ARTICLE

Accessibility and Inclusion for Families with Children with Autism Spectrum Disorders in Cultural Institutions

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Abstract This project aimed to develop a comprehensive set of evaluation tools to assess the accessibility and inclusion of families with children on the autism spectrum in cultural institutions. A stakeholder team conducted interviews, reviewed museum artifacts, and observed museum programming. An evaluation toolkit was constructed by incorporating best practices from current literature and collected data. Tools were piloted and revised after being implemented in the museum context. The Toolkit to Increase Accessibility and Inclusion for Children on the Autism Spectrum and with Sensory Processing Differences in Cultural Institutions was developed with five unique tools, the Dimensions of Accessibility framework, and further resources to provide a self-assessment of cultural institutions. The toolkit can be used broadly across many types of institutions and self-assessment can lead to proactive development of public spaces, institutions, and programming that is accessible and inclusive of diverse groups of people, beyond families with children on the autism spectrum.

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BACKGROUND

Autism spectrum disorder (ASD) prevalence is estimated that 1 out of 54 children in the United States have an ASD diagnosis (Maenner, 2020). Children on the autism spectrum have ongoing challenges in social interactions and communication, demonstrate restricted and repetitive behaviors and interests, and often have sensory processing differences (American Psychiatric Association, 2013). These differences, such as over- or under-responsiveness to sensory information in the environment, influence participation in both home and community activities (Ismael et al., 2018). In addition, core characteristics of ASD often manifest as rigidity with a need for structure and predictability in daily activities and the environment. Lights, sounds, textures, and other environmental input can cause over- or under- stimulation for children on the autism spectrum which can lead to challenges with integrating sensory input to be able to participate (Baranek et al., 2015). Sensory integration challenges can impact engagement in meaningful activity from daily tasks to community participation, including visiting cultural institutions with their family.

Families with children on the autism spectrum face barriers to participation in community settings that may require additional adaptations for meaningful family participation. Autism symptom severity can directly affect the frequency of a child's participation (Little et al., 2015). Askari et al. (2015) noted that children on the autism spectrum participated in fewer leisure activities and were more often in the home with adults or by themselves, limiting opportunities for social engagement. In addition to social barriers, researchers have noted that sensory processing plays a large role in daily participation in activities such as self-care, play, and education. Lawson and Foster (2016) found that children on the autism spectrum with sensory-avoiding behaviors (i.e., over-responsiveness to sensory information) participated in fewer recreational activities. Interventionists, specifically occupational therapists, have found that targeting the child's sensory integration increases participation in activities of daily living (Schaaf et al., 2015). The unique needs of a child on the autism spectrum significantly impact their home and community participation, but their needs also influence the broader family's access to and participation in community spaces as well.

Parents and caregivers facilitate participation for children on the autism spectrum, adapting components of the activity or environment to meet their child's unique sensory and behavioral needs (Pfeiffer et al., 2017). In addition, families often choose those specific activities based on the child's individualized needs (Bagby et al., 2012; DeGrace, 2004). Families may limit their participation in community events or avoid cultural institutions, such as museums, libraries, and community centers solely based on the needs of the child on the autism spectrum (Kulik & Fletcher, 2016; Lussenhop et al., 2016). Limiting participation to cultural institutions in the community impacts all family members, which may decrease the opportunity for cultural, social, and educational engagement that fosters overall well-being. Consequently, all family members are at risk for higher stress, reduced health outcomes, and decreased family cohesion (Iadarola et al., 2017).

The way families choose and prepare for outings, may differ for families with children on the autism spectrum compared to families without children on the autism spectrum (Bagby et al., 2012).

