing the need to facilitate access for persons with disabilities in education and emerging technologies. The Rights of Persons with Disabilities (RPWD) Act 2016 reinforces the mandatory nature of accessibility compliance, extending its applicability to both public and private sectors in India.

Aligned with the pursuit of educational excellence, the National Assessment and Accreditation Council (NAAC) aims to assess and accredit higher education institutions in India. Focusing on 211 Central and State Universities with a Cumulative Grade Point Average (CGPA) of 3.01 and above for NAAC accreditation, this study, conducted on December 3, 2022, scrutinizes the quality of websites developed by these institutions. The evaluation encompasses both central and state government universities, shedding light on their

digital presence and, by extension, their commitment to providing inclusive and accessible higher education.

**Key Words:**

Accessibility, Websites, Universities, Higher Education, Communication Technology, Digital Inclusion.

## Introduction

The websites are today the face of an organization, with global and local reach. An organization's website reflects the true face of an organization as never before<sup>1</sup>. The World Wide Web [W3] establishes a direct connection between organizations and customers, serving as a pivotal Information and Communication Technology (ICT) medium. In the context of Indian Universities, websites play a crucial role in utilizing this platform for educational purposes and effective dissemination of educational information. 'A website is increasingly the place where customers get that vital first impression<sup>2</sup>'. Accessibility of these websites to students with disabilities will be the test of its global reach. All the Universities in India are guided and monitored by the University Grants Commission (UGC). The National Assessment and Accreditation Council (NAAC) is one of the autonomous bodies established by the UGC to assess and accredit institutions of higher education in the country. In the year 2010, the Government of India, Ministry of Social Justice & Empowerment, made a provision of Rs.20 lakh for adopting websites to be accessible to PWDs under the Scheme of the Implementation of Persons with Disabilities Act (SIPDA) and requested all Central/State Universities recognized by the UGC to provide self-contained proposals. The Articles 8, 9 and 21 of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) 2006, guidelines, deal with awareness, accessibility and access to information. Article 9.2 (g) & (h) of UNCRPD (to which India has been a signatory since 1st October 2007), especially lays down that states should facilitate access to new information and communication technologies, especially the Internet for PWDs. 'Digital inclusion tends to be solely associated with technical accessibility issues' (Steyaert, 2005). 'A particular focus of attention has been the inaccessibility of

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1           McGovern G (2006). Websites reflect the true fact of an organization. Retrieved from <http://www.gerrymcgovern.com/nt/2006/nt-2006-03-13-customer-centric.html>

2           ibid

virtual learning environments for disabled students<sup>3</sup>. A review of accessibility issues in higher education<sup>4</sup> noted that, although disabled students may have access to computers and the Internet, they may not necessarily have access to access online learning resources and activities, and stated that in this sense, disabled students may still be 'have-nots', and experience what described as the 'second digital divide'<sup>5</sup>. Such moves have helped to expand our concept of accessibility, but on their own, they only partially contribute to the improved conceptualization and understanding of digital inclusion. NAAC accreditation of higher educational institutions in India. The NAAC was established in September 1994 in Bangalore to evaluate the performance of the universities and colleges in the country. NAAC's mandate includes the task of performance evaluation, assessment and accreditation of universities and colleges in the country. The philosophy of NAAC is based on objective and continuous improvement rather than being punitive or judgmental so that all institutions of higher learning are empowered to maximize their resources, opportunities and capabilities. Assessment is the performance evaluation of an institution and /or its units and is accomplished through a process based on self-study and peer review using defined criteria.

## **NAAC Accreditation and Accessibility**

Accreditation refers to the certification given by NAAC which is valid for five years. The UNCRPD and the RPwD Act focus on promoting and protecting the rights and dignity of persons with disabilities, including ensuring accessibility in various aspects of life, such as education. Entities like NAAC, within the framework of higher education, may indirectly contribute to compliance through the following ways: This includes 1. Incorporation of accessibility criteria in the accreditation process- NAAC could include accessibility criteria in its accreditation process,

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3 Newland B, Pavey J, Boyd V (2004). Disabled students and VLEs. Accessibility in Learning Environments and Related Technologies Project Bournemouth University. [http://www.bournemouth.ac.uk/alert/guidelines/word/alert allVLEguidelines.doc](http://www.bournemouth.ac.uk/alert/guidelines/word/alert%20allVLEguidelines.doc)

4 Seale J, et al. (2010). Digital agility and digital decision- making: conceptualizing digital inclusion in the context of disabled learners in higher education. *Studies in Higher Education*, 35(4), 445-461.

