DESIGNING FOR INCLUSION: LIBRARY PROGRAMMES AND SPACES FOR NEURODIVERSE USERS

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Abstract

Supporting neurodiverse individuals in library environments requires more than superficial or occasional accommodations; it necessitates a fundamental rethinking of what accessibility means within public and academic library contexts. Neurodivergence which includes conditions such as autism, attention-deficit/hyperactivity disorder (ADHD), dyslexia, and other neurological variations significantly influences how individuals interact with information, spaces, and services. Traditional, one-size-fits-all library programming and design often fail to meet these diverse cognitive and sensory needs. To ensure equitable access, libraries must adopt more flexible, user-centered strategies that accommodate different ways of thinking, learning, and engaging. These may include creating low-stimulation, quiet zones, offering programming in multiple formats, and designing intuitive, customizable digital interfaces. Moreover, involving neurodivergent individuals directly in the planning, evaluation, and delivery of library services helps ensure that those services are truly inclusive and responsive. While these changes aim to support neurodiverse users, the principles of inclusive design benefit the broader user community by enhancing accessibility and usability for all. Positioned as inclusive spaces for learning, connection, and civic engagement, libraries have both the opportunity and the responsibility to lead in fostering inclusive environments that prioritize empathy, equity, and meaningful participation across all user demographics.

Keywords: Inclusive Programming, Library Design, Neurodiversity, Sensory Processing, Universal Design

Introduction

Neurodiversity is a framework that acknowledges natural variations in human cognition, learning styles, and social interactions as valuable aspects of diversity rather than deficits. It encompasses a wide range of conditions, including autism spectrum disorder, ADHD, dyslexia, dyspraxia, Tourette's syndrome, and other neurological differences that influence how individuals perceive and process the world around them. Armstrong (2010) emphasises that this perspective moves away from deficit-based views, encouraging instead a strengths-focused understanding of these differences as alternative but equally valid ways of experiencing life. Within this paradigm, those whose cognitive processes deviate from conventional expectations are described as neurodivergent. Importantly, their brain function is not flawed but simply distinct.

Historically, libraries have invested considerable effort in addressing physical accessibility, often through features such as ramps, elevators, or assistive reading devices. These adjustments were largely driven by legislation, including the Americans with Disabilities Act in the United States and the Equality Act in the United Kingdom. However, Bittner (2021) argues that true accessibility must extend beyond physical infrastructure to include cognitive and sensory dimensions, particularly as many challenges faced by neurodivergent individuals remain invisible. For instance, brightly lit environments, constant background noise, and rigid behavioural norms may leave some users feeling overwhelmed or excluded.

Research highlights that sensory overload is a common barrier for neurodivergent patrons. Bodison (2015) observes that individuals with autism or heightened sensory sensitivities may experience distress when confronted with harsh lighting, cluttered layouts, or loud spaces. Similarly, some neurodivergent users struggle with unspoken social rules or expectations within public spaces, which can foster discomfort and social withdrawal. In response, libraries worldwide have begun reimagining their roles. Samuels (2021) documents examples such as McMaster University and UC Berkeley, both of which have introduced quiet areas, staff training on neurodiversity, and inclusive service models shaped by community feedback. The San Francisco Public Library has also developed sensory-friendly programmes, offered adaptive resources like fidget tools, and invested in staff training initiatives (SFPL, 2019). Meanwhile, the Brooklyn Public Library has pioneered outreach and education efforts through projects such as "MyLibraryNYC" (BPL, 2020).

Inclusive library spaces require more than physical redesign. Henry et al. (2014) suggest that thoughtful planning such as integrating calming spaces, using visual cues like maps or pictorial signage, and arranging seating to allow personal comfort can significantly enhance accessibility. Technology is also central to inclusion. Al-Azawei, Serenelli, and Lundqvist (2016) demonstrate how accessible websites, customisable interfaces, and assistive digital tools enable neurodivergent users to interact independently with library resources. Programmes tailored to varied learning needs further strengthen inclusivity. Harpin (2019) notes that initiatives such as sensory-friendly story hours, low-stimulation events, and flexible workshops create welcoming environments, while well-trained staff play a vital role in connecting with patrons more effectively.

As open, non-clinical community hubs, libraries are uniquely positioned to advance neurodiversity inclusion. Yet, achieving this goal requires more than surface-level modifications; it calls for a cultural transformation that views neurodiversity as an essential part of the human experience. By embedding this perspective into their environments, services,

and professional practices, libraries can move beyond accommodation to foster respect, empowerment, and genuine participation for neurodivergent individuals.