In addition, the shared meaning and feelings among family members may also be different. Families with children on the autism spectrum may decline attending social engagements or avoid specific public places to prevent over-stimulating their child on the autism spectrum. Families are also less likely to participate in community-based recreational activities due to environmental factors (e.g., lack of social peer partners, crowds, noise) and lack of accommodations for the needs of children on the autism spectrum (Milgramm et al., 2021). Additionally, when families with a child on the autism spectrum choose to plan an outing, extra preparation and development of alternative plans extend far beyond what is required for non-autistic peers (Bagby et al., 2012). The need for a child on the autism spectrum to have a highly structured routine can increase parenting stress in orchestrating what could be a unique and enjoyable outing for the family (Larson, 2006; Larson & Miller-Bishoff, 2014). Caregivers have reported a lack of appropriately adapted resources as a barrier for their child to participate in many public spaces, limiting family community participation and engagement (Lim et al., 2016). Families who regularly avoid going into the community can be at risk for marginalization and isolation.

Community participation is a complex process for many families who are managing internal factors of family members' needs, as well as external factors of cultural institutions. Cultural institutions may have innate barriers that may seem insurmountable for families with children on the autism spectrum. Common barriers may include: physical (e.g., bathrooms with loud hand dryers, crowded spaces), communication (e.g., information provided in inaccessible formats, limited information to prepare for visits), programmatic (e.g., limited flexibility in activities, lack of staff trained in disability awareness), transportation (e.g., lack of accessible transportation or parking), and financial (Andrews et al., 2015). Additionally, parents of children on the autism spectrum reported experiencing three times the amount of negative emotions associated with museums compared to parents with non-autistic children (Antonetti & Fletcher, 2016).

Stigma is the greatest barrier to participating in community public spaces (Broady et al., 2017; Kinnear et al., 2016). Families of an autistic child may have concerns about being judged and experience ongoing discrimination by other other families when in public spaces, which can discourage them from actively participating (CDC, 2020). Individual accessibility or difficulty finding in quality programming may compound into insurmountable barriers for a family, keeping them from attending an institution altogether. Lack of participation in specific institutions that are inaccessible for families with a child on the autism spectrum may result in decreased engagement in the wider community. For example, families may avoid cultural institutions due to lack of autism friendly programming or over-stimulating environments such as a small noisy lobby. These challenges can create barriers for the entire family to attend that institution and cause feelings of isolation from their community.

To address participation inequities, community businesses and corporate organizations are supporting families with children on the autism spectrum through sensory-friendly events and environmental modifications. For example, restaurant chain Texas Roadhouse hosts sensory-friendly nights with dimmed lighting, low music volume, sensory-friendly toys, pictures of menu items, and has

replaced their traditional birthday song with a free dessert (Wisconsin Early Autism Project, 2018). In addition, multiple movie theater chains host sensory friendly screenings of popular family movies. While these programs are a step in the right direction, programs are not consistently developed in collaboration with key stakeholders and often lack specificity or a formal process for determining what is needed in a specific environment to facilitate participation and ongoing accessibility. Many children's museums and other cultural institutions have partnered with local autism organizations and self-advocates to offer sensory-friendly hours or ASD-specific programming that include structured programs and encourage families to join the activities. Anecdotally, programs have been noted as important for supporting families and increasing the feeling of being valued and included in the community. However, to date, there hasn't been a process for determining how to make the whole experience of engagement at the cultural institution, from pre-visit to post-visit, best meet the needs of families and individuals on the autism spectrum.

A process for determining the specific needs of a cultural institution to increase family participation and engagement in their communities is essential. The evaluation process should include community stakeholders (self-advocates, family members, and members of professional organizations) and provide a structured process for their ongoing input. Currently, there are no methods for institutions to evaluate their own accessibility. The purpose of this project was to collaborate with key stakeholders to develop a comprehensive set of evaluation tools to assess the accessibility and inclusion of specific cultural institutions for families with children on the autism spectrum.