5 Burgstahler S (2002). Distance learning: the library's role in ensuring access to everyone. *Library Hi Tech*, 20(4), 420-432.

ensuring that higher education institutions are evaluated based on their commitment to providing accessible facilities, resources, and services to students with disabilities. 2. Advocacy and Awareness -NAAC may play a role in promoting awareness about the importance of accessibility and inclusive education within higher education institutions. This could involve advocating for the implementation of inclusive policies and practices. 3. Guidance and Training- NAAC can provide guidance to higher educational institutions on implementing accessibility measures and offer training programs for educators and staff to enhance their understanding of inclusive practices and provide more sustainable job opportunities. 4. Monitoring and Reporting - NAAC, as an accrediting body, may monitor institutions' compliance with accessibility standards over time. This could involve regular reporting and assessment to ensure ongoing commitment to accessibility. 5. Integration of Universal Design Principles- Encouraging higher education institutions to adopt universal design principles, which aim to create environments and products that are usable by all people, including those with disabilities, could be a part of NAAC's guidance.

It's significant to note that specific details about NAAC's role in relation to UNCRPD and RPWD Act compliance might be outlined in any of the subsequent policies, guidelines, or collaborations that have been established through the government of India notifications so that persons with disabilities continue to get their rights for quality higher education. At present, the assessment and accreditation by NAAC are done voluntarily. However, it is mandatory for seeking financial assistance from UGC Assessment and accreditation is broadly used for understanding the "Quality Status" of an institution. In this study, 211 such universities with universities accredited by NAAC with CGPA of 3.01 and above were selected for the study Accessibility of websites. Hypertext Markup Language (HTML) is the non-programmable technology used to create most websites. It can be augmented with other features (e.g. IBM 2003) and it is these features that add complexity to Web pages and social media platforms that are often the causes of barriers to accessibility. In their study 'The quest to make accessibility a corporate article of faith at Microsoft', the authors underscored the importance, as outlined by the United States Department of Justice and the World Wide Web Consortium (W3C), of including text equivalents for non-text elements (such as images and multimedia objects). This is crucial to enable assistive technologies

to render these textual descriptions into speech or Braille output, allowing access to the content regardless of disability or device constraints.

## **The Web Content Accessibility Guidelines**

(WCAG) developed by the World Wide Web Consortium (W3C) provide a set of standards and guidelines to make web content more accessible to people with disabilities. The core ideas of the W3C Accessibility standards, particularly those outlined in the WCAG, include 1. Perceivability - to make information and user interface components must be presented in a way that users can perceive, 2. Operability- so that the user interface components and navigation must be operable. 3. Understandability- so that information and operation of the user interface must be understandable. 4. Robustness- the content must be robust enough to be reliably interpreted by a wide variety of user agents. The WCAG standards for websites are organized into three levels of conformance: A (basic), AA (mid-range), and AAA (highest). Websites and applications are encouraged to meet at least the AA level of conformance to ensure a higher level of accessibility. The WCAG is designed to be technology-neutral, meaning it applies to a wide range of web technologies and can be implemented across various platforms and devices. This adaptability ensures that accessibility standards remain relevant as technology evolves.

The W3C Accessibility standards promote the concept of inclusive design, emphasizing the importance of creating digital content and interfaces that are accessible to everyone, including people with disabilities, without the need for separate adaptations or assistive technologies. By incorporating these core ideas and principles, the W3C Accessibility standards aim to create a more inclusive online environment, making digital content and services accessible to people with diverse abilities and disabilities. Uses and Gratification theory also determine the choice of the users of websites and social media platforms, even among persons with disabilities.