Understanding Neurodiversity in Library Contexts

Neurodiversity refers to the natural variations in how individuals think, learn, and interact with their surroundings. It encompasses a wide range of conditions, including autism spectrum disorder, attention-deficit/hyperactivity disorder (ADHD), dyslexia, Tourette syndrome, and other neurological differences. Rather than being viewed as deficits, these traits reflect diverse ways of experiencing and processing the world. For instance, Baron-Cohen (2017) explains that people on the autism spectrum may experience sensory challenges such as heightened sensitivity to sound, lighting, or spatial crowding, which can lead to sensory overload. In contrast, Kofler and colleagues (2019) observe that individuals with ADHD often encounter obstacles in sustaining attention, regulating impulses, and managing tasks, particularly within structured educational or institutional settings. Recognising these variations is central to fostering inclusive and compassionate communities.

Libraries, as shared public and educational spaces, have an important role to play in meeting the needs of neurodiverse populations. They are traditionally seen as gateways to knowledge and community engagement, yet their physical, sensory, and social environments can sometimes pose challenges. Hollins (2022) highlights that features such as clearly designated quiet areas may provide comfort for users who are prone to overstimulation. However, other design elements like disorganised layouts or unclear navigational signs may increase stress or disorientation. The American Library Association (2020) and the National Center on Universal Design for Learning (2019) have recommended frameworks that support more inclusive planning, ensuring that spaces and services are intentionally designed to accommodate users with varied ways of processing information.

Principles of Inclusive Library Design

One key aspect of inclusive design is acknowledging neurodiversity as a valuable dimension of human difference. People whose neurological functioning diverges from conventional norms often engage with spaces differently. Kapp (2020), for example, notes that individuals on the autism spectrum may react strongly to sensory stimuli, finding harsh lighting, persistent background noise, or crowded environments uncomfortable. Similarly, Gordon et al.(2021) point out that people with ADHD may find it difficult to focus in visually disordered or overly stimulating settings. Acknowledging these differences is not about reducing library services to the lowest common denominator; rather, it is about ensuring that flexibility and choice are built into the design.

Today's libraries are no longer limited to being silent reading rooms. They serve as multipurpose hubs that provide access to digital resources, collaborative spaces, and social interaction opportunities. While this multifunctionality enhances their social value, it can inadvertently create barriers for neurodivergent users if not carefully managed. For instance, although sensory-friendly areas may help reduce overstimulation, visually complex displays or crowded floorplans may still leave certain patrons disoriented or anxious. Because neurodiversity covers a broad spectrum of needs and experiences, there is no single formula for inclusivity. Cox et al. (2017) argue that adaptive strategies such as offering flexible seating, adjustable lighting, and quiet breakout areas to help make library environments more accessible to diverse users. Staff training also plays a vital role, as it equips librarians with the skills to recognise and respond to the needs of neurodivergent patrons in empathetic ways. In this sense,

inclusive design is both a physical and cultural practice: it ensures accessibility while reaffirming the library's role as a community institution committed to equity, belonging, and respect for difference.

Creating Sensory-Friendly Library Spaces

Traditional library environments can present challenges for individuals with sensory sensitivities, particularly those associated with autism, attention-deficit/hyperactivity disorder ADHD, or other sensory processing differences. Bright fluorescent lighting, background noise from ventilation systems, and visually crowded layouts often trigger discomfort or stress for these users. Anderson, Stephenson, and Carter (2019) highlight that such features may act as barriers to engagement, reducing the inclusivity of library spaces. To address this concern, libraries are increasingly incorporating sensory-friendly practices. For example, dimmable or warm-toned lighting, soundproofed areas, and the provision of noise-cancelling headphones have proven effective in creating a more welcoming atmosphere (Anderson et al., 2019). Additionally, the introduction of scheduled "quiet hours," where noise and lighting levels are intentionally moderated, has been particularly beneficial in fostering a calmer and more accessible environment.

Libraries that have embraced these measures are beginning to receive recognition from advocacy groups. The Toronto Public Library, for instance, has been praised for its commitment to creating sensory-friendly spaces, demonstrating the broader societal value of universal design principles (Toronto Public Library [TPL], 2022). Such practices not only enhance access for neurodivergent communities but also improve the overall experience for all patrons, reinforcing the importance of equity and inclusivity in public service delivery.