METHOD

Project Background

The Madison Children's Museum received a local grant to expand their visitor accessibility and inclusion efforts with specific focus on the needs of families with children on the autism spectrum and/or sensory processing differences. Leveraging their extensive community partnerships, the museum convened a coalition group of over 40 community stakeholders including, parents, therapists, non-profit leaders, self-advocates, educators, disability rights lawyers and advocates, and researchers to develop strategies for improving visitor experience and accessibility. The Harwood Approach was used as a framework to understand what the community needed (The Harwood Institute, 2019). The coalition set out first to understand the hopes and aspirations of the community, their challenges, who the community trusts in helping achieve change, and how Madison Children's Museum could both change the experience locally but also support change across the entire field. Over several meetings, the coalition recommended that Madison Children's Museum introduce sensory friendly events and assess its current institutional strengths and areas of improvement. Subcommittees were formed focusing on evaluation, training, and digital improvement. The goal of the assessment process was to develop assessment tools to provide ongoing self-evaluation and resources (Evaluation Toolkit) for other similar cultural institutions to utilize. Areas of assessment for accessibility and inclusion included: 1. staff competency in working with families with children on the

autism spectrum, 2. the sensory environment of museum spaces, 3. digital resources for families, and 4. the overall visitor experience during specific programs and general admission hours. The assessment and toolkit development process took place over the two phases described below.
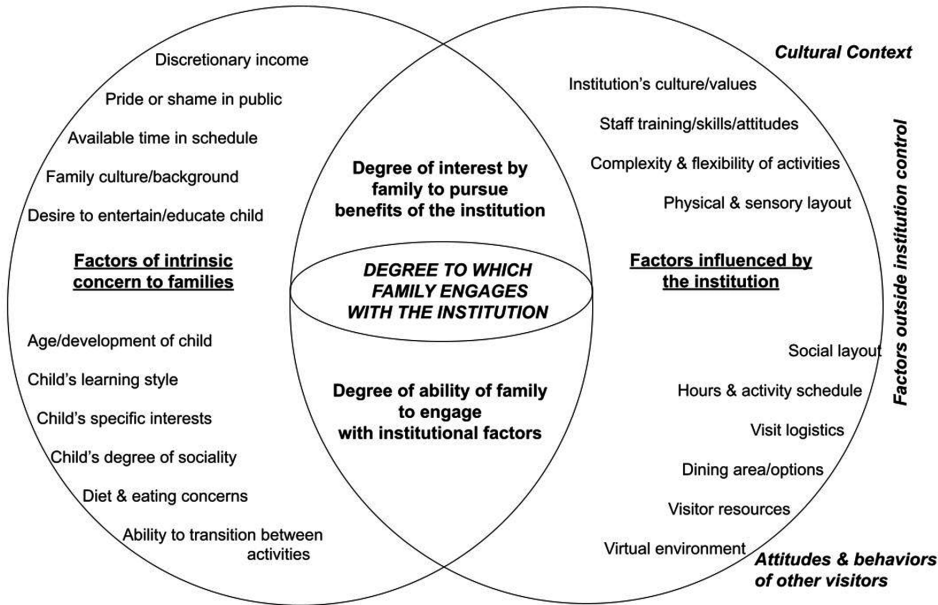
Phase 1: Theoretical Model and Accessibility Assessment

A diverse stakeholder team, including museum staff, self-advocates, parents, clinicians, and university researchers were identified to lead the assessment process and toolkit development. They started by reviewing relevant literature related to cultural institutions, ASD, sensory processing, and participation to guide the project. The process began with defining a theoretical lens to shape the evaluation process in the museum environment. The model was adapted from Christiansen and Baum's (1991) Person-Environment-Occupation-Performance (PEOP) theoretical model developed in occupational science for occupational therapy practice. The PEOP model provides a framework for understanding how successful participation ("performance") in a chosen activity ("occupation") occurs as the result of complex interactions between the individual and their environment. In this model, "person" is understood as an individual with a unique set of strengths and abilities related to their intrinsic physical, psychological, cognitive, and neurological resources. "Environment" refers to all elements outside the individual, which provide the context in which an activity takes place (e.g., physical space, cultural context, social obligations).