## Theoretical Perspective

This study undertakes a comprehensive examination of the accessibility of digital platforms, treating it as a litmus test for gauging their global reach and dedication to fostering digital inclusion. Grounded in the Uses and Gratification theory formulated by Elihu Katz, Jay Blumler, and Michael Gurevitch<sup>6</sup>, this research delves into the ways in which users actively mould their online experiences. By adopting this theoretical perspective, the study aims to unravel the motivations and behaviours driving individuals to engage with digital platforms, shedding light on the intersection of accessibility, user agency, and the broader objectives of global outreach and inclusivity in the world of digital space that targets higher education. According to Katz et al (1974), 'Uses and Gratifications theory asserts that people are active users of media and select how they will use it' In fact the Uses and Gratifications theory assumes that media audiences are active and selective in their media consumption. Individuals actively choose and use media content based on their preferences and needs. People use media to fulfil various psychological and social needs. These needs may include information, entertainment, personal identity reinforcement, social integration, and escapism. The theory suggests that people use media as a tool to achieve specific goals rather than viewing media consumption as an end in itself. Individuals are purposeful in their media choices to satisfy particular needs. The theory emphasizes the role of communication choices in satisfying individual needs. Whether it's choosing a particular TV show, news source, Artificial Intelligence (AI) or social media platform, individuals make conscious choices based on their communication needs. Moreover, the theory emphasizes the role of communication choices in satisfying individual needs. Whether it's choosing a particular TV show, news source, or social media platform, individuals make conscious choices based on their communication needs.

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6 Katz, E, Blumler, J.G., and Gurevitch, M. (1974), "Utilization of Mass Communication by Individual" in *The Uses of Mass Communications: Current Perspective on Gratifications Research*, ed. J.G Blumler and E. Katz, Beverly Hills, CA: Sage; pp. 19-32

## **Aim & Objectives**

The primary goal of this study was to comprehensively evaluate the quality of websites developed by both Central and State Universities in India. The assessment focused on key dimensions such as information content, dissemination effectiveness, accessibility, design aesthetics, and the inclusion of interactive and participatory features. Additionally, the study sought to quantify and measure these dimensions across all selected websites, employing established validation methods available on the Internet. The overarching objective was to provide a nuanced understanding of the strengths and areas for improvement in the online presence of educational institutions, contributing valuable insights to enhance the overall user experience and functionality of university websites.

## **Hypothesis**

There is no significant correlation between the adherence of websites to the guidelines outlined in the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) and the overall accessibility of information on these platforms.

The provision of specific functional features for students with disabilities, such as screen readers, adjustable font sizes, colour customization, alternative texts, and support for Indian Sign Language, has no impact on the overall accessibility and usability of university websites.

There is no significant difference in the degree of accessibility between websites of Central and State Universities in India regarding the incorporation of accessible design elements like the 'F' pattern for efficient and rapid viewing of web content.

The level of inclusivity on the websites of Central and State Universities in India, whether characterized by interactivity or participatory features, does not



significantly contribute to enhancing the user experience for individuals with disabilities.

## **Research Questions**

The following research questions provided direction for the study:

To what extent does the website adhere to the guidelines outlined in the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) concerning access to information?

How well do the websites cater to the specific functional needs of students with disabilities, including the provision of features such as screen readers, adjustable font sizes, colour customization, alternative texts, and support for Indian Sign Language?

To what degree do the websites of Central and State Universities in India incorporate accessible design elements, such as the 'F' pattern, known for facilitating efficient and rapid viewing of web content?

In terms of inclusivity, are the websites of Central and State Universities in India characterized more by interactivity or participatory features, specifically tailored to enhance the user experience for individuals with disabilities?

## **Methodology**

To comprehensively evaluate the attributes of websites designed by NAAC-accredited Central and State Universities in India, focusing on design, format, functionality, and accessibility, a meticulous methodology was employed. Using 'Google' as the primary search engine on December 3, 2022, the researchers selected this specific date, recognized as 'World Disability Day,' to emphasize the study's emphasis on assessing the accessibility features of the chosen websites in light of their significance for individuals with disabilities. On this occasion, a total of 211 websites from various Central and State Universities were systematically examined, and screen captures were incorporated as part of the sample.

The evaluation of these websites involved rigorous testing for W3C compliance, utilizing established parameters to gauge performance. The assessment encompassed key dimensions, including information and dissemination, accessibility, design, and interactive and participatory features. This methodological approach ensured a thorough and meaningful analysis of the selected university websites, contributing valuable insights into their overall quality and user experience.

## **Sampling**

This research adopts a survey approach with purposive sampling, focusing on 211 websites selected deliberately from Central (56), State (95), and Private (60) Universities, all possessing NAAC accreditation. The websites underwent thorough examination, encompassing design, formal aspects, functionality, and accessibility features. Subsequently, they were categorized into two groups based on their university type (Central, State, and Private), and the collected data on each accessible feature were subjected to a comparative analysis using Statistical Package for Social Sciences (SPSS) Version-16.