Improving Navigation and Layout for Neurodivergent Users

The organisation and layout of a library are equally significant in shaping user experience. Poorly arranged spaces can intensify feelings of disorientation or sensory overload, particularly among those with heightened sensitivities or spatial awareness difficulties. Scott (2009) stresses that clear and consistent design features, such as straightforward pathways, uncluttered shelving, and visible signage, can ease navigation and reduce stress. Complementing these structural adjustments with visual supports such as pictograms, maps, or illustrated instructions provides additional clarity and direction. Gould (2020) notes that these visual tools are especially helpful for individuals on the autism spectrum, who often rely more heavily on pictorial cues to interpret their surroundings.

Colour coding is another strategy that can aid with orientation and memory, while maintaining open and tidy shelving contributes to reducing visual clutter. Savio and D'Alonzo (2019) argue that such thoughtful design choices promote independence, minimise cognitive load, and communicate a clear message of belonging. By integrating these approaches, libraries can transform themselves into inclusive environments that affirm the diverse needs of all users while enhancing overall accessibility.

Inclusive Programming for Neurodivergent Users

1. **Supporting Young Neurodiverse Learners through Inclusive Storytime**

Contemporary libraries are becoming more intentional about meeting the developmental needs of children with diverse cognitive and sensory profiles. One practical example of this inclusivity is the implementation of sensory-friendly storytime sessions. Anderson and Emmons (2017) emphasise that such sessions are particularly beneficial for children on the autism spectrum or those with sensory processing challenges. Rather than replicating conventional formats, these programmes are carefully adapted to provide a predictable and calming atmosphere. Adjustments may include smaller audience sizes, visual cues for transitions, subdued lighting, and flexible seating that accommodates movement or stillness depending on a child's comfort level (Croland & Gavigan, 2018).

Sensory activities and opportunities for physical interaction are often integrated, ensuring that children remain engaged without being overwhelmed. Research has demonstrated that these inclusive practices enhance children's communication skills, foster problem-solving and thinking abilities, and promote both social interaction and emotional growth (Knapczyk & Rodes, 2018). In this way, libraries reinforce their commitment to equity by ensuring that literacy initiatives are not limited to neurotypical children but are accessible to all.

2. Expanding Inclusive Services for Neurodivergent Teens and Adults

Inclusivity within libraries extends beyond early childhood initiatives to embrace adolescents and adults with neurodivergent needs. Accardo and Malachowski (2017) argue that structured programmes, such as robotics or coding clubs, are particularly valuable for teenagers who thrive in environments that highlight logic, structure, and predictability. Alongside these, creative and calming pursuits like knitting groups or adult colouring sessions provide low-pressure opportunities for social engagement, allowing participants to interact in ways that respect their comfort zones. Regular book clubs, when supported with clear rules and structured dialogue, can similarly create environments of stability that encourage active participation.

The academic library sector has also responded to this demand for inclusivity. At institutions such as the University of Michigan, quiet study zones and alternative test-taking arrangements have been established to support students with different cognitive needs (Wong et al., 2020). These measures illustrate a growing recognition that learning environments must accommodate varied modes of engagement. By doing so, libraries create welcoming spaces in which neurodivergent individuals can participate fully and confidently.

3. Ensuring Accessibility in Online Library Services

As libraries increasingly transition to virtual platforms, accessibility in digital services has become a central consideration. One important strategy is the provision of recorded sessions with captions, enabling users to learn at their own pace. This flexibility is particularly useful for those who process information differently (CAST, 2018). Similarly, substituting live voice communication with text-based chat can reduce anxiety for users who find synchronous discussions overwhelming (Burgstahler, 2015). Providing detailed information in advance about online sessions including format, duration, and participation requirements—can also lessen uncertainty, thereby increasing confidence in participation.

These approaches reflect the core principles of Universal Design for Learning (UDL), which encourage multiple pathways for access, engagement, and expression (CAST, 2018). By integrating such strategies, libraries ensure that their online environments are as inclusive and supportive as their physical counterparts. This intentional design demonstrates an ongoing

commitment to equity in both physical and digital spaces, affirming the role of libraries as inclusive, community-oriented institutions.

4. Building Staff Awareness of Neurodiversity

Creating an inclusive library begins with equipping staff with both knowledge and sensitivity regarding the diverse needs of users. Neurodiversity, which refers to variations in neurological functioning such as autism, attention-deficit/hyperactivity disorder (ADHD), dyslexia, among others, highlights that these differences are not merely deficits but represent unique ways of perceiving and engaging with the world (Austin & Pisano, 2017). Recognising this perspective allows library professionals to move beyond deficit-based thinking and embrace strategies that respect different cognitive styles.