The PEOP model was adapted to consider how families with children on the autism spectrum and with sensory processing differences engage in the activity of visiting a cultural institution. The adapted model allowed the stakeholder team to consider all the aspects that may influence a child and family's participation in complex community spaces such as a museum. In our adapted model developed for the Evaluation Toolkit (see Figure 1a), we have adapted the "person" category to encompass a child's individual abilities and developmental functioning as well as factors within the family system that may influence engagement in a public environment. We have further adapted the "environment" category to highlight aspects of the environment, which a public institution such as a museum could influence or control. The decisions an institution makes regarding its environment have the potential to increase or decrease a family's likelihood of successful participation in the environment. For example (see Figure 1b), it may be difficult for a child ("person") with hypersensitivity to noise, to participate in a children's museum free play area ("occupation") during peak visitor hours ("environment"). The child's response to these factors is evidenced by the child covering their ears while walking through the space ("performance"). As a result, the child's participation in free play and engagement with the museum is reduced.

With the foundational model as guiding principles, the stakeholder team led by museum staff then gathered data regarding accessibility to the museum's spaces and programming. Three areas of data collection included observations of programming, review of artifacts and materials provided by the museum staff, and interviews with staff. The information was evaluated by the team and integrated into key areas for cultural institution self-evaluation to be included in the future toolkit. While

A. Adapted PEOP Model

Discretionary income

Pride or shame in public

Available time in schedule

Family culture/background

Desire to entertain/educate child

**Factors of intrinsic
concern to families**

Age/development of child

Child's learning style

Child's specific interests

Child's degree of sociality

Diet & eating concerns

Ability to transition between
activities

Cultural Context

Institution's culture/values

Staff training/skills/attitudes

Complexity & flexibility of activities

Physical & sensory layout

**Degree of interest by
family to pursue
benefits of the institution**

*DEGREE TO WHICH
FAMILY ENGAGES
WITH THE INSTITUTION*

**Degree of ability of family
to engage
with institutional factors**

**Factors influenced by
the institution**

Social layout

Hours & activity schedule

Visit logistics

Dining area/options

Visitor resources

Virtual environment

Factors outside institution control

*Attitudes & behaviors
of other visitors*

B. Example

OCCUPATION

Free play

PERSON

Child's hypersensitivity to
noise

*Performance = Reduced play and
engagement in museum*

ENVIRONMENT

Peak visitor hours

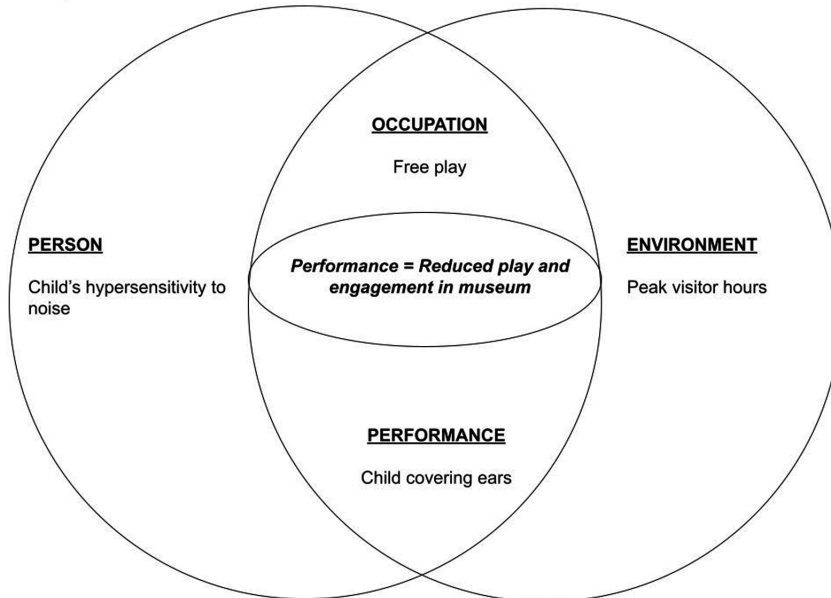**PERFORMANCE**

Child covering ears

Figure 1. Person-Environment-Occupation-Performance (PEOP) model. (a) The figure portrays a model of how factors from the families and cultural institution overlap to influence the degree to which a family engages with that institution. Items near the top are based in the context of culture and items at the bottom are based on attitudes and behaviors. (b) This figure of the PEOP Model illustrates an example of a child in a museum and how factors from Person, Environment, Occupation and Performance impact occupational performance of free play in a museum context. Source: Adapted from original, Christiansen & Baum, 1991, for the *Evaluation Toolkit to Increase Accessiblity and Inclusion for Children with Autism Spectrum Disorder and Sensory Processing Challanges in Public Institutions* (p. 3), Ausderau Research Lab.

each area was evaluated individually, the integration and review for all three areas was an interactive and collaborative process to allow the team to utilize findings to inform other areas of inquiry.