To ensure a representative selection, only the home pages of websites that appeared on the first page of 'Google' search results were chosen. This approach is crucial, as well-designed meta-tags significantly influence the visibility of a website. The comparative study aimed to shed light on potential disparities in website features among different university types. Table 2 depicts that only 35.07% of the sampled websites possessed NAAC Accreditation above the CPA 3.01 grade. Notably, the majority (14.2%) of UGC-recognized higher education institutions were affiliated with Central Universities, indicating a predominant commitment to digital inclusion standards in Indian higher education.

**Table 1.** Classification of Universities Recognized by UGC as of 03.12.2022

Sr. No	Type of University	Universities with NAAC Accreditation with CGPA Above 3.01	Universities with NAAC Accreditation without	Total Number of Universities
1.	Central Universities	51	05	56
2.	State Universities	58	404	462 (42.9 %)
3.	Deemed to be Universities	25	102	127
4.	Private Universities	77	359	436
5.	Total Number of Universities	211 (19.5%)	870	1081

**Table 2.** NAAC Accredited Universities in India

Type of Universities	Above CGPA 3.01	Below CGPA 3.00	TOTAL
Central Univ.	30 (14.2 %)	26	56
State Univ.	16	61	77
Private Univ.	28	50	78
<b>TOTAL</b>	<b>74</b>	<b>137</b>	<b>211</b>
	<b>(35.07 %)</b>		

## Limitations

The following are the limitations of the study:

The scope of the study is restricted to 211 websites, comprising 56 Central Universities, 95 State Universities, and 60 Private Universities, potentially limiting the generalizability of findings to a broader context.

The inclusion criteria focused on websites of Central, State, and Private Universities with NAAC Accreditation as of December 3, 2022, excluding institutions without this accreditation and those that may have gained accreditation after the specified date.

The selection criteria narrowed down the study to universities accredited by NAAC with a CGPA of 3.01 and above, potentially excluding valuable insights from institutions with lower accreditation scores.

The analysis of website home pages occurred solely on December 3, 2022 (World Disabled Day), and no updates or changes made to the websites after this date were considered, limiting the study's ability to capture dynamic developments.

The study does not encompass the accessibility assessment of electronic documents linked with web pages, overlooking potential challenges in accessing additional online content.

The focus on websites in English introduces a language bias, potentially neglecting accessibility considerations for users preferring other languages.

Although the study examines social media platform links in terms of accessibility, the comprehensive analysis may be constrained due to the vast and ever-evolving nature of social media platforms.

## **Results of Analysis and Conclusion**

As we reflect on the two decades that have transpired since the enactment of the IT Act in India, it becomes evident that NAAC-accredited universities in the country have embraced the expansive capabilities of the internet, despite the Act's silence on web accessibility features. While a number of these institutions have incorporated interactive and social communication tools, such as blogs, guest books, and RSS feeds, into their websites, a notable 66.4% lack even basic feedback or complaint forms. Nevertheless, a glimmer of progress was observed on "World Disability Day" (December 3, 2022), with certain NAAC-accredited university websites showcasing commendable accessible features. Accessible features play a crucial role in bridging the digital divide for students with disabilities seeking higher education in India<sup>7</sup>.

The primary objective of this study was to assess websites and social media platforms in terms of their efficacy as tools for information dissemination, education, accessibility, design, and interactive participatory features for

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7 Poothullil, J. M. M. 2009. "Organizations Working for Persons with Disabilities in India Moving Towards Accessible Websites." *Journal of Rehabilitation Council of India* 5, no. 12: 55.

students with disabilities in higher education. The findings revealed that 24.8% of the websites examined, and 57.1% of Central Universities' websites, offered information in regional languages. Markup validation tests exposed a deficiency in Central University websites, with none passing, while only three State University websites met the validation criteria. A mere 25.5% of NAAC-accredited Central and State University websites passed the cascading style sheet (CSS) validation, and a mere 8.8% passed the mobile phone validation test.

Despite the widespread use of videos, images, and photographs on websites with integrated social media platforms (67.2%), a mere 17% provided alternative text or audio descriptions for visual content. While many websites offered downloadable information, links to social media platforms, and participatory features, a critical observation emerged: the majority lacked accessibility features, indicative of a shortfall in digital inclusion efforts. This underscores the need for ongoing efforts and interventions to enhance the digital accessibility landscape and promote inclusivity within the higher education sphere in India.

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