Staff development initiatives should therefore go beyond surface-level awareness. As Rao and Goh (2018), emphasised, training that incorporates hands-on practice and scenario-based learning better prepares frontline employees to respond to real-life challenges. For example, when a library user becomes distressed due to environmental triggers such as excessive lighting, loud background noise, or crowded spaces, staff who have undergone experiential training are more likely to respond calmly and effectively. Equally critical is the manner in which staff communicate. O'Rourke (2020) points out that simplifying language, avoiding jargon, and providing instructions in clear, direct terms can minimise misunderstandings and create smoother interactions. Attention to non-verbal behaviours is also necessary.

Robertson (2015) observes that cues such as restlessness, withdrawal, or visible discomfort often provide early indications of distress, and staff who can recognise these signals are better positioned to offer empathetic support. Professional learning, however, should not be viewed as a one-time intervention but as an ongoing process. As staff continually deepen their understanding of the lived realities of neurodiverse individuals, they become more adept at fostering environments that feel safe, respectful, and inclusive (Agran, 2020). In this way, libraries can evolve into spaces where diversity is not only accommodated but actively embraced.

Steps for Effective Implementation

Creating inclusive environments for neurodiverse users requires intentional design and structured strategies rather than ad hoc adjustments. Scholars suggest several practical measures that can guide this process.

1. Conduct an Environmental Audit

The first step is to systematically review the physical environment. Factors such as lighting, sound intensity, signage, and spatial arrangement should be assessed with neurodiversity-sensitive tools. As Kinnaird and Parson (2020) emphasise, this type of audit helps uncover hidden barriers—such as sensory overstimulation or spatial disorientation—that may hinder accessibility for neurodivergent individuals.

2. Build Partnerships with Experts and the Community

Libraries benefit significantly when they collaborate with occupational therapists, educators, and, importantly, neurodivergent individuals themselves. Higgins (2021) notes that such partnerships blend lived experiences with professional expertise, ensuring that initiatives are both practical and meaningful. By engaging directly with the community, libraries can avoid assumptions and design services that reflect authentic needs.

3. Pilot Interventions and Make Adjustments

Instead of attempting sweeping reforms at once, a more effective approach is to begin with small-scale modifications such as redesigning a program format or reconfiguring a reading space. Feedback from users should then be collected and analysed to inform further adjustments. Gould and colleagues (2020) highlight that iterative piloting not only reduces risks but also ensures that changes are data-driven and responsive to real user experiences.

4. Centre Neurodivergent Perspectives

A consistent theme in the literature is the importance of including neurodiverse voices in the design process. Beresford (2018) argues that planning without active participation from neurodivergent individuals often leads to solutions that overlook or misinterpret their needs. Co-design approaches, therefore, provide a foundation for developing more relevant and inclusive services.

5. Secure Long-Term Funding

No initiative is sustainable without adequate resources. Rumbold et al. (2020) stress the importance of securing grants and funding streams dedicated to accessibility and equity. Ongoing investment not only sustains existing programmes but also enables their expansion, ensuring that inclusivity is not treated as a temporary project but as an enduring institutional commitment.

Conclusion

Fostering genuine inclusion for neurodivergent users requires moving beyond minimal modifications towards a fundamental rethinking of what accessibility entails. Neurodivergence including conditions such as autism, ADHD, and dyslexia affects how individuals process information, interact socially, and navigate environments. Uniform solutions, therefore, are inadequate. Instead, libraries must adopt flexible approaches that account for diverse cognitive and sensory styles.

This might involve developing quiet, low-stimulation areas for users who require calm environments, offering alternative formats for programmes to cater to varied sensory or social preferences, and designing digital platforms that allow users to engage independently and comfortably. Involving neurodivergent individuals in both planning and evaluation ensures that services are not only inclusive in principle but also effective in practice. Importantly, designing with neurodiverse needs in mind extends benefits beyond this group. Inclusive design principles enhance accessibility for all users, creating more welcoming and adaptable spaces. As community-centred institutions, libraries are uniquely positioned to lead this cultural shift by fostering environments where every patron feels recognised, respected, and supported. In doing so, libraries strengthen their role as vital spaces for learning, social connection, and equitable participation.

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