Structured observations

Data was gathered through structured observation of various programming with different aims and structures. Observational data was collected during four sensory events specifically targeted for children on the autism spectrum, eight museum programs (drop-in, camps, nature, history, technology), and general floor observations data. Twelve individual observers documented observations in short answers, Likert scale questions, and general comments. Observations ranged from 10 to 60-min increments and incorporated staff engagement with children, child participation, environmental factors (lighting, noise level, signage), and sensory behaviors. Observation data focused on quality of interactions, activity structure and demands, sensory and safety concerns related to the physical environment, and child sensory responses. In addition, museum patrons were provided the opportunity to complete a brief feedback form post-attendance.

Artifact and material review

In the second area of assessment, museum artifacts and materials were reviewed to consider how they may influence participation and accessibility for families attending the museum. At least two team members individually reviewed the MCM website, employee and volunteer training materials, pre-visit materials distributed to families, program lesson plans, and sensory resources. Information was documented on current efforts to promote accessibility, challenges to finding information helpful to patrons, and identified areas of need to support participation for families with children on the autism spectrum.

Interviews

In the third area of assessment, interview data was gathered with museum staff. The university research team conducted interviews with 13 staff members by phone or in-person, which typically lasted 30–60 min and were transcribed verbatim. The content of the interviews explored how parents, volunteers, staff, and administration were involved and experienced museum events, specific programs and general activities. Transcripts were reviewed to understand not only staff's perception strengths and areas of need for their institution, but more importantly, to determine how to incorporate staff in creating inclusive cultural spaces for families.

Phase 2: Tool Development and Refinement

Toolkit topics were identified and materials were drafted after using the adapted PEOP model and integrating findings from the literature review, program observations, artifact/material review, and interviews. The material development was initiated by the university team but then reviewed, revised, and adapted based on feedback from the stakeholder team and extended museum staff. Data collection and refinement of the tools was an iterative process where draft forms were used to collect data, then reviewed by the research team for the beneficial implementation, edited based on

feedback, and re-used to gather additional information. The goal of the iterative process was to develop materials to allow for institutional self-assessment of accessibility, increase the clarity and institutional utility of toolkit materials, and integrating concerns and ideas of stakeholders. After a final draft of all toolkit materials were developed, they were piloted in the Madison Children's Museum environment to determine the usefulness. Additional revisions with final recommendations for implementation were integrated into the toolkit, which included the creation of an additional framework to guide self-assessment called Dimensions of Accessibility. The Dimensions of Accessibility was developed from a series of conversations between museum staff and stakeholder collaborators while using self-assessment tools. It emerged during the development process as a framework that supports collaborators in identifying and discussing barriers and facilitators institutional engagement from multiple perspectives. After the toolkit development and refinement process, a discussion with staff was initiated to begin to discuss how the self-assessment findings may be effectively implemented in various cultural institutions.

RESULTS

The Toolkit to Increase Accessibility and Inclusion for Children on the Autism Spectrum and with Sensory Processing Differences in Cultural Institutions was created through a collaborative and iterative process integrating the findings from the observations, artifact/website review, and interviews (see supplementary material). The Evaluation Toolkit's five unique tools were designed to provide self-assessment for multiple dimensions of cultural institutions ranging from staff knowledge and training, website/online materials, special events, environmental aspects, and direct child engagement. Depending on the objectives of the specific tool, methods for data collection include a range of direct observations, interviews, surveys, and material review.

The Observation of Child Engagement form can be used in multiple environments and types of programming to better understand how children are interacting with the environment, staff, and activities. Additional observational data about the logistics if visiting the institution, expectation of staff education, and family experiences are gathered from patrons with the Event Feedback Form and the Public Institution Questionnaire. To evaluate pre-visit planning information available, the User-Friendly Website Review Form rates ease of navigation to important information sought out by families with children on the autism spectrum. Finally, the Staff Survey and Semi-Structured Staff Interview provide a mechanism for institutions to understand their staff strengths, challenges, and experiences related to accessibility and inclusion for children on the autism spectrum. See Table 1 for detailed information on each specific tool, it's purpose, and administration format.

Along with tools within the Evaluation Toolkit, a framework titled, Dimensions of Accessibility was developed for guiding institutional self-assessment. The framework will guide institutional staff to further conceptualize barriers and facilitators in key areas of engagement for families with children on the autism spectrum. In the first two areas, Information and Economic, institutions are encouraged to consider external factors that impact families'

Table 1.
Five tools of the evaluation toolkit for accessibility and inclusion self-assessment

Tool	Format	Administration	Purpose
Public Institution Questionnaire	38-questions 5 Categories: Parking, Entrance, Visitor Resources, Staff, Programs	Any staff or stakeholder (~30 min)	Highlight unnoticed patterns or barriers within the existing environment Provides objective information to contextualize and interpret findings from other tools
Staff Survey & Semi-Structured Staff Interview	15-question multiple choice and short answer survey 14–16-question semi-structured interview	For staff to fill out (10–15 min) Optional face-to-face follow up (20–40 min)	Gain insight into staff perspectives that values a diversity of staff responses Addresses the awareness and how the staff intervene with the children on the autism spectrum
User-Friendly Website Review Form	31-question form with rating scales 2 categories: Language & Content	Any staff or stakeholder, multiple reviewers encouraged (~30 min)	Evaluate websites from the perspective of a family member with a child on the autism spectrum *Multiple reviewers and multiple browsers and devices encouraged **Not intended as a general evaluation of website accessibility
Observation of Child Engagement form	38-question form with rating scales, plus notes and examples 5 Categories: Physical Environment, Staff, Children Social Behavior, Children Sensory Behavior, Activities	Any staff or stakeholder for specific programs or general activity (30–45 min) Key terms with definitions provided	Describe features of the physical and social environment that may support or hinder participation and current strengths and needs Findings can identify areas of strength and need & impact of initiatives designed to increase accessibility
Event Feedback Form	40-question survey with multiple choice, short answer, and rating scales	Families with children on the autism spectrum & other stakeholders (10 min)	Gather information from families of children on the autism spectrum and other stakeholders about their experiences with your institution

engagement with the institution and offers ways in which institutions may address potential barriers keeping families away. The areas of Social and Physiological, address factors that are more internal to the family and individual and ways in which an institution's awareness of these barriers can create opportunity for engagement. The Dimensions of Accessibility Framework encourages institutional self-reflection to identify specific details as well as systemic influences. The rows of the framework require specificity to identify barriers and facilitators unique to the institution, and the columns help organize that information to better understand the broader social and cultural influences. Utilizing this framework in concert with data collected from the Evaluation Toolkit can help institutions identify specific barriers within their institution and possible facilitators to increase engagement for families of children on the autism spectrum. See Table 2 for detailed information on the Dimensions of Accessibility Framework.

DISCUSSION

Increasing accessibility for children on the autism spectrum and their families in public cultural spaces, such as museums, is essential to support a diverse population of children to engage in the vast benefits of cultural spaces. With stakeholders as key members of an iterative process, an Evaluation Toolkit with five unique assessment forms was developed to begin to address this need. A self-reflective process incorporates multiple dimensions of the institutional context by addressing public experience, staff perspectives and competency, website ease of use, observation of program accessibility, and event experience feedback. Data collection with the tools and the prosses of self-evaluation is most effectively utilized in partnership with stakeholder collaborators, the users of the institution who are families and caregivers of children on the autism spectrum. The integration of stakeholders allows for individualization of materials to unique institutions and better interpretation of findings that are meaningful to the institution users. The Evaluation Toolkit creates a preliminary framework for cultural institutions to broadly assess their strengths and areas of need when supporting families with children on the autism spectrum.

The adapted PEOP model provides a lens to better assess how meaningful participation may occur in complex cultural institution environments. Together, a family's personal factors and an institution's environmental factors help to measure the degree of interest and ability a family may have leading to participation in a particular public institution. Other institutions examining participation have noted similar personal and institutional factors impacting engagement for patrons on the autism

Table 2.

Dimensions of accessibility as a framework for guiding institutional self-assessment

	Information	Economic	Social	Physiological
Dimensions of accessibility	Website advertisements, printed material, language	Transportation, food, and admission cost	Diversity, attitudes, and behaviors	Sensory, physical and social environment
Barriers	Missing details:			
		●Low socio-economic status	●Lack of feeling accepted	●Lights and sounds
	●List of accommodations	●Family work schedules	●Expectations of social normativity	●Anxiety
	●Services available	●Traditional institutional hours	●Decreased staff knowledge	●Decreased focus
	●Pricing options	●High food cost	●Attitudes of other guests	●Impulsivity
	●Diverse representation	●Limited parking options		●Social stress
Facilitators				
	●Stakeholder input	●Discounted admission fees	●Welcoming and educated staff	●Quiet rooms
	●ADA compliant web design	●Refund availability	●Diverse representation	●Sensory regulating opportunities
	●Staff education	●Expanded institutional hours	●Inclusive policies	●Child autonomy in activity choice
	●Accessible materials	●Supports for siblings	●Clear communication	●Developmental flexibility in activities
	●Clear services and policies	●Incentives		

spectrum, although may not have had a foundational model. At the Canada Science and Technology Museum suggestions were made to improve engagement in the museum based on the experiences of four autistic children and one autistic adult (Hoskin et al., 2020). Recommendations included both environmental factors targeted at family and support persons (improved environmental navigation and pre-planning website use) and an individual's sensory regulation (Hoskin et al., 2020). In the case of the Canadian Science and Technology Museum as well as our children's museum partner, increased access for planning and getting to the museum *and* individualized supports for engaging in the space are necessary. By addressing factors of intrinsic concern to the family and factors influenced by the cultural institution simultaneously, the opportunity for both interest and ability to engage in the institution increases, making it more likely for the family to participate in a meaningful way. The multiplicity of needs to consider highlights the need for cultural institutions to have a way to assess their unique institutional factors to increase accessibility for families with children on the autism spectrum. Using the Evaluation Toolkit to gather institution-specific data and having the Dimensions of Accessibility framework to guide discussions about facilitators and barriers for families at their institution, cultural institutions can conduct meaningful self-assessment that can lead to specific, plausible change to improve accessibility. An important value of this work brought to light by this work is the value of stakeholder engagement in the process of evaluating accessibility.

Stakeholders from across many sectors and disciplines that had deep commitment and input were essential for the development of the Evaluation Toolkit, including appropriate concerns as well as the overall development process. In partnership with Madison Children's Museum, self-advocates, family members, and organization leaders deeply connected with the autism community were involved in the planning, execution, and dissemination of the toolkit development process, providing key insight to their experiences. In a framework of stakeholder engagement, Goodman and Sanders Thompson (2017) identified three levels of stakeholder engagement: non-participation, symbolic participation, and engaged participation. While often ultimate end users may receive outreach or education, or symbolically serve on an advisory board, engaged participation requires collaboration and outcomes that are mutually beneficial to all partners. The development of the Dimension of Accessibility framework arose from a need for stakeholders and museum staff to have shared language to discuss challenges and successes related to institutional accessibility that was meaningful to everyone ranging from the family bringing their autistic child on an afternoon outing to the museum staff who develop exhibits and programming. Having a coalition of diverse stakeholders from beginning to end in the development of the Evaluation Toolkit has created deep conversation between parties involved on the meaning, use, and outcomes of the tools to address the real need and realities of everyone involved.

Generally, there is movement toward inclusion of stakeholders to drive autism research (Roche et al., 2021). Additionally, stakeholder engagement on topics such as autism and technology provide evidence of the value of co-construction of research agendas that reflect the needs and values of autistic people (Parsons et al., 2020). In the partnerships established around the Evaluation Toolkit the co-construction of objectives and desired outcomes provided key benchmarks for the progress of the toolkit, but also established a wider conversation about inclusion. In the context of cultural

institutions, museums have found that stakeholder engagement collaborations around specific projects have improved experiences for autistic individuals and increased skills and understanding for staff resulting in mutually beneficial outcomes (Cho & Jolley, 2016; Theriault & Jones, 2018). Unfortunately, collaborations are often project specific and small in scope and may offer opportunity for the conversations to extend to the wider accessibility of an institution.

To address institutional access and accessibility, an important aspect of the stakeholder engagement in the Evaluation Toolkit development process was negotiating the needs of children and families on the autism spectrum and the institution simultaneously. Cultural institutions have their own mission and objectives that at times may not necessarily align with common strategies to support children on the autism spectrum. For example, the underlying philosophy of some cultural institutions, such as a children's museum, often supports free play and aims to create spaces for infinite creative opportunities. However, children on the autism spectrum often benefit from structure, visual cues, and scaffolding (Escolano-Pérez et al., 2019; Rutherford et al., 2020). Finding ways to negotiate these intersections to continue to support families and children on the autism spectrum while also respecting core institutional values is essential. By integrating stakeholders into the Evaluation Toolkit development process, the team developed tools that provide the opportunity to recognize the needs of both individuals and the institution through a variety of tools with different formats and aims. The Evaluation Toolkit systematically captures diverse data for the evaluation process allowing for integration of information to facilitate meaningful solutions for both groups. Rooted in the values of true stakeholder engagement, children on the autism spectrum, their families and support community, and cultural institutions employing the Evaluation Toolkit are valued in this process as key stakeholders for which the outcomes will be mutually beneficial.

LIMITATIONS AND FUTURE DIRECTIONS

The Toolkit to Increase Accessibility and Inclusion for Children on the Autism Spectrum and with Sensory Processing Differences in Cultural Institutions is a first step in creating a systematic process for evaluation of an institution's strengths and areas of need. However, the toolkit was developed with a stakeholder team primarily associated with a local children's museum. Future work should include implementation in diverse family-centered institutions (e.g., science center or art museum) across geographical locations to further assess the Evaluation Toolkit's contextual effectiveness and applicability. The Toolkit could also be relevant and applicable to other disability populations across the lifespan. However, it would be important to consider which stakeholder communities would be involved in the adaption of the Toolkit to best meet the unique needs of this population in varying cultural institutions. In addition, while institutional needs and strengths may be identified with pathways for potential adaptations for use for families with children on the autism spectrum, the Evaluation Toolkit does not provide pragmatic strategies for implementation. Cultural institutions will need to work with local experts, including families and children on the autism spectrum, to develop institution specific strategies and staff training to address their unique needs for increasing local access and inclusion for families with children on the autism spectrum. A collective

community of practice to consider best possible ways of implementing change and then assessing community-based evaluation for effectiveness will be essential.

CONCLUSION

Families with children on the autism spectrum deserve the opportunity to enjoy the benefits of attending and participating in cultural institutions. Inherent barriers of institutions and their design can make that challenging or even impossible to occur. The Toolkit to Increase Accessibility and Inclusion for Children on the Autism Spectrum and with Sensory Processing Differences in Cultural Institutions provides an opportunity for institutional self-assessment to address their weaknesses and continue to learn from their strengths to increase their accessibility. The five tools and Dimensions of Accessibility framework emphasize and support the need for institutions to work with stakeholder collaborators in this process. By taking the opportunity for a comprehensive examination of the cultural institution's environment, programs, and staff, cultural institutions can begin to better meet the needs of families and children on the autism spectrum to facilitate meaningful engagement. The Evaluation Toolkit can be used broadly across many types of institutions and data collected in the self-assessment process can lead to proactive development of public spaces, institutions, and programming that is accessible and inclusive of diverse groups of people, beyond families with children on the autism spectrum.